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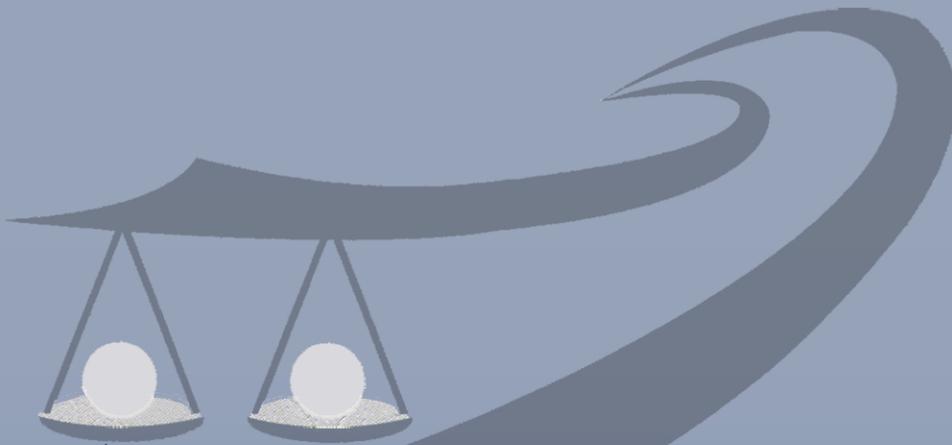
The National Center for Remote Sensing, Air, and Space Law

Informational resources on the legal aspects of human activities using aerospace technologies

# Space Law: Selected Documents 2010

## Volume 1: National Space Law Documents

Compiled by P.J. Blount  
P.J. Blount, editor  
Joanne Irene Gabrynowicz, editor



A supplement to the Journal of Space Law

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Founded in 1999, the National Center for Remote Sensing, Air, and Space Law is a reliable source for creating, gathering, and disseminating objective and timely remote sensing, space, and aviation legal research and materials. The Center serves the public good and the aerospace industry by addressing and conducting education and outreach activities related to the legal aspects of aerospace technologies to human activities.

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The National Center for Remote Sensing, Air, and Space Law at  
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Dedicated to

Yuri Alekseyevich Gagarin  
(1934-1968)

In honor of the fiftieth anniversary of his becoming the  
first human to enter space during the April 12, 1961  
flight of the *Vostok 1* spacecraft.

"Law must precede man into space."

- Andrew G. Haley, *Space Age Presents  
Immediate Legal Problems*, 1

PROCEEDINGS OF THE FIRST COLLOQUIUM  
ON THE LAW OF OUTER SPACE 5 (1959)

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# Selected Space Law Documents: 2010

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**Volume 1: National Space Law Documents**

**Volume 2: International Space Law Documents**

**Foreword**

**by**

**Joanne Irene Gabrynowicz**

This compilation of space law documents for the year 2010 was gathered primarily from postings placed on the aerospace law blog, *Res Communis* from 1 January through 31 December 2010. *Res Communis* is hosted by the National Center for Remote Sensing, Air, and Space Law (Center) at the University of Mississippi School of Law. The postings are supplemented with materials from other sources that were published within 2010, but which were not published on *Res Communis*.

The blog's name, *Res Communis*, is taken from the Latin legal term *that means, in part, "things common to all; that is, those things that are used and enjoyed by everyone."* *Res Communis* is also a fundamental principle that provides a major part of the foundation of the international space law regime. The name was chosen because of its specific relevance to space law and to express the Center's intent that the blog provide the aerospace law community with a reliable, timely source of legal materials.

The annual compilation is a special supplement to the Journal of Space Law, the world's oldest law review dedicated to space law. The Journal of Space Law, beginning with the first volume published in 1973, is available on line at the Center's website, <http://www.spacelaw.olemiss.edu/>, and through HeinOnline, <http://heinonline.org/>.

This year's compilation is in two volumes: national space law documents and international documents. This demonstrates that the body of space law is growing in size and complexity. As these volumes go to press, important changes are occurring in the U.S. space program, including the historic final *Shuttle* launch. Changes are also occurring in a number of other national programs. Together, these will impact a number of international cooperative projects. On the private and commercial side of space activities, legal actions, investments and activities are expanding. It can be expected that space law will continue to change for the practitioner, academic, and government lawyer. The reader can find updated material on an on-going basis at <http://rescommunis.wordpress.com/>.

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**COMMISSION DECISION**  
**of 5 February 2010**  
**setting up the GMES Partners Board**  
(2010/67/EU)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Whereas:

- (1) Global Monitoring for Environment and Security (GMES) is an Earth observation initiative led by the European Union and carried out in partnership with the Member States. Its objective is to foster better exploitation of the industrial potential of policies of innovation, research and technological development in the field of Earth observation and to provide information services.
- (2) In order to achieve the objective of GMES on a sustainable basis, it is necessary to coordinate the activities of the various partners involved in GMES and to develop, establish and operate a service and observation capacity meeting the demands of users. For this purpose, the Commission may need to call upon the expertise of specialists in an advisory body.
- (3) In its Communication entitled 'Global Monitoring for Environment and Security (GMES): we care for a safer planet' <sup>(1)</sup>, the Commission announced the establishment of a Partners Board to assist the Commission in the overall coordination of GMES.
- (4) It is therefore necessary to set up a group of experts in the field of GMES and Earth observation and to define its tasks and its structure.
- (5) The group should help to ensure the coordination of contributions to GMES by all partners, making best use of existing capacities and identifying gaps to be addressed at Union level. It should assist the Commission in monitoring the coherent implementation of the European Earth Observation Programme (GMES). It should monitor the evolution of policy and enable exchange of good practices in GMES and Earth observation.
- (6) The Partners Board should be composed of representatives of the Member States with competence in the Earth observation, environment and security sectors. Representatives should be nominated by their national authorities responsible for Earth observation in their Member State.
- (7) Rules on disclosure of information by members of the Board should be provided for, without prejudice to the Commission's rules on security as set out in the Annex to Commission Decision 2001/844/EC, ECSC, Euratom <sup>(2)</sup>.
- (8) Personal data relating to members of the Board should be processed in accordance with Regulation (EC) No 45/2001 of the European Parliament and of the Council of 18 December 2000 on the protection of individuals with regard to the processing of personal data by the Community institutions and bodies and on the free movement of such data <sup>(3)</sup>.
- (9) Provision should be made for the participation of Norway and Switzerland, members of the European Space Agency, in the work of the group. Representatives of organisations involved in Earth observation, in particular former members of the GMES Advisory Council, should be able to attend meetings of the group as observers.
- (10) It is appropriate to fix a period for the application of this Decision. The Commission will in due time consider the advisability of an extension,

HAS DECIDED AS FOLLOWS:

*Article 1*

**The GMES Partners Board**

The GMES Partners Board, hereinafter referred to as 'the Board', is hereby set up.

<sup>(1)</sup> COM(2008) 748 final.

<sup>(2)</sup> OJ L 317, 3.12.2001, p. 1.

<sup>(3)</sup> OJ L 8, 12.1.2001, p. 1.

*Article 2***Tasks**

The tasks of the Board shall be:

1. to establish cooperation between Member States bodies and the Commission on questions related to GMES, in order to help ensure coordination of contributions by national and European Union's activities to GMES, make best use of existing capacities and identify gaps to be addressed at European level;
2. to assist the Commission in monitoring the coherent implementation of the European Earth Observation Programme (GMES), which includes funding from the Research Framework Programme, for which the Commission is assisted by the Committee established pursuant to Article 8 of Council Decision 2006/971/EC <sup>(1)</sup>, and from other EU funding sources, and which builds on the GMES Space Component programme of the European Space Agency (ESA), the execution of which is monitored by the ESA Programme Board for Earth Observation;
3. to assist the Commission with the preparation of a strategic implementation framework of the European Earth Observation Programme (GMES), including: (i) indicative annual and multi-annual planning of the EU programme activities; (ii) indicative implementation schemes; (iii) GMES activities cost assessment and preliminary budgetary strategy; and (iv) programme specification and participation rules;
4. to bring about an exchange of experience and good practice in the field of GMES and Earth observation.

*Article 3***Consultation**

1. The Commission may consult the Board on any matter relating to the development and implementation of GMES.
2. The Chairperson of the Board may advise the Commission that it is desirable to consult the Board on a specific question.

*Article 4***Membership — Appointment**

1. The Board shall be composed of 27 members.
2. The members of the Board shall be appointed by the Commission from specialists with competence in the Earth observation, environment and security sectors.

The members shall be nominated by national authorities of the Member States.

<sup>(1)</sup> OJ L 400, 30.12.2006, p. 86.

3. Alternate members for the members of the Board shall be appointed in equal numbers and on the same conditions as the members. Alternate members shall automatically replace members who are absent.

4. The Commission may invite representatives of organisations involved in Earth observation to attend meetings as observers.

A representative of Switzerland and a representative of Norway shall be invited as permanent observers.

5. The members shall be appointed as representatives of a public authority.

6. Members of the Board shall be appointed for a one-year renewable term of office. They shall remain in office until such time as they are replaced or their term of office ends.

7. Members who are no longer capable of contributing effectively to the Board's deliberations, who resign or who do not comply with the conditions set out in Article 339 of the Treaty, may be replaced for the remainder of their term of office.

*Article 5***Operation**

1. The Board shall be chaired by the Commission.
2. When discussing matters related to the Space component of the GMES programme, the Commission shall be assisted by the European Space Agency.

When discussing matters related to the in situ component of the GMES programme, the Commission shall be assisted by the European Environment Agency.

3. In agreement with the Commission, sub-groups may be set up to examine specific questions under terms of reference established by the Board. Such groups shall be dissolved as soon as their mandates are fulfilled.

4. The Commission's representative may ask experts or observers with specific competence on a subject on the agenda to participate in the Board's or sub-group's deliberations if this is useful and/or necessary.

5. Information obtained by participating in the Board's or sub-group's deliberations shall not be divulged if, in the opinion of the Commission, that information relates to confidential matters.

6. The Board and its sub-groups shall normally meet on Commission premises in accordance with the procedures and schedule established by it. The Commission shall provide secretarial services. Other Commission officials with an interest in the proceedings may attend meetings of the Board and its sub-groups.

7. The Board shall adopt its rules of procedure on the basis of the standard rules of procedure adopted by the Commission.

8. The Commission may publish on the Internet, in the original language of the document concerned, any summary, conclusion, or partial conclusion or working document of the Board.

*Article 6*

**Meeting expenses**

1. The Commission shall reimburse travel and, where appropriate, subsistence expenses for members, experts and observers in connection with the Board's activities in accordance with the Commission's rules on the compensation of external experts.

2. The Board members, experts and observers shall not be remunerated for the services they render.

3. Meeting expenses shall be reimbursed within the limits of the annual budget allocated to the Board by the responsible Commission departments.

*Article 7*

**Entry into force and applicability**

This Decision shall enter into force on the third day following its publication in the *Official Journal of the European Union*.

It shall apply until 31 December 2011.

Done at Brussels, 5 February 2010.

*For the Commission*

*The President*

José Manuel BARROSO

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Procedure : **2009/0070(COD)**

[Document stages in plenary](#)

Document selected : [A7-0161/2010](#)

Texts tabled :  
**A7-0161/2010**

Debates :

Votes :  
**PV 16/06/2010 - 8.3**  
**Explanations of votes**

Texts adopted :  
**P7\_TA(2010)0214**

## Texts adopted

Wednesday, 16 June 2010 - Strasbourg

Provisional edition

**European Earth monitoring programme (GMES) (2011–2013) \*\*\*I**

[P7\\_TA-PROV\(2010\)0214](#)

[A7-0161/2010](#)

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**▶ European Parliament legislative resolution of 16 June 2010 on the proposal for a regulation of the European Parliament and of the Council on the European Earth observation programme (GMES) and its initial operations (2011–2013) (COM(2009)0223 – C7-0037/2009 – 2009/0070(COD))**



**(Ordinary legislative procedure: first reading)**

*The European Parliament,*

- having regard to the Commission proposal to Parliament and the Council (**COM(2009)0223**),
  - having regard to Article 251(2) and Article 157(3) of the EC Treaty, pursuant to which the Commission submitted the proposal to Parliament (C7-0037/2009),
  - having regard to the Communication from the Commission to Parliament and the Council entitled "Consequences of the entry into force of the Treaty of Lisbon for ongoing interinstitutional decision-making procedures" (**COM(2009)0665**),
  - having regard to Article 294(3) and Article 189 of the Treaty on the Functioning of the European Union,
  - having regard to the opinion of the European Economic and Social Committee of 20 January 2010<sup>(1)</sup>,
  - after consulting the Committee of the Regions,
  - having regard to the undertaking given by the Council representative by letter of 5 May 2010 to approve Parliament's position, in accordance with Article 294(4) of the Treaty on the Functioning of the European Union,
  - having regard to Rule 55 of its Rules of Procedure,
  - having regard to the report of the Committee on Industry, Research and Energy and the opinions of the Committee on Budgets and the Committee on the Environment, Public Health and Food Safety (**A7-0161/2010**),
1. Adopts the position at first reading hereinafter set out;
  2. Calls on the Commission to refer the matter to Parliament again if it intends to amend the proposal substantially or replace it with another text;
  3. Instructs its President to forward its position to the Council, the Commission and the national parliaments.

<sup>(1)</sup> Not yet published in the Official Journal.

► **Position of the European Parliament adopted at first reading on 16 June 2010 with a view to the adoption of Regulation (EU) No .../2010 of the European Parliament and of the Council on the European Earth monitoring programme (GMES) and its initial operations (2011-2013)**



P7\_TC1-COD(2009)0070

**(Text with EEA relevance)**

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty on the Functioning of the European Union, and in particular Article 189 thereof,

Having regard to the proposal from the European Commission,

Having regard to the opinion of the European Economic and Social Committee<sup>(1)</sup>,

After consulting the Committee of the Regions,

Acting in accordance with the ordinary legislative procedure<sup>(2)</sup>,

**Whereas:**

(1) At its meeting of 15 and 16 June 2001 in Gothenburg, the European Council agreed on a strategy for sustainable development, in order to mutually reinforce economic, social and environmental policies and added an environmental dimension to the Lisbon process.

(2) In the Resolution on the European Space Policy<sup>(3)</sup> of 21 May 2007 adopted at the fourth joint and concomitant meeting of the Council of the European Union and of the Council of the European Space Agency at ministerial level (the "Space Council", established in accordance with Article 8(1) of the Framework Agreement between the European Community and the European Space Agency<sup>(4)</sup>), the Council recognised the actual and potential contributions by space activities to the Lisbon strategy for growth and employment, in the form of providing enabling technologies and services for the emerging European knowledge society and contributing to European cohesion, and underlined that space is a significant element of the strategy for sustainable development.

**(2a) The Resolution "Taking forward the European Space Policy" of 26 September 2008 adopted at the fifth joint and concomitant meeting of the Council of the European Union and of the Council of the European Space Agency at Ministerial Level stressed the need to develop adequate EU instruments and funding schemes, taking into account the specificities of the space sector, the need to strengthen its overall and its industry's competitiveness and the necessity of a balanced industrial structure; and to allow appropriate long-term Union investment in space-related research and for the operation of sustainable space-based applications for the benefit of the Union and its citizens, in particular by examining all space-related policy consequences within the framework of the next financial perspective.**

**(2b) The European Parliament's resolution of 20 November 2008 on the European space policy: how to bring space down to earth stressed the need to find adequate EU instruments and funding schemes for the European Space Policy to supplement the allocations from the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007-2013) ("the Seventh Framework Programme"), so as to allow the different economic actors to plan their actions in the medium and long term and emphasised that the next financial framework should take into account adequate EU instruments and funding schemes to allow long-term Union investment in space-related research and for the operation of sustainable space-based applications for the benefit of the Union and its citizens.**

(3) Global Monitoring for Environment and Security (GMES) is an Earth **monitoring** initiative led by the European **Union** and carried out in partnership with the Member States **and the European Space Agency (ESA)**. Its **primary** objective is to provide, **under European Union control**, information services, which give access to accurate data and information in the field of environment and security and are tailored to the needs of users. **In doing so, it should foster better exploitation of the industrial potential of policies of innovation, research and technological development in the field of Earth observation. GMES should be inter alia a key tool to support biodiversity, ecosystem management, and climate change mitigation and adaptation.**

(4) In order to achieve the objective of GMES on a sustainable basis, it is necessary to coordinate the activities of the various partners involved in GMES, and to develop, establish and operate service and observation capacity meeting demands of users, **without prejudice to relevant national and European security restrictions**.

**(4a) In this context, the GMES Committee should assist the Commission in ensuring the coordination of contributions to GMES by the European Union, the Member States and inter-governmental agencies, making best use of existing capacities and identifying gaps to be addressed at Union level. It should also assist the Commission in monitoring the coherent implementation of the GMES programme. It should monitor the evolution of policy and enable exchanges of good practice in GMES.**

**(4b) GMES is a user-driven programme, thus requiring the continuous, effective involvement of users, particularly regarding the definition and validation of service requirements. In order to increase its value to users, their input should be actively sought through regular consultation with end-users from the public and private sectors. A dedicated body (the "User Forum") should also be established to facilitate the identification of user requirements, the verification of service compliance and the coordination of the GMES programme with its public users.**

**(4c) The Commission should be responsible for the implementation of the GMES security policy, assisted by the GMES Committee. For that purpose, a specific configuration of the GMES Committee (the "Security Board") should be set up.**

**(4d) For the purpose of providing for a framework ensuring full and open access to information produced by GMES services and data collected through GMES infrastructure, while providing for the necessary protection of the information produced by the GMES services and of data collected through the GMES dedicated infrastructure, the Commission should be empowered to adopt delegated acts in accordance with Article 290 of the Treaty on the Functioning of the European Union in respect of registration and licensing conditions for GMES users and of criteria for restriction of access to GMES data and information, while taking into account the data and information policies of providers of data needed for GMES, and without prejudice to national rules and procedures applicable to space and in situ infrastructures under national control. It is of particular importance that the Commission carries out appropriate consultations during its preparatory work, including at expert level.**

**(4e) In order to ensure uniform conditions for implementation of this Regulation and of the delegated acts adopted on the basis of this Regulation, implementing powers should be conferred to the Commission to adopt, on the basis of the conditions and criteria established by delegated acts, specific measures on restricting access to the information produced by the GMES services and to data collected through the GMES dedicated infrastructure, including individual measures taking into account the sensitivity of the information and data in question. Implementing powers should also be conferred to the Commission to coordinate the voluntary contributions of Member States and the potential synergies with relevant national, European Union and international initiatives, to set the maximum rate of co-financing for grants, to adopt measures laying down the technical requirements in order to ensure the control and integrity of the system within the GMES space component dedicated programme and to control the access to, and handling of, technologies that provide security to the GMES space component dedicated programme, and to adopt the annual work programme of GMES. According to Article 291 of the Treaty on the Functioning of the European Union (TFEU), rules and general principles concerning mechanisms for the control by Member States of the Commission's exercise of implementing powers shall be laid down in advance by a regulation adopted in accordance with the ordinary legislative procedure. Pending the adoption of that new regulation, Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission<sup>(5)</sup> continues to apply, with the exception of the regulatory procedure with scrutiny, which is not applicable.**

**(4f) As GMES is based on a partnership between the EU, ESA and the Member States, the Commission should endeavour to continue the dialogue recently established with ESA and Member States owning relevant space assets.**

(5) GMES services are necessary in order to foster the use of information sources by the private sector on a continuous basis, thus facilitating innovation by service providers adding value, many of which are small and medium-sized enterprises (SMEs).

(6) GMES comprises both development activities and operations. Regarding operations, in its third orientations adopted at the Space Council meeting of 28 November 2005, Council supported a phased approach for implementation of GMES based on clearly identified priorities, starting with the development of three fast-track services in the field of emergency response, land monitoring and marine services.

(7) The first operational services in the field of emergency response and land monitoring were financed as preparatory actions in accordance with Article 49(6)(b) of Council Regulation (EC, Euratom) No 1605/2002 of 25 June 2002 on the Financial Regulation applicable to the general budget of the European Communities<sup>(6)</sup> ("the Financial Regulation").

(8) In addition to the development activities financed under the space thematic area included in Decision No 1982/2006/EC of the European Parliament and of the Council of 18 December 2006 concerning the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007-2013)<sup>(7)</sup>, **European Union** action is necessary in the period of 2011-2013 to ensure continuity with the preparatory actions and to establish operational services on a more permanent basis in areas of sufficient technical maturity with a proven potential for the development of downstream services

(9) In its Communication of 12 November 2008 entitled "Global Monitoring for Environment and Security (GMES): we care for a safer planet", the Commission outlined its approach to the governance and financing of GMES and indicated its intention to delegate technical implementation of GMES to specialised entities, including ESA for the GMES space component owing to its unique position and expertise.

**(9a) The Commission should entrust the coordination of the technical implementation of the GMES services, where appropriate, to competent European or intergovernmental institutions, such as the European Environment Agency (EEA) and the European Centre for Medium-Term Weather Forecasting (ECMWF).**

(10) Operational services in the field of emergency **management** and humanitarian responses are necessary in order to coordinate the existing capacity of the **European Union** and its Member States to be better prepared, respond to and recover from natural and man-made disasters, which often also have a negative impact on the environment. As climate change could lead to an increase in emergencies, GMES will be essential for **supporting** climate change adaptation **measures**. GMES services should therefore deliver geospatial information to support **emergency and humanitarian responses**.

(11) Land monitoring services are important for monitoring of biodiversity and ecosystems, **support** climate change mitigation and adaptation **measures** and the management of a wide range of resources and policies, most of which relate to the natural environment: soil, water, agriculture, forests, energy and utilities, built-up areas, recreational facilities, infrastructure and transport. Operational land monitoring services are necessary at both European and global levels, developed in collaboration with Member States, third countries in Europe and partners outside Europe and with the United Nations.

**(11a) GMES services in the field of the marine environment are important for the support of an integrated European capacity for ocean forecasting and monitoring and the future provision of Essential Climate Variables (ECVs). They are an essential element for climate change monitoring, marine environment monitoring and transport policy support.**

**(11b) Atmosphere monitoring services are important for monitoring air quality, atmospheric chemistry and composition. They are an essential element for climate change monitoring and the future provision of ECVs. The provision of information on the state of the atmosphere is necessary on a regular basis and at regional and global levels.**

**(11c) Security services are an important part of the GMES initiative. Europe will benefit from the use of space and in situ assets in support of the implementation of services responding to the challenges which Europe is facing in the security field, notably border control, maritime surveillance and support to EU external actions.**

**(11d) Monitoring of climate change should allow for the adaptation and mitigation of its effects. It should in particular contribute to the provision of ECVs, climate analysis and projections on a scale relevant to adaptation and mitigation, and relevant service delivery.**

(12) The provision of operational services financed under this Regulation depends on access to data collected via space infrastructure and airborne, seaborne and ground-based facilities ("in situ infrastructure") and survey programmes. **With full respect for the principles of subsidiarity and proportionality**, access to **the required** data should therefore be ensured and where necessary in-situ data collection complementary to **existing European Union** and national activities **may** be supported. **The continuous availability of the underlying in situ and space observation infrastructure needs to be ensured**, including space infrastructure specifically developed for GMES in the framework of the ESA GMES space component programme (the Sentinel missions). The first Sentinels will enter their initial operations phase starting in **2012**.

(13) The Commission should ensure the complementarity of GMES related research and development activities under the Seventh Framework Programme, the **EU** contribution to GMES initial operations, activities of GMES partners and already existing structures, such as the European Data Centres.

(14) GMES initial operations should be implemented consistently with other relevant **European Union** policies, instruments and action, in particular with **environmental, security, competitiveness and innovation, cohesion, research, transport, competition and international cooperation** policies, the European Global Navigation Satellite Systems (GNSS) programme and protection of personal data. Furthermore, GMES **data** should **maintain coherence with Member States' spatial reference data and support the development of the infrastructure for spatial information in the European Union** established by Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE)<sup>(8)</sup>. GMES should also complement the Shared Environmental Information System (SEIS) and **European Union** activities in the field of emergency response.

**(14a) GMES and its initial operations should be considered as a European contribution to building the Global Earth Observing System of Systems (GEOSS) developed within the framework of the Group on Earth Observations (GEO).**

(15) The Agreement on the European Economic Area and the Framework Agreements with candidate and potential candidate countries provide for participation by those countries in **European Union** programmes. Participation by other non-EU countries and international organisations should be rendered possible by the conclusion of international agreements to that effect.

(16) For the entire duration of GMES initial operations, a financial envelope of EUR 107 million constituting the prime reference, within the meaning of point 37 of the Interinstitutional Agreement of 17 May 2006 between the European Parliament, the Council and the Commission on budgetary discipline and sound financial management<sup>(9)</sup> ("Interinstitutional Agreement") should be established. It is envisaged that this financial envelope will be complemented by an amount of EUR **209 million** from the space theme of the Seventh Framework Programme for research actions accompanying GMES initial operations **that should be managed in accordance with applicable rules and decision-making procedures in the Seventh Framework Programme. These two funding sources should be managed in a coordinated manner in order to ensure consistent progress in the implementation of the GMES programme .**

**(16a) That financial envelope is compatible with the ceiling for subheading 1a financial framework 2007-2013, but the margin remaining in Heading 1a for 2011-2013 is very small. It should be emphasised that the annual amount will be determined during the annual budgetary procedure, in accordance with point 37 of the Interinstitutional Agreement.**

**(16b) The fund should if possible be further increased so that commitment appropriations can be allocated for the space component during the current Multiannual Financial Framework (MFF). In specific terms, this concerns the operation of the A series of Sentinel satellites and the launch of the B series and the procurement of crucial components for the C series.**

**(16c) To that end, the Commission should, in the context of the mid-term review of the current MFF, and before the end of 2010, examine the possibility of additional funding for GMES, within the overall EU budget during the MFF 2007-2013.**

**(16d) The allocation of any additional funding to this Regulation on top of the EUR 107 million already allocated should be considered in the context of the discussion on the future of European space policy, notably on procurement and governance.**

**(16e) The Commission should also submit a long-term financing strategy for the future MFF during the first semester of 2011, without prejudice to the outcome of the negotiations on the MFF 2014-2020.**

**(16f) In its financial planning, the Commission should ensure that data continuity is ensured both during and after the end of the period of the initial GMES operations (2011-2013), and that the services can be used uninterruptedly and without restrictions.**

(17) In accordance with the Financial Regulation, Member States, non-EU countries and international organisations should be free to contribute to the programmes on the basis of appropriate agreements.

(18) GMES **information** should be fully and openly accessible, **without prejudice to relevant security restrictions and to the data policies of Member States and other organisations contributing data and information to GMES** . This is necessary to promote the use and sharing of Earth observation data and information in accordance with the principles of the SEIS, INSPIRE and Global Earth Observation System of Systems (GEOSS). **Full and open access to data should also take into account existing commercial data provision and should promote stronger Earth observation markets in Europe, in particular in downstream sectors, to increase growth and employment.**

**(18a) According to the Commission Communication of 28 October 2009 entitled "Global Monitoring for Environment and Security (GMES): Challenges and Next Steps for the Space Component", there should be a full and open access data policy for the Sentinels through a free-of-charge licensing and online access scheme, subject to security aspects. Such an approach aims at maximising the beneficial use of Sentinel data for the widest range of applications and is intended to stimulate the uptake of information based on Earth observation data for end users.**

(19) The action financed under this Regulation should be monitored and evaluated in order to allow readjustments.

(22) Appropriate measures should also be taken to prevent irregularities and fraud and the necessary steps should be taken to recover funds lost, wrongly paid or incorrectly used, in accordance with Council Regulations (EC, Euratom) No 2988/95 of 18 December 1995 on the protection of the European Communities' financial interests<sup>(10)</sup> and (Euratom, EC) No 2185/96 of 11 November 1996 concerning on-the-spot checks and inspections carried out by the Commission in order to protect the European Communities' financial interests against fraud and other irregularities<sup>(11)</sup> and Regulation (EC) No 1073/1999 of the European Parliament and of the Council of 25 May 1999 concerning investigations conducted by the European Anti-Fraud Office (OLAF)<sup>(12)</sup>

(23) Since the objective of this Regulation, namely the establishment of the GMES programme and its initial operations, cannot be sufficiently achieved by the Member States because GMES initial operations will also comprise pan-European capacity and depend on coordinated provision of services throughout the Member States that needs to be coordinated at **European Union** level and can therefore, by reason of the scale of the action, be better achieved at **European Union** level, the **European Union**

may adopt measures, in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty of the European Union. In accordance with the principle of proportionality, as set out in the same Article, this Regulation does not go beyond what is necessary in order to achieve these objectives, **especially regarding the Commission's role as coordinator of national activities** .

**HAVE ADOPTED THIS REGULATION:**

Article 1

Subject-matter

This Regulation establishes the European Earth **monitoring** programme (**Global Monitoring for the Environment and Security** ("GMES **programme** ")), and **the implementation of its initial operations during the 2011-2013 period** .

Article 2

GMES programme

1. The GMES programme shall build on the research activities carried out under Decision No 1982/2006/EC and the GMES Space Component Programme of ESA.
2. The GMES programme shall comprise the following:

(a) a service component ensuring access to information **in support of** the following **areas**:

- atmosphere monitoring;
  - climate change **monitoring in support of** adaptation and mitigation **policies** ;
  - **emergency management**;
  - **land monitoring**;
  - **marine environment monitoring**;
  - **security**;
- (b) a space component ensuring sustainable spaceborne observations for the **service** areas referred to in point (a);
- (c) an in situ component ensuring observations through airborne, seaborne and ground-based installations for the **service** areas referred to in point (a).

Article 3

GMES initial operations (2011-2013)

1. GMES initial operations shall cover the period 2011–2013 and **may** comprise **operational** actions in the following fields:

- (1) **the service areas referred to in Article 2(2)(a)**;
- (3) measures to support take-up of services by users;
- (4) data access **;**

**(4a) support for in-situ data collection;**

- (5) the GMES space component.

2. The **objectives** of the actions referred to in paragraph 1 are defined in the Annex.

Article 4

Organisational arrangements

1. The Commission shall ensure coordination of the GMES programme with activities at national, **European Union** and international level, **notably the Global Earth Observation System of Systems (GEOSS)**. **The implementation and operation of GMES shall be based on partnerships between the European Union and the Member States, in compliance with their respective rules and procedures. The coordination of the voluntary contributions of Member States, and the potential**

**synergies with relevant national, European Union and international initiatives, shall be implemented in accordance with the advisory procedure referred to in Article 11(3a).**

2. The Commission shall manage the funds allocated to the activities under this Regulation in accordance with the Financial Regulation **and with the management procedure referred to in Article 11(3).** It shall ensure complementarity and consistency of the GMES programme with other relevant **European Union** policies, instruments and actions, relating in particular to **the environment, security,** competitiveness and innovation, cohesion, research (**in particular the activities of the Seventh Framework Programme linked to GMES, without prejudice to Decision No 1982/2006/EC**), transport and competition, **international cooperation,** the European Global Navigation Satellite Systems (GNSS) programmes, the protection of personal data **and existing intellectual property rights,** Directive 2007/2/EC (INSPIRE), the Shared Environmental Information System (SEIS) and **European Union** activities in the field of emergency response.

**2a. The Commission shall ensure that, the GMES programme being a user-driven initiative, service specifications match user needs. To that end, it shall establish a transparent mechanism for regular user involvement and consultation, enabling identification of user requirements at European and national level. The Commission shall ensure coordination with relevant public sector users in Member States, third countries and international organisations. Service data requirements shall be established independently by the Commission after consultation of the User Forum.**

**3a. Technical coordination and** implementation of the GMES space component **shall be delegated to ESA**, relying on the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) where necessary.

**3b. The Commission shall entrust the coordination of the technical implementation of the GMES services, where appropriate, to competent European or intergovernmental institutions.**

#### **Article 4a**

##### **Service Delivery**

**1. The Commission shall take adequate measures to ensure effective competition in the provision of GMES services and to promote the participation of SMEs. The Commission shall facilitate the use of the GMES services output to develop the downstream sector.**

**2. The provision of GMES services shall be decentralised, where appropriate, to integrate at European level existing space, in-situ and reference data inventories and capacities in Member States, thus avoiding duplication. Procurement of new data that duplicate existing sources shall be avoided unless the use of existing or upgradable data sets is not technically feasible or cost-effective.**

**3. The Commission, taking into account the opinion of the User Forum, may define or validate appropriate procedures for the certification of the production of data within the framework of the GMES programme. Those procedures shall be transparent, verifiable and auditable to ensure authenticity, traceability and data integrity to the user. In its contractual arrangements with GMES service operators, the Commission shall ensure that those procedures are implemented.**

**4. The Commission shall report annually on the results achieved in the implementation of this Article.**

#### **Article 5**

##### **Forms of European Union funding**

1. **European Union** funding may take the following legal forms:

**(-1) delegation agreements;**

(1) grants;

(2) public procurement contracts.

**2. Genuine competition, transparency and equal treatment shall be ensured in the provision of funding by the European Union. Where justified, European Union** grants may be provided in specific forms, including framework partnership agreement, or co-funding of operating or action grants. Operating grants to bodies pursuing objectives of general European interest shall not be subject to the degressivity provisions of the Financial Regulation. For grants, the maximum rate of co-financing shall be adopted in accordance with the procedure of Article 11(3).

**2a. The Commission shall report on the allocation of European Union funds to each of the activities specified in Article 3(1) and on the evaluation process and results of the procurement tenders and of the contracts concluded on the basis**

**of this Article, after the award of the contracts.**

Article 6

Participation of third countries

The following countries may participate in the actions referred to in Article 2:

- (1) European Free Trade Association (EFTA) countries which are Contracting Parties to the EEA Agreement in accordance with the conditions laid down in the EEA Agreement;
- (2) the candidate countries, as well as potential candidates included in the stabilisation and association process in accordance with the Framework Agreements, or Protocol to an Association Agreement, on the general principles for the participation of those countries in **European Union** programmes, concluded with those countries;
- (3) the Swiss Confederation, other third countries not referred to in points (1) and (2), and international organisations, in accordance with agreements concluded by the European Union with such third countries or international organisations, pursuant to Article 218 of TFEU, which shall lay down the conditions and detailed rules for their involvement.

Article 7

Funding

1. The financial envelope allocated to the **operational activities established in Article 3(1)** of this Regulation shall be EUR 107 million.
2. Appropriations shall be authorised annually by the budgetary authority within the limits laid down in the multi-annual financial framework.
3. Third countries or international organisations may also provide additional funding for the GMES programme.

Additional funds referred to in the first subparagraph shall be treated as assigned revenue, in accordance with Article 18 of the Financial Regulation.

Article 8

GMES Data and Information Policy

1. The data and information policy for actions financed under the GMES programme shall have the following objectives:

- (a) promoting the use and sharing of GMES information and data;
- (b) full and open access to information produced by GMES services and data collected through GMES infrastructure, subject to relevant **international agreements**, security restrictions **and licensing conditions, including registration and acceptance of user licences** ;
- (c) strengthening Earth observation markets in Europe, in particular the downstream sector, with a view to enabling growth and job creation;
- (d) contributing to the sustainability **and continuity** of the provision of GMES data and information;
- (e) supporting the European research, **technology and innovation** communities.

**2. For the purpose of providing for a framework ensuring the attainment of the GMES information and data policy objective referred to in point (b) of paragraph 1 while providing for the necessary protection of the information produced by the GMES services and of data collected through the GMES dedicated infrastructure, the Commission may adopt, by means of delegated acts in accordance with Article 8a and subject to the conditions of Articles 8b and 8c, the following measures, taking into account the data and information policies of providers of data needed for GMES, and without prejudice to national rules and procedures applicable to space and in situ infrastructures under national control:**

**(a) measures establishing registration and licensing conditions for GMES users;**

**(b) measures defining criteria for restricting access to the information produced by the GMES services and to data collected through the GMES dedicated infrastructure.**

**Article 8a**

**Exercise of the delegation**

- 1. The powers to adopt the delegated acts referred to in Article 8(2) shall be conferred on the Commission until 31 December 2013.**
- 2. As soon as it adopts a delegated act, the Commission shall notify it simultaneously to the European Parliament and to the Council.**
- 3. The powers to adopt delegated acts are conferred on the Commission subject to the conditions laid down in Articles 8b and 8c.**

**Article 8b**

**Revocation of the delegation**

- 1. The delegation of power referred to in Article 8(2) may be revoked at any time by the European Parliament or by the Council.**
- 2. The institution which has commenced an internal procedure for deciding whether to revoke the delegation of power shall endeavor to inform the other institution and the Commission within a reasonable time before the final decision is taken, indicating the delegated powers which could be subject to revocation and possible reasons for a revocation.**
- 3. The decision of revocation shall put an end to the delegation of the powers specified in that decision. It shall take effect immediately or at a later date specified therein. It shall not affect the validity of the delegated acts already in force. It shall be published in the Official Journal of the European Union.**

**Article 8c**

**Objections to delegated acts**

- 1. The European Parliament or the Council may object to a delegated act within a period of two months from the date of notification.**
- At the initiative of the European Parliament or the Council that period shall be extended by two months.**
- 2. If, on expiry of that period, neither the European Parliament nor the Council has objected to the delegated act, it shall be published in the Official Journal of the European Union and shall enter into force on the date stated therein.**

**The delegated act may be published in the Official Journal of the European Union and enter into force before the expiry of that period if the European Parliament and the Council have both informed the Commission of their intention not to raise objections.**

- 3. If the European Parliament or the Council objects to a delegated act, it shall not enter into force. The institution which objects shall state the reasons for objecting to the delegated act.**

**Article 8d**

**Implementing measures on data and information policy and on the governance of the security of GMES components and information**

- 1. On the basis of the criteria referred to in point (b) of Article 8(2), the Commission shall adopt specific measures in accordance with the regulatory procedure referred to in Article 11(2), on restricting access to the information produced by GMES services and data collected through the GMES dedicated infrastructure.**
- 2. The Commission shall ensure overall coordination with regard to the security of the GMES components and services, taking into account the need for oversight and integration of the security requirements of all its elements, without prejudice to national rules and procedures applicable to space and in situ infrastructures under national control. In particular, the Commission shall adopt measures, in accordance with the regulatory procedure referred to in Article 11(2), laying down technical requirements in order to ensure the control and integrity of the system within the GMES space component dedicated programme, and to control the access to, and handling of, technologies that provide security to the GMES space component dedicated programme.**

**Article 9**

**Monitoring and evaluation**

1. The Commission shall monitor and evaluate the implementation of actions referred to in Article 3(1).
2. The Commission shall submit to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions an interim evaluation report by 31 December 2012 and an ex-post evaluation report **by 31 December 2015**.

#### Article 10

##### Implementing measures

1. The Commission shall adopt the annual work programme pursuant to Article 110 of the Financial Regulation and Articles 90 and 166 of Commission Regulation (EC, Euratom) No 2342/2002 of 23 December 2002 laying down detailed rules for the implementation of Council Regulation (EC, Euratom) No 1605/2002 on the Financial Regulation applicable to the general budget of the European Communities<sup>(13)</sup> in accordance with the **management** procedure referred to in Article 11(3).
2. The financial allocation for the GMES programme may also cover expenses relating to preparatory, monitoring, control, audit and evaluation activities which are required directly for the management of the GMES programme and the achievement of its objectives, and in particular studies, meetings, information and publication actions, together with all other technical and administrative assistance expenses that the Commission may incur for the management of the GMES programme.

#### Article 11

##### **GMES** Committee

1. The Commission shall be assisted by a committee (the "GMES Committee").  
**1a. The GMES Committee may meet in specific configurations to deal with concrete issues, notably those relating to security ("Security Board").**
2. Where reference is made to this paragraph, **the regulatory procedure referred to in Article 5** and Article 7 of Decision 1999/468/EC shall apply, having regard to the provisions of Article 8 thereof.
3. Where reference is made to this paragraph, **the management procedure referred to in Articles 4 and 7** of Decision 1999/468/EC shall apply, having regard to the provisions of Article 8 thereof.

The period laid down in Article 4(3) of Decision 1999/468/EC shall be set at two months.

**3a. Where reference is made to this paragraph, the advisory procedure referred to in Articles 3 and 7 of Decision 1999/468/EC shall apply, having regard to the provisions of Article 8 thereof.**

#### Article 11a

##### **User Forum**

1. **The User Forum is hereby set up as a dedicated body. It shall advise the Commission with regard to the definition and validation of user requirements, and to the coordination of the GMES programme with its public users.**
2. **The User Forum shall be chaired by the Commission. It shall consist of GMES public sector users appointed by the Member States.**
3. **The Secretariat of the User Forum shall be provided by the Commission.**
4. **The User Forum shall adopt its rules of procedure.**
5. **The GMES Committee shall be kept fully informed of the advice of the User Forum for the implementation of the GMES programme.**

#### Article 12

##### Protection of the **European Union's** financial interests

1. The Commission shall ensure that, when actions financed under this Regulation are implemented, the financial interests of the **European Union** are protected by the application of preventive measures against fraud, corruption and any other illegal activities, by means of effective checks and by the recovery of amounts unduly paid and, if irregularities are detected, by effective, proportional and dissuasive penalties, in accordance with Regulation (EC, Euratom) No 2988/95, Regulation (Euratom, EC) No 2185/96 and Regulation (EC) No 1073/1999.

2. For the **European Union** actions financed under this Regulation, the notion of irregularity referred to in Article 1(2) of Regulation (EC, Euratom) No 2988/95 shall mean any infringement of a provision of **European Union** law or any breach of a contractual obligation resulting from an act or omission by an economic operator, which has, or would have, the effect of prejudicing the general budget of the **European Union**, by an unjustified item of expenditure.

3. Agreements resulting from this Regulation, including agreements concluded with participating third countries and international organisations, shall provide for supervision and financial control by the Commission, or any representative authorised by it, and audits by the Court of Auditors, if necessary on-the-spot.

#### Article 13

##### Entry into force

This Regulation shall enter into force on the twentieth day following that of its publication in the Official Journal of the European Union.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at

For the European Parliament For the Council

The President The President

- (1) Opinion of 20 January 2010 (not yet published in the Official Journal).
- (2) Position of the European Parliament of 16 June 2010.
- (3) OJ C 136, 20.6.2007, p. 1.
- (4) OJ L 261, 6.8.2004, p. 64.
- (5) OJ L 184, 17.7.1999, p. 23.
- (6) OJ L 248, 16.9.2002, p. 1.
- (7) OJ L 412, 30.12.2006, p. 1.
- (8) OJ L 108, 25.4.2007, p. 1.
- (9) OJ C 139, 14.6.2006, p. 1.
- (10) OJ L 312, 23.12.1995, p. 1.
- (11) OJ L 292, 15.11.1996, p. 2.
- (12) OJ L 136, 31.5.1999, p. 1.
- (13) OJ L 357, 31.12.2002, p. 1.

## ▶ ANNEX



### Objectives of GMES initial operations (2011–2013)

The actions referred to in **Article 3(1)** shall **contribute to** the following objectives:

- (1) emergency response services, based on existing activities in Europe, shall ensure that Earth observation data and derived products are made available for the benefit of emergency response players at international, European, national and regional levels to different types of disasters, including meteorological hazards (including storms, fires and floods), geophysical hazards (including earthquakes, tsunamis, volcanic eruptions and landslides), deliberate and accidental man-made disasters and other humanitarian disasters. As climate change could lead to an increase in emergencies, GMES emergency response will be essential to support climate change adaptation measures in this area as a part of the prevention, preparedness, response and recovery activities in Europe;
- (2) land monitoring services shall ensure that Earth observation data and derived products are made available for the benefit of European, national, regional **and international** authorities responsible for the **global to local** environmental monitoring of biodiversity, soil, water, forests and national resources, as well as in general implementation of environmental policies, collection of geographical information, agriculture, energy, urban planning, infrastructure and transport. Land monitoring services shall include monitoring of climate change variables;

**(2a) marine monitoring services shall provide information on the state of physical ocean and marine ecosystems for the global ocean and the European regional areas. The application areas of the GMES marine services include maritime safety, the marine environment and coastal regions, marine resources as well as seasonal meteorological forecasting and climate monitoring;**

**(2b) atmosphere environmental services shall ensure the monitoring of air quality on a European scale and of the**

**chemical composition of the atmosphere on a global scale. It shall in particular provide information for air quality monitoring systems on the local to national scales, and should contribute to the monitoring of atmospheric chemistry climate variables;**

**Security Services shall provide useful information in support of the challenges which Europe is facing in the security field, notably border control, maritime surveillance and support for EU external actions;**

**(2d) monitoring of climate change shall allow for the adaptation and mitigation of its effects. It should in particular contribute to the provision of ECVs, climate analyses and projections on a scale relevant to adaptation and mitigation and relevant service delivery;**

- (3) measures to support take-up of services by users shall include implementation of technical interfaces adapted to the specific user environment, training, communication and development of the downstream sector;
- (4) data access shall ensure that Earth observation data from a wide range of European missions and other types of **observation** infrastructure, are collected and made available to achieve the objectives of GMES ;

**(4a) the in-situ component shall ensure coordination of in-situ data collection and in-situ data access for GMES services;**

- (5) GMES initial operations shall ensure the operations **and development** of the GMES space component, which consists of space-borne Earth observation infrastructure and aims at ensuring observation of Earth sub-systems (including land surfaces, atmosphere and oceans). **GMES initial operations** shall **draw** on existing or planned national and European space infrastructure and on space infrastructure developed in the GMES Space Component Programme.

Last updated: 18 June 2010

[Legal notice](#)



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Procedure : **2009/0047(COD)**

[Document stages in plenary](#)

Document selected : [A7-0160/2010](#)

Texts tabled :  
**A7-0160/2010**

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**Explanations of votes**

Texts adopted :  
**P7\_TA(2010)0213**

## Texts adopted

Wednesday, 16 June 2010 - Strasbourg

Provisional edition

**Structures for the management of the European satellite radio navigation programmes \*\*\*I**

[P7\\_TA-PROV\(2010\)0213](#)

[A7-0160/2010](#)

- [Resolution](#)
- [Consolidated text](#)

**European Parliament legislative resolution of 16 June 2010 on the proposal for a regulation of the European Parliament and of the Council amending Council Regulation (EC) No 1321/2004 on the establishment of structures for the management of the European satellite radio-navigation programmes (COM(2009)0139 – C7-0103/2009 – 2009/0047(COD))**



**(Ordinary legislative procedure: first reading)**

*The European Parliament,*

- having regard to the Commission proposal to Parliament and the Council (**COM(2009)0139**),
  - having regard to Article 251(2) and Article 156 of the EC Treaty, pursuant to which the Commission submitted the proposal to Parliament (C7-0103/2009),
  - having regard to the Commission Communication to Parliament and the Council entitled 'Consequences of the entry into force of the Treaty of Lisbon for ongoing interinstitutional decision-making procedures' (**COM(2009)0665**),
  - having regard to Article 294(3) and Article 172 of the Treaty of the Functioning of the European Union,
  - having regard to the opinion of the European Economic and Social Committee of 15 July 2009<sup>(1)</sup>
  - after consulting the Committee of the Regions
  - having regard to Rule 55 of its Rules of Procedure,
  - having regard to the report of the Committee on Industry, Research and Energy and the opinion of the Committee on Budgets (**A7-0160/2010**),
1. Adopts its position at first reading hereinafter set out;
  2. Calls on the Commission to refer the matter to Parliament again if it intends to amend its proposal substantially or replace it with another text;
  3. Instructs its President to forward its position to the Council, the Commission and the national parliaments.

<sup>(1)</sup> OJ C 317, 23.12.2009, p. 103.

► **Position of the European Parliament adopted at first reading on 16 June 2010 with a view to the adoption of Regulation (EU) No .../2010 of the European Parliament and of the Council setting up the European GNSS Agency, repealing Council Regulation (EC) No 1321/2004 on the establishment of structures for the management of the European satellite radio navigation programmes and amending Regulation (EC) No 683/2008**



P7\_TC1-COD(2009)0047

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty on the Functioning of the European Union, and in particular Article 172 thereof,

Having regard to the proposal from the European Commission,

Having regard to the opinion of the European Economic and Social Committee<sup>(1)</sup>,

Having consulted the Committee of the Regions,

Acting in accordance with the ordinary legislative procedure<sup>(2)</sup>,

**Whereas:**

(1) The European satellite radio-navigation policy is presently implemented through the EGNOS and Galileo programmes.

**(1a)** Council Regulation (EC) No 1321/2004 of 12 July 2004 on the establishment of structures for the management of the European satellite radio-navigation programmes<sup>(3)</sup>, established a Community agency, called the European GNSS Supervisory Authority (hereinafter the "Authority").

(3) Regulation (EC) No 683/2008 of the European Parliament and of the Council of 9 July 2008 on the further implementation of the European satellite navigation programmes (EGNOS and Galileo)<sup>(4)</sup> defines the new framework for the public governance and financing of the Galileo and EGNOS programmes. It sets out the principle of the strict division of responsibilities between the European Union, represented by the Commission, the Authority and the European Space Agency (hereinafter the "ESA"), granting the Commission responsibility for the management of the programmes and **attributing to it** the tasks **originally assigned** to the Authority. It also provides that the Authority, when accomplishing **the** tasks entrusted to it, will ensure that the Commission's role as manager of the programmes is respected and that the Authority acts in accordance with guidelines issued by the Commission.

**(3a)** *In Regulation (EC) No 683/2008 the European Parliament and the Council invited the Commission to put forward a proposal to align formally the management structures of the EGNOS and Galileo programmes as set out in Regulation (EC) No 1321/2004 with the new roles of the Commission and the Authority as set out in Regulation (EC) No 683/2008.*

(5) In view of its reduced sphere of activity, **the Authority** should no longer be called the "European GNSS Supervisory Authority", but rather the "**European GNSS Agency**" (hereinafter the "Agency"). **However, the continuity of the activities of the Authority, including continuity as regards rights and obligations, staff and the validity of any decisions taken, should be ensured under the Agency.**

(6) **The aims and objectives** of Regulation (EC) No 1321/2004 **should also be adjusted in order to reflect the fact that** the Agency **is no longer** responsible for the management of public interests relating to **Global Navigation Satellite Systems (GNSS)** European programmes and for regulating such programmes.

**(6a)** The legal status of the Agency should be such as to enable it to act as a legal person in the discharge of its tasks.

(7) It is also important to **modify** the tasks of the Agency, and, in this regard, to ensure that its **tasks are defined in conformity with those set out in** Article 16 of Regulation (EC) No 683/2008, **including the possibility for the Agency to accomplish other activities that may be entrusted to it by the Commission, in order to support the Commission in the implementation of the GNSS programmes. In accordance with Article 54(2)(b) of Council Regulation (EC, Euratom) No 1605/2002 of 25 June 2002 on the Financial Regulation applicable to the general budget of the European Communities**<sup>(5)</sup>, **such activities could for example include following the development of coordination and consultation procedures on security-related matters, carrying out research of benefit to the development and promotion of the European GNSS programmes and providing support in the development and implementation of the Public Regulated Service (PRS) pilot project.**

**(7a)** Within its scope, its objectives and in the performance of its tasks, the Agency should comply in particular with the provisions applicable to Union institutions.

**(7b) The Commission should, in the context of its mid-term review of the Galileo programme planned for 2010 as referred to in Article 22 of Regulation (EC) No 683/2008, also address the issue of the governance of the programme in the operating and exploitation phase and the role of the Agency in this context.**

(8) **In order to reflect the** █ **title of this Regulation** █ **and the new name of the Agency, all provisions of Regulation (EC) No 683/2008 citing the previous name of the Agency should be amended.**

█  
**(9a)** In order to ensure effectively the accomplishment of the tasks of the Agency, the Member States and the Commission should be represented on an Administrative Board entrusted with the necessary powers to establish the budget, verify its execution, adopt the appropriate financial rules, establish transparent working procedure for decision making by the Agency, approve its work programme and appoint the Executive Director.

**(9b)** It is also **appropriate to include a representative of** the European Parliament in the Agency's Administrative Board as a **non-voting member** , in view of the fact that Regulation (EC) No 683/2008 highlighted the usefulness of close cooperation between the European Parliament, the Council and the Commission. █

(10) In order to ensure that the Agency accomplishes its tasks whilst respecting the Commission's role as manager of the programmes and in accordance with guidelines issued by the Commission, it is also important █ to state explicitly that the Agency **should** be managed by an Executive Director under the supervision of the Administrative Board, in accordance with the guidelines provided to the Agency by the Commission. **It is equally important to specify** that the Commission **should have five representatives** on the Agency's Administrative Board **and that decisions regarding a limited number of tasks of the Board should not be adopted without the assent of the representatives of the Commission .**

**(10a)** The smooth functioning of the Agency requires that its Executive Director be appointed on the grounds of merit and documented administrative and managerial skills, as well as relevant competence and experience, and that he/she performs his/her duties with complete independence and flexibility as to the organisation of the internal functioning of the Agency. **Except as regards certain activities and measures relating to security accreditation**, the Executive Director should prepare and take all necessary steps to ensure the proper accomplishment of the work programme of the Agency, should prepare each year a draft general report to be submitted to the Administrative Board, should draw up a draft statement of estimates of revenues and expenditure of the Agency and should implement the budget.

**(10b) The Agency's Administrative Board should be empowered to take any decision which may ensure that the Agency can accomplish its tasks with the exception of the accreditation tasks, which should be entrusted to the Security Accreditation Board, and in respect of which the Administrative Board will be responsible only for resource and budget matters. Sound governance of the programmes requires also that the tasks of the Administrative Board be compliant with the new missions assigned to the Agency by virtue of Article 16 of Regulation (EC) No 683/2008, notably regarding the functioning of the Security Monitoring Centre and the instructions given pursuant to Council Joint Action 2004/552/CFSP of 12 July 2004 on aspects of the operation of the European satellite radio-navigation system affecting the security of the European Union** <sup>(6)</sup> .

█  
**(11a)** Procedures whereby office-holders are appointed should be transparent.

(12) Furthermore, in view of the scope of the tasks entrusted to the Agency, which include security accreditation, the Agency's Scientific and Technical Committee should be disbanded and its System Security and Safety Committee replaced by a **Security Accreditation Board** for European GNSS systems, to be responsible for security accreditation, and composed of representatives from the Member States and the Commission. **The High Representative for Foreign Affairs and Security Policy (hereinafter the "HR") and the ESA should have** an observer role.

(13) Accreditation activities should be carried out independently of the authorities responsible for managing the programmes, notably the Commission, the other bodies of the Agency, █ the ESA, and other entities responsible for implementing provisions with regard to security. **In order to ensure such independence** , a **Security Accreditation Board** for European GNSS systems should be **established as the** █ **security accreditation authority for the systems and for the receivers containing PRS technology. It should be** , within the Agency, an autonomous body that takes its decisions independently **and objectively, in the interest of the citizens .**

( 14) Given that the Commission, in accordance with Regulation (EC) No 683/2008, manages all aspects relating to system security, **and** in order to ensure efficient governance of security issues and **compliance with** the principle of strict division of

responsibilities provided for under that Regulation **■** , it is essential for the **Security Accreditation Board's** activities to be strictly limited to the security accreditation **activities** of systems and **not** under **any** circumstances **to encroach on** the **tasks entrusted to the Commission under Article 13 of Regulation (EC) No 683/2008** .

**(14a) The decisions taken by the Commission in accordance with procedures involving the European GNSS Programmes Committee will in no way affect the existing rules on budgetary matters or the specific competence of Member States on security matters.**

**(14b) In accordance with Article 13(4) of Regulation (EC) No 683/2008, in cases where the security of the Union or the Member States may be affected by the operation of the European satellite radio-navigation system, the procedures set out in Joint Action 2004/552/CFSP apply. In particular, in the event of a threat to the security of the Union or of a Member State arising from the operation or use of the system, or in the event of a threat to the operation of the system, in particular as a result of an international crisis, the Council, acting unanimously is able to decide on the necessary instructions to the Agency and the Commission. Any Member of the Council, the HR or the Commission are able to request a Council discussion to agree on such instructions.**

**(14c) In application of the principle of subsidiarity, security accreditation decisions should, following the process defined in the security accreditation strategy, be based on local security accreditation decisions taken by the respective national security accreditation authorities of the Member States.**

**(14d) In order for it to carry out all of its activities quickly and effectively, the Security Accreditation Board should be able to establish appropriate subordinate bodies acting on its instructions. It should accordingly set up a "Panel" to assist it in preparing its decisions and a "Crypto Distribution Authority", managing and preparing crypto material issues, including a "Flight Key Cell" dedicated to operational flight keys for launches, as well as other bodies, if necessary, to deal with specific issues. In doing so, special consideration should be given to the necessary continuity of the work in these bodies.**

(15) It is also important for accreditation activities to be coordinated with the work of the authorities responsible for managing the programmes and other entities responsible for implementing security provisions. **■**

(16) Given the specific nature and complexity of the systems, it is essential for the **■** accreditation **activities to be carried out in a context of collective responsibility for the security of the Union and the Member States** , by making efforts to reach a consensus and by involving all parties with an interest in security, and for **■** permanent **risk** monitoring **■** . It is also imperative that **technical** accreditation activities be entrusted to **professionals who are** duly qualified in the field of accrediting complex systems and **who have** an adequate level of security clearance.

(17) In order to ensure that **the Security Accreditation Board is able to** accomplish its tasks, it should also be provided that Member States supply the **Board** with any **necessary** documentation, **■** grant **■** access **to classified information and** to any areas **falling within their jurisdiction to duly authorised persons** , and that they should be responsible at local level for the accreditation of the security of areas that are located within their territory.

**■**

(19) The systems established within the framework of the European satellite radio-navigation programmes are infrastructures **the use of which** extends well beyond the national boundaries of the Member States, and **which** are set up as trans-European networks in accordance with the provisions of Article 172 of the Treaty on the Functioning of the European Union. Furthermore, the services provided via such systems contribute to the development of trans-European networks in the areas of transport, telecommunications and energy infrastructures.

**(19a) The Commission is to assess the budgetary implications of the financing of the Agency for the expenditure heading concerned. On the basis of the information and without prejudice to the relevant legislative procedure, the two arms of the budgetary authority need to achieve, in the framework of budgetary cooperation, a timely agreement on the financing of the Agency. The Union budgetary procedure is applicable to the Union contribution charged to the general budget of the European Union. In addition, auditing of accounts are to be undertaken by the European Court of Auditors in accordance with Title VIII of Regulation (EC, Euratom) No 1605/2002.**

**( 19b )** The Agency should apply the relevant Union legislation concerning public access to documents and the protection of individuals with regard to the processing of personal data. It should also comply with the security principles applicable to the Council and the Commission services.

**(19c)** It should be possible for third countries to participate in the Agency, provided that they have concluded a prior agreement to this effect with the Union, particularly when these countries have been involved in the previous phases of the programme through their contribution to the Galileosat programme of the ESA.

**(19d) Since the objectives of this Regulation, namely to establish and ensure the functioning of an agency with**

**responsibility in particular for security accreditation of the European GNSS systems, cannot be sufficiently achieved by the Member States and can therefore by reason of the scale and effects of the action, be better achieved at Union level, the Union may adopt measures, in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty on European Union. In accordance with the principle of proportionality as set out in that Article, this Regulation does not go beyond what is necessary in order to achieve those objectives.**

**(19e) Regulation (EC) No 683/2008 should be amended accordingly.**

**(20) Regulation (EC) No 1321/2004 has previously been amended █ . Considering the amendments that are now being introduced, it is appropriate, for the sake of clarity, to repeal that Regulation and replace it with a new Regulation .**

**HAVE ADOPTED THIS REGULATION:**

**Subject, tasks, bodies**

Article 1

**Subject matter**

This Regulation sets up a Union agency called the **European** GNSS Agency (hereinafter the "Agency").

Article 2

Tasks

**The tasks of the Agency shall be as set out in Article 16 of Regulation (EC) No 683/2008.**

Article 3

Bodies

The bodies of the Agency shall be the Administrative Board, the Security Accreditation **Board** for European GNSS systems and the Executive Director. **They shall accomplish their tasks in accordance with the guidelines given by the Commission as set out in Article 16 of Regulation (EC) No 683/2008.**

Article 4

Legal status, local offices

1. The Agency shall be a body of the Union. It shall have legal personality.
2. In each of the Member States, the Agency shall enjoy the most extensive legal capacity accorded to legal persons under their law. It may, in particular, acquire or dispose of movable and immovable property and be a party to legal proceedings.
3. The Agency may decide to establish local offices in Member States subject to their consent, or in other countries participating in the programme in accordance with Article 20.
4. The Agency shall be represented by its Executive Director, **subject to Article 9b(9)** .

Article 5

Administrative Board

1. An Administrative Board is hereby set up to carry out the tasks listed in Article 6.
2. The Administrative Board shall be composed of one representative appointed by each Member State, **five representatives** appointed by the Commission **and a non-voting representative appointed by the European Parliament** . The duration of the term of office of the Board members shall be five years. The term of office may be **renewed for a maximum of five years** . A representative **of the HR and a representative of the ESA shall be invited to attend the Administrative Board's meetings as observers** .
3. When appropriate, the participation of representatives of third countries and the conditions thereof shall be established in the arrangements referred to in Article 20.
4. The Administrative Board shall elect a Chairperson and a Deputy Chairperson from among its members. The Deputy Chairperson shall automatically take the place of the Chairperson if he/she is prevented from attending to his/her duties. The term of office of the Chairperson and of the Deputy Chairperson shall be two and a half years and shall expire when they cease to be

members of the Administrative Board. The terms of office may be renewed once.

5. The meetings of the Administrative Board shall be convened by its Chairperson.

The Executive Director of the Agency shall **normally** take part in the deliberations, **unless the Chairperson decides otherwise** .

The Administrative Board shall hold an ordinary meeting twice a year. In addition, it shall meet on the initiative of its Chairperson or at the request of at least a third of its members.

The Administrative Board may invite any person whose opinion can be of interest to attend its meetings as an observer. ■ The members of the Administrative Board may, subject to the provisions of its rules of procedure, be assisted by advisers or experts.

The secretariat of the Administrative Board shall be provided by the Agency.

6. Unless otherwise provided in this Regulation, the Administrative Board shall take its decisions by a two-thirds majority of its members.

7. Each **representative of the Member States and of the Commission** shall have **one vote. Decisions based on Article 6(b) and (e) shall not be adopted without a positive vote of the representatives of the Commission** . The Executive Director of the Agency shall not vote.

The rules of procedure shall establish the more detailed voting arrangements, in particular the conditions for a member to act on behalf of another member.

## Article 6

### Tasks of the Administrative Board

The Administrative Board shall **ensure that the Agency carries out the work entrusted to it, under the conditions set out in this Regulation, and shall take any necessary decision to this end. In respect of security accreditation tasks and decisions provided for in Chapter II, the Administrative Board shall be responsible only for resources and budgetary matters. The Administrative Board shall also** :

- (a) appoint the Executive Director pursuant to Article 7(2);
- (b) adopt **not later than 15 November** each year, and after receiving the Commission's opinion, the work programme of the Agency for the coming year ■ ;
- (c) perform its duties in relation to the Agency's budget pursuant to Articles 10 and 11;
- (d) **oversee** the operation of the Galileo security centre (**referred to as the "Galileo Security Monitoring Centre" or "the GSMC"**) **as referred to in Article 16(a)(ii) of Regulation (EC) No 683/2008** ;
- (e) exercise disciplinary authority over the Executive Director;
- (f) adopt the special provisions necessary for the implementation of the right of access to the documents of the Agency, in accordance with Article 18;
- (g) adopt the annual report on the activities and prospects of the Agency and forward it, by 1 July, to the Member States, the European Parliament, the Council, the Commission, the European Economic and Social Committee and the Court of Auditors; the Agency shall forward to the budgetary authority all information relevant to the outcome of the evaluation procedures;
- (h) adopt its rules of procedure.

## Article 7

### Executive Director

1. The Agency shall be managed by its Executive Director, who shall carry out **his/her** duties under the supervision of the Administrative Board ■ .

2. The Executive Director shall be appointed by the Administrative Board on the grounds of merit and documented administrative and managerial skills, as well as relevant competence and experience, from a list of at least three candidates proposed by the Commission, **after an open competition, following publication in the Official Journal of the European Union and elsewhere of a call for expressions of interest** . The Administrative Board shall take its decision by a three-quarters majority of its members.

Power to dismiss the Executive Director shall lie with the Administrative Board, according to the same procedure.

The Executive Director's term shall be **five years** . This term of office **may be renewed** once for **a further five-year** period.

3. The European Parliament or the Council may call upon the Executive Director to submit a report on the performance of **his/her tasks, and to make a statement before these institutions** .

#### Article 8

##### Tasks of the Executive Director

The Executive Director:

- (a) shall be responsible for representing the Agency, **except in respect of activities and decisions undertaken in accordance with the Articles of Chapters II and III**, and shall be in charge of its management;
- (b) shall prepare the work of the Administrative Board. He/she shall participate, without having the right to vote, in the work of the Board;
- (c) shall be responsible for implementing the annual work programme of the Agency under the control of the Administrative Board;
- (d) shall take all necessary steps, including the adoption of internal administrative instructions and the publication of notices, to ensure the functioning of the Agency in accordance with this Regulation;
- (e) shall draw up estimates of the Agency's revenue and expenditure in accordance with Article 10, and shall implement the budget in accordance with Article 11;
- (f) shall prepare a draft general report each year and submit it to the Administrative Board;  
**(fa) shall ensure that the Agency, as the operator of the GSMC, is able to respond to instructions provided under the Joint Action 2004/552/CFSP;**
- (g) shall define the organisational structure of the Agency and submit it for approval to the Administrative Board;
- (h) shall exercise, in respect of the staff, the powers laid down in Article 15;
- (i) may adopt, after approval of the Administrative Board, the necessary measures to establish local offices in Member States in accordance with Article 4;  
**(ia) shall ensure that the secretariat and all the resources necessary for proper functioning are provided to the Security Accreditation Board and to the bodies set up under its authority referred to in Article 9b(11).**

##### Aspects relating to the security of the European Union or the Member States

#### Article 9

##### Joint Action

**1. In accordance with Article 13(4) of Regulation (EC) No 683/2008, whenever the security of the Union or the Member States may be affected by the operation of the systems, the procedures set out in Joint Action 2004/552/CFSP shall apply.**

**2. The security accreditation decisions taken pursuant to Chapter III, as well as the residual risks identified, shall be communicated by the Commission to the Council for information.**

##### Security accreditation for European GNSS systems

#### Article 9a

##### General principles

**The security accreditation activities referred to in this Chapter shall be carried out in accordance with the following principles:**

- (a) security accreditation activities and decisions are undertaken in a context of collective responsibility for security of the Union and the Member States;**
- (b) efforts shall be made for decisions to be reached by consensus and for all relevant parties with an interest in security issues to be involved;**
- (c) tasks shall be carried out in respect of relevant security rules applicable to the Council and the Commission <sup>(7)</sup> ;**

- (d) a permanent monitoring process shall ensure that security risks are known, security measures are defined to reduce such risks to an acceptable level in accordance with the basic principles and minimum standards set out in the security rules applicable to the Council and the Commission and that these measures are applied in line with the concept of defence in depth. The effectiveness of such measures shall be continuously evaluated;**
- (e) security accreditation decisions shall, following the process defined in the security accreditation strategy, be based on local security accreditation decisions taken by the respective national security accreditation authorities of the Member States;**
- (f) the technical security accreditation activities shall be entrusted to professionals who are duly qualified in the field of accrediting complex systems, who have an appropriate level of security clearance, and who shall act objectively;**
- (g) accreditation decisions shall be taken independently of the Commission, without prejudice to Article 3, and of the entities responsible for implementing the programmes. As a result, a security accreditation authority for European GNSS systems shall be, within the Agency, an autonomous body that takes its decisions independently;**
- (h) security accreditation activities shall be carried out while reconciling the requirement for independence with the need for adequate coordination, between the Commission and the authorities responsible for implementing security provisions.**

#### **Article 9b**

##### **Security Accreditation Board**

- 1. A Security Accreditation Board for European GNSS systems (hereinafter the "Board") shall be established within the Agency. As regards the European GNSS systems, this body shall have the tasks of the security accreditation authority, as referred to in the relevant security rules applicable to the Council and the Commission.**
- 2. The Board shall perform the tasks entrusted to the Agency with regard to security accreditation under Article 16(a)(i) of Regulation (EC) No 683/2008 and take "security accreditation decisions" as provided for in the present Article, in particular on the approval of the security accreditation strategy and of satellite launches, the authorisation to operate the systems in their different configurations and for the various services, the authorisation to operate the ground stations and in particular the sensor stations located in third countries, as well as the authorisation to manufacture the receivers containing PRS technology and their components.**
- 3. The security accreditation of systems by the Board shall consist of the establishment of the compliance of the systems with the security requirements referred to in Article 13 of Regulation (EC) No 683/2008 and in accordance with the relevant security rules and regulations applicable to the Council and the Commission.**
- 4. On the basis of the risk reports referred to in paragraph 11 of this Article, the Board shall inform the Commission of its risk assessment and provide advice to the Commission on residual risk treatment options for a given security accreditation decision.**
- 5. The Commission shall keep the Board continuously informed of the impact of any envisaged decisions of the Board on the proper conduct of the programmes and of the implementation of residual risk treatment plans. The Board shall take note of any such opinion of the Commission.**
- 6. The decisions of the Board shall be addressed to the Commission.**
- 7. The Board shall be composed of one representative per Member State, one representative from the Commission and one from the HR. A representative of ESA shall be invited to attend Board meetings as an observer.**
- 8. The Board shall establish its rules of procedure and shall appoint its Chairperson.**
- 9. The Chairperson of the Board shall be responsible for representing the Agency insofar as the Executive Director, according to Article 8, is not responsible.**
- 10. The Board shall have access to all the human and material resources required to provide appropriate administrative support functions and to enable it, together with the bodies referred to in paragraph 11 of this Article, to perform its tasks independently, in particular when handling files, initiating and monitoring the implementation of security procedures and performing system security audits, preparing decisions and organising its meetings.**
- 11. The Board shall set up special bodies, under itself, to deal with specific issues, acting on its instructions. In particular, while ensuring necessary continuity of work, it shall set up:**

- *a Panel to conduct security analysis reviews and tests to produce the relevant risk reports in order to assist it in preparing its decisions;*
- *a Crypto Distribution Authority (CDA) to assist the Board in particular for questions related to flight keys.*

**12. If consensus according to the general principles referred to in Article 9a cannot be reached, the Board shall take decisions on the basis of majority voting, as provided for in Article 16 of the Treaty on European Union and without prejudice to Article 9 of this Regulation. The representative of the Commission and the representative of the HR shall not vote. The Chairperson of the Board shall sign, on behalf of the Board, the decisions adopted by the Board.**

**13. The Commission shall keep the European Parliament and the Council informed, without undue delay, about the impact of the adoption of the accreditation decisions on the proper conduct of the programmes. If the Commission considers that a decision taken by the Board may have a significant effect on the proper conduct of the programmes, for example in terms of costs and schedule, it shall urgently inform the European Parliament and the Council.**

**14. Taking into account the views of the European Parliament and of the Council, which should be expressed within one month, the Commission may adopt any adequate measures in accordance with Regulation (EC) No 683/2008.**

**15. The Administrative Board shall be regularly kept informed about the evolution of the work of the Security Accreditation Board.**

**14. The timetable for the work of the Board shall respect the GNSS work programme of the Commission.**

#### **Article 9c**

##### **Role of Member States**

##### **Member States shall:**

- (a) transmit to the Board all information they consider relevant for the purposes of security accreditation;**
- (b) permit duly authorised persons appointed by the Board to have access to any classified information and to any areas/sites related to the security of systems falling within their jurisdiction, in conformity with their national laws and regulations, and without any discrimination on ground of nationality, including for the purposes of security audits and tests as decided by the Board;**
- (c) each be responsible for devising a template for access control, which is to outline or list the areas/sites to be accredited, and which shall be agreed in advance between the Member States and the Board, thereby ensuring that the same level of access control is being provided by all Member States;**
- (d) be responsible, at local level, for the accreditation of the security of areas that are located within their territory and form part of the security accreditation area for European GNSS systems, and report, to this end, to the Board.**

##### **Budgetary and financial provisions**

#### **Article 10**

##### **Budget**

1. Without prejudice to other resources and dues yet to be defined, revenue of the Agency shall include a Union subsidy entered in the general budget of the European Union in order to ensure a balance between revenue and expenditure.
2. The expenditure of the Agency shall cover staff, administrative and infrastructure expenditure, operating costs and expenditure associated with the functioning of the **Board, including any special bodies set up to assist it**, and the contracts and agreements concluded by the Agency in order to accomplish the tasks entrusted to it.
3. The Executive Director shall draw up a draft statement of estimates of the revenue and expenditure of the Agency for the following year and shall forward it to the Administrative Board, together with a draft establishment plan.
4. Revenue and expenditure shall be in balance.
5. Each year the Administrative Board, on the basis of the draft statement of revenue and expenditure, shall produce a statement of estimates of revenue and expenditure for the Agency for the following financial year.
6. This statement of estimates, which shall include a draft establishment plan together with the provisional work programme, shall, by 31 March, be forwarded by the Administrative Board to the Commission and to the States with which the Union has concluded

agreements in accordance with Article 20.

7. The statement of estimates shall be forwarded by the Commission to the European Parliament and to the Council (hereinafter the "budgetary authority") together with the preliminary draft general budget of the European Union.
8. On the basis of the statement of estimates, the Commission shall enter in the preliminary draft general budget of the European Union the estimates it deems necessary for the establishment plan and the amount of the subsidy to be charged to general budget, which it shall place before the budgetary authority in accordance with Article 314 TFEU.
9. The budgetary authority shall authorise the appropriations for the subsidy to the Agency and shall adopt the establishment plan for the Agency.
10. The budget shall be adopted by the Administrative Board. It shall become final following final adoption of the general budget of the European Union. Where appropriate, it shall be adjusted accordingly.
11. The Administrative Board shall, as soon as possible, notify the budgetary authority of its intention to implement any project which will have significant financial implications for the funding of the budget, in particular any projects relating to property such as the rental or purchase of buildings. It shall inform the Commission thereof.
12. Where a branch of the budgetary authority has notified its intention to deliver an opinion, it shall forward its opinion to the Administrative Board within a period of six weeks from the date of notification of the project.

#### Article 11

##### Implementation and control of the budget

1. The Executive Director shall implement the budget of the Agency.
2. By 1 March following each financial year, the accounting officer of the Agency shall communicate the provisional accounts to the Commission's accounting officer, together with a report on the budgetary and financial management for that financial year. The Commission's accounting officer shall consolidate the provisional accounts of the institutions and decentralised bodies in accordance with Article 128 of Regulation (EC, Euratom) No 1605/2002.
3. By 31 March following each financial year, the Commission's accounting officer shall forward the provisional accounts of the Agency to the Court of Auditors, together with a report on the budgetary and financial management for that financial year. The report shall also be forwarded to the European Parliament and the Council.
4. On receipt of the Court of Auditors' observations on the provisional accounts of the Agency, under Article 129 of Regulation (EC, Euratom) No 1605/2002, the Executive Director shall draw up the final accounts of the Agency under his/her own responsibility and submit them to the Administrative Board for an opinion.
5. The Administrative Board shall deliver an opinion on the final accounts of the Agency.
6. The Executive Director shall, by 1 July following each financial year, forward the final accounts to the European Parliament, the Council, the Commission and the Court of Auditors, together with the Administrative Board's opinion.
7. The final accounts shall be published.
8. The Executive Director shall send the Court of Auditors a reply to its observations by 30 September. He/she shall also send this reply to the Administrative Board.
9. The Executive Director shall submit to the European Parliament, at the latter's request, all information necessary for the smooth application of the discharge procedure for the financial year in question, as laid down in Article 146(3) of Regulation (EC, Euratom) No 1605/2002.
10. The European Parliament, on a recommendation from the Council acting on a qualified majority, shall, before 30 April of the year N + 2, grant discharge to the Executive Director in respect of the implementation of the budget for year N.

#### Article 12

##### Financial provisions

The financial rules applicable to the Agency shall be adopted by the Administrative Board after the Commission has been consulted. They may not depart from Commission Regulation (EC, Euratom) No 2343/2002 of 19 November 2002 on the framework Financial Regulation for the bodies referred to in Article 185 of Regulation (EC, Euratom) No 1605/2002 on the Financial Regulation applicable to the general budget of the European Communities<sup>(8)</sup> unless such departure is specifically

required for the operation of the Agency and the Commission has given its prior consent.

**Miscellaneous provisions**

Article 13

Anti-fraud measures

1. In order to combat fraud, corruption and other unlawful activities, the provisions of Regulation (EC) No 1073/1999 of the European Parliament and of the Council of 25 May 1999 concerning investigations conducted by the European Anti-Fraud Office (OLAF)<sup>(9)</sup> shall apply without restriction.
2. The Agency shall accede to the Interinstitutional Agreement of 25 May 1999 between the European Parliament, the Council of the European Union and the Commission of the European Communities concerning internal investigations by the European Anti Fraud Office (OLAF)<sup>(10)</sup> and shall issue, without delay, appropriate provisions applicable to all staff of the Agency.
3. The decisions concerning funding, and the implementing agreements and instruments resulting there from, shall explicitly stipulate that the Court of Auditors and OLAF may, if necessary, carry out on-the-spot checks on the recipients of funding of the Agency and the agents responsible for allocating it.

Article 14

Privileges and immunities

The Protocol on Privileges and Immunities of the European Union shall apply to the Agency.

Article 15

Staff

1. The Staff Regulations of Officials of the European Union, the Conditions of employment of other servants of the European Union and the rules adopted jointly by the institutions of the European Union for the purposes of the application of those Staff Regulations and Conditions of employment shall apply to the staff of the Agency. The Administrative Board, in agreement with the Commission, shall adopt the necessary detailed rules of application.
2. Without prejudice to Article 8, the powers conferred on the appointing authority by the Staff Regulations and the Conditions of employment of other servants shall be exercised by the Agency with respect to its own staff.
3. The staff of the Agency shall consist of servants recruited by the Agency as necessary to perform its tasks, but may also include officials **with the appropriate clearance who have been** assigned or seconded by the Commission or the Member States on a temporary basis.

**3a. The provisions laid down in paragraphs 1 and 3 of this Article shall also apply to the staff of the GSMC.**

Article 16

Liability

1. The contractual liability of the Agency shall be governed by the law applicable to the contract in question. The Court of Justice shall have jurisdiction to give judgement pursuant to any arbitration clause contained in a contract concluded by the Agency.
2. In the event of non-contractual liability, the Agency shall, in accordance with the general principles common to the laws of the Member States, make good any damage caused by its departments or by its servants in the performance of their duties.
3. The Court of Justice shall have jurisdiction in any dispute relating to compensation for damage referred to in paragraph 2.
4. The personal liability of its servants towards the Agency shall be governed by the provisions laid down in the Staff Regulations or Conditions of employment applicable to them.

Article 17

Languages

1. The provisions laid down in Regulation No 1 of 15 April 1958 determining the languages to be used in the European Economic Community<sup>(11)</sup> shall apply to the Agency.
2. The translation services required for the functioning of the Agency shall be provided by the Translation Centre for the bodies of

the European Union.

#### Article 18

Access to documents and protection of data of a personal character

1. Regulation (EC) No 1049/2001 of the European Parliament and of the Council of 30 May 2001 regarding public access to European Parliament, Council and Commission documents<sup>(12)</sup> shall apply to documents held by the Agency.
2. The Administrative Board shall adopt arrangements for implementing Regulation (EC) No 1049/2001 within six months from the entry into force of this Regulation.
3. Decisions taken by the Agency in pursuance of Article 8 of Regulation (EC) No 1049/2001 may be the subject of a complaint to the Ombudsman or an action before the Court of Justice of the European Union, under Articles 228 and 263 TFEU respectively.
4. When processing data relating to individuals, the Agency shall be subject to the provisions of Regulation (EC) No 45/2001 of the European Parliament and of the Council of 18 December 2000 on the protection of individuals with regard to the processing of personal data by the Community institutions and bodies and on the free movement of such data<sup>(13)</sup>.

#### Article 19

Security rules

The Agency shall apply the security principles contained in Commission Decision 2001/844/EC, ECSC, Euratom. This shall cover, inter alia, provisions for the exchange, handling and storage of classified information.

#### Article 20

Participation of third countries

1. The Agency shall be open to the participation of third countries, which have entered into agreements with the European Union to this effect.
2. Under the relevant provisions of these agreements, arrangements shall be developed specifying, in particular, the nature, extent and manner in which these countries will participate in the work of the Agency, including provisions relating to participation in the initiatives undertaken by the Agency, financial contributions and staff.

### ***Final provisions***

#### ***Article 20a***

***Amendments to Regulation (EC) No 683/2008***

***Throughout Regulation (EC) No 683/2008 the words***

***"European GNSS Supervisory Authority" and "Authority" shall be replaced by "European GNSS Agency" and "Agency" respectively.***

#### ***Article 20b***

***Repeal and validity of measures taken***

***Regulation (EC) No 1321/2004 is hereby repealed. References to the repealed Regulation shall be construed as references to this Regulation. Any measure adopted on the basis of Regulation (EC) No 1321/2004 shall remain valid.***

#### ***Article 20c***

***Evaluation***

***By 2012 at the latest, the Commission shall evaluate this Regulation, particularly as regards the Agency's tasks laid down in Article 2, and, if necessary, make proposals.***

#### Article 21

Entry into force

This Regulation shall enter into force on the twentieth day following its publication in the *Official Journal of the European Union* .

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at

For the European Parliament For the Council

The President The President

(1) OJ C 317, 23.12.2009, p.103.

(2) Position of the European Parliament of 16 June 2010.

(3) OJ L 246, 20.7.2004, p. 1.

(4) OJ L 196, 24.7.2008, p. 1.

(5) OJ L 248, 16.9.2002, p. 1.

(6) **OJ L 246, 20.7.2004, p. 30.**

(7) **Council Decision 2001/264/EC of 19 March 2001 adopting the Council's security regulation (OJ L 101, 11.4.2001, p. 1). Commission's rules on security set out in the Annex to Commission Decision 2001/844/EC, ECSC, EURATOM of 29 November 2001 amending its internal Rules of Procedure (OJ L 317, 3.12.2001, p. 1).**

(8) OJ L 357, 31.12.2002, p. 72.

(9) OJ L 136, 31.5.1999, p. 1.

(10) OJ L 136, 31.5.1999, p. 15.

(11) OJ 17, 6.10.1958, p. 385/58.

(12) OJ L 145, 31.5.2001, p. 43.

(13) OJ L 8, 12.1.2001, p. 1.

Last updated: 18 June 2010

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## 宇宙分野における重点施策について

～ 我が国の成長をもたらす戦略的宇宙政策の推進 ～

〔 平成 22 年 5 月 25 日 〕  
〔 宇宙開発戦略本部決定 〕

「新成長戦略(基本方針)」(平成 21 年 12 月 30 日閣議決定)を踏まえ、今後の我が国の成長への寄与という観点から、特に重点的に進めていくべき宇宙政策を別添「宇宙分野における重点施策について」のとおり取りまとめたところである。

本決定を受け、施策の進捗状況を踏まえつつ、「宇宙基本計画」(平成 21 年 6 月 2 日宇宙開発戦略本部決定)の見直しに係る検討を宇宙開発戦略本部として進めることとする。

## 宇宙分野における重点施策について ～ 我が国の成長をもたらす戦略的宇宙政策の推進 ～

宇宙は、その研究開発が、イノベーションの創出、最先端分野における革新、優れた人材の育成につながるものであることから、「新成長戦略(基本方針)」(平成 21 年 12 月 30 日閣議決定)においても、成長を支えるプラットフォームとしての科学・技術の新フロンティア分野に位置付けられ、その開拓を進めることとされている。

世界の動向を見ると、本年 2 月に発表された米国の予算教書などにおいても、宇宙政策の持つ、産業の発展への寄与、イノベーションエンジンや安全保障面でのポテンシャルなどに鑑み、今後 5 年間で、米国航空宇宙局(NASA)予算に約 60 億ドルが追加されることになった(5 年総額約 1,000 億ドル)<sup>1</sup>。具体的には、有人月探査計画を見直す一方で、将来の有人宇宙活動を見据えた太陽系のロボット探査、環境観測などを含めた科学分野などに大きな予算を配分することが示され、また、宇宙産業の成熟を踏まえた民間企業の活用及び裾野の拡大に向けた施策の展開が図られることとなった。

このように米国における民間活動の裾野拡大・宇宙活用に向けた施策の展開に加え、EU、中国、インドなどにおいても、宇宙利用活動を急速に拡充してきており、今や世界では「利用の時代」を迎え、宇宙利用産業の成長は著しく、5 年間で倍増している(平成 15 年から 20 年までの間、年率平均 14.2 パーセントで急速に成長。)<sup>2</sup>。このような傾向は、アジアを始めとする宇宙新興国において、災害状況の把握などのための衛星画像利用や、高速インターネットによる遠隔医療・教育などでの衛星の新たな利用やそれらの実証などが緒に就き始めていることにも表れている。

一方、我が国の衛星やロケットなどの宇宙機器産業の規模は約 2,300 億円(平成 19 年度ベース)であるが、そのほとんどが官需に頼っているのが現状である(米国、欧州の宇宙機器

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<sup>1</sup> 米国の宇宙関係予算は、NASA 予算以外に国防総省(DoD)などにも計上されている。  
なお、我が国の宇宙関係予算は、概ね米国の 13 分の 1、欧州の半分以下程度に止まっている。

<sup>2</sup> 「State of the Satellite Industry Report (June 2009 Futron Corporation)」。ただし、我が国の統計データとは、対象とする産業の範囲が異なる。

産業についても、それぞれ官需が必要である状況は変わらないが、EGAS 政策<sup>3</sup>などにより市場を獲得した欧州では民需の占める割合が約 4 割に達している<sup>4</sup>。)。しかしながら、日本においても、宇宙利用産業として、これまでの技術開発の成果を活かし、放送・通信、カーナビ、船舶・航空航行支援、気象情報提供など多様なサービス事業などを展開している。それらの宇宙利用産業を含めた宇宙産業全体の規模は、宇宙機器産業の約 30 倍である約 7 兆円にのぼる<sup>4</sup>。ただし、これらの宇宙利用産業が使用している人工衛星やロケットの大半が外国のものであり(現在運用されている放送・通信衛星 20 機のうち 19 機が外国製。)、宇宙利用産業の拡大が、我が国の宇宙機器産業の発展に寄与していないことが課題である。今後、官民が協力して、ユーザーのニーズを踏まえた技術開発などを通じた我が国の宇宙機器産業の国際的な競争力の強化、宇宙の利用をより一層進めるための基盤的なシステム・環境の整備などによる宇宙利用産業の更なる拡大が図られれば、我が国やアジアの経済成長に大きく寄与するものと期待される。

このような世界的な転換期において、今後の宇宙政策の重要性に鑑みれば、我が国が他国に依存することなく、宇宙で活動する能力など、自在な宇宙利用能力(=自律性)を保持し続けることは元より、その推進に当たっては、米国などの諸外国との協調を取りながら進めることが必要であるものの、諸外国の方針によって、我が国の方針が徒に左右されることのないよう、その軸足を定めることが重要である。本決定は、そのような観点から、宇宙機器産業の国際的な競争力強化などによる拡大、宇宙利用産業の裾野拡大などを通し、10 年後に宇宙産業規模が 2 倍の 14～15 兆円になることを目指して、当面、宇宙開発戦略本部が中心に政府が一体となって、特に重点的に進めるべき施策を我が国の成長への貢献という視点から取りまとめたものである。

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<sup>3</sup> European Guaranteed Access to Space: 欧州宇宙機関(ESA)によるアリアンロケットに係る製造・運用固定費の一部を負担する制度

<sup>4</sup> 出典:「平成 20 年度宇宙産業データブック(平成 21 年 3 月 社団法人日本航空宇宙工業会)」

# 1. 世界に冠たるマーケット・コミュニティの創出 ～利用(科学・公共・教育・ビジネス)がドライブする成長の実現～

## (1) ユーザーのニーズにきめ細かく応えるユーザー本位で競争力を備えた宇宙開発利用

これまで、我が国の宇宙開発は、米国、欧州、ロシアなどの宇宙先進国に追いつくことが主眼であったことから、研究開発を中心に進めてきたという一面は否定出来ない。宇宙開発利用が最先端の科学・技術の最たるものであり、国際競争力のある宇宙活動を進める上でも、研究開発の重要性が些かも低下することはない。一方で、宇宙の本格的な利用時代を迎え、宇宙政策により、我が国の成長を実現していくためには、国際的な競争力を備えていくことは元より、利用(デマンド・サイド)が牽引する施策への転換が急務である。そのような観点から、研究開発や利用に関わる産学官の関係者からなる「宇宙開発利用推進連絡会議(仮称)」を開催し、多様な利用コミュニティの意見の集約を図るとともに、以下の施策の推進を図ることが必要である。

### ① 小型衛星(含:超小型衛星)・小型ロケットによる新たな市場の開拓

これまでの我が国の宇宙機器産業は、主に JAXA が進める研究開発に因るところが大きかったが、近年、東大阪市の中小企業や、気象予報などを行っている民間企業が小型衛星の開発・運用を計画するなど、中小企業や大学が徐々に参入を試みる段階に至っている。同時に、搭載されるミッション機器の小型化も進展しており、小型衛星であっても、その機能の高性能化が図られ、通信、観測等の実用に利用できる目途が立ってきている。このような動きは、納期が短く比較的少ない資金で製作できる「小型衛星」による宇宙利用を可能とし、また、衛星機器の標準化、それに伴う製造数の増加・低価格化の実現などによる宇宙利用における新たな需要、市場が生まれる大きな可能性を示している。

今後、我が国宇宙機器産業全体の活性化に繋げていくためには、このような取組みを後押しし、その裾野を拡大することにより、新たなプレイヤーを増やしていくことが不可欠である。

そのためには、中小企業や大学がより参入しやすい環境を整備することが肝要であり、長期的な視点に立ったリスク・マネーの供給などの関連施策の活用は元より、

- ・ より容易かつ安価に宇宙へのアクセスを実現するための小型衛星の開発・利用支援
- ・ 小型衛星用の効率的・低コストな打上げ手段の開発 (小型固体ロケット、空中発射など)

- ・ 衛星取得データを効率よく地上に送信するための通信装置の開発
- ・ 部品・コンポーネントの標準化

などを進め、競争力の強化を図る。

## ② 衛星・センサーのシリーズ化の推進

これまでの研究開発を目的とした衛星開発では、より性能の高いものを 1 つずつ作るため、1 機当たりの衛星の開発費が高くなり、その結果、継続して本格的な利用を進めていくことが遅れてきたという弊害が指摘されている。今後、衛星利用の増大が見込まれる中で、ユーザーのニーズに的確に答えていくためには、宇宙の利用をより推進していく観点からは、衛星からの情報・データなどが、高頻度に継続的に、可能な限り低コストで提供されることが極めて重要である。

今後、我が国の衛星による情報・データの利用を拡大していくためには、情報・データ取得頻度の向上に向けた機数増による「規模のメリット」(開発費低減による国際競争力強化)や情報・データの「継続性」を実現するよう、衛星・センサーの研究開発を単発で行うのではなく、ユーザーのニーズを踏まえた高度化を進めながら、それらのシリーズ化を行うことが必要である。

## ③ リアルタイムの地球観測衛星網の構築

地球観測は、公共の安全の確保(災害監視など)、国土保全・管理、農業・漁業等の高度化など幅広い民生分野に活用されているとともに、安全保障分野での情報収集機能に重要な役割を果たしており、この分野の利用の拡大は、我が国の産業の成長や国民生活の向上に寄与することが最も期待されているものの1つである。

そのような認識の下、我が国の状況を顧みれば、地球観測衛星の撮像頻度は、「だいち」1機のみでの運用であることから、3日に1回程度と十分でなく、ビジネスなどで必要とされる即時性には乏しいのが現状である。即時性の欠如が、我が国の衛星画像市場の成長の制約要因となっているとの指摘もあり、今後、我が国が世界市場に出て行くためには、3時間に1回程度の撮像の高頻度化が期待される。その際、ユーザーのニーズに対応し、「だいち」シリーズと小型衛星「ASNARO(仮称)」(合計4~8機)に加え、より小型化した超小型衛星なども活用し、我が国として、地球観測衛星網を整備・運用することが重要である。それにより、災害監視、

農業・漁業等の高度化等を中心としつつ、外交・安全保障など、幅広い分野での利用による衛星画像市場の成長が期待できる。

加えて、将来的には、アジア全域のより高頻度の撮像を可能とするため、アジアなどの宇宙新興国との協力関係を構築することで、官民連携(PPP)なども活用しつつ、それらの国々が保有する衛星を含めた地球観測衛星網を構築し、ほぼリアルタイムの衛星画像提供市場の創出を目指す。

#### ④ 衛星データ利用促進プラットフォームの構築

宇宙産業をより大きな産業へと成長させるためには、衛星により取得された情報・データなどによる統合的な利用基盤(プラットフォーム)を構築し、その利用に不可欠な測位情報や通信機能を併せて提供可能とするインフラ化を図ることにより、利用者の利便性を高めることが有効である。具体的には、例えば、シリーズ化された地球観測衛星システム(「だいち」、「ASRARO(仮称)」、「ひまわり」、「いぶき」など)によるデータに加え、地上系の情報を集約し、測位衛星などによる利用者の位置情報に基づき必要なサービスを受けることが可能となる利用基盤(プラットフォーム)を構築する。このため、利用促進プラットフォーム協議会(仮称)を開催し、今後 1 年程度、統合するデータの規格化、システム、データ配信ガイドライン、運用方針などを含めた“データ・ポリシー”について検討し、平成 24 年度の運用開始を目指す。

なお、その際、専門家の利用は元より、裾野の拡大を目的としていることから、宇宙分野に携わっていない一般の企業・個人でも扱いやすいソフトウェアを開発とするなど、ユーザーへの配慮に留意すべきである。加えて、我が国のみならず、衛星を有する、若しくは、今後参入するアジア諸国などとの連携によるボーダレスなプラットフォームの構築を我が国がイニシアティブを取って進めることが重要であるとの観点を常に意識して進めるべきである。

<参考:先行的利用事例及び今後考えられる事例>

(プラットフォームを活用した災害・海賊対策の充実や農林水産業などの第一次産業の高度化・高収益化)

- ・ 地震、火山噴火、風水害などの自然災害に対する災害状況把握など
- ・ 農作物の作付把握、含有成分の把握に基づく収穫予測など(海外では既に実施されているものもある。)
- ・ 違法伐採監視、森林面積の把握
- ・ 鉱物資源探査 (海洋資源開発との連携も)

(プラットフォームと測位衛星情報と連携した新たなサービス)

- ・ より精緻なカーナビ・マンナビの実現
- ・ 大規模農場における農作業の自動化
- ・ 通信網(地上系・衛星系)を活用した、利用者の TPO に合わせたオーダーメイド情報の提供(その先の

様々なビジネス展開)

(プラットフォーム(気象衛星情報など)を活用した新たなサービス)

- ・ 保険業界、小売業界などが気象衛星データを保険商品の開発、仕入れなどに利用
- ・ 海面温度などを観測することによる魚群探知
- ・ 温室効果ガス濃度情報による排出・吸収状況の監視

## **(2)法制整備などを含めた宇宙利用環境整備**

### **① 民間の宇宙活動のリスクを低減する法制などの整備**

これまで我が国の宇宙活動は、国若しくは国に準じた機関が中心に進めてきたが、今後、宇宙産業の成熟を図ることにより、新たなステークホルダーの参入が見込まれるところである。これに伴い、民間の宇宙活動について、宇宙諸条約上の義務の履行を確実にすることが必要であり、また、民間の宇宙活動を安全に行うための仕組みや、宇宙損害に関する適切な損害賠償の仕組みを整えることにより、新たな参入者のリスクを低減し、宇宙産業の健全な発達を図ることが必要であることから、宇宙活動に関する法制などの整備を進める。

### **② 裾野(ステークホルダー)の拡大に向けた制度の活用**

宇宙分野の裾野を拡大し、新たなステークホルダーの参入を促進していくためには、そのリスクを可能な限り低減していくことが必要である。中小企業・大学などが参入を始めていることから、その敷居は着実に下がってきているものと考えられるが、今後、更に、その参入を促進していくためには、PPP(人工衛星を民間資金等の活用による公共施設等の整備等の促進に関する法律の対象施設に含めるなど)、産業投資、低利融資などの枠組みの活用や、適切な規制の導入(宇宙活動に関する法制など(①参照))、アンカーテナンシー、デュアル・ユースなど新たな政策・考え方の検討、導入を進める。

### **③ 世界最先端の成果を目指したデータ利用促進施設・設備などの整備**

世界最先端の成果を目指し、これまで述べた施策を推進するため、衛星データの利用促進・分析センター、射場や通信施設などの施設・設備の整備(リハービッシュを含む。)を進める。

## **2. 宇宙外交を通じた協力国の拡大と我が国の宇宙利用の海外展開** **～アジアなどの宇宙新興国とともに実現する利用がドライブする成長～**

### **(1)宇宙外交の推進**

宇宙のアセットは、自然災害や地球環境問題への対応など、我が国のみならず、世界の国々が直面している課題の克服に貢献することができるものである。加えて、地上インフラ整備が進んでいない国々においては、情報通信などにおける宇宙の利用は、効果的・効率的なアセットとして、その整備が進められている事例が出てきており、我が国の宇宙分野の技術・成果や人材などは、正に国際社会における影響力と地位を向上させる外交資源であり、ソフトパワーの源泉として、その推進を図る。

また、国際宇宙ステーションについては、現在、その運用期間の延長について検討が進められているが、現在確定している 2015 年までの運用期間においても、我が国としては、日本実験棟「きぼう」を新素材・新薬開発などに本格的に活用するだけでなく、現状、我が国がアジアで唯一の参加国であり、同施設における実験機会などを有していることを踏まえ、同機会も外交資源であるとの認識の下、その機会などの活用を図ることが重要である。

加えて、1. (1)③、④などに記載したとおり、地球観測衛星網の構築やそれらの情報・データの利用を進めるに当たっては、アジアなどの宇宙新興国と協力し、例えば、東アジア地域での高頻度な災害監視を行うなど、相互補完的に進めることが重要である。

### **(2)宇宙システムのパッケージによる海外展開の推進**

宇宙新興国が新たに宇宙の活用を進めるに当たっては、自国の技術力の向上に努めつつも、自国でのロケットや衛星の開発を行わず、宇宙先進国からロケットや衛星、地上施設などを購入し、運用を行っているのが現状である。そのような観点からは、今後、成長著しいアジアを中心として、世界的に成長が期待されるマーケットとしても捉えられる。ただし、導入当初のシステムが長期に亘って、当該国のスタンダードになることが往々にして起こり得ることから、初めての衛星などの導入時期に各宇宙先進国は、自国のシステムの導入の働きかけを精力的に行っているところである。

我が国としても、宇宙産業を大きく成長させていくためには、国内での宇宙機器や衛星からの情報・データの利用実績を蓄積することによって、国内需要に加え、海外の需要を我が国が一丸となって取り込むという姿勢が必須であるが、宇宙機器産業の現状としては、近年、気

象衛星「ひまわり」などを国内企業が受注するなど、これまでの研究開発の成果が芽吹きつつあるものの、海外市場においては、アジア諸国の衛星活用が進む中、シンガポール・台湾の通信衛星 1 機の開発・製造受注、韓国政府衛星 1 機の H-II A ロケットによる打上げ受注にとどまっている。この状況を打破するためには、地球観測や情報通信などの需要の見込める分野におけるニーズを踏まえた研究開発の推進や、コスト低減などに向けたスケール・メリットの実現などの施策に加え、

- i) 途上国に対する宇宙利用の啓発・普及活動
- ii) 具体的な宇宙利用の促進に必要なキャパシティ・ビルディングのための技術協力
- iii) 宇宙機器・サービスの途上国への提供・運営支援

という一貫した「3 ステップ・アプローチ」を、官民が一体となって、途上国の状況を踏まえ、柔軟に適用することにより、真に当該国ニーズに応じていくための視点が重要である。そのためには、それらの国の宇宙開発利用事業に対し、他のシステムの海外展開案件同様、

- ・ 政府首脳・閣僚によるトップセールス、現地大使館等との緊密な連携
- ・ 国際協力銀行(JBIC)による長期的なリスク・マネーの供給制度の活用や日本貿易保険(NEXI)による保険制度の活用（例：政策金融、貿易保険、産業投資などの活用）
- ・ 途上国からの要請を前提とした政府開発援助(ODA)などの適切な活用

等をパッケージとして、総合的に実施すべきである。なお、これらの取組みを進めるに当たっては、対象国の国家基盤作りに初期の段階から関与していくことが重要である点に留意すべきである。これらの点を踏まえれば、まずは、これまでに共同研究等、宇宙機関間の協力などを通じて協力の基盤が既に構築されている国々(ベトナム、タイ、インドネシアなど)を念頭に置きつつ、宇宙関係機関のみならず、大使館、JICA、日本貿易振興会(JETRO)、JBIC を始めとする国際協力を実際に進めている国内外の政府関係機関や国際機関などとも緊密に連携を取りつつ、一貫した「3 ステップ・アプローチ」を戦略的に展開することが必要である。

### **3. イノベーションエンジンとしての最先端科学・技術力の強化**

#### **(1)我が国の自律性確保に必要な基盤技術(輸送系・衛星系など)の獲得・確保**

今後の宇宙の重要性に鑑みれば、我が国として、宇宙活動に係る自律性を保持し続けることが必要不可欠である。具体的には、宇宙空間へのアクセスを可能とする輸送系(H-IIAロケット、小型固体ロケットなど)や、人工衛星に共通的な部分であるバス、様々な観測を行うセンサーに係る技術などが該当するが、今後とも、我が国が、これらの技術を確立し、自律性を確保していくためには、長期的な視点に立った弛まない新たな技術開発を継続的に行い、人材の育成や経験・知見の蓄積を図ることによってロケットや衛星に係る総合的な技術力を継続的に発展・向上させていくことは必要不可欠である。

その際、それらの技術を支えている戦略的な部品を開発・確保することについても留意することが必要である。特に、これまで海外からの輸入に依存している部品の中には、今後、その輸入が困難になることが見込まれるものもあり、早急な対応が必要である。また、シングルソースになっている部品などのセカンドソースの確保、中小企業や大学などの優れた技術の活用も含めた民生部品の適用拡大を図ることも重要である。

#### **(2)グリーンイノベーションへの貢献(「環境の番人」としての衛星利用)**

「新成長戦略」において、我が国の強みを活かす成長分野としてグリーンイノベーションによる環境・エネルギー大国戦略が掲げられている。再生可能エネルギーの普及などが主な施策として挙げられるが、その効果を全球的に検証してこそ、地球温暖化対策分野における国際社会でのリーダーシップの発揮、プレゼンスの拡大・貢献の認識につながるものである。

そのような観点からは、全球的な観測データの取得が不可欠であるが、地上観測地点は、世界で280程度に限定されている。一方、既に運用している「いぶき」、「だいち」に加え、今後、打上げ予定の水循環変動観測衛星や気候変動観測衛星などによるデータを統合的に利用することによって、全球的な温室効果ガスの濃度分布や二酸化炭素の吸収源である森林の状況などを監視・把握することが可能であることから(現在の「いぶき」で56,000地点。将来的には2倍程度に拡大可能。)、我が国としては、環境・エネルギー大国戦略を推進していく上で不可欠となる検証手段を確保する観点から、環境観測衛星網の構築にイニシアティブを発揮する。

### **(3)宇宙科学・技術(月・惑星探査や宇宙天文など)**

月・惑星探査や宇宙天文などの宇宙科学・技術は、新たなフロンティア分野として最先端科学・技術の基盤の強化につながるものである。また、次世代を担う子供達に活力ある未来への夢や希望を与え、未来の科学・技術を支える人材の養成とともに、我が国としての国際的なプレゼンスの確立に寄与する将来に向けた投資たり得るものである。

このような特長を有する宇宙科学・技術分野において、これまで我が国は世界トップレベルの成果を挙げてきており、引き続き、我が国の強みを活かした宇宙科学・技術を推進する。特に、中国やインドなども精力的に取り組を進めてきている月探査については、別途検討中であるが、地球に最も近い重力天体である月において将来の自在な太陽系探査のキーステップとなる技術を確立するとともに、「かぐや」の成果によって我が国が世界をリードしている科学の一層の発展を図り、更に月の平和的な利用に係る国際的な議論において先導的な役割を果たすため、2020年頃に長期間のロボット探査、サンプルリターンの実現を目標として進める方針で検討を深める。

また、将来の我が国独自の有人宇宙活動につながる技術基盤の構築を目指し、これまで我が国が確立していない宇宙からの帰還技術など、我が国としての自律性の確保・向上を図る上で不可欠な技術についての研究開発を戦略的に進めていくことが重要である。具体的には、現在、国際宇宙ステーションへの物資の輸送・補給を担っている宇宙ステーション補給機(HTV)を活用した再突入技術の実証などが挙げられる。

### **(4)国際的な対応が必要な課題(デブリなど)への対応**

国際的な対応が求められている課題として、宇宙環境保全の観点からのデブリ対策が挙げられる。現在、我が国としては、デブリの分布状況把握、発生極少化への取り組み、除去措置を目指した研究などを進めている。

今後は、これらの取り組みを通して、デブリ対策などの国連宇宙空間平和利用委員会(COPUOS)などで議論される宇宙活動の長期的持続性の確保のための国際ルール作りに主体的に参画していくことが、我が国としての国際的な役割を果たしていく上で重要である。

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## **Statutory Instruments**

**2010 No. 672**

### **Electronic Communications**

#### **The Authorisation of Frequency Use for the Provision of Mobile Satellite Services (European Union) Regulations 2010**

Made: 8th March 2010

Laid before Parliament: 10th March 2010

Coming into force: 31st March 2010

The Secretary of State makes the following Regulations in exercise of the powers conferred by section 2(2) of the European Communities Act 1972(1).

The Secretary of State has been designated for the purposes of section 2(2) of the European Communities Act 1972 in relation to electronic communications(2).

#### **Citation, commencement and interpretation**

1.—(1) These Regulations may be cited as The Authorisation of Frequency Use for the Provision of Mobile Satellite Services (European Union) Regulations 2010 and shall come into force on 31st March 2010.

(2) In these Regulations—

“an authorisation” means an authorisation granted under regulation 3, subject to the conditions contained in regulation 4;

“the Commission Decision” means Decision 2009/449/EC of the Commission on the selection of operators of pan-European systems providing mobile satellite services (MSS)(3);

“electronic communications network” and “associated facilities” have the meaning given by section 32 of the Communications Act 2003(4);

“the EU Decision” means Decision 626/2008/EC of the European Parliament and of the Council on the selection and authorisation of systems providing mobile satellite services (MSS)(5);

“mobile satellite services” means radio communication services provided by an electronic communications network and associated facilities capable of providing radio communication services between a mobile earth station in the United Kingdom and one or more space stations, or between mobile earth stations in the United Kingdom by means of one or more space stations;

“OFCOM” means the Office of Communications as established by the Office of Communications Act 2002(6);

“the selected applicants” means Inmarsat Ventures Limited(7) and Solaris Mobile Limited(8)which are identified as the eligible applicants under Article 2 of the Commission Decision;

“the Tribunal” means the Competition Appeal Tribunal; and

“Tribunal rules” means rules made under section 15 of the Enterprise Act 2002(9).

### **Authorisation of frequency use for the provision of mobile satellite services**

2.—(1) A person commits an offence if that person uses the frequency bands 1980 to 2010MHz and 2170 to 2200MHz or any part of those bands for the provision of mobile satellite services except under and in accordance with an authorisation granted under these Regulations by OFCOM.

(2) A person who commits an offence under this regulation is liable—

(a)on conviction on indictment, to an unlimited fine; or

(b)on summary conviction, to a fine of not more than level 5 on the standard scale (if not calculated on a daily basis) or a fine of not more than £100 a day.

### **Granting of authorisations to the selected applicants**

3.—(1) OFCOM shall grant an authorisation under these Regulations to each of the selected applicants for use in the United Kingdom of the frequencies specified for that selected applicant in Article 3 of the Commission Decision subject to the conditions set out in these Regulations.

(2) For the purposes of paragraph (1), the frequencies specified in Article 3 of the Commission Decision are the following—

(a)Inmarsat Ventures Limited: from 1980 to 1995MHz for earth to space communications and from 2170 to 2185MHz for space to earth communications; and

(b)Solaris Mobile Limited: from 1995 to 2010MHz for earth to space communications and from 2185 to 2200MHz for space to earth communications.

### **Conditions of an authorisation**

4.—(1) OFCOM shall ensure that the authorisations are subject to the common conditions specified in Article 7(2) of the EU Decision, namely—

(a)the selected applicants shall use the frequencies which those applicants are authorised to use pursuant to regulation 3(1) for the provision of mobile satellite services;

(b)each selected applicant shall meet milestones 6 to 9 set out in the Annex to the EU Decision by 14th May 2011;

(c) each selected applicant shall honour all commitments given by that applicant in its application or during the comparative selection procedure referred to in Articles 4 and 6 of the EU Decision respectively;

(d) each selected applicant shall provide OFCOM with an annual report detailing the status of development of their proposed mobile satellite system.

(2) An authorisation shall be granted for eighteen years with effect from 14th May 2009.

(3) An authorisation may include objectively justified, non-discriminatory, proportionate and transparent conditions or obligations to ensure communications between emergency services and authorities during major disasters.

(4) An authorisation shall not be transferable.

(5) OFCOM shall not charge the selected applicants for the granting of an authorisation.

#### **Monitoring, reporting and information requirements**

5.—(1) OFCOM shall monitor compliance by the selected applicants of the conditions of their authorisations.

(2) Where—

(a) there has been a contravention by either of the selected applicants of one or more of the conditions specified in their authorisation; or

(b) where OFCOM have taken action under these Regulations against either of the selected applicants in respect of such a contravention,

OFCOM shall provide the European Commission with information about the contravention or action within 12 months of such contravention or action.

(3) OFCOM may require the selected applicants to provide them with all such information as OFCOM consider necessary for the purpose of carrying out their functions under these Regulations, including the verification of compliance by the selected applicants with the conditions of their authorisations.

(4) A selected applicant required to provide information under paragraph (3) must provide it in such a manner and within such reasonable period as may be specified by OFCOM.

#### **Notification of contravention of conditions of authorisations**

6.—(1) Where OFCOM determine that there are reasonable grounds for believing that a selected applicant is contravening or has contravened—

(a) a condition of its authorisation; or

(b) a requirement under regulation 5(3) or (4), they may give that selected applicant a notification under this regulation.

(2) A notification under this regulation is one which—

(a) sets out the determination made by OFCOM;

(b) specifies the condition of the authorisation or the requirement under regulation 5(3) or (4) and the contravention in respect of which that determination has been made; and

(c) specifies the period during which the selected applicant notified has an opportunity of doing the things specified in paragraph (4).

(3) A notification under this regulation—

(a) may be given in respect of more than one contravention; and

(b) if it is given in respect of a continuing contravention, may be given in respect of any period during which the contravention has continued.

(4) Those things are—

(a) making representations about the matters notified;

(b) complying with the notified conditions of the authorisation or the requirements under regulation 5(3) or (4) of which the selected applicant remains in contravention; and

(c) remedying the consequences of the notified contraventions.

(5) Subject to paragraphs (5), (6) and (7), the period for doing those things must be the period of one month beginning with the day after the day on which the notification was given.

(6) OFCOM may, if they think fit, allow a longer period for doing those things either—

(a) by specifying a longer period in the notification; or

(b) by subsequently, on one or more occasions, extending the specified period.

(7) The selected applicant notified shall have a shorter period for doing those things if a shorter period is agreed between OFCOM and the selected applicant notified.

(8) The selected applicant notified shall also have a shorter period if—

(a) OFCOM have reasonable grounds for believing that the contravention is a repeated contravention or that the case is urgent;

(b) they have determined that, in those circumstances, a shorter period would be appropriate; and

(c) the shorter period has been specified in the notification.

(9) For the purposes of paragraph (7)(a) a contravention is a repeated contravention, in relation to a notification with respect to that contravention, if—

(a) a previous notification under this regulation has been given in respect of the same contravention or in respect of another contravention of the same condition of the authorisation or the same requirement under regulation 5(3) or (4); and

(b) the subsequent notification is given no more than 12 months after the date when the previous notification was given.

(10) For the purposes of paragraph (7)(a) a case is an urgent case if the contravention has resulted in, or creates an immediate risk of—

(a) a serious threat to the safety of the public, to public health or to national security; or

(b) serious economic or operational problems for persons (other than the selected applicant in contravention) who—

(i) use wireless telegraphy stations or wireless telegraphy apparatus; or

(ii) are communications providers or make associated facilities available.

(11) References to remedying a contravention include references to—

(a) doing anything the failure to do which, or the failure to do which within a particular period or before a particular time, constituted the whole of or a part of the contravention;

(b) paying an amount to a person by way of compensation for loss or damage suffered by that person in consequence of the contravention;

(c) paying an amount to a person by way of compensation in respect of annoyance, inconvenience or anxiety to which that person has been put in consequence of the contravention;

(d) otherwise acting in a manner that constitutes an acknowledgement that the notified contravention did occur.

(12) In paragraph (9) the expressions—

“wireless telegraphy station” and “wireless telegraphy apparatus” have the meanings given by section 117 of the Wireless Telegraphy Act 2006(10); and

“communications provider” has the same meaning as in section 405 of the Communications Act 2003(11).

### **Penalties for contravention**

7.—(1) This regulation applies where—

- (a) a selected applicant (the “notified person”) has been given a notification under regulation 6;
- (b) OFCOM have allowed the notified person the opportunity to make representations about the matters notified; and
- (c) the period allowed for the making of the representations has expired.

(2) OFCOM may impose a penalty on the notified person if they are satisfied—

- (a) that the notified person has, in one or more of the respects notified, been in contravention of a condition of an authorisation or a requirement under regulation 5(3) or (4) specified in the notification under regulation 6; and
- (b) that the notified person has not, during the period allowed under that regulation, taken such steps as OFCOM consider appropriate—
  - (i) for complying with that condition or requirement; and
  - (ii) for remedying the consequences of the notified contravention of that condition or requirement.

(3) Where a notification under regulation 6 relates to more than one contravention, a separate penalty may be imposed in respect of each contravention.

(4) Where such a notification relates to a continuing contravention, no more than one penalty may be imposed in respect of the period of contravention specified in the notification.

(5) Where OFCOM decide to impose a penalty on a notified person under this regulation, they shall—

- (a) notify that person of their decision and of their reasons for that decision; and
- (b) in that notification, fix a reasonable period as the period within which the penalty is to be paid.

(6) A penalty under this regulation—

- (a) must be paid to OFCOM; and
- (b) if not paid within the period fixed by them, is to be recoverable by them accordingly.

#### **Amount of penalty under regulation 7**

8.—(1) The amount of a penalty imposed under regulation 7 shall be an amount not exceeding ten percent of the turnover of the notified person’s relevant business for the relevant period, as OFCOM determine to be—

- (a) appropriate; and
- (b) proportionate to the contravention in respect of which it is imposed.

(2) In making that determination OFCOM must have regard to—

(a) any representations made to them by the notified person;

(b) any steps taken by the notified person towards complying with the condition or requirement contravention of which has been notified to him under regulation 6; and

(c) any steps taken to by the notified person for remedying the consequences of that contravention.

(3) For the purposes of this regulation the turnover of the notified person's relevant business for the relevant period shall be calculated in accordance with regulation 9.

(4) In this regulation and regulation 9—

“notified person” has the same meaning as in regulation 7;

“relevant business” means so much of any business carried on by the notified person as consists in the provision of mobile satellite services;

“relevant period” means—

(a) except in a case falling within subparagraphs (b) or (c), the period of one year ending with the 31st March next before the time when notification of the contravention was given under regulation 6;

(b) in the case of a notified person who at that time has been carrying on that business for a period of less than a year, the period, ending with that time, during which the notified person has been carrying it on; and

(c) in the case of a notified person who at that time has ceased to carry on that business, the period of one year ending with the time when the notified person ceased to carry it on.

#### **Calculation of turnover of notified person's relevant business**

9.—(1) The turnover of a notified person shall be calculated in conformity with accounting practices and principles which are generally accepted in the United Kingdom.

(2) The turnover of a notified person shall be limited to the amounts derived by that person from the relevant business after deduction of sales rebates, value added tax and other taxes directly related to turnover.

(3) When a notified person's relevant business consists of two or more undertakings that each prepare accounts then the turnover shall be calculated by adding together the turnover of each, save that no account shall be taken of any turnover resulting from the supply of goods or the provision of services between them.

(4) Any aid (within the meaning of Article 107 of the Treaty on the Functioning of the European Union) granted by a public body to a notified person which relates to one of that person's ordinary activities

shall be included in the calculation of turnover if the notified person is the recipient of the aid and if the aid is directly linked to the carrying out by that person of the relevant business.

### **Appeals against decisions by OFCOM**

10.—(1) A selected applicant affected by a decision by OFCOM under regulations 3 to 9 may appeal against it to the Tribunal.

(2) The means of making an appeal is by sending the Tribunal a notice of appeal in accordance with Tribunal rules.

(3) The notice of appeal must be sent within the period specified in those rules.

(4) The notice of appeal must set out—

(a) the provision under which the decision appealed against was taken; and

(b) the grounds of appeal.

(5) The grounds of appeal must be set out in sufficient detail to indicate—

(a) to what extent (if any) the appellant contends that the decision appealed against was based on an error of fact or was wrong in law or both; and

(b) to what extent (if any) the appellant is appealing against the exercise of a discretion by OFCOM.

(6) In this regulation references to a decision include—

(a) references to a decision that is given effect to by the exercise or performance of a power or duty conferred or imposed by these Regulations; but

(b) references to a failure to make a decision, and to a failure to exercise a power or to perform a duty, but only where the failure constitutes a failure to comply with any form of request to make the decision, exercise the power or perform the duty;

and references in the following regulations to a decision appealed against are to be construed accordingly.

(7) For the purposes of this regulation and regulations 11 and 12 a decision to which effect is given by the exercise or performance of a power or duty conferred or imposed by these Regulations, shall be treated, except where provision is made for the making of that decision at a different time, as made at the time when the power is exercised or the duty performed.

### **Decisions of the Tribunal**

11.—(1) The Tribunal shall dispose of an appeal under regulation 10 in accordance with this regulation.

(2) The Tribunal shall decide the appeal on the merits and by reference to the grounds of appeal set out in the notice of appeal.

(3) The Tribunal's decision must include a decision as to what (if any) is the appropriate action for OFCOM to take in relation to the subject matter of the decision under appeal.

(4) The Tribunal shall then remit the decision under appeal to OFCOM with such directions (if any) as the Tribunal considers appropriate for giving effect to its decision.

(5) The Tribunal must not direct OFCOM to take any action which OFCOM would not otherwise have power to take in relation to the decision under appeal.

(6) It shall be the duty of OFCOM to comply with every direction given under paragraph (4).

(7) In any document recording the decision of the Tribunal under this regulation, the Tribunal shall have regard to the need for excluding, so far as practicable, commercial information the disclosure of which would or might, in its opinion, significantly harm the legitimate business interests of any person to whom it relates.

### **Appeals from the Tribunal**

12.—(1) A party to the appeal may appeal a decision of the Tribunal made under regulation 11. An appeal under this regulation—

(a) lies to the Court of Appeal or to the Court of Session; and

(b) must relate only to a point of law arising from the decision of the Tribunal.

(2) An appeal under this regulation requires the permission of the Tribunal or of the court to which it is to be made.

(3) In this regulation references to a decision of the Tribunal include references to a direction given by it under regulation 11(4).

### **Complementary ground components**

13.—(1) OFCOM shall carry out their functions under the Wireless Telegraphy Act 2006(12) so as to give effect to the obligations of the United Kingdom under the EU Decision and the Commission Decision in so far as those obligations have not been given effect by these Regulations.

(2) OFCOM shall in particular pursuant to their powers under that Act grant a selected applicant, if requested, the authorisation necessary for the provision of complementary ground components of systems providing mobile satellite services subject to the common conditions specified in Article 8(3) of the EU Decision.

(3) In this regulation “complementary ground components” means ground-based stations used at fixed locations in order to improve the availability of mobile satellite services in geographical area covered by those services.

Stephen Timms

Minister for Digital Britain

Department for Business Innovation and Skills

8th March 2010

### **EXPLANATORY NOTE**

#### **(This note is not part of the Regulations)**

These Regulations implement in the United Kingdom the European Parliament and Council Decision 626/2008/EC of 30 June 2008 on the selection and authorisation of systems providing mobile satellite services (the EU Decision) and the Commission Decision 2009/449/EC of 13 May 2009 on the selection of operators of pan-European systems providing mobile satellite services (the Commission Decision).

Regulation 2 creates a new criminal offence of use of frequency bands 1980 to 2010MHz and 2170 to 2200MHz for the provision of mobile satellite services except under and in accordance with an authorisation granted by OFCOM.

Regulation 3 places an obligation on OFCOM to grant an authorisation to each of the selected applicants, as defined in regulation 1 subject to the conditions set out in regulation 4.

Regulation 5 requires OFCOM to monitor compliance by the selected applicants of the conditions of their authorisations. OFCOM must also report to the Commission any contravention by either of the selected applicants of any such condition or any enforcement action taken by OFCOM against either of the selected applications. Regulation 5(3) confers a power on OFCOM to require the selected applicants to provide information necessary for OFCOM to carry out their functions under these Regulations.

Regulation 6 provides for a notification procedure where OFCOM determine that there has been a contravention by a selected applicant of a condition of its authorisation or a requirement under regulation 5(3) or (4).

Regulation 7 gives OFCOM the power to impose a penalty on a selected applicant who has received a notification under regulation 6 where OFCOM are satisfied that that person has failed to comply with its authorisation or the requirement under regulation 5(3) or (4) and has failed to remedy any consequences of the notified contravention.

Regulation 8 provides for the amount of penalty which may be imposed by OFCOM under regulation 7, and that penalty may not exceed 10% of the turnover of the notified person's "relevant business" for the "relevant period", as defined in regulation 8.

Regulation 9 specifies how the turnover of the "relevant business" is to be calculated for the purposes of regulation 8.

Regulations 10 to 12 provide that a person affected by a decision of OFCOM under these Regulations, other than decisions taken by OFCOM under regulation 13, may appeal that decision to the Competition Appeal Tribunal. Decisions of the Competition Appeal Tribunal may be appealed on a point of law to the Court of Appeal or the Court of Session in Scotland.

Regulation 13 requires OFCOM to exercise their functions under the Wireless Telegraphy Act 2006 so as to give effect to the obligations of the United Kingdom under the EU Decision and the Commission Decision insofar as the implementation of such obligations is not covered by these Regulations.

A full Regulatory Impact Assessment and Transposition Note have been produced. Copies may be obtained from Tracey Halsey, Business Relations Directorate (BR2), Department for Business, Innovation and Skills, 1 Victoria Street, London, SW1H 0ET.

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(1) 1972 c.68.

(2) S.I.2001/3495 to which there are amendments not relevant to these Regulations.

(3) OJ No L 149, 12.6.2009, p 65.

(4) 2003 c.21.

(5) OJ No L 172, 2.7.2008, p 15.

(6) 2002 c.11.

(7) A company incorporated in England and Wales with number 03674573.

(8) A company incorporated in the Republic of Ireland with number 426976.

(9) 2002 c.40.

(10) 2006 c.36.

(11) 2003 c.21.

(12) 2006 c.36.

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## United States Introduced Legislation 2010

H.R. 3186: Satellite Television Extension Act of 2010  
Introduced: March 25, 2010  
Signed into Law: March 26, 2010

H.R. 4804: Human Space Flight Capability Assurance and Enhancement Act of 2010  
Introduced: March 10, 2010  
Final Action: Referred to Committee

H.R. 5093: Space to Schools Act of 2010  
Introduced: April 21, 2010  
Final Action: Referred to Committee

H.R. 5534: To authorize the Science, Engineering, Math, and Aerospace Academy Program in the National Aeronautics and Space Administration  
Introduced: June 15, 2010  
Final Action: Referred to Committee

H.R. 5614: Protecting Human Space Flight Act of 2010  
Introduced: June 28, 2010  
Final Action: Referred to Committee

H.R. 5781: National Aeronautics and Space Administration Authorization Act of 2010  
Introduced: July 20, 2010  
Final Action: Reported by Committee

H. Res. 1150: Designating the National Aeronautics and Space Administration (NASA) as a National Security Interest and Asset  
Introduced: March 9, 2010  
Final Action: Referred to Committee

H. Res. 1231: Celebrating the 50th anniversary of the United States Television Infrared Observation Satellite, the world's first meteorological satellite, launched by the National Aeronautics and Space Administration on April 1, 1960, and fulfilling the promise of President Eisenhower to all nations of the world to promote the peaceful use of space for the benefit of all mankind  
Introduced: March 25, 2010  
Passed: May 4, 2010

H. Res. 1269: Commemorating the 400th anniversary of the first use of the telescope for astronomical observation by the Italian scientist Galileo Galilei  
Introduced: April 15, 2010  
Passed: May 4, 2010

H. Res. 1421: Recognizing the 40th anniversary of the Apollo 13 mission and the heroic actions of both the crew and those working at mission control in Houston, Texas, for bringing the three astronauts, Fred Haise, Jim Lovell, and Jack Swigert, home to Earth safely

Introduced: May 28, 2010  
Passed: September 28, 2010

H. Res. 1714: Congratulating the engineers, scientists, psychologists, and staff of the National Aeronautics and Space Administration (NASA) for helping to successfully rescue 33 trapped Chilean miners from a collapsed mine near Copiapo, Chile

Introduced: November 15, 2010  
Passed: November 16, 2010

S. 3068: Human Space Flight Capability Assurance and Enhancement Act of 2010

Introduced: March 3, 2010  
Final Action: Referred to Committee

S. 3180: A bill to prohibit the use of funds for the termination of the Constellation Program of the National Aeronautics and Space Administration, and for other purposes

Introduced: March 25, 2010  
Final Action: Referred to Committee

S. 3333: Satellite Television Extension and Localism Act of 2010

Introduced: May 7, 2010  
Signed into Law: May 27, 2010

S.3729: National Aeronautics and Space Administration Authorization Act of 2010

Introduced: August 15, 2010  
Signed into Law: October 11, 2010

S. 3785: Commercial Space Jobs and Investment Act of 2010

Introduced: September 15, 2010  
Final Action: Referred to Committee

Public Law 111–151  
111th Congress

An Act

To reauthorize the Satellite Home Viewer Extension and Reauthorization Act of 2004 through April 30, 2010, and for other purposes.

Mar. 26, 2010  
[S. 3186]

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

**SECTION 1. SHORT TITLE; TABLE OF CONTENTS.**

This Act may be cited as the “Satellite Television Extension Act of 2010”.

Satellite  
Television  
Extension Act of  
2010.  
17 USC 101 note.

**SEC. 2. SATELLITE TELEVISION EXTENSION.**

(a) AMENDMENTS TO SECTION 119 OF TITLE 17, UNITED STATES CODE.—

(1) IN GENERAL.—Section 119 of title 17, United States Code, is amended—

(A) in subsection (c)(1)(E), by striking “March 28, 2010” and inserting “April 30, 2010”; and

(B) in subsection (e), by striking “March 28, 2010” and inserting “April 30, 2010”.

(2) TERMINATION OF LICENSE.—Section 1003(a)(2)(A) of Public Law 111–118 is amended by striking “March 28, 2010”, and inserting “April 30, 2010”.

17 USC 119 note.

(b) AMENDMENTS TO COMMUNICATIONS ACT OF 1934.—Section 325(b) of the Communications Act of 1934 (47 U.S.C. 325(b)) is amended—

(1) in paragraph (2)(C), by striking “March 28, 2010” and inserting “April 30, 2010”; and

(2) in paragraph (3)(C), by striking “March 29, 2010” each place it appears in clauses (ii) and (iii) and inserting “May 1, 2010”.

Approved March 26, 2010.

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LEGISLATIVE HISTORY—S. 3186:

CONGRESSIONAL RECORD, Vol. 156 (2010):

Mar. 25, considered and passed Senate and House.



PUBLIC LAW 111-175—MAY 27, 2010

SATELLITE TELEVISION EXTENSION  
AND LOCALISM ACT OF 2010

Public Law 111–175  
111th Congress

An Act

May 27, 2010  
[S. 3333]

To extend the statutory license for secondary transmissions under title 17, United States Code, and for other purposes.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

Satellite  
Television  
Extension and  
Localism Act of  
2010.  
17 USC 101 note.

**SECTION 1. SHORT TITLE; TABLE OF CONTENTS.**

(a) **SHORT TITLE.**—This Act may be cited as the “Satellite Television Extension and Localism Act of 2010”.

(b) **TABLE OF CONTENTS.**—The table of contents for this Act is as follows:

Sec. 1. Short title; table of contents.

**TITLE I—STATUTORY LICENSES**

Sec. 101. Reference.

Sec. 102. Modifications to statutory license for satellite carriers.

Sec. 103. Modifications to statutory license for satellite carriers in local markets.

Sec. 104. Modifications to cable system secondary transmission rights under section 111.

Sec. 105. Certain waivers granted to providers of local-into-local service for all DMAs.

Sec. 106. Copyright Office fees.

Sec. 107. Termination of license.

Sec. 108. Construction.

**TITLE II—COMMUNICATIONS PROVISIONS**

Sec. 201. Reference.

Sec. 202. Extension of authority.

Sec. 203. Significantly viewed stations.

Sec. 204. Digital television transition conforming amendments.

Sec. 205. Application pending completion of rulemakings.

Sec. 206. Process for issuing qualified carrier certification.

Sec. 207. Nondiscrimination in carriage of high definition digital signals of non-commercial educational television stations.

Sec. 208. Savings clause regarding definitions.

Sec. 209. State public affairs broadcasts.

**TITLE III—REPORTS AND SAVINGS PROVISION**

Sec. 301. Definition.

Sec. 302. Report on market based alternatives to statutory licensing.

Sec. 303. Report on communications implications of statutory licensing modifications.

Sec. 304. Report on in-state broadcast programming.

Sec. 305. Local network channel broadcast reports.

Sec. 306. Savings provision regarding use of negotiated licenses.

Sec. 307. Effective date; Noninfringement of copyright.

**TITLE IV—SEVERABILITY**

Sec. 401. Severability.

**TITLE V—DETERMINATION OF BUDGETARY EFFECTS**

Sec. 501. Determination of Budgetary Effects.

## TITLE I—STATUTORY LICENSES

### SEC. 101. REFERENCE.

Except as otherwise provided, whenever in this title an amendment is made to a section or other provision, the reference shall be considered to be made to such section or provision of title 17, United States Code.

### SEC. 102. MODIFICATIONS TO STATUTORY LICENSE FOR SATELLITE CARRIERS.

#### (a) HEADING RENAMED.—

(1) IN GENERAL.—The heading of section 119 is amended by striking “**superstations and network stations for private home viewing**” and inserting “**distant television programming by satellite**”.

(2) TABLE OF CONTENTS.—The table of contents for chapter 1 is amended by striking the item relating to section 119 and inserting the following:

“119. Limitations on exclusive rights: Secondary transmissions of distant television programming by satellite.”

#### (b) UNSERVED HOUSEHOLD DEFINED.—

(1) IN GENERAL.—Section 119(d)(10) is amended—

17 USC 119.

(A) by striking subparagraph (A) and inserting the following:

“(A) cannot receive, through the use of an antenna, an over-the-air signal containing the primary stream, or, on or after the qualifying date, the multicast stream, originating in that household’s local market and affiliated with that network of—

“(i) if the signal originates as an analog signal, Grade B intensity as defined by the Federal Communications Commission in section 73.683(a) of title 47, Code of Federal Regulations, as in effect on January 1, 1999; or

“(ii) if the signal originates as a digital signal, intensity defined in the values for the digital television noise-limited service contour, as defined in regulations issued by the Federal Communications Commission (section 73.622(e) of title 47, Code of Federal Regulations), as such regulations may be amended from time to time;”;

(B) in subparagraph (B)—

(i) by striking “subsection (a)(14)” and inserting “subsection (a)(13),”; and

(ii) by striking “Satellite Home Viewer Extension and Reauthorization Act of 2004” and inserting “Satellite Television Extension and Localism Act of 2010”; and

(C) in subparagraph (D), by striking “(a)(12)” and inserting “(a)(11)”.

(2) QUALIFYING DATE DEFINED.—Section 119(d) is amended by adding at the end the following:

“(14) QUALIFYING DATE.—The term ‘qualifying date’, for purposes of paragraph (10)(A), means—

“(A) October 1, 2010, for multicast streams that exist on March 31, 2010; and

- 17 USC 119. “(B) January 1, 2011, for all other multicast streams.”
- (c) FILING FEE.—Section 119(b)(1) is amended—
- (1) in subparagraph (A), by striking “and” after the semicolon at the end;
  - (2) in subparagraph (B), by striking the period and inserting “; and”; and
  - (3) by adding at the end the following:
 

“(C) a filing fee, as determined by the Register of Copyrights pursuant to section 708(a).”
- (d) DEPOSIT OF STATEMENTS AND FEES; VERIFICATION PROCEDURES.—Section 119(b) is amended—
- (1) by amending the subsection heading to read as follows:
 

“(b) DEPOSIT OF STATEMENTS AND FEES; VERIFICATION PROCEDURES.—”;
  - (2) in paragraph (1), by striking subparagraph (B) and inserting the following:
 

“(B) a royalty fee payable to copyright owners pursuant to paragraph (4) for that 6-month period, computed by multiplying the total number of subscribers receiving each secondary transmission of a primary stream or multicast stream of each non-network station or network station during each calendar year month by the appropriate rate in effect under this subsection; and”;
  - (3) by redesignating paragraphs (2), (3), and (4) as paragraphs (3), (4), and (5), respectively;
  - (4) by inserting after paragraph (1) the following:
 

“(2) VERIFICATION OF ACCOUNTS AND FEE PAYMENTS.—The Register of Copyrights shall issue regulations to permit interested parties to verify and audit the statements of account and royalty fees submitted by satellite carriers under this subsection.”;
  - (5) in paragraph (3), as redesignated, in the first sentence—
    - (A) by inserting “(including the filing fee specified in paragraph (1)(C))” after “shall receive all fees”; and
    - (B) by striking “paragraph (4)” and inserting “paragraph (5)”;
  - (6) in paragraph (4), as redesignated—
    - (A) by striking “paragraph (2)” and inserting “paragraph (3)”;
    - (B) by striking “paragraph (4)” each place it appears and inserting “paragraph (5)”;
  - (7) in paragraph (5), as redesignated, by striking “paragraph (2)” and inserting “paragraph (3)”.
- (e) ADJUSTMENT OF ROYALTY FEES.—Section 119(c) is amended as follows:
- (1) Paragraph (1) is amended—
    - (A) in the heading for such paragraph, by striking “ANALOG”;
    - (B) in subparagraph (A)—
      - (i) by striking “primary analog transmissions” and inserting “primary transmissions”; and
      - (ii) by striking “July 1, 2004” and inserting “July 1, 2009”;
    - (C) in subparagraph (B)—
      - (i) by striking “January 2, 2005, the Librarian of Congress” and inserting “June 1, 2010, the Copyright Royalty Judges”; and

Regulations.

- (ii) by striking “primary analog transmission” and inserting “primary transmissions”;
- (D) in subparagraph (C), by striking “Librarian of Congress” and inserting “Copyright Royalty Judges”;
- (E) in subparagraph (D)—
  - (i) in clause (i)—
    - (I) by striking “(i) Voluntary agreements” and inserting the following:  
“(i) VOLUNTARY AGREEMENTS; FILING.—Voluntary agreements”; and
    - (II) by striking “that a parties” and inserting “that are parties”; and
  - (ii) in clause (ii)—
    - (I) by striking “(ii)(I) Within” and inserting the following:  
“(ii) PROCEDURE FOR ADOPTION OF FEES.—  
“(I) PUBLICATION OF NOTICE.—Within”;
    - (II) in subclause (I), by striking “an arbitration proceeding pursuant to subparagraph (E)” and inserting “a proceeding under subparagraph (F)”;
    - (III) in subclause (II), by striking “(II) Upon receiving a request under subclause (I), the Librarian of Congress” and inserting the following:  
“(II) PUBLIC NOTICE OF FEES.—Upon receiving a request under subclause (I), the Copyright Royalty Judges”; and
    - (IV) in subclause (III)—
      - (aa) by striking “(III) The Librarian” and inserting the following:  
“(III) ADOPTION OF FEES.—The Copyright Royalty Judges”;
      - (bb) by striking “an arbitration proceeding” and inserting “the proceeding under subparagraph (F)”;
      - (cc) by striking “the arbitration proceeding” and inserting “that proceeding”;
- (F) in subparagraph (E)—
  - (i) by striking “Copyright Office” and inserting “Copyright Royalty Judges”; and
  - (ii) by striking “May 31, 2010” and inserting “December 31, 2014”;
- (G) in subparagraph (F)—
  - (i) in the heading, by striking “COMPULSORY ARBITRATION” and inserting “COPYRIGHT ROYALTY JUDGES PROCEEDING”;
  - (ii) in clause (i)—
    - (I) in the heading, by striking “PROCEEDINGS” and inserting “THE PROCEEDING”;
    - (II) in the matter preceding subclause (I)—
      - (aa) by striking “May 1, 2005, the Librarian of Congress” and inserting “September 1, 2010, the Copyright Royalty Judges”;
      - (bb) by striking “arbitration proceedings” and inserting “a proceeding”;
      - (cc) by striking “fee to be paid” and inserting “fees to be paid”;

(dd) by striking “primary analog transmission” and inserting “the primary transmissions”; and

(ee) by striking “distributors” and inserting “distributors—”;

(III) in subclause (II)—

(aa) by striking “Librarian of Congress” and inserting “Copyright Royalty Judges”; and

(bb) by striking “arbitration”; and

(IV) by amending the last sentence to read as follows: “Such proceeding shall be conducted under chapter 8.”;

(iii) in clause (ii), by amending the matter preceding subclause (I) to read as follows:

“(ii) ESTABLISHMENT OF ROYALTY FEES.—In determining royalty fees under this subparagraph, the Copyright Royalty Judges shall establish fees for the secondary transmissions of the primary transmissions of network stations and non-network stations that most clearly represent the fair market value of secondary transmissions, except that the Copyright Royalty Judges shall adjust royalty fees to account for the obligations of the parties under any applicable voluntary agreement filed with the Copyright Royalty Judges in accordance with subparagraph (D). In determining the fair market value, the Judges shall base their decision on economic, competitive, and programming information presented by the parties, including—”;

(iv) by amending clause (iii) to read as follows:

“(iii) EFFECTIVE DATE FOR DECISION OF COPYRIGHT ROYALTY JUDGES.—The obligation to pay the royalty fees established under a determination that is made by the Copyright Royalty Judges in a proceeding under this paragraph shall be effective as of January 1, 2010.”; and

(v) in clause (iv)—

(I) in the heading, by striking “FEE” and inserting “FEES”; and

(II) by striking “fee referred to in (iii)” and inserting “fees referred to in clause (iii)”.

(2) Paragraph (2) is amended to read as follows:

Effective date.

“(2) ANNUAL ROYALTY FEE ADJUSTMENT.—Effective January 1 of each year, the royalty fee payable under subsection (b)(1)(B) for the secondary transmission of the primary transmissions of network stations and non-network stations shall be adjusted by the Copyright Royalty Judges to reflect any changes occurring in the cost of living as determined by the most recent Consumer Price Index (for all consumers and for all items) published by the Secretary of Labor before December 1 of the preceding year. Notification of the adjusted fees shall be published in the Federal Register at least 25 days before January 1.”.

Notification.  
Federal Register,  
publication.  
Deadline.

(f) DEFINITIONS.—

17 USC 119.

(1) SUBSCRIBER.—Section 119(d)(8) is amended to read as follows:

“(8) SUBSCRIBER; SUBSCRIBE.—

“(A) SUBSCRIBER.—The term ‘subscriber’ means a person or entity that receives a secondary transmission service from a satellite carrier and pays a fee for the service, directly or indirectly, to the satellite carrier or to a distributor.

“(B) SUBSCRIBE.—The term ‘subscribe’ means to elect to become a subscriber.”

(2) LOCAL MARKET.—Section 119(d)(11) is amended to read as follows: 17 USC 119.

“(11) LOCAL MARKET.—The term ‘local market’ has the meaning given such term under section 122(j).”

(3) LOW POWER TELEVISION STATION.—Section 119(d) is amended by striking paragraph (12) and redesignating paragraphs (13) and (14) as paragraphs (12) and (13), respectively.

(4) MULTICAST STREAM.—Section 119(d), as amended by paragraph (3), is further amended by adding at the end the following new paragraph:

“(14) MULTICAST STREAM.—The term ‘multicast stream’ means a digital stream containing programming and program-related material affiliated with a television network, other than the primary stream.”

(5) PRIMARY STREAM.—Section 119(d), as amended by paragraph (4), is further amended by adding at the end the following new paragraph:

“(15) PRIMARY STREAM.—The term ‘primary stream’ means—

“(A) the single digital stream of programming as to which a television broadcast station has the right to mandatory carriage with a satellite carrier under the rules of the Federal Communications Commission in effect on July 1, 2009; or

“(B) if there is no stream described in subparagraph (A), then either—

“(i) the single digital stream of programming associated with the network last transmitted by the station as an analog signal; or

“(ii) if there is no stream described in clause (i), then the single digital stream of programming affiliated with the network that, as of July 1, 2009, had been offered by the television broadcast station for the longest period of time.”

(6) CLERICAL AMENDMENT.—Section 119(d) is amended in paragraphs (1), (2), and (5) by striking “which” each place it appears and inserting “that”.

(g) SUPERSTATION REDESIGNATED AS NON-NETWORK STATION.—Section 119 is amended—

(1) by striking “superstation” each place it appears in a heading and each place it appears in text and inserting “non-network station”; and

(2) by striking “superstations” each place it appears in a heading and each place it appears in text and inserting “non-network stations”.

(h) REMOVAL OF CERTAIN PROVISIONS.—

(1) REMOVAL OF PROVISIONS.—Section 119(a) is amended—

(A) in paragraph (2), by striking subparagraph (C) and redesignating subparagraph (D) as subparagraph (C);

(B) by striking paragraph (3) and redesignating paragraphs (4) through (14) as paragraphs (3) through (13), respectively; and

(C) by striking paragraph (15) and redesignating paragraph (16) as paragraph (14).

17 USC 119.

(2) CONFORMING AMENDMENTS.—Section 119 is amended—

(A) in subsection (a)—

(i) in paragraph (1), by striking “(5), (6), and (8)” and inserting “(4), (5), and (7)”;

(ii) in paragraph (2)—

(I) in subparagraph (A), by striking “subparagraphs (B) and (C) of this paragraph and paragraphs (5), (6), (7), and (8)” and inserting “subparagraph (B) of this paragraph and paragraphs (4), (5), (6), and (7)”;

(II) in subparagraph (B)(i), by striking the second sentence; and

(III) in subparagraph (C) (as redesignated), by striking clauses (i) and (ii) and inserting the following:

Deadline.

“(i) INITIAL LISTS.—A satellite carrier that makes secondary transmissions of a primary transmission made by a network station pursuant to subparagraph (A) shall, not later than 90 days after commencing such secondary transmissions, submit to the network that owns or is affiliated with the network station a list identifying (by name and address, including street or rural route number, city, State, and 9-digit zip code) all subscribers to which the satellite carrier makes secondary transmissions of that primary transmission to subscribers in unserved households.

Deadline.

“(ii) MONTHLY LISTS.—After the submission of the initial lists under clause (i), the satellite carrier shall, not later than the 15th of each month, submit to the network a list, aggregated by designated market area, identifying (by name and address, including street or rural route number, city, State, and 9-digit zip code) any persons who have been added or dropped as subscribers under clause (i) since the last submission under this subparagraph.”; and

(iii) in subparagraph (E) of paragraph (3) (as redesignated)—

(I) by striking “under paragraph (3) or”; and

(II) by striking “paragraph (12)” and inserting “paragraph (11)”;

(B) in subsection (b)(1), by striking the final sentence.

(i) MODIFICATIONS TO PROVISIONS FOR SECONDARY TRANSMISSIONS BY SATELLITE CARRIERS.—

(1) PREDICTIVE MODEL.—Section 119(a)(2)(B)(ii) is amended by adding at the end the following:

“(III) ACCURATE PREDICTIVE MODEL WITH RESPECT TO DIGITAL SIGNALS.—Notwithstanding subclause (I), in determining presumptively whether a person resides in an unserved household under subsection (d)(10)(A) with respect to digital signals, a court shall rely on a predictive model

set forth by the Federal Communications Commission pursuant to a rulemaking as provided in section 339(c)(3) of the Communications Act of 1934 (47 U.S.C. 339(c)(3)), as that model may be amended by the Commission over time under such section to increase the accuracy of that model. Until such time as the Commission sets forth such model, a court shall rely on the predictive model as recommended by the Commission with respect to digital signals in its Report to Congress in ET Docket No. 05-182, FCC 05-199 (released December 9, 2005).”.

(2) MODIFICATIONS TO STATUTORY LICENSE WHERE RETRANSMISSIONS INTO LOCAL MARKET AVAILABLE.—Section 119(a)(3) (as redesignated) is amended—

117 USC 119.

(A) by striking “analog” each place it appears in a heading and text;

(B) by striking subparagraphs (B), (C), and (D), and inserting the following:

“(B) RULES FOR LAWFUL SUBSCRIBERS AS OF DATE OF ENACTMENT OF 2010 ACT.—In the case of a subscriber of a satellite carrier who, on the day before the date of the enactment of the Satellite Television Extension and Localism Act of 2010, was lawfully receiving the secondary transmission of the primary transmission of a network station under the statutory license under paragraph (2) (in this subparagraph referred to as the ‘distant signal’), other than subscribers to whom subparagraph (A) applies, the statutory license under paragraph (2) shall apply to secondary transmissions by that satellite carrier to that subscriber of the distant signal of a station affiliated with the same television network, and the subscriber’s household shall continue to be considered to be an unserved household with respect to such network, until such time as the subscriber elects to terminate such secondary transmissions, whether or not the subscriber elects to subscribe to receive the secondary transmission of the primary transmission of a local network station affiliated with the same network pursuant to the statutory license under section 122.

Applicability.

“(C) FUTURE APPLICABILITY.—

“(i) WHEN LOCAL SIGNAL AVAILABLE AT TIME OF SUBSCRIPTION.—The statutory license under paragraph (2) shall not apply to the secondary transmission by a satellite carrier of the primary transmission of a network station to a person who is not a subscriber lawfully receiving such secondary transmission as of the date of the enactment of the Satellite Television Extension and Localism Act of 2010 and, at the time such person seeks to subscribe to receive such secondary transmission, resides in a local market where the satellite carrier makes available to that person the secondary transmission of the primary transmission of a local network station affiliated with the same network pursuant to the statutory license under section 122.

- Deadline. “(ii) WHEN LOCAL SIGNAL AVAILABLE AFTER SUBSCRIPTION.—In the case of a subscriber who lawfully subscribes to and receives the secondary transmission by a satellite carrier of the primary transmission of a network station under the statutory license under paragraph (2) (in this clause referred to as the ‘distant signal’) on or after the date of the enactment of the Satellite Television Extension and Localism Act of 2010, the statutory license under paragraph (2) shall apply to secondary transmissions by that satellite carrier to that subscriber of the distant signal of a station affiliated with the same television network, and the subscriber’s household shall continue to be considered to be an unserved household with respect to such network, until such time as the subscriber elects to terminate such secondary transmissions, but only if such subscriber subscribes to the secondary transmission of the primary transmission of a local network station affiliated with the same network within 60 days after the satellite carrier makes available to the subscriber such secondary transmission of the primary transmission of such local network station.”;
- (C) by redesignating subparagraphs (E), (F), and (G) as subparagraphs (D), (E), and (F), respectively;
- (D) in subparagraph (E) (as redesignated), by striking “(C) or (D)” and inserting “(B) or (C)”; and
- (E) in subparagraph (F) (as redesignated), by inserting “9-digit” before “zip code”.
- 17 USC 119. (3) STATUTORY DAMAGES FOR TERRITORIAL RESTRICTIONS.—Section 119(a)(6) (as redesignated) is amended—
- (A) in subparagraph (A)(ii), by striking “\$5” and inserting “\$250”;
- (B) in subparagraph (B)—
- (i) in clause (i), by striking “\$250,000 for each 6-month period” and inserting “\$2,500,000 for each 3-month period”; and
- (ii) in clause (ii), by striking “\$250,000” and inserting “\$2,500,000”; and
- Courts. (C) by adding at the end the following flush sentences: “The court shall direct one half of any statutory damages ordered under clause (i) to be deposited with the Register of Copyrights for distribution to copyright owners pursuant to subsection (b). The Copyright Royalty Judges shall issue regulations establishing procedures for distributing such funds, on a proportional basis, to copyright owners whose works were included in the secondary transmissions that were the subject of the statutory damages.”.
- Regulations. (4) TECHNICAL AMENDMENT.—Section 119(a)(4) (as redesignated) is amended by striking “and 509”.
- Procedures. (5) CLERICAL AMENDMENT.—Section 119(a)(2)(B)(iii)(II) is amended by striking “In this clause” and inserting “In this clause,”.
- (j) MORATORIUM EXTENSION.—Section 119(e) is amended by striking “May 31, 2010” and inserting “December 31, 2014”.
- (k) CLERICAL AMENDMENTS.—Section 119 is amended—

(1) by striking “of the Code of Federal Regulations” each place it appears and inserting “, Code of Federal Regulations”; and

(2) in subsection (d)(6), by striking “or the Direct” and inserting “, or the Direct”.

**SEC. 103. MODIFICATIONS TO STATUTORY LICENSE FOR SATELLITE CARRIERS IN LOCAL MARKETS.**

(a) **HEADING RENAMED.**—

(1) **IN GENERAL.**—The heading of section 122 is amended by striking “**by satellite carriers within local markets**” and inserting “**of local television programming by satellite**”.

(2) **TABLE OF CONTENTS.**—The table of contents for chapter 1 is amended by striking the item relating to section 122 and inserting the following:

“122. Limitations on exclusive rights: Secondary transmissions of local television programming by satellite.”

(b) **STATUTORY LICENSE.**—Section 122(a) is amended to read 17 USC 122. as follows:

“(a) **SECONDARY TRANSMISSIONS INTO LOCAL MARKETS.**—

“(1) **SECONDARY TRANSMISSIONS OF TELEVISION BROADCAST STATIONS WITHIN A LOCAL MARKET.**—A secondary transmission of a performance or display of a work embodied in a primary transmission of a television broadcast station into the station’s local market shall be subject to statutory licensing under this section if—

“(A) the secondary transmission is made by a satellite carrier to the public;

“(B) with regard to secondary transmissions, the satellite carrier is in compliance with the rules, regulations, or authorizations of the Federal Communications Commission governing the carriage of television broadcast station signals; and

“(C) the satellite carrier makes a direct or indirect charge for the secondary transmission to—

“(i) each subscriber receiving the secondary transmission; or

“(ii) a distributor that has contracted with the satellite carrier for direct or indirect delivery of the secondary transmission to the public.

“(2) **SIGNIFICANTLY VIEWED STATIONS.**—

“(A) **IN GENERAL.**—A secondary transmission of a performance or display of a work embodied in a primary transmission of a television broadcast station to subscribers who receive secondary transmissions of primary transmissions under paragraph (1) shall be subject to statutory licensing under this paragraph if the secondary transmission is of the primary transmission of a network station or a non-network station to a subscriber who resides outside the station’s local market but within a community in which the signal has been determined by the Federal Communications Commission to be significantly viewed in such community, pursuant to the rules, regulations, and authorizations of the Federal Communications Commission in effect on April 15, 1976, applicable to determining with respect to

Applicability.

a cable system whether signals are significantly viewed in a community.

Deadline.

“(B) WAIVER.—A subscriber who is denied the secondary transmission of the primary transmission of a network station or a non-network station under subparagraph (A) may request a waiver from such denial by submitting a request, through the subscriber’s satellite carrier, to the network station or non-network station in the local market affiliated with the same network or non-network where the subscriber is located. The network station or non-network station shall accept or reject the subscriber’s request for a waiver within 30 days after receipt of the request. If the network station or non-network station fails to accept or reject the subscriber’s request for a waiver within that 30-day period, that network station or non-network station shall be deemed to agree to the waiver request.

“(3) SECONDARY TRANSMISSION OF LOW POWER PROGRAMMING.—

“(A) IN GENERAL.—Subject to subparagraphs (B) and (C), a secondary transmission of a performance or display of a work embodied in a primary transmission of a television broadcast station to subscribers who receive secondary transmissions of primary transmissions under paragraph (1) shall be subject to statutory licensing under this paragraph if the secondary transmission is of the primary transmission of a television broadcast station that is licensed as a low power television station, to a subscriber who resides within the same designated market area as the station that originates the transmission.

“(B) NO APPLICABILITY TO REPEATERS AND TRANSLATORS.—Secondary transmissions provided for in subparagraph (A) shall not apply to any low power television station that retransmits the programs and signals of another television station for more than 2 hours each day.

“(C) NO IMPACT ON OTHER SECONDARY TRANSMISSIONS OBLIGATIONS.—A satellite carrier that makes secondary transmissions of a primary transmission of a low power television station under a statutory license provided under this section is not required, by reason of such secondary transmissions, to make any other secondary transmissions.

Applicability.

“(4) SPECIAL EXCEPTIONS.—A secondary transmission of a performance or display of a work embodied in a primary transmission of a television broadcast station to subscribers who receive secondary transmissions of primary transmissions under paragraph (1) shall, if the secondary transmission is made by a satellite carrier that complies with the requirements of paragraph (1), be subject to statutory licensing under this paragraph as follows:

“(A) STATES WITH SINGLE FULL-POWER NETWORK STATION.—In a State in which there is licensed by the Federal Communications Commission a single full-power station that was a network station on January 1, 1995, the statutory license provided for in this paragraph shall apply to the secondary transmission by a satellite carrier of the primary transmission of that station to any subscriber in a community that is located within that State and that is not within the first 50 television markets as listed in

the regulations of the Commission as in effect on such date (47 C.F.R. 76.51).

“(B) STATES WITH ALL NETWORK STATIONS AND NON-NETWORK STATIONS IN SAME LOCAL MARKET.—In a State in which all network stations and non-network stations licensed by the Federal Communications Commission within that State as of January 1, 1995, are assigned to the same local market and that local market does not encompass all counties of that State, the statutory license provided under this paragraph shall apply to the secondary transmission by a satellite carrier of the primary transmissions of such station to all subscribers in the State who reside in a local market that is within the first 50 major television markets as listed in the regulations of the Commission as in effect on such date (section 76.51 of title 47, Code of Federal Regulations).

“(C) ADDITIONAL STATIONS.—In the case of that State in which are located 4 counties that—

“(i) on January 1, 2004, were in local markets principally comprised of counties in another State, and

“(ii) had a combined total of 41,340 television households, according to the U.S. Television Household Estimates by Nielsen Media Research for 2004,

the statutory license provided under this paragraph shall apply to secondary transmissions by a satellite carrier to subscribers in any such county of the primary transmissions of any network station located in that State, if the satellite carrier was making such secondary transmissions to any subscribers in that county on January 1, 2004.

“(D) CERTAIN ADDITIONAL STATIONS.—If 2 adjacent counties in a single State are in a local market comprised principally of counties located in another State, the statutory license provided for in this paragraph shall apply to the secondary transmission by a satellite carrier to subscribers in those 2 counties of the primary transmissions of any network station located in the capital of the State in which such 2 counties are located, if—

“(i) the 2 counties are located in a local market that is in the top 100 markets for the year 2003 according to Nielsen Media Research; and

“(ii) the total number of television households in the 2 counties combined did not exceed 10,000 for the year 2003 according to Nielsen Media Research.

“(E) NETWORKS OF NONCOMMERCIAL EDUCATIONAL BROADCAST STATIONS.—In the case of a system of three or more noncommercial educational broadcast stations licensed to a single State, public agency, or political, educational, or special purpose subdivision of a State, the statutory license provided for in this paragraph shall apply to the secondary transmission of the primary transmission of such system to any subscriber in any county or county equivalent within such State, if such subscriber is located in a designated market area that is not otherwise eligible to receive the secondary transmission of the primary transmission of a noncommercial educational broadcast station located within the State pursuant to paragraph (1).

“(5) APPLICABILITY OF ROYALTY RATES AND PROCEDURES.—The royalty rates and procedures under section 119(b) shall apply to the secondary transmissions to which the statutory license under paragraph (4) applies.”.

17 USC 122.

(c) REPORTING REQUIREMENTS.—Section 122(b) is amended—

(1) in paragraph (1), by striking “station a list” and all that follows through the end and inserting the following: “station—

“(A) a list identifying (by name in alphabetical order and street address, including county and 9-digit zip code) all subscribers to which the satellite carrier makes secondary transmissions of that primary transmission under subsection (a); and

“(B) a separate list, aggregated by designated market area (by name and address, including street or rural route number, city, State, and 9-digit zip code), which shall indicate those subscribers being served pursuant to paragraph (2) of subsection (a).”; and

(2) in paragraph (2), by striking “network a list” and all that follows through the end and inserting the following: “network—

“(A) a list identifying (by name in alphabetical order and street address, including county and 9-digit zip code) any subscribers who have been added or dropped as subscribers since the last submission under this subsection; and

“(B) a separate list, aggregated by designated market area (by name and street address, including street or rural route number, city, State, and 9-digit zip code), identifying those subscribers whose service pursuant to paragraph (2) of subsection (a) has been added or dropped since the last submission under this subsection.”.

(d) NO ROYALTY FEE FOR CERTAIN SECONDARY TRANSMISSIONS.—Section 122(c) is amended—

(1) in the heading, by inserting “FOR CERTAIN SECONDARY TRANSMISSIONS” after “REQUIRED”; and

(2) by striking “subsection (a)” and inserting “paragraphs (1), (2), and (3) of subsection (a)”.

(e) VIOLATIONS FOR TERRITORIAL RESTRICTIONS.—

(1) MODIFICATION TO STATUTORY DAMAGES.—Section 122(f) is amended—

(A) in paragraph (1)(B), by striking “\$5” and inserting “\$250”; and

(B) in paragraph (2), by striking “\$250,000” each place it appears and inserting “\$2,500,000”.

(2) CONFORMING AMENDMENTS FOR ADDITIONAL STATIONS.—Section 122 is amended—

(A) in subsection (f), by striking “section 119 or” each place it appears and inserting the following: “section 119, subject to statutory licensing by reason of paragraph (2)(A), (3), or (4) of subsection (a), or subject to”; and

(B) in subsection (g), by striking “section 119 or” and inserting the following: “section 119, paragraph (2)(A), (3), or (4) of subsection (a), or”.

(f) DEFINITIONS.—Section 122(j) is amended—

(1) in paragraph (1), by striking “which contracts” and inserting “that contracts”;

(2) by redesignating paragraphs (4) and (5) as paragraphs (6) and (7), respectively;

(3) in paragraph (3)—

(A) by redesignating such paragraph as paragraph (4);

(B) in the heading of such paragraph, by inserting “NON-NETWORK STATION;” after “NETWORK STATION;”; and

(C) by inserting “‘non-network station,’” after “‘network station,’”;

(4) by inserting after paragraph (2) the following:

“(3) LOW POWER TELEVISION STATION.—The term ‘low power television station’ means a low power TV station as defined in section 74.701(f) of title 47, Code of Federal Regulations, as in effect on June 1, 2004. For purposes of this paragraph, the term ‘low power television station’ includes a low power television station that has been accorded primary status as a Class A television licensee under section 73.6001(a) of title 47, Code of Federal Regulations.”;

(5) by inserting after paragraph (4) (as redesignated) the following:

“(5) NONCOMMERCIAL EDUCATIONAL BROADCAST STATION.—The term ‘noncommercial educational broadcast station’ means a television broadcast station that is a noncommercial educational broadcast station as defined in section 397 of the Communications Act of 1934, as in effect on the date of the enactment of the Satellite Television Extension and Localism Act of 2010.”; and

(6) by amending paragraph (6) (as redesignated) to read as follows:

“(6) SUBSCRIBER.—The term ‘subscriber’ means a person or entity that receives a secondary transmission service from a satellite carrier and pays a fee for the service, directly or indirectly, to the satellite carrier or to a distributor.”.

**SEC. 104. MODIFICATIONS TO CABLE SYSTEM SECONDARY TRANSMISSION RIGHTS UNDER SECTION 111.**

(a) HEADING RENAMED.—

(1) IN GENERAL.—The heading of section 111 is amended by inserting at the end the following: “**of broadcast programming by cable**”.

(2) TABLE OF CONTENTS.—The table of contents for chapter 1 is amended by striking the item relating to section 111 and inserting the following:

“111. Limitations on exclusive rights: Secondary transmissions of broadcast programming by cable.”.

(b) TECHNICAL AMENDMENT.—Section 111(a)(4) is amended by striking “; or” and inserting “or section 122;” 17 USC 111.

(c) STATUTORY LICENSE FOR SECONDARY TRANSMISSIONS BY CABLE SYSTEMS.—Section 111(d) is amended—

(1) in paragraph (1)—

(A) in the matter preceding subparagraph (A)—

(i) by striking “A cable system whose secondary” and inserting the following: “STATEMENT OF ACCOUNT AND ROYALTY FEES.—Subject to paragraph (5), a cable system whose secondary”; and

(ii) by striking “by regulation—” and inserting “by regulation the following:”;

(B) in subparagraph (A)—

(i) by striking “a statement of account” and inserting “A statement of account”; and

(ii) by striking “; and” and inserting a period; and

(C) by striking subparagraphs (B), (C), and (D) and inserting the following:

“(B) Except in the case of a cable system whose royalty fee is specified in subparagraph (E) or (F), a total royalty fee payable to copyright owners pursuant to paragraph (3) for the period covered by the statement, computed on the basis of specified percentages of the gross receipts from subscribers to the cable service during such period for the basic service of providing secondary transmissions of primary broadcast transmitters, as follows:

“(i) 1.064 percent of such gross receipts for the privilege of further transmitting, beyond the local service area of such primary transmitter, any non-network programming of a primary transmitter in whole or in part, such amount to be applied against the fee, if any, payable pursuant to clauses (ii) through (iv);

“(ii) 1.064 percent of such gross receipts for the first distant signal equivalent;

“(iii) 0.701 percent of such gross receipts for each of the second, third, and fourth distant signal equivalents; and

“(iv) 0.330 percent of such gross receipts for the fifth distant signal equivalent and each distant signal equivalent thereafter.

“(C) In computing amounts under clauses (ii) through (iv) of subparagraph (B)—

“(i) any fraction of a distant signal equivalent shall be computed at its fractional value;

“(ii) in the case of any cable system located partly within and partly outside of the local service area of a primary transmitter, gross receipts shall be limited to those gross receipts derived from subscribers located outside of the local service area of such primary transmitter; and

“(iii) if a cable system provides a secondary transmission of a primary transmitter to some but not all communities served by that cable system—

“(I) the gross receipts and the distant signal equivalent values for such secondary transmission shall be derived solely on the basis of the subscribers in those communities where the cable system provides such secondary transmission; and

“(II) the total royalty fee for the period paid by such system shall not be less than the royalty fee calculated under subparagraph (B)(i) multiplied by the gross receipts from all subscribers to the system.

“(D) A cable system that, on a statement submitted before the date of the enactment of the Satellite Television Extension and Localism Act of 2010, computed its royalty fee consistent with the methodology under subparagraph (C)(iii), or that amends a statement filed before such date

of enactment to compute the royalty fee due using such methodology, shall not be subject to an action for infringement, or eligible for any royalty refund or offset, arising out of its use of such methodology on such statement.

“(E) If the actual gross receipts paid by subscribers to a cable system for the period covered by the statement for the basic service of providing secondary transmissions of primary broadcast transmitters are \$263,800 or less—

“(i) gross receipts of the cable system for the purpose of this paragraph shall be computed by subtracting from such actual gross receipts the amount by which \$263,800 exceeds such actual gross receipts, except that in no case shall a cable system’s gross receipts be reduced to less than \$10,400; and

“(ii) the royalty fee payable under this paragraph to copyright owners pursuant to paragraph (3) shall be 0.5 percent, regardless of the number of distant signal equivalents, if any.

“(F) If the actual gross receipts paid by subscribers to a cable system for the period covered by the statement for the basic service of providing secondary transmissions of primary broadcast transmitters are more than \$263,800 but less than \$527,600, the royalty fee payable under this paragraph to copyright owners pursuant to paragraph (3) shall be—

“(i) 0.5 percent of any gross receipts up to \$263,800, regardless of the number of distant signal equivalents, if any; and

“(ii) 1 percent of any gross receipts in excess of \$263,800, but less than \$527,600, regardless of the number of distant signal equivalents, if any.

“(G) A filing fee, as determined by the Register of Copyrights pursuant to section 708(a).”;

(2) in paragraph (2), in the first sentence—

(A) by striking “The Register of Copyrights” and inserting the following “HANDLING OF FEES.—The Register of Copyrights”; and

(B) by inserting “(including the filing fee specified in paragraph (1)(G))” after “shall receive all fees”;

(3) in paragraph (3)—

(A) by striking “The royalty fees” and inserting the following: “DISTRIBUTION OF ROYALTY FEES TO COPYRIGHT OWNERS.—The royalty fees”;

(B) in subparagraph (A)—

(i) by striking “any such” and inserting “Any such”; and

(ii) by striking “; and” and inserting a period;

(C) in subparagraph (B)—

(i) by striking “any such” and inserting “Any such”; and

(ii) by striking the semicolon and inserting a period; and

(D) in subparagraph (C), by striking “any such” and inserting “Any such”;

(4) in paragraph (4), by striking “The royalty fees” and inserting the following: “PROCEDURES FOR ROYALTY FEE DISTRIBUTION.—The royalty fees”; and

(5) by adding at the end the following new paragraphs:

“(5) 3.75 PERCENT RATE AND SYNDICATED EXCLUSIVITY SURCHARGE NOT APPLICABLE TO MULTICAST STREAMS.—The royalty rates specified in sections 256.2(c) and 256.2(d) of title 37, Code of Federal Regulations (commonly referred to as the ‘3.75 percent rate’ and the ‘syndicated exclusivity surcharge’, respectively), as in effect on the date of the enactment of the Satellite Television Extension and Localism Act of 2010, as such rates may be adjusted, or such sections redesignated, thereafter by the Copyright Royalty Judges, shall not apply to the secondary transmission of a multicast stream.

Regulations.  
Time period.

“(6) VERIFICATION OF ACCOUNTS AND FEE PAYMENTS.—The Register of Copyrights shall issue regulations to provide for the confidential verification by copyright owners whose works were embodied in the secondary transmissions of primary transmissions pursuant to this section of the information reported on the semiannual statements of account filed under this subsection for accounting periods beginning on or after January 1, 2010, in order that the auditor designated under subparagraph (A) is able to confirm the correctness of the calculations and royalty payments reported therein. The regulations shall—

“(A) establish procedures for the designation of a qualified independent auditor—

“(i) with exclusive authority to request verification of such a statement of account on behalf of all copyright owners whose works were the subject of secondary transmissions of primary transmissions by the cable system (that deposited the statement) during the accounting period covered by the statement; and

“(ii) who is not an officer, employee, or agent of any such copyright owner for any purpose other than such audit;

“(B) establish procedures for safeguarding all non-public financial and business information provided under this paragraph;

“(C)(i) require a consultation period for the independent auditor to review its conclusions with a designee of the cable system;

“(ii) establish a mechanism for the cable system to remedy any errors identified in the auditor’s report and to cure any underpayment identified; and

“(iii) provide an opportunity to remedy any disputed facts or conclusions;

“(D) limit the frequency of requests for verification for a particular cable system and the number of audits that a multiple system operator can be required to undergo in a single year; and

“(E) permit requests for verification of a statement of account to be made only within 3 years after the last day of the year in which the statement of account is filed.

“(7) ACCEPTANCE OF ADDITIONAL DEPOSITS.—Any royalty fee payments received by the Copyright Office from cable systems for the secondary transmission of primary transmissions that are in addition to the payments calculated and deposited in accordance with this subsection shall be deemed to have been deposited for the particular accounting period for which

they are received and shall be distributed as specified under this subsection.”

(d) EFFECTIVE DATE OF NEW ROYALTY FEE RATES.—The royalty fee rates established in section 111(d)(1)(B) of title 17, United States Code, as amended by subsection (c)(1)(C) of this section, shall take effect commencing with the first accounting period occurring in 2010. 17 USC 111 note.

(e) DEFINITIONS.—Section 111(f) is amended— 17 USC 111.

(1) by striking the first undesignated paragraph and inserting the following:

“(1) PRIMARY TRANSMISSION.—A ‘primary transmission’ is a transmission made to the public by a transmitting facility whose signals are being received and further transmitted by a secondary transmission service, regardless of where or when the performance or display was first transmitted. In the case of a television broadcast station, the primary stream and any multicast streams transmitted by the station constitute primary transmissions.”;

(2) in the second undesignated paragraph—

(A) by striking “A ‘secondary transmission’” and inserting the following:

“(2) SECONDARY TRANSMISSION.—A ‘secondary transmission’”; and

(B) by striking “‘cable system’” and inserting “cable system”;

(3) in the third undesignated paragraph—

(A) by striking “A ‘cable system’” and inserting the following:

“(3) CABLE SYSTEM.—A ‘cable system’”; and

(B) by striking “Territory, Trust Territory, or Possession” and inserting “territory, trust territory, or possession of the United States”;

(4) in the fourth undesignated paragraph, in the first sentence—

(A) by striking “The ‘local service area of a primary transmitter’, in the case of a television broadcast station, comprises the area in which such station is entitled to insist” and inserting the following:

“(4) LOCAL SERVICE AREA OF A PRIMARY TRANSMITTER.—The ‘local service area of a primary transmitter’, in the case of both the primary stream and any multicast streams transmitted by a primary transmitter that is a television broadcast station, comprises the area where such primary transmitter could have insisted”;

(B) by striking “76.59 of title 47 of the Code of Federal Regulations” and inserting the following: “76.59 of title 47, Code of Federal Regulations, or within the noise-limited contour as defined in 73.622(e)(1) of title 47, Code of Federal Regulations”;

(C) by striking “as defined by the rules and regulations of the Federal Communications Commission,”;

(5) by amending the fifth undesignated paragraph to read as follows:

“(5) DISTANT SIGNAL EQUIVALENT.—

“(A) IN GENERAL.—Except as provided under subparagraph (B), a ‘distant signal equivalent’—

“(i) is the value assigned to the secondary transmission of any non-network television programming carried by a cable system in whole or in part beyond the local service area of the primary transmitter of such programming; and

“(ii) is computed by assigning a value of one to each primary stream and to each multicast stream (other than a simulcast) that is an independent station, and by assigning a value of one-quarter to each primary stream and to each multicast stream (other than a simulcast) that is a network station or a noncommercial educational station.

“(B) EXCEPTIONS.—The values for independent, network, and noncommercial educational stations specified in subparagraph (A) are subject to the following:

“(i) Where the rules and regulations of the Federal Communications Commission require a cable system to omit the further transmission of a particular program and such rules and regulations also permit the substitution of another program embodying a performance or display of a work in place of the omitted transmission, or where such rules and regulations in effect on the date of the enactment of the Copyright Act of 1976 permit a cable system, at its election, to effect such omission and substitution of a nonlive program or to carry additional programs not transmitted by primary transmitters within whose local service area the cable system is located, no value shall be assigned for the substituted or additional program.

“(ii) Where the rules, regulations, or authorizations of the Federal Communications Commission in effect on the date of the enactment of the Copyright Act of 1976 permit a cable system, at its election, to omit the further transmission of a particular program and such rules, regulations, or authorizations also permit the substitution of another program embodying a performance or display of a work in place of the omitted transmission, the value assigned for the substituted or additional program shall be, in the case of a live program, the value of one full distant signal equivalent multiplied by a fraction that has as its numerator the number of days in the year in which such substitution occurs and as its denominator the number of days in the year.

“(iii) In the case of the secondary transmission of a primary transmitter that is a television broadcast station pursuant to the late-night or specialty programming rules of the Federal Communications Commission, or the secondary transmission of a primary transmitter that is a television broadcast station on a part-time basis where full-time carriage is not possible because the cable system lacks the activated channel capacity to retransmit on a full-time basis all signals that it is authorized to carry, the values for independent, network, and noncommercial educational stations set forth in subparagraph (A), as the case may be, shall be multiplied by a fraction that is equal

to the ratio of the broadcast hours of such primary transmitter retransmitted by the cable system to the total broadcast hours of the primary transmitter.

“(iv) No value shall be assigned for the secondary transmission of the primary stream or any multicast streams of a primary transmitter that is a television broadcast station in any community that is within the local service area of the primary transmitter.”;

(6) by striking the sixth undesignated paragraph and inserting the following:

“(6) NETWORK STATION.—

“(A) TREATMENT OF PRIMARY STREAM.—The term ‘network station’ shall be applied to a primary stream of a television broadcast station that is owned or operated by, or affiliated with, one or more of the television networks in the United States providing nationwide transmissions, and that transmits a substantial part of the programming supplied by such networks for a substantial part of the primary stream’s typical broadcast day.

“(B) TREATMENT OF MULTICAST STREAMS.—The term ‘network station’ shall be applied to a multicast stream on which a television broadcast station transmits all or substantially all of the programming of an interconnected program service that—

“(i) is owned or operated by, or affiliated with, one or more of the television networks described in subparagraph (A); and

“(ii) offers programming on a regular basis for 15 or more hours per week to at least 25 of the affiliated television licensees of the interconnected program service in 10 or more States.”;

(7) by striking the seventh undesignated paragraph and inserting the following:

“(7) INDEPENDENT STATION.—The term ‘independent station’ shall be applied to the primary stream or a multicast stream of a television broadcast station that is not a network station or a noncommercial educational station.”;

(8) by striking the eighth undesignated paragraph and inserting the following:

“(8) NONCOMMERCIAL EDUCATIONAL STATION.—The term ‘noncommercial educational station’ shall be applied to the primary stream or a multicast stream of a television broadcast station that is a noncommercial educational broadcast station as defined in section 397 of the Communications Act of 1934, as in effect on the date of the enactment of the Satellite Television Extension and Localism Act of 2010.”; and

(9) by adding at the end the following:

“(9) PRIMARY STREAM.—A ‘primary stream’ is—

“(A) the single digital stream of programming that, before June 12, 2009, was substantially duplicating the programming transmitted by the television broadcast station as an analog signal; or

“(B) if there is no stream described in subparagraph (A), then the single digital stream of programming transmitted by the television broadcast station for the longest period of time.

“(10) PRIMARY TRANSMITTER.—A ‘primary transmitter’ is a television or radio broadcast station licensed by the Federal Communications Commission, or by an appropriate governmental authority of Canada or Mexico, that makes primary transmissions to the public.

“(11) MULTICAST STREAM.—A ‘multicast stream’ is a digital stream of programming that is transmitted by a television broadcast station and is not the station’s primary stream.

“(12) SIMULCAST.—A ‘simulcast’ is a multicast stream of a television broadcast station that duplicates the programming transmitted by the primary stream or another multicast stream of such station.

“(13) SUBSCRIBER; SUBSCRIBE.—

“(A) SUBSCRIBER.—The term ‘subscriber’ means a person or entity that receives a secondary transmission service from a cable system and pays a fee for the service, directly or indirectly, to the cable system.

“(B) SUBSCRIBE.—The term ‘subscribe’ means to elect to become a subscriber.”

17 USC 804.

(f) TIMING OF SECTION 111 PROCEEDINGS.—Section 804(b)(1) is amended by striking “2005” each place it appears and inserting “2015”.

(g) TECHNICAL AND CONFORMING AMENDMENTS.—

(1) CORRECTIONS TO FIX LEVEL DESIGNATIONS.—Section 111 is amended—

(A) in subsections (a), (c), and (e), by striking “clause” each place it appears and inserting “paragraph”;

(B) in subsection (c)(1), by striking “clauses” and inserting “paragraphs”; and

(C) in subsection (e)(1)(F), by striking “subclause” and inserting “subparagraph”.

(2) CONFORMING AMENDMENT TO HYPHENATE NONNETWORK.—Section 111 is amended by striking “nonnetwork” each place it appears and inserting “non-network”.

(3) PREVIOUSLY UNDESIGNATED PARAGRAPH.—Section 111(e)(1) is amended by striking “second paragraph of subsection (f)” and inserting “subsection (f)(2)”.

(4) REMOVAL OF SUPERFLUOUS ANDS.—Section 111(e) is amended—

(A) in paragraph (1)(A), by striking “and” at the end;

(B) in paragraph (1)(B), by striking “and” at the end;

(C) in paragraph (1)(C), by striking “and” at the end;

(D) in paragraph (1)(D), by striking “and” at the end;

and

(E) in paragraph (2)(A), by striking “and” at the end.

(5) REMOVAL OF VARIANT FORMS REFERENCES.—Section 111 is amended—

(A) in subsection (e)(4), by striking “, and each of its variant forms,”; and

(B) in subsection (f), by striking “and their variant forms”.

(6) CORRECTION TO TERRITORY REFERENCE.—Section 111(e)(2) is amended in the matter preceding subparagraph (A) by striking “three territories” and inserting “five entities”.

17 USC 111 note.

(h) EFFECTIVE DATE WITH RESPECT TO MULTICAST STREAMS.—

(1) **IN GENERAL.**—Subject to paragraphs (2) and (3), the amendments made by this section, to the extent such amendments assign a distant signal equivalent value to the secondary transmission of the multicast stream of a primary transmitter, shall take effect on the date of the enactment of this Act.

(2) **DELAYED APPLICABILITY.**—

(A) **SECONDARY TRANSMISSIONS OF A MULTICAST STREAM BEYOND THE LOCAL SERVICE AREA OF ITS PRIMARY TRANSMITTER BEFORE 2010 ACT.**—In any case in which a cable system was making secondary transmissions of a multicast stream beyond the local service area of its primary transmitter before the date of the enactment of this Act, a distant signal equivalent value (referred to in paragraph (1)) shall not be assigned to secondary transmissions of such multicast stream that are made on or before June 30, 2010.

(B) **MULTICAST STREAMS SUBJECT TO PREEXISTING WRITTEN AGREEMENTS FOR THE SECONDARY TRANSMISSION OF SUCH STREAMS.**—In any case in which the secondary transmission of a multicast stream of a primary transmitter is the subject of a written agreement entered into on or before June 30, 2009, between a cable system or an association representing the cable system and a primary transmitter or an association representing the primary transmitter, a distant signal equivalent value (referred to in paragraph (1)) shall not be assigned to secondary transmissions of such multicast stream beyond the local service area of its primary transmitter that are made on or before the date on which such written agreement expires.

(C) **NO REFUNDS OR OFFSETS FOR PRIOR STATEMENTS OF ACCOUNT.**—A cable system that has reported secondary transmissions of a multicast stream beyond the local service area of its primary transmitter on a statement of account deposited under section 111 of title 17, United States Code, before the date of the enactment of this Act shall not be entitled to any refund, or offset, of royalty fees paid on account of such secondary transmissions of such multicast stream.

(3) **DEFINITIONS.**—In this subsection, the terms “cable system”, “secondary transmission”, “multicast stream”, and “local service area of a primary transmitter” have the meanings given those terms in section 111(f) of title 17, United States Code, as amended by this section.

**SEC. 105. CERTAIN WAIVERS GRANTED TO PROVIDERS OF LOCAL-INTO-LOCAL SERVICE FOR ALL DMAS.**

Courts.

Section 119 is amended by adding at the end the following new subsection:

17 USC 119.

“(g) **CERTAIN WAIVERS GRANTED TO PROVIDERS OF LOCAL-INTO-LOCAL SERVICE TO ALL DMAS.**—

“(1) **INJUNCTION WAIVER.**—A court that issued an injunction pursuant to subsection (a)(7)(B) before the date of the enactment of this subsection shall waive such injunction if the court recognizes the entity against which the injunction was issued as a qualified carrier.

“(2) **LIMITED TEMPORARY WAIVER.**—

“(A) IN GENERAL.—Upon a request made by a satellite carrier, a court that issued an injunction against such carrier under subsection (a)(7)(B) before the date of the enactment of this subsection shall waive such injunction with respect to the statutory license provided under subsection (a)(2) to the extent necessary to allow such carrier to make secondary transmissions of primary transmissions made by a network station to unserved households located in short markets in which such carrier was not providing local service pursuant to the license under section 122 as of December 31, 2009.

Time period.

“(B) EXPIRATION OF TEMPORARY WAIVER.—A temporary waiver of an injunction under subparagraph (A) shall expire after the end of the 120-day period beginning on the date such temporary waiver is issued unless extended for good cause by the court making the temporary waiver.

“(C) FAILURE TO PROVIDE LOCAL-INTO-LOCAL SERVICE TO ALL DMAS.—

“(i) FAILURE TO ACT REASONABLY AND IN GOOD FAITH.—If the court issuing a temporary waiver under subparagraph (A) determines that the satellite carrier that made the request for such waiver has failed to act reasonably or has failed to make a good faith effort to provide local-into-local service to all DMAs, such failure—

“(I) is actionable as an act of infringement under section 501 and the court may in its discretion impose the remedies provided for in sections 502 through 506 and subsection (a)(6)(B) of this section; and

“(II) shall result in the termination of the waiver issued under subparagraph (A).

“(ii) FAILURE TO PROVIDE LOCAL-INTO-LOCAL SERVICE.—If the court issuing a temporary waiver under subparagraph (A) determines that the satellite carrier that made the request for such waiver has failed to provide local-into-local service to all DMAs, but determines that the carrier acted reasonably and in good faith, the court may in its discretion impose financial penalties that reflect—

“(I) the degree of control the carrier had over the circumstances that resulted in the failure;

“(II) the quality of the carrier’s efforts to remedy the failure; and

“(III) the severity and duration of any service interruption.

“(D) SINGLE TEMPORARY WAIVER AVAILABLE.—An entity may only receive one temporary waiver under this paragraph.

“(E) SHORT MARKET DEFINED.—For purposes of this paragraph, the term ‘short market’ means a local market in which programming of one or more of the four most widely viewed television networks nationwide as measured on the date of the enactment of this subsection is not offered on the primary stream transmitted by any local television broadcast station.

“(3) ESTABLISHMENT OF QUALIFIED CARRIER RECOGNITION.—

“(A) STATEMENT OF ELIGIBILITY.—An entity seeking to be recognized as a qualified carrier under this subsection shall file a statement of eligibility with the court that imposed the injunction. A statement of eligibility must include—

“(i) an affidavit that the entity is providing local-into-local service to all DMAs;

“(ii) a motion for a waiver of the injunction;

“(iii) a motion that the court appoint a special master under Rule 53 of the Federal Rules of Civil Procedure;

“(iv) an agreement by the carrier to pay all expenses incurred by the special master under paragraph (4)(B)(ii); and

“(v) a certification issued pursuant to section 342(a) of Communications Act of 1934.

“(B) GRANT OF RECOGNITION AS A QUALIFIED CARRIER.—Upon receipt of a statement of eligibility, the court shall recognize the entity as a qualified carrier and issue the waiver under paragraph (1). Upon motion pursuant to subparagraph (A)(iii), the court shall appoint a special master to conduct the examination and provide a report to the court as provided in paragraph (4)(B).

Appointment.  
Reports.

“(C) VOLUNTARY TERMINATION.—At any time, an entity recognized as a qualified carrier may file a statement of voluntary termination with the court certifying that it no longer wishes to be recognized as a qualified carrier. Upon receipt of such statement, the court shall reinstate the injunction waived under paragraph (1).

“(D) LOSS OF RECOGNITION PREVENTS FUTURE RECOGNITION.—No entity may be recognized as a qualified carrier if such entity had previously been recognized as a qualified carrier and subsequently lost such recognition or voluntarily terminated such recognition under subparagraph (C).

“(4) QUALIFIED CARRIER OBLIGATIONS AND COMPLIANCE.—

“(A) CONTINUING OBLIGATIONS.—

“(i) IN GENERAL.—An entity recognized as a qualified carrier shall continue to provide local-into-local service to all DMAs.

“(ii) COOPERATION WITH COMPLIANCE EXAMINATION.—An entity recognized as a qualified carrier shall fully cooperate with the special master appointed by the court under paragraph (3)(B) in an examination set forth in subparagraph (B).

“(B) QUALIFIED CARRIER COMPLIANCE EXAMINATION.—

“(i) EXAMINATION AND REPORT.—A special master appointed by the court under paragraph (3)(B) shall conduct an examination of, and file a report on, the qualified carrier’s compliance with the royalty payment and household eligibility requirements of the license under this section. The report shall address the qualified carrier’s conduct during the period beginning on the date on which the qualified carrier is recognized as such under paragraph (3)(B) and ending on April 30, 2012.

Time period.

“(ii) RECORDS OF QUALIFIED CARRIER.—Beginning on the date that is one year after the date on which

Time period.

the qualified carrier is recognized as such under paragraph (3)(B), but not later than December 1, 2011, the qualified carrier shall provide the special master with all records that the special master considers to be directly pertinent to the following requirements under this section:

“(I) Proper calculation and payment of royalties under the statutory license under this section.

“(II) Provision of service under this license to eligible subscribers only.

Records.

“(iii) SUBMISSION OF REPORT.—The special master shall file the report required by clause (i) not later than July 24, 2012, with the court referred to in paragraph (1) that issued the injunction, and the court shall transmit a copy of the report to the Register of Copyrights, the Committees on the Judiciary and on Energy and Commerce of the House of Representatives, and the Committees on the Judiciary and on Commerce, Science, and Transportation of the Senate.

“(iv) EVIDENCE OF INFRINGEMENT.—The special master shall include in the report a statement of whether the examination by the special master indicated that there is substantial evidence that a copyright holder could bring a successful action under this section against the qualified carrier for infringement.

Deadline.

“(v) SUBSEQUENT EXAMINATION.—If the special master’s report includes a statement that its examination indicated the existence of substantial evidence that a copyright holder could bring a successful action under this section against the qualified carrier for infringement, the special master shall, not later than 6 months after the report under clause (i) is filed, initiate another examination of the qualified carrier’s compliance with the royalty payment and household eligibility requirements of the license under this section since the last report was filed under clause (iii). The special master shall file a report on the results of the examination conducted under this clause with the court referred to in paragraph (1) that issued the injunction, and the court shall transmit a copy to the Register of Copyrights, the Committees on the Judiciary and on Energy and Commerce of the House of Representatives, and the Committees on the Judiciary and on Commerce, Science, and Transportation of the Senate. The report shall include a statement described in clause (iv).

Reports.  
Records.

“(vi) COMPLIANCE.—Upon motion filed by an aggrieved copyright owner, the court recognizing an entity as a qualified carrier shall terminate such designation upon finding that the entity has failed to cooperate with the examinations required by this subparagraph.

“(vii) OVERSIGHT.—During the period of time that the special master is conducting an examination under

this subparagraph, the Comptroller General shall monitor the degree to which the entity seeking to be recognized or recognized as a qualified carrier under paragraph (3) is complying with the special master's examination. The qualified carrier shall make available to the Comptroller General all records and individuals that the Comptroller General considers necessary to meet the Comptroller General's obligations under this clause. The Comptroller General shall report the results of the monitoring required by this clause to the Committees on the Judiciary and on Energy and Commerce of the House of Representatives and the Committees on the Judiciary and on Commerce, Science, and Transportation of the Senate at intervals of not less than six months during such period.

Records.

Reports.  
Deadlines.

“(C) AFFIRMATION.—A qualified carrier shall file an affidavit with the district court and the Register of Copyrights 30 months after such status was granted stating that, to the best of the affiant's knowledge, it is in compliance with the requirements for a qualified carrier. The qualified carrier shall attach to its affidavit copies of all reports or orders issued by the court, the special master, and the Comptroller General.

Affidavits.  
Deadline.

“(D) COMPLIANCE DETERMINATION.—Upon the motion of an aggrieved television broadcast station, the court recognizing an entity as a qualified carrier may make a determination of whether the entity is providing local-into-local service to all DMAs.

“(E) PLEADING REQUIREMENT.—In any motion brought under subparagraph (D), the party making such motion shall specify one or more designated market areas (as such term is defined in section 122(j)(2)(C)) for which the failure to provide service is being alleged, and, for each such designated market area, shall plead with particularity the circumstances of the alleged failure.

“(F) BURDEN OF PROOF.—In any proceeding to make a determination under subparagraph (D), and with respect to a designated market area for which failure to provide service is alleged, the entity recognized as a qualified carrier shall have the burden of proving that the entity provided local-into-local service with a good quality satellite signal to at least 90 percent of the households in such designated market area (based on the most recent census data released by the United States Census Bureau) at the time and place alleged.

“(5) FAILURE TO PROVIDE SERVICE.—

“(A) PENALTIES.—If the court recognizing an entity as a qualified carrier finds that such entity has willfully failed to provide local-into-local service to all DMAs, such finding shall result in the loss of recognition of the entity as a qualified carrier and the termination of the waiver provided under paragraph (1), and the court may, in its discretion—

“(i) treat such failure as an act of infringement under section 501, and subject such infringement to the remedies provided for in sections 502 through 506 and subsection (a)(6)(B) of this section; and

“(ii) impose a fine of not less than \$250,000 and not more than \$5,000,000.

“(B) EXCEPTION FOR NONWILLFUL VIOLATION.—If the court determines that the failure to provide local-into-local service to all DMAs is nonwillful, the court may in its discretion impose financial penalties for noncompliance that reflect—

“(i) the degree of control the entity had over the circumstances that resulted in the failure;

“(ii) the quality of the entity’s efforts to remedy the failure and restore service; and

“(iii) the severity and duration of any service interruption.

“(6) PENALTIES FOR VIOLATIONS OF LICENSE.—A court that finds, under subsection (a)(6)(A), that an entity recognized as a qualified carrier has willfully made a secondary transmission of a primary transmission made by a network station and embodying a performance or display of a work to a subscriber who is not eligible to receive the transmission under this section shall reinstate the injunction waived under paragraph (1), and the court may order statutory damages of not more than \$2,500,000.

“(7) LOCAL-INTO-LOCAL SERVICE TO ALL DMAS DEFINED.—For purposes of this subsection:

“(A) IN GENERAL.—An entity provides ‘local-into-local service to all DMAs’ if the entity provides local service in all designated market areas (as such term is defined in section 122(j)(2)(C)) pursuant to the license under section 122.

“(B) HOUSEHOLD COVERAGE.—For purposes of subparagraph (A), an entity that makes available local-into-local service with a good quality satellite signal to at least 90 percent of the households in a designated market area based on the most recent census data released by the United States Census Bureau shall be considered to be providing local service to such designated market area.

“(C) GOOD QUALITY SATELLITE SIGNAL DEFINED.—The term ‘good quality satellite signal’ has the meaning given such term under section 342(e)(2) of Communications Act of 1934.”.

#### SEC. 106. COPYRIGHT OFFICE FEES.

17 USC 708.

Section 708(a) is amended—

(1) in paragraph (8), by striking “and” after the semicolon;

(2) in paragraph (9), by striking the period and inserting a semicolon;

(3) by inserting after paragraph (9) the following:

“(10) on filing a statement of account based on secondary transmissions of primary transmissions pursuant to section 119 or 122; and

“(11) on filing a statement of account based on secondary transmissions of primary transmissions pursuant to section 111.”; and

(4) by adding at the end the following new sentence: “Fees established under paragraphs (10) and (11) shall be reasonable and may not exceed one-half of the cost necessary to cover reasonable expenses incurred by the Copyright Office for the

collection and administration of the statements of account and any royalty fees deposited with such statements.”

**SEC. 107. TERMINATION OF LICENSE.**

(a) **TERMINATION.**—Section 119 of title 17, United States Code, as amended by this Act, shall cease to be effective on December 31, 2014. 17 USC 119 note.

(b) **CONFORMING AMENDMENT.**—Section 1003(a)(2)(A) of Public Law 111–118 (17 U.S.C. 119 note) is repealed. Repeal.

**SEC. 108. CONSTRUCTION.**

17 USC 111 note.

Nothing in section 111, 119, or 122 of title 17, United States Code, including the amendments made to such sections by this title, shall be construed to affect the meaning of any terms under the Communications Act of 1934, except to the extent that such sections are specifically cross-referenced in such Act or the regulations issued thereunder.

## TITLE II—COMMUNICATIONS PROVISIONS

**SEC. 201. REFERENCE.**

Except as otherwise provided, whenever in this title an amendment is made to a section or other provision, the reference shall be considered to be made to such section or provision of the Communications Act of 1934 (47 U.S.C. 151 et seq.).

**SEC. 202. EXTENSION OF AUTHORITY.**

Section 325(b) is amended—

47 USC 325.

(1) in paragraph (2)(C), by striking “May 31, 2010” and inserting “December 31, 2014”; and

(2) in paragraph (3)(C), by striking “June 1, 2010” each place it appears in clauses (ii) and (iii) and inserting “January 1, 2015”.

**SEC. 203. SIGNIFICANTLY VIEWED STATIONS.**

(a) **IN GENERAL.**—Paragraphs (1) and (2) of section 340(b) are amended to read as follows: 47 USC 340.

“(1) **SERVICE LIMITED TO SUBSCRIBERS TAKING LOCAL-INTO-LOCAL SERVICE.**—This section shall apply only to retransmissions to subscribers of a satellite carrier who receive retransmissions of a signal from that satellite carrier pursuant to section 338.

Applicability.

“(2) **SERVICE LIMITATIONS.**—A satellite carrier may retransmit to a subscriber in high definition format the signal of a station determined by the Commission to be significantly viewed under subsection (a) only if such carrier also retransmits in high definition format the signal of a station located in the local market of such subscriber and affiliated with the same network whenever such format is available from such station.”

(b) **RULEMAKING REQUIRED.**—Within 270 days after the date of the enactment of this Act, the Federal Communications Commission shall take all actions necessary to promulgate a rule to implement the amendments made by subsection (a). Deadline. 47 USC 340 note.

**SEC. 204. DIGITAL TELEVISION TRANSITION CONFORMING AMENDMENTS.**

47 USC 338.

(a) SECTION 338.—Section 338 is amended—

(1) in subsection (a), by striking “(3) EFFECTIVE DATE.—No satellite” and all that follows through “until January 1, 2002.”; and

(2) by amending subsection (g) to read as follows:

**“(g) CARRIAGE OF LOCAL STATIONS ON A SINGLE RECEPTION ANTENNA.—****“(1) SINGLE RECEPTION ANTENNA.—**Each satellite carrier that retransmits the signals of local television broadcast stations in a local market shall retransmit such stations in such market so that a subscriber may receive such stations by means of a single reception antenna and associated equipment.**“(2) ADDITIONAL RECEPTION ANTENNA.—**If the carrier retransmits the signals of local television broadcast stations in a local market in high definition format, the carrier shall retransmit such signals in such market so that a subscriber may receive such signals by means of a single reception antenna and associated equipment, but such antenna and associated equipment may be separate from the single reception antenna and associated equipment used to comply with paragraph (1).”.

47 USC 339.

(b) SECTION 339.—Section 339 is amended—

(1) in subsection (a)—

(A) in paragraph (1)(B), by striking “Such two network stations” and all that follows through “more than two network stations.”; and

(B) in paragraph (2)—

(i) in the heading for subparagraph (A), by striking “TO ANALOG SIGNALS”;

(ii) in subparagraph (A)—

(I) in the heading for clause (i), by striking “ANALOG”;

(II) in clause (i)—

(aa) by striking “analog” each place it appears; and

(bb) by striking “October 1, 2004” and inserting “October 1, 2009”;

(III) in the heading for clause (ii), by striking “ANALOG”; and

(IV) in clause (ii)—

(aa) by striking “analog” each place it appears; and

(bb) by striking “2004” and inserting “2009”;

(iii) by amending subparagraph (B) to read as follows:

**“(B) RULES FOR OTHER SUBSCRIBERS.—****“(i) IN GENERAL.—**In the case of a subscriber of a satellite carrier who is eligible to receive the signal of a network station under this section (in this subparagraph referred to as a ‘distant signal’), other than subscribers to whom subparagraph (A) applies, the following shall apply:**“(I)** In a case in which the satellite carrier makes available to that subscriber, on JanuaryApplicability.  
Deadlines.

1, 2005, the signal of a local network station affiliated with the same television network pursuant to section 338, the carrier may only provide the secondary transmissions of the distant signal of a station affiliated with the same network to that subscriber if the subscriber's satellite carrier, not later than March 1, 2005, submits to that television network the list and statement required by subparagraph (F)(i).

“(II) In a case in which the satellite carrier does not make available to that subscriber, on January 1, 2005, the signal of a local network station pursuant to section 338, the carrier may only provide the secondary transmissions of the distant signal of a station affiliated with the same network to that subscriber if—

“(aa) that subscriber seeks to subscribe to such distant signal before the date on which such carrier commences to carry pursuant to section 338 the signals of stations from the local market of such local network station; and

“(bb) the satellite carrier, within 60 days after such date, submits to each television network the list and statement required by subparagraph (F)(ii).

“(ii) SPECIAL CIRCUMSTANCES.—A subscriber of a satellite carrier who was lawfully receiving the distant signal of a network station on the day before the date of enactment of the Satellite Television Extension and Localism Act of 2010 may receive both such distant signal and the local signal of a network station affiliated with the same network until such subscriber chooses to no longer receive such distant signal from such carrier, whether or not such subscriber elects to subscribe to such local signal.”;

(iv) in subparagraph (C)—

(I) by striking “analog”;

(II) in clause (i), by striking “the Satellite Home Viewer Extension and Reauthorization Act of 2004; and” and inserting the following:

“the Satellite Television Extension and Localism Act of 2010 and, at the time such person seeks to subscribe to receive such secondary transmission, resides in a local market where the satellite carrier makes available to that person the signal of a local network station affiliated with the same television network pursuant to section 338 (and the retransmission of such signal by such carrier can reach such subscriber); or”;

(III) by amending clause (ii) to read as follows:

“(ii) lawfully subscribes to and receives a distant signal on or after the date of enactment of the Satellite Television Extension and Localism Act of 2010, and, subsequent to such subscription, the satellite carrier makes available to that subscriber the signal of a local network station affiliated with the same network as the distant signal (and the retransmission of such

Deadline.

signal by such carrier can reach such subscriber), unless such person subscribes to the signal of the local network station within 60 days after such signal is made available.”;

(v) in subparagraph (D)—

(I) in the heading, by striking “DIGITAL”;

(II) by striking clauses (i), (iii) through (v), (vii) through (ix), and (xi);

(III) by redesignating clause (vi) as clause (i) and transferring such clause to appear before clause (ii);

(IV) by amending such clause (i) (as so redesignated) to read as follows:

“(i) ELIGIBILITY AND SIGNAL TESTING.—A subscriber of a satellite carrier shall be eligible to receive a distant signal of a network station affiliated with the same network under this section if, with respect to a local network station, such subscriber—

“(I) is a subscriber whose household is not predicted by the model specified in subsection (c)(3) to receive the signal intensity required under section 73.622(e)(1) or, in the case of a low-power station or translator station transmitting an analog signal, section 73.683(a) of title 47, Code of Federal Regulations, or a successor regulation;

“(II) is determined, based on a test conducted in accordance with section 73.686(d) of title 47, Code of Federal Regulations, or any successor regulation, not to be able to receive a signal that exceeds the signal intensity standard in section 73.622(e)(1) or, in the case of a low-power station or translator station transmitting an analog signal, section 73.683(a) of such title, or a successor regulation; or

“(III) is in an unserved household, as determined under section 119(d)(10)(A) of title 17, United States Code.”;

(V) in clause (ii)—

(aa) by striking “DIGITAL” in the heading;

(bb) by striking “digital” the first two places such term appears;

(cc) by striking “Satellite Home Viewer Extension and Reauthorization Act of 2004” and inserting “Satellite Television Extension and Localism Act of 2010”; and

(dd) by striking “, whether or not such subscriber elects to subscribe to local digital signals”;

(VI) by inserting after clause (ii) the following new clause:

“(iii) TIME-SHIFTING PROHIBITED.—In a case in which the satellite carrier makes available to an eligible subscriber under this subparagraph the signal of a local network station pursuant to section 338, the carrier may only provide the distant signal of a station affiliated with the same network to that subscriber if, in the case of any local market in the 48

contiguous States of the United States, the distant signal is the secondary transmission of a station whose prime time network programming is generally broadcast simultaneously with, or later than, the prime time network programming of the affiliate of the same network in the local market.”; and

(VII) by redesignating clause (x) as clause (iv);

and

(vi) in subparagraph (E), by striking “distant analog signal or” and all that follows through “(B), or (D)” and inserting “distant signal”;

(2) in subsection (c)—

(A) by amending paragraph (3) to read as follows:

“(3) ESTABLISHMENT OF IMPROVED PREDICTIVE MODEL AND ON-LOCATION TESTING REQUIRED.—

Deadlines.

“(A) PREDICTIVE MODEL.—Within 270 days after the date of the enactment of the Satellite Television Extension and Localism Act of 2010, the Commission shall develop and prescribe by rule a point-to-point predictive model for reliably and presumptively determining the ability of individual locations, through the use of an antenna, to receive signals in accordance with the signal intensity standard in section 73.622(e)(1) of title 47, Code of Federal Regulations, or a successor regulation, including to account for the continuing operation of translator stations and low power television stations. In prescribing such model, the Commission shall rely on the Individual Location Longley-Rice model set forth by the Commission in CS Docket No. 98-201, as previously revised with respect to analog signals, and as recommended by the Commission with respect to digital signals in its Report to Congress in ET Docket No. 05-182, FCC 05-199 (released December 9, 2005). The Commission shall establish procedures for the continued refinement in the application of the model by the use of additional data as it becomes available.

Regulations.

Procedures.

“(B) ON-LOCATION TESTING.—The Commission shall issue an order completing its rulemaking proceeding in ET Docket No. 06-94 within 270 days after the date of enactment of the Satellite Television Extension and Localism Act of 2010. In conducting such rulemaking, the Commission shall seek ways to minimize consumer burdens associated with on-location testing.”;

(B) by amending paragraph (4)(A) to read as follows:

“(A) IN GENERAL.—If a subscriber’s request for a waiver under paragraph (2) is rejected and the subscriber submits to the subscriber’s satellite carrier a request for a test verifying the subscriber’s inability to receive a signal of the signal intensity referenced in clause (i) of subsection (a)(2)(D), the satellite carrier and the network station or stations asserting that the retransmission is prohibited with respect to that subscriber shall select a qualified and independent person to conduct the test referenced in such clause. Such test shall be conducted within 30 days after the date the subscriber submits a request for the test. If the written findings and conclusions of a test conducted in accordance with such clause demonstrate that the subscriber does not receive a signal that meets or

Deadline.

exceeds the requisite signal intensity standard in such clause, the subscriber shall not be denied the retransmission of a signal of a network station under section 119(d)(10)(A) of title 17, United States Code.”;

(C) in paragraph (4)(B), by striking “the signal intensity” and all that follows through “United States Code” and inserting “such requisite signal intensity standard”; and

(D) in paragraph (4)(E), by striking “Grade B intensity”.

47 USC 340. (c) **SECTION 340.**—Section 340(i) is amended by striking paragraph (4).

47 USC 338 note. **SEC. 205. APPLICATION PENDING COMPLETION OF RULEMAKINGS.**

Time period. (a) **IN GENERAL.**—During the period beginning on the date of the enactment of this Act and ending on the date on which the Federal Communications Commission adopts rules pursuant to the amendments to the Communications Act of 1934 made by section 203 and section 204 of this title, the Federal Communications Commission shall follow its rules and regulations promulgated pursuant to sections 338, 339, and 340 of the Communications Act of 1934 as in effect on the day before the date of the enactment of this Act.

Applicability. (b) **TRANSLATOR STATIONS AND LOW POWER TELEVISION STATIONS.**—Notwithstanding subsection (a), for purposes of determining whether a subscriber within the local market served by a translator station or a low power television station affiliated with a television network is eligible to receive distant signals under section 339 of the Communications Act of 1934, the rules and regulations of the Federal Communications Commission for determining such subscriber’s eligibility as in effect on the day before the date of the enactment of this Act shall apply until the date on which the translator station or low power television station is licensed to broadcast a digital signal.

(c) **DEFINITIONS.**—As used in this subtitle:

(1) **LOCAL MARKET; LOW POWER TELEVISION STATION; SATELLITE CARRIER; SUBSCRIBER; TELEVISION BROADCAST STATION.**—The terms “local market”, “low power television station”, “satellite carrier”, “subscriber”, and “television broadcast station” have the meanings given such terms in section 338(k) of the Communications Act of 1934.

(2) **NETWORK STATION; TELEVISION NETWORK.**—The terms “network station” and “television network” have the meanings given such terms in section 339(d) of such Act.

**SEC. 206. PROCESS FOR ISSUING QUALIFIED CARRIER CERTIFICATION.**

Part I of title III is amended by adding at the end the following new section:

47 USC 342. **“SEC. 342. PROCESS FOR ISSUING QUALIFIED CARRIER CERTIFICATION.**

“(a) **CERTIFICATION.**—The Commission shall issue a certification for the purposes of section 119(g)(3)(A)(iii) of title 17, United States Code, if the Commission determines that—

“(1) a satellite carrier is providing local service pursuant to the statutory license under section 122 of such title in each designated market area; and

“(2) with respect to each designated market area in which such satellite carrier was not providing such local service as of the date of enactment of the Satellite Television Extension and Localism Act of 2010—

“(A) the satellite carrier’s satellite beams are designed, and predicted by the satellite manufacturer’s pre-launch test data, to provide a good quality satellite signal to at least 90 percent of the households in each such designated market area based on the most recent census data released by the United States Census Bureau; and

“(B) there is no material evidence that there has been a satellite or sub-system failure subsequent to the satellite’s launch that precludes the ability of the satellite carrier to satisfy the requirements of subparagraph (A).

“(b) INFORMATION REQUIRED.—Any entity seeking the certification provided for in subsection (a) shall submit to the Commission the following information:

Submission.

“(1) An affidavit stating that, to the best of the affiant’s knowledge, the satellite carrier provides local service in all designated market areas pursuant to the statutory license provided for in section 122 of title 17, United States Code, and listing those designated market areas in which local service was provided as of the date of enactment of the Satellite Television Extension and Localism Act of 2010.

“(2) For each designated market area not listed in paragraph (1):

“(A) Identification of each such designated market area and the location of its local receive facility.

“(B) Data showing the number of households, and maps showing the geographic distribution thereof, in each such designated market area based on the most recent census data released by the United States Census Bureau.

“(C) Maps, with superimposed effective isotropically radiated power predictions obtained in the satellite manufacturer’s pre-launch tests, showing that the contours of the carrier’s satellite beams as designed and the geographic area that the carrier’s satellite beams are designed to cover are predicted to provide a good quality satellite signal to at least 90 percent of the households in such designated market area based on the most recent census data released by the United States Census Bureau.

“(D) For any satellite relied upon for certification under this section, an affidavit stating that, to the best of the affiant’s knowledge, there have been no satellite or sub-system failures subsequent to the satellite’s launch that would degrade the design performance to such a degree that a satellite transponder used to provide local service to any such designated market area is precluded from delivering a good quality satellite signal to at least 90 percent of the households in such designated market area based on the most recent census data released by the United States Census Bureau.

“(E) Any additional engineering, designated market area, or other information the Commission considers necessary to determine whether the Commission shall grant a certification under this section.

“(c) CERTIFICATION ISSUANCE.—

- Deadline. “(1) PUBLIC COMMENT.—The Commission shall provide 30 days for public comment on a request for certification under this section.
- “ (2) DEADLINE FOR DECISION.—The Commission shall grant or deny a request for certification within 90 days after the date on which such request is filed.
- Affidavit. Deadline. “(d) SUBSEQUENT AFFIRMATION.—An entity granted qualified carrier status pursuant to section 119(g) of title 17, United States Code, shall file an affidavit with the Commission 30 months after such status was granted stating that, to the best of the affiant’s knowledge, it is in compliance with the requirements for a qualified carrier.
- “ (e) DEFINITIONS.—For the purposes of this section:
- “ (1) DESIGNATED MARKET AREA.—The term ‘designated market area’ has the meaning given such term in section 122(j)(2)(C) of title 17, United States Code.
- “ (2) GOOD QUALITY SATELLITE SIGNAL.—
- “ (A) IN GENERAL.—The term “good quality satellite signal” means—
- “ (i) a satellite signal whose power level as designed shall achieve reception and demodulation of the signal at an availability level of at least 99.7 percent using—
- “ (I) models of satellite antennas normally used by the satellite carrier’s subscribers; and
- “ (II) the same calculation methodology used by the satellite carrier to determine predicted signal availability in the top 100 designated market areas; and
- “ (ii) taking into account whether a signal is in standard definition format or high definition format, compression methodology, modulation, error correction, power level, and utilization of advances in technology that do not circumvent the intent of this section to provide for non-discriminatory treatment with respect to any comparable television broadcast station signal, a video signal transmitted by a satellite carrier such that—
- “ (I) the satellite carrier treats all television broadcast stations’ signals the same with respect to statistical multiplexer prioritization; and
- “ (II) the number of video signals in the relevant satellite transponder is not more than the then current greatest number of video signals carried on any equivalent transponder serving the top 100 designated market areas.
- Publication. “(B) DETERMINATION.—For the purposes of subparagraph (A), the top 100 designated market areas shall be as determined by Nielsen Media Research and published in the Nielsen Station Index Directory and Nielsen Station Index United States Television Household Estimates or any successor publication as of the date of a satellite carrier’s application for certification under this section.”.

**SEC. 207. NONDISCRIMINATION IN CARRIAGE OF HIGH DEFINITION DIGITAL SIGNALS OF NONCOMMERCIAL EDUCATIONAL TELEVISION STATIONS.** 47 USC 338.

(a) IN GENERAL.—Section 338(a) is amended by adding at the end the following new paragraph:

“(5) NONDISCRIMINATION IN CARRIAGE OF HIGH DEFINITION SIGNALS OF NONCOMMERCIAL EDUCATIONAL TELEVISION STATIONS.—

“(A) EXISTING CARRIAGE OF HIGH DEFINITION SIGNALS.— If, before the date of enactment of the Satellite Television Extension and Localism Act of 2010, an eligible satellite carrier is providing, under section 122 of title 17, United States Code, any secondary transmissions in high definition format to subscribers located within the local market of a television broadcast station of a primary transmission made by that station, then such satellite carrier shall carry the signals in high-definition format of qualified non-commercial educational television stations located within that local market in accordance with the following schedule:

“(i) By December 31, 2010, in at least 50 percent of the markets in which such satellite carrier provides such secondary transmissions in high definition format.

“(ii) By December 31, 2011, in every market in which such satellite carrier provides such secondary transmissions in high definition format.

“(B) NEW INITIATION OF SERVICE.—If, on or after the date of enactment of the Satellite Television Extension and Localism Act of 2010, an eligible satellite carrier initiates the provision, under section 122 of title 17, United States Code, of any secondary transmissions in high definition format to subscribers located within the local market of a television broadcast station of a primary transmission made by that station, then such satellite carrier shall carry the signals in high-definition format of all qualified non-commercial educational television stations located within that local market.”.

(b) DEFINITIONS.—Section 338(k) is amended—

(1) by redesignating paragraphs (2) through (8) as paragraphs (3) through (9), respectively;

(2) by inserting after paragraph (1) the following new paragraph:

“(2) ELIGIBLE SATELLITE CARRIER.—The term ‘eligible satellite carrier’ means any satellite carrier that is not a party to a carriage contract that—

“(A) governs carriage of at least 30 qualified non-commercial educational television stations; and

“(B) is in force and effect within 150 days after the date of enactment of the Satellite Television Extension and Localism Act of 2010.”;

(3) by redesignating paragraphs (6) through (9) (as previously redesignated) as paragraphs (7) through (10), respectively; and

(4) by inserting after paragraph (5) (as so redesignated) the following new paragraph:

Deadlines.

Deadline.

“(6) **QUALIFIED NONCOMMERCIAL EDUCATIONAL TELEVISION STATION.**—The term ‘qualified noncommercial educational television station’ means any full-power television broadcast station that—

“(A) under the rules and regulations of the Commission in effect on March 29, 1990, is licensed by the Commission as a noncommercial educational broadcast station and is owned and operated by a public agency, nonprofit foundation, nonprofit corporation, or nonprofit association; and

“(B) has as its licensee an entity that is eligible to receive a community service grant, or any successor grant thereto, from the Corporation for Public Broadcasting, or any successor organization thereto, on the basis of the formula set forth in section 396(k)(6)(B) of this title.”

47 USC 325 note. **SEC. 208. SAVINGS CLAUSE REGARDING DEFINITIONS.**

Nothing in this title or the amendments made by this title shall be construed to affect—

(1) the meaning of the terms “program related” and “primary video” under the Communications Act of 1934; or

(2) the meaning of the term “multicast” in any regulations issued by the Federal Communications Commission.

47 USC 335. **SEC. 209. STATE PUBLIC AFFAIRS BROADCASTS.**

Section 335(b) is amended—

(1) by inserting “**STATE PUBLIC AFFAIRS,**” after “**EDUCATIONAL,**” in the heading;

(2) by striking paragraph (1) and inserting the following:

“(1) **CHANNEL CAPACITY REQUIRED.**—

“(A) **IN GENERAL.**—Except as provided in subparagraph (B), the Commission shall require, as a condition of any provision, initial authorization, or authorization renewal for a provider of direct broadcast satellite service providing video programming, that the provider of such service reserve a portion of its channel capacity, equal to not less than 4 percent nor more than 7 percent, exclusively for noncommercial programming of an educational or informational nature.

“(B) **REQUIREMENT FOR QUALIFIED SATELLITE PROVIDER.**—The Commission shall require, as a condition of any provision, initial authorization, or authorization renewal for a qualified satellite provider of direct broadcast satellite service providing video programming, that such provider reserve a portion of its channel capacity, equal to not less than 3.5 percent nor more than 7 percent, exclusively for noncommercial programming of an educational or informational nature.”;

(3) in paragraph (5), by striking “For purposes of the subsection—” and inserting “For purposes of this subsection.”; and

(4) by adding at the end of paragraph (5) the following:

“(C) The term ‘qualified satellite provider’ means any provider of direct broadcast satellite service that—

“(i) provides the retransmission of the State public affairs networks of at least 15 different States;

“(ii) offers the programming of State public affairs networks upon reasonable prices, terms, and conditions as determined by the Commission under paragraph (4); and

Definition.

“(iii) does not delete any noncommercial programming of an educational or informational nature in connection with the carriage of a State public affairs network.

“(D) The term ‘State public affairs network’ means a non-commercial non-broadcast network or a noncommercial educational television station—

Definition.

“(i) whose programming consists of information about State government deliberations and public policy events; and

“(ii) that is operated by—

“(I) a State government or subdivision thereof;

“(II) an organization described in section 501(c)(3) of the Internal Revenue Code of 1986 that is exempt from taxation under section 501(a) of such Code and that is governed by an independent board of directors; or

“(III) a cable system.”.

## TITLE III—REPORTS AND SAVINGS PROVISION

### SEC. 301. DEFINITION.

47 USC 338 note.

In this title, the term “appropriate Congressional committees” means the Committees on the Judiciary and on Commerce, Science, and Transportation of the Senate and the Committees on the Judiciary and on Energy and Commerce of the House of Representatives.

### SEC. 302. REPORT ON MARKET BASED ALTERNATIVES TO STATUTORY LICENSING.

Not later than 18 months after the date of the enactment of this Act, and after consultation with the Federal Communications Commission, the Register of Copyrights shall submit to the appropriate Congressional committees a report containing—

(1) proposed mechanisms, methods, and recommendations on how to implement a phase-out of the statutory licensing requirements set forth in sections 111, 119, and 122 of title 17, United States Code, by making such sections inapplicable to the secondary transmission of a performance or display of a work embodied in a primary transmission of a broadcast station that is authorized to license the same secondary transmission directly with respect to all of the performances and displays embodied in such primary transmission;

(2) any recommendations for alternative means to implement a timely and effective phase-out of the statutory licensing requirements set forth in sections 111, 119, and 122 of title 17, United States Code; and

(3) any recommendations for legislative or administrative actions as may be appropriate to achieve such a phase-out.

### SEC. 303. REPORT ON COMMUNICATIONS IMPLICATIONS OF STATUTORY LICENSING MODIFICATIONS.

(a) STUDY.—The Comptroller General shall conduct a study that analyzes and evaluates the changes to the carriage requirements currently imposed on multichannel video programming

distributors under the Communications Act of 1934 (47 U.S.C. 151 et seq.) and the regulations promulgated by the Federal Communications Commission that would be required or beneficial to consumers, and such other matters as the Comptroller General deems appropriate, if Congress implemented a phase-out of the current statutory licensing requirements set forth under sections 111, 119, and 122 of title 17, United States Code. Among other things, the study shall consider the impact such a phase-out and related changes to carriage requirements would have on consumer prices and access to programming.

(b) REPORT.—Not later than 18 months after the date of the enactment of this Act, the Comptroller General shall report to the appropriate Congressional committees the results of the study, including any recommendations for legislative or administrative actions.

**SEC. 304. REPORT ON IN-STATE BROADCAST PROGRAMMING.**

Not later than 18 months after the date of the enactment of this Act, the Federal Communications Commission shall submit to the appropriate Congressional committees a report containing an analysis of—

(1) the number of households in a State that receive the signals of local broadcast stations assigned to a community of license that is located in a different State;

(2) the extent to which consumers in each local market have access to in-state broadcast programming over the air or from a multichannel video programming distributor; and

(3) whether there are alternatives to the use of designated market areas, as defined in section 122 of title 17, United States Code, to define local markets that would provide more consumers with in-state broadcast programming.

47 USC 338 note.

**SEC. 305. LOCAL NETWORK CHANNEL BROADCAST REPORTS.**

(a) REQUIREMENT.—

(1) IN GENERAL.—On the 270th day after the date of the enactment of this Act, and on each succeeding anniversary of such 270th day, each satellite carrier shall submit an annual report to the Federal Communications Commission setting forth—

(A) each local market in which it—

(i) retransmits signals of 1 or more television broadcast stations with a community of license in that market;

(ii) has commenced providing such signals in the preceding 1-year period; and

(iii) has ceased to provide such signals in the preceding 1-year period; and

(B) detailed information regarding the use and potential use of satellite capacity for the retransmission of local signals in each local market.

(2) TERMINATION.—The requirement under paragraph (1) shall cease after each satellite carrier has submitted 5 reports under such paragraph.

(b) FCC STUDY; REPORT.—

(1) STUDY.—If no satellite carrier files a request for a certification under section 342 of the Communications Act of 1934 (as added by section 206 of this title) within 270 days

after the date of the enactment of this Act, the Federal Communications Commission shall initiate a study of—

(A) incentives that would induce a satellite carrier to provide the signals of 1 or more television broadcast stations licensed to provide signals in local markets in which the satellite carrier does not provide such signals; and

(B) the economic and satellite capacity conditions affecting delivery of local signals by satellite carriers to these markets.

(2) **REPORT.**—Within 1 year after the date of the initiation of the study under paragraph (1), the Federal Communications Commission shall submit a report to the appropriate Congressional committees containing its findings, conclusions, and recommendations.

(c) **DEFINITIONS.**—In this section—

(1) the terms “local market” and “satellite carrier” have the meaning given such terms in section 339(d) of the Communications Act of 1934 (47 U.S.C. 339(d)); and

(2) the term “television broadcast station” has the meaning given such term in section 325(b)(7) of such Act (47 U.S.C. 325(b)(7)).

**SEC. 306. SAVINGS PROVISION REGARDING USE OF NEGOTIATED LICENSES.** 17 USC 111 note.

(a) **IN GENERAL.**—Nothing in this Act, title 17, United States Code, the Communications Act of 1934, regulations promulgated by the Register of Copyrights under this title or title 17, United States Code, or regulations promulgated by the Federal Communications Commission under this Act or the Communications Act of 1934 shall be construed to prevent a multichannel video programming distributor from retransmitting a performance or display of a work pursuant to an authorization granted by the copyright owner or, if within the scope of its authorization, its licensee.

(b) **LIMITATION.**—Nothing in subsection (a) shall be construed to affect any obligation of a multichannel video programming distributor under section 325(b) of the Communications Act of 1934 to obtain the authority of a television broadcast station before retransmitting that station’s signal.

**SEC. 307. EFFECTIVE DATE; NONINFRINGEMENT OF COPYRIGHT.** 17 USC 111 note.

(a) **EFFECTIVE DATE.**—Unless specifically provided otherwise, this Act, and the amendments made by this Act, shall take effect on February 27, 2010, and with the exception of the reference in subsection (b), all references to the date of enactment of this Act shall be deemed to refer to February 27, 2010, unless otherwise specified.

(b) **NONINFRINGEMENT OF COPYRIGHT.**—The secondary transmission of a performance or display of a work embodied in a primary transmission is not an infringement of copyright if it was made by a satellite carrier on or after February 27, 2010, and prior to enactment of this Act, and was in compliance with the law as in existence on February 27, 2010.

**TITLE IV—SEVERABILITY**

17 USC 111 note. **SEC. 401. SEVERABILITY.**

If any provision of this Act, an amendment made by this Act, or the application of such provision or amendment to any person or circumstance is held to be unconstitutional, the remainder of this Act, the amendments made by this Act, and the application of such provision or amendment to any person or circumstance shall not be affected thereby.

**TITLE V—DETERMINATION OF  
BUDGETARY EFFECTS**

**SEC. 501. DETERMINATION OF BUDGETARY EFFECTS.**

(a) **IN GENERAL.**—The budgetary effects of this Act, for the purpose of complying with the Statutory Pay-As-You-Go-Act of 2010, shall be determined by reference to the latest statement titled “Budgetary Effects of PAYGO Legislation” for this Act, submitted for printing in the Congressional Record by the Chairman of the Senate Budget Committee, provided that such statement has been submitted prior to the vote on passage.

Approved May 27, 2010.

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**LEGISLATIVE HISTORY—S. 3333:**

**CONGRESSIONAL RECORD**, Vol. 156 (2010):  
May 7, considered and passed Senate.  
May 12, considered and passed House.



Public Law 111–267  
111th Congress

An Act

To authorize the programs of the National Aeronautics and Space Administration for fiscal years 2011 through 2013, and for other purposes.

Oct. 11, 2010  
[S. 3729]

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

**SEC. 1. SHORT TITLE; TABLE OF CONTENTS.**

(a) **SHORT TITLE.**—This Act may be cited as the “National Aeronautics and Space Administration Authorization Act of 2010”.

(b) **TABLE OF CONTENTS.**—The table of contents for this Act is as follows:

National  
Aeronautics and  
Space  
Administration  
Authorization  
Act of 2010.  
42 USC 18301  
note.

- Sec. 1. Short title; table of contents.
- Sec. 2. Findings.
- Sec. 3. Definitions.

**TITLE I—AUTHORIZATION OF APPROPRIATIONS**

- Sec. 101. Fiscal year 2011.
- Sec. 102. Fiscal year 2012.
- Sec. 103. Fiscal year 2013.

**TITLE II—POLICY, GOALS, AND OBJECTIVES FOR HUMAN SPACE FLIGHT AND EXPLORATION**

- Sec. 201. United States human space flight policy.
- Sec. 202. Goals and objectives.
- Sec. 203. Assurance of core capabilities.
- Sec. 204. Independent study on human exploration of space.

**TITLE III—EXPANSION OF HUMAN SPACE FLIGHT BEYOND THE INTERNATIONAL SPACE STATION AND LOW-EARTH ORBIT**

- Sec. 301. Human space flight beyond low-Earth orbit.
- Sec. 302. Space Launch System as follow-on launch vehicle to the Space Shuttle.
- Sec. 303. Multi-purpose crew vehicle.
- Sec. 304. Utilization of existing workforce and assets in development of Space Launch System and multi-purpose crew vehicle.
- Sec. 305. NASA launch support and infrastructure modernization program.
- Sec. 306. Report on effects of transition to Space Launch System on the solid and liquid rocket motor industrial bases.
- Sec. 307. Sense of Congress on other technology and robotic elements in human space flight and exploration.
- Sec. 308. Development of technologies and in-space capabilities for beyond near-Earth space missions.
- Sec. 309. Report requirement.

**TITLE IV—DEVELOPMENT AND USE OF COMMERCIAL CREW AND CARGO TRANSPORTATION CAPABILITIES**

- Sec. 401. Commercial Cargo Development program.
- Sec. 402. Commercial Crew Development program.
- Sec. 403. Requirements applicable to development of commercial crew transportation capabilities and services.
- Sec. 404. Report on International Space Station cargo return capability.

TITLE V—CONTINUATION, SUPPORT, AND EVOLUTION OF THE  
INTERNATIONAL SPACE STATION

- Sec. 501. Continuation of the International Space Station through 2020.
- Sec. 502. Maximum utilization of the International Space Station.
- Sec. 503. Maintenance of the United States segment and assurance of continued operations of the International Space Station.
- Sec. 504. Management of the ISS national laboratory.

TITLE VI—SPACE SHUTTLE RETIREMENT AND TRANSITION

- Sec. 601. Sense of Congress on the Space Shuttle program.
- Sec. 602. Retirement of Space Shuttle orbiters and transition of Space Shuttle program.
- Sec. 603. Disposition of orbiter vehicles.

TITLE VII—EARTH SCIENCE

- Sec. 701. Sense of Congress.
- Sec. 702. Interagency collaboration implementation approach.
- Sec. 703. Transitioning experimental research to operations.
- Sec. 704. Decadal survey missions implementation for Earth observation.
- Sec. 705. Expansion of Earth science applications.
- Sec. 706. Instrument test-beds and venture class missions.
- Sec. 707. Sense of Congress on NPOESS follow-on program.

TITLE VIII—SPACE SCIENCE

- Sec. 801. Technology development.
- Sec. 802. Suborbital research activities.
- Sec. 803. Overall science portfolio-sense of the Congress.
- Sec. 804. In-space servicing.
- Sec. 805. Decadal results.
- Sec. 806. On-going restoration of radioisotope thermoelectric generator material production.
- Sec. 807. Collaboration with ESMD and SOMD on robotic missions.
- Sec. 808. Near-Earth object survey and policy with respect to threats posed.
- Sec. 809. Space weather.

TITLE IX—AERONAUTICS AND SPACE TECHNOLOGY

- Sec. 901. Sense of Congress.
- Sec. 902. Aeronautics research goals.
- Sec. 903. Research collaboration.
- Sec. 904. Goal for agency space technology.
- Sec. 905. Implementation plan for agency space technology.
- Sec. 906. National space technology policy.
- Sec. 907. Commercial reusable suborbital research program.

TITLE X—EDUCATION

- Sec. 1001. Report on education implementation outcomes.
- Sec. 1002. Sense of Congress on the Experimental Program to Stimulate Competitive Research.
- Sec. 1003. Science, technology, engineering, and mathematics commercial orbital platform program.

TITLE XI—RESCOPING AND REVITALIZING INSTITUTIONAL CAPABILITIES

- Sec. 1101. Sense of Congress.
- Sec. 1102. Institutional requirements study.
- Sec. 1103. NASA capabilities study requirement.
- Sec. 1104. Sense of Congress on community transition support.
- Sec. 1105. Workforce stabilization and critical skills preservation.

TITLE XII—OTHER MATTERS

- Sec. 1201. Report on space traffic management.
- Sec. 1202. National and international orbital debris mitigation.
- Sec. 1203. Reports on program and cost assessment and control assessment.
- Sec. 1204. Eligibility for service of individual currently serving as Administrator of NASA.
- Sec. 1205. Sense of Congress on independent verification and validation of NASA software.
- Sec. 1206. Counterfeit parts.
- Sec. 1207. Information security.
- Sec. 1208. National Center for Human Performance.

Sec. 1209. Enhanced-use Leasing.

Sec. 1210. Sense of Congress concerning the Stennis Space Center.

TITLE XIII—COMPLIANCE WITH STATUTORY PAY-AS-YOU-GO ACT OF 2010

Sec. 1301. Compliance provision.

**SEC. 2. FINDINGS.**

42 USC 18301.

Congress makes the following findings:

(1) The United States human space flight program has, since the first Mercury flight on May 5, 1961, been a source of pride and inspiration for the Nation.

(2) The establishment of and commitment to human exploration goals is essential for providing the necessary long term focus and programmatic consistency and robustness of the United States civilian space program.

(3) The National Aeronautics and Space Administration is and should remain a multi-mission agency with a balanced and robust set of core missions in science, aeronautics, and human space flight and exploration.

(4) In the 50 years since the establishment of NASA, the arena of space has evolved substantially. As the uses and users of space continue to expand, the issues and operations in the regions closest to Earth have become increasingly complex, with a growing number of overlaps between civil, commercial and national security activities. These developments present opportunities and challenges to the space activities of NASA and the United States.

(5) The extraordinary challenges of achieving access to space both motivated and accelerated the development of technologies and industrial capabilities that have had widespread applications which have contributed to the technological excellence of the United States. It is essential to tie space activity to human challenges ranging from enhancing the influence, relationships, security, economic development, and commerce of the United States to improving the overall human condition.

(6) It is essential to the economic well-being of the United States that the aerospace industrial capacity, highly skilled workforce, and embedded expertise remain engaged in demanding, challenging, and exciting efforts that ensure United States leadership in space exploration and related activities.

(7) Crewmembers provide the essential component to ensure the return on investment from and the growth and safe operation of the ISS. The Russian Soyuz vehicle has allowed continued human presence on the ISS for United States crewmembers with its ability to serve as both a routine and backup capability for crew delivery, rescue, and return. With the impending retirement of the Space Shuttle, the United States will find itself with no national crew delivery and return system. Without any other system, the United States and all the ISS partners will have no redundant system for human access to and from the ISS. It is therefore essential that a United States capability be developed as soon as possible.

(8) Existing and emerging United States commercial launch capabilities and emerging launch capabilities offer the potential for providing crew support assets. New capabilities for human crew access to the ISS should be developed in a manner that ensures ISS mission assurance and safety. Commercial services

offer the potential to broaden the availability and access to space at lower costs.

(9) While commercial transportation systems have the promise to contribute valuable services, it is in the United States national interest to maintain a government operated space transportation system for crew and cargo delivery to space.

(10) Congress restates its commitment, expressed in the National Aeronautics and Space Administration Authorization Act of 2005 (Public Law 109–155) and the National Aeronautics and Space Administration Authorization Act of 2008 (Public Law 110–422), to the development of commercially developed launch and delivery systems to the ISS for crew and cargo missions. Congress reaffirms that NASA shall make use of United States commercially provided ISS crew transfer and crew rescue services to the maximum extent practicable.

(11) It is critical to identify an appropriate combination of NASA and related United States Government programs, while providing a framework that allows partnering, leveraging and stimulation of the existing and emerging commercial and international efforts in both near Earth space and the regions beyond.

(12) The designation of the United States segment of the ISS as a National Laboratory, as provided by the National Aeronautics and Space Administration Authorization Act of 2005 and the National Aeronautics and Space Administration Authorization Act of 2008, provides an opportunity for multiple United States Government agencies, university-based researchers, research organizations, and others to utilize the unique environment of microgravity for fundamental scientific research and potential economic development.

(13) For some potential replacement elements necessary for ISS sustainability, the Space Shuttle may represent the only vehicle, existing or planned, capable of carrying those elements to the ISS in the near term. Additional or alternative transportation capabilities must be identified as contingency delivery options, and accompanied by an independent analysis of projected availability of such capabilities.

(14) The United States must develop, as rapidly as possible, replacement vehicles capable of providing both human and cargo launch capability to low-Earth orbit and to destinations beyond low-Earth orbit.

(15) There is a need for national space and export control policies that protect the national security of the United States while also enabling the United States and its aerospace industry to undertake cooperative programs in science and human space flight in an effective and efficient manner and to compete effectively in the global market place.

42 USC 18302.

### SEC. 3. DEFINITIONS.

In this Act:

(1) ADMINISTRATOR.—The term “Administrator” means the Administrator of the National Aeronautics and Space Administration.

(2) APPROPRIATE COMMITTEES OF CONGRESS.—The term “appropriate committees of Congress” means—

(A) the Committee on Commerce, Science, and Transportation of the Senate; and

(B) the Committee on Science of the House of Representatives.

(3) CIS-LUNAR SPACE.—The term “cis-lunar space” means the region of space from the Earth out to and including the region around the surface of the Moon.

(4) DEEP SPACE.—The term “deep space” means the region of space beyond cis-lunar space.

(5) ISS.—The term “ISS” means the International Space Station.

(6) NASA.—The term “NASA” means the National Aeronautics and Space Administration.

(7) NEAR-EARTH SPACE.—The term “near-Earth space” means the region of space that includes low-Earth orbit and extends out to and includes geo-synchronous orbit.

(8) NOAA.—The term “NOAA” means the National Oceanic and Atmospheric Administration.

(9) OSTP.—The term “OSTP” means the Office of Science and Technology Policy.

(10) SPACE LAUNCH SYSTEM.—The term “Space Launch System” means the follow-on government-owned civil launch system developed, managed, and operated by NASA to serve as a key component to expand human presence beyond low-Earth orbit.

## TITLE I—AUTHORIZATION OF APPROPRIATIONS

### SEC. 101. FISCAL YEAR 2011.

There are authorized to be appropriated to NASA for fiscal year 2011, \$19,000,000,000, as follows:

(1) For Exploration, \$3,868,000,000, of which—

(A) \$1,120,000,000 shall be for a multi-purpose crew vehicle, and associated program and other necessary support;

(B) \$1,631,000,000 shall be for Space Launch System and associated program and other necessary support;

(C) \$250,000,000 shall be for Exploration Technology Development;

(D) \$155,000,000 shall be for Human Research;

(E) \$300,000,000 shall be for Commercial Cargo;

(F) \$312,000,000 shall be for Commercial Crew Development activities and studies related to commercial crew services; and

(G) \$100,000,000 shall be for Robotic Precursor Studies and Instruments.

(2) For Space Operations, \$5,508,500,000, of which—

(A) \$2,779,800,000 shall be for the ISS program;

(B) \$1,609,700,000 shall be for Space Shuttle, to support Space Shuttle flight operations and related activities; and

(C) \$1,119,000,000 for Space and Flight Services, of which \$428,600,000 shall be directed toward NASA launch support and infrastructure modernization program.

(3) For Science, \$5,005,600,000, of which—

- (A) \$1,801,800,000 shall be for Earth Sciences;
- (B) \$1,485,700,000 shall be for Planetary Science;
- (C) \$1,076,300,000 shall be for Astrophysics; and
- (D) \$641,900,000 shall be for Heliophysics.
- (4) For Aeronautics, \$929,600,000, of which—
  - (A) \$579,600,000 shall be for Aeronautics Research; and
  - (B) \$350,000,000 shall be for Space Technology.
- (5) For Education, \$145,800,000, of which—
  - (A) \$25,000,000 shall be for the Experimental Program to Stimulate Competitive Research; and
  - (B) \$45,600,000 shall be for the Space Grant program.
- (6) For Cross-Agency Support Programs, \$3,111,400,000.
- (7) For Construction and Environmental Compliance and Restoration, \$394,300,000.
- (8) For Inspector General, \$37,000,000.

**SEC. 102. FISCAL YEAR 2012.**

There are authorized to be appropriated to NASA for fiscal year 2012, \$19,450,000,000, as follows:

- (1) For Exploration, \$5,252,300,000, of which—
  - (A) \$1,400,000,000 shall be for a multi-purpose crew vehicle and associated program and other necessary support;
  - (B) \$2,650,000,000 shall be for Space Launch System and associated program and other necessary support;
  - (C) \$437,300,000 shall be for Exploration Technology Development;
  - (D) \$165,000,000 shall be for Human Research;
  - (E) \$500,000,000 shall be for commercial crew capabilities; and
  - (F) \$100,000,000 shall be for Robotic Precursor Instruments and Low-Cost Missions.
- (2) For Space Operations, \$4,141,500,000, of which—
  - (A) \$2,952,250,000 shall be for the ISS operations and crew/cargo support; and
  - (B) \$1,189,250,000 shall be for Space and Flight Services, of which \$500,000,000 shall be directed toward the NASA launch support and infrastructure modernization program.
- (3) For Science, \$5,248,600,000, of which—
  - (A) \$1,944,500,000 shall be for Earth Sciences;
  - (B) \$1,547,200,000 shall be for Planetary Science;
  - (C) \$1,109,300,000 shall be for Astrophysics; and
  - (D) \$647,600,000 shall be for Heliophysics.
- (4) For Aeronautics, \$1,070,600,000, of which—
  - (A) \$584,700,000 shall be for Aeronautics Research; and
  - (B) \$486,000,000 shall be for Space Technology.
- (5) For Education, \$145,800,000, of which—
  - (A) \$25,000,000 shall be for the Experimental Program to Stimulate Competitive Research; and
  - (B) \$45,600,000 shall be for the Space Grant program.
- (6) For Cross-Agency Support Programs, \$3,189,600,000.
- (7) For Construction and Environmental Compliance and Restoration, \$363,800,000.
- (8) For Inspector General, \$37,800,000.

**SEC. 103. FISCAL YEAR 2013.**

There are authorized to be appropriated to NASA for fiscal year 2013, \$19,960,000,000, as follows:

- (1) For Exploration, \$5,264,000,000, of which—
  - (A) \$1,400,000,000 shall be for a multi-purpose crew vehicle and associated program and other necessary support;
  - (B) \$2,640,000,000 shall be for Space Launch System and associated program and other necessary support;
  - (C) \$449,000,000 shall be for Exploration Technology Development;
  - (D) \$175,000,000 shall be for Human Research;
  - (E) \$500,000,000 shall be for commercial crew capabilities; and
  - (F) \$100,000,000 shall be for Robotic Precursor Instruments and Low-Cost Missions.
- (2) For Space Operations, \$4,253,300,000, of which—
  - (A) \$3,129,400,000 shall be for the ISS operations and crew/cargo support; and
  - (B) \$1,123,900,000 shall be for Space and Flight Services, of which \$400,000,000 shall be directed toward the NASA launch support and infrastructure modernization program.
- (3) For Science, \$5,509,600,000, of which—
  - (A) \$2,089,500,000 shall be for Earth Sciences;
  - (B) \$1,591,200,000 shall be for Planetary Science;
  - (C) \$1,149,100,000 shall be for Astrophysics; and
  - (D) \$679,800,000 shall be for Heliophysics.
- (4) For Aeronautics, \$1,105,000,000, of which—
  - (A) \$590,000,000 shall be for Aeronautics Research; and
  - (B) \$515,000,000 shall be for Space Technology.
- (5) For Education, \$145,700,000, of which—
  - (A) \$25,000,000 shall be for the Experimental Program to Stimulate Competitive Research; and
  - (B) \$45,600,000 shall be for the Space Grant program.
- (6) For Cross-Agency Support Programs, \$3,276,800,000.
- (7) For Construction and Environmental Compliance and Restoration, \$366,900,000.
- (8) For Inspector General, \$38,700,000.

## **TITLE II—POLICY, GOALS, AND OBJECTIVES FOR HUMAN SPACE FLIGHT AND EXPLORATION**

**SEC. 201. UNITED STATES HUMAN SPACE FLIGHT POLICY.**

42 USC 18311.

(a) **USE OF NON-UNITED STATES HUMAN SPACE FLIGHT TRANSPORTATION CAPABILITIES.**—It is the policy of the United States that reliance upon and use of non-United States human space flight capabilities shall be undertaken only as a contingency in circumstances where no United States-owned and operated human space flight capability is available, operational, and certified for flight by appropriate Federal agencies.

(b) **UNITED STATES HUMAN SPACE FLIGHT CAPABILITIES.**—Congress reaffirms the policy stated in section 501(a) of the National

Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16761(a)), that the United States shall maintain an uninterrupted capability for human space flight and operations in low-Earth orbit, and beyond, as an essential instrument of national security and of the capacity to ensure continued United States participation and leadership in the exploration and utilization of space.

42 USC 18312.

**SEC. 202. GOALS AND OBJECTIVES.**

(a) **LONG TERM GOAL.**—The long term goal of the human space flight and exploration efforts of NASA shall be to expand permanent human presence beyond low-Earth orbit and to do so, where practical, in a manner involving international partners.

(b) **KEY OBJECTIVES.**—The key objectives of the United States for human expansion into space shall be—

(1) to sustain the capability for long-duration presence in low-Earth orbit, initially through continuation of the ISS and full utilization of the United States segment of the ISS as a National Laboratory, and through assisting and enabling an expanded commercial presence in, and access to, low-Earth orbit, as elements of a low-Earth orbit infrastructure;

(2) to determine if humans can live in an extended manner in space with decreasing reliance on Earth, starting with utilization of low-Earth orbit infrastructure, to identify potential roles that space resources such as energy and materials may play, to meet national and global needs and challenges, such as potential cataclysmic threats, and to explore the viability of and lay the foundation for sustainable economic activities in space;

(3) to maximize the role that human exploration of space can play in advancing overall knowledge of the universe, supporting United States national and economic security and the United States global competitive posture, and inspiring young people in their educational pursuits; and

(4) to build upon the cooperative and mutually beneficial framework established by the ISS partnership agreements and experience in developing and undertaking programs and meeting objectives designed to realize the goal of human space flight set forth in subsection (a).

42 USC 18313.

**SEC. 203. ASSURANCE OF CORE CAPABILITIES.**

(a) **SENSE OF CONGRESS.**—It is the sense of Congress that—

(1) the ISS, technology developments, the current Space Shuttle program, and follow-on transportation systems authorized by this Act form the foundation of initial capabilities for missions beyond low-Earth orbit to a variety of lunar and Lagrangian orbital locations; and

(2) these initial missions and related capabilities should be utilized to provide operational experience, technology development, and the placement and assured use of in-space infrastructure and in-space servicing of existing and future assets.

(b) **SPACE SHUTTLE CAPABILITY ASSURANCE.**—

(1) **DEVELOPMENT OF FOLLOW-ON SPACE TRANSPORTATION SYSTEMS.**—The Administrator shall proceed with the development of follow-on space transportation systems in a manner that ensures that the national capability to restart and fly Space Shuttle missions can be initiated if required by the

Congress, in an Act enacted after the date of enactment of this Act, or by a Presidential determination transmitted to the Congress, before the last Space Shuttle mission authorized by this Act is completed.

(2) **REQUIRED ACTIONS.**—In carrying out the requirement in paragraph (1), the Administrator shall authorize refurbishment of the manufactured external tank of the Space Shuttle, designated as ET-94, and take all actions necessary to enable its readiness for use in the Space Launch System development as a critical skills and capability retention effort or for test purposes, while preserving the ability to use this tank if needed for an ISS contingency if deemed necessary under paragraph (1).

**SEC. 204. INDEPENDENT STUDY ON HUMAN EXPLORATION OF SPACE.**

(a) **IN GENERAL.**—In fiscal year 2012 the Administrator shall contract with the National Academies for a review of the goals, core capabilities, and direction of human space flight, using the goals set forth in the National Aeronautics and Space Act of 1958, the National Aeronautics and Space Administration Authorization Act of 2005, and the National Aeronautics and Space Administration Authorization Act of 2008, the goals set forth in this Act, and goals set forth in any existing statement of space policy issued by the President.

Contracts.

(b) **ELEMENTS.**—The review shall include—

(1) a broad spectrum of participation with representatives of a range of disciplines, backgrounds, and generations, including civil, commercial, international, scientific, and national security interests;

(2) input from NASA's international partner discussions and NASA's Human Exploration Framework Team;

(3) an examination of the relationship of national goals to foundational capabilities, robotic activities, technologies, and missions authorized by this Act;

(4) a review and prioritization of scientific, engineering, economic, and social science questions to be addressed by human space exploration to improve the overall human condition; and

(5) findings and recommendations for fiscal years 2014 through 2023.

**TITLE III—EXPANSION OF HUMAN SPACE FLIGHT BEYOND THE INTERNATIONAL SPACE STATION AND LOW-EARTH ORBIT**

**SEC. 301. HUMAN SPACE FLIGHT BEYOND LOW-EARTH ORBIT.**

42 USC 18321.

(a) **FINDINGS.**—Congress makes the following findings:

(1) The extension of the human presence from low-Earth orbit to other regions of space beyond low-Earth orbit will enable missions to the surface of the Moon and missions to deep space destinations such as near-Earth asteroids and Mars.

(2) The regions of cis-lunar space are accessible to other national and commercial launch capabilities, and such access raises a host of national security concerns and economic

implications that international human space endeavors can help to address.

(3) The ability to support human missions in regions beyond low-Earth orbit and on the surface of the Moon can also drive developments in emerging areas of space infrastructure and technology.

(4) Developments in space infrastructure and technology can stimulate and enable increased space applications, such as in-space servicing, propellant resupply and transfer, and in situ resource utilization, and open opportunities for additional users of space, whether national, commercial, or international.

(5) A long term objective for human exploration of space should be the eventual international exploration of Mars.

(6) Future international missions beyond low-Earth orbit should be designed to incorporate capability development and availability, affordability, and international contributions.

(7) Human space flight and future exploration beyond low-Earth orbit should be based around a pay-as-you-go approach. Requirements in new launch and crew systems authorized in this Act should be scaled to the minimum necessary to meet the core national mission capability needed to conduct cis-lunar missions. These initial missions, along with the development of new technologies and in-space capabilities can form the foundation for missions to other destinations. These initial missions also should provide operational experience prior to the further human expansion into space.

(b) REPORT ON INTERNATIONAL COLLABORATION.—

(1) REPORT REQUIRED.—Not later than 120 days after the date of the enactment of this Act, the Administrator shall submit to the appropriate committees of Congress a report on the following assets and capabilities:

(A) Any effort by NASA to expand and ensure effective international collaboration on the ISS.

(B) The efforts of NASA, including its approach and progress, in defining near-term, cis-lunar space human missions.

(2) NASA CONTRIBUTIONS.—In preparing the report required by paragraph (1), the Administrator shall assume that NASA will contribute to the efforts described in that paragraph the following:

(A) A Space Launch System.

(B) A multi-purpose crew vehicle.

(C) Such other technology elements the Administrator may consider appropriate, and which the Administrator shall specifically identify in the report.

42 USC 18322.

**SEC. 302. SPACE LAUNCH SYSTEM AS FOLLOW-ON LAUNCH VEHICLE TO THE SPACE SHUTTLE.**

(a) UNITED STATES POLICY.—It is the policy of the United States that NASA develop a Space Launch System as a follow-on to the Space Shuttle that can access cis-lunar space and the regions of space beyond low-Earth orbit in order to enable the United States to participate in global efforts to access and develop this increasingly strategic region.

(b) INITIATION OF DEVELOPMENT.—

(1) IN GENERAL.—The Administrator shall, as soon as practicable after the date of the enactment of this Act, initiate development of a Space Launch System meeting the minimum capabilities requirements specified in subsection (c).

(2) MODIFICATION OF CURRENT CONTRACTS.—In order to limit NASA's termination liability costs and support critical capabilities, the Administrator shall, to the extent practicable, extend or modify existing vehicle development and associated contracts necessary to meet the requirements in paragraph (1), including contracts for ground testing of solid rocket motors, if necessary, to ensure their availability for development of the Space Launch System.

(c) MINIMUM CAPABILITY REQUIREMENTS.—

(1) IN GENERAL.—The Space Launch System developed pursuant to subsection (b) shall be designed to have, at a minimum, the following:

(A) The initial capability of the core elements, without an upper stage, of lifting payloads weighing between 70 tons and 100 tons into low-Earth orbit in preparation for transit for missions beyond low-Earth orbit.

(B) The capability to carry an integrated upper Earth departure stage bringing the total lift capability of the Space Launch System to 130 tons or more.

(C) The capability to lift the multipurpose crew vehicle.

(D) The capability to serve as a backup system for supplying and supporting ISS cargo requirements or crew delivery requirements not otherwise met by available commercial or partner-supplied vehicles.

(2) FLEXIBILITY.—The Space Launch System shall be designed from inception as a fully-integrated vehicle capable of carrying a total payload of 130 tons or more into low-Earth orbit in preparation for transit for missions beyond low-Earth orbit. The Space Launch System shall, to the extent practicable, incorporate capabilities for evolutionary growth to carry heavier payloads. Developmental work and testing of the core elements and the upper stage should proceed in parallel subject to appropriations. Priority should be placed on the core elements with the goal for operational capability for the core elements not later than December 31, 2016.

Deadline.

(3) TRANSITION NEEDS.—The Administrator shall ensure critical skills and capabilities are retained, modified, and developed, as appropriate, in areas related to solid and liquid engines, large diameter fuel tanks, rocket propulsion, and other ground test capabilities for an effective transition to the follow-on Space Launch System.

(4) The capacity for efficient and timely evolution, including the incorporation of new technologies, competition of sub-elements, and commercial operations.

**SEC. 303. MULTI-PURPOSE CREW VEHICLE.**

42 USC 18323.

(a) INITIATION OF DEVELOPMENT.—

(1) IN GENERAL.—The Administrator shall continue the development of a multi-purpose crew vehicle to be available as soon as practicable, and no later than for use with the Space Launch System. The vehicle shall continue to advance development of the human safety features, designs, and systems in the Orion project.

Deadline.

(2) **GOAL FOR OPERATIONAL CAPABILITY.**—It shall be the goal to achieve full operational capability for the transportation vehicle developed pursuant to this subsection by not later than December 31, 2016. For purposes of meeting such goal, the Administrator may undertake a test of the transportation vehicle at the ISS before that date.

(b) **MINIMUM CAPABILITY REQUIREMENTS.**—The multi-purpose crew vehicle developed pursuant to subsection (a) shall be designed to have, at a minimum, the following:

(1) The capability to serve as the primary crew vehicle for missions beyond low-Earth orbit.

(2) The capability to conduct regular in-space operations, such as rendezvous, docking, and extra-vehicular activities, in conjunction with payloads delivered by the Space Launch System developed pursuant to section 302, or other vehicles, in preparation for missions beyond low-Earth orbit or servicing of assets described in section 804, or other assets in cis-lunar space.

(3) The capability to provide an alternative means of delivery of crew and cargo to the ISS, in the event other vehicles, whether commercial vehicles or partner-supplied vehicles, are unable to perform that function.

(4) The capacity for efficient and timely evolution, including the incorporation of new technologies, competition of sub-elements, and commercial operations.

42 USC 18324.

**SEC. 304. UTILIZATION OF EXISTING WORKFORCE AND ASSETS IN DEVELOPMENT OF SPACE LAUNCH SYSTEM AND MULTI-PURPOSE CREW VEHICLE.**

(a) **IN GENERAL.**—In developing the Space Launch System pursuant to section 302 and the multi-purpose crew vehicle pursuant to section 303, the Administrator shall, to the extent practicable utilize—

Contracts.

(1) existing contracts, investments, workforce, industrial base, and capabilities from the Space Shuttle and Orion and Ares 1 projects, including—

(A) space-suit development activities for application to, and coordinated development of, a multi-purpose crew vehicle suit and associated life-support requirements with potential development of standard NASA-certified suit and life support systems for use in alternative commercially-developed crew transportation systems; and

(B) Space Shuttle-derived components and Ares 1 components that use existing United States propulsion systems, including liquid fuel engines, external tank or tank-related capability, and solid rocket motor engines; and

(2) associated testing facilities, either in being or under construction as of the date of enactment of this Act.

(b) **DISCHARGE OF REQUIREMENTS.**—In meeting the requirements of subsection (a), the Administrator—

(1) shall, to the extent practicable, utilize ground-based manufacturing capability, ground testing activities, launch and operations infrastructure, and workforce expertise;

(2) shall, to the extent practicable, minimize the modification and development of ground infrastructure and maximize the utilization of existing software, vehicle, and mission operations processes;

- (3) shall complete construction and activation of the A-3 test stand with a completion goal of September 30, 2013; Deadline.
- (4) may procure, develop, and flight test applicable components; and
- (5) shall take appropriate actions to ensure timely and cost-effective development of the Space Launch System and the multi-purpose crew vehicle, including the use of a procurement approach that incorporates adequate and effective oversight, the facilitation of contractor efficiencies, and the streamlining of contract and procurement requirements.

**SEC. 305. NASA LAUNCH SUPPORT AND INFRASTRUCTURE MODERNIZATION PROGRAM.** 42 USC 18325.

(a) **IN GENERAL.**—The Administrator shall carry out a program the primary purpose of which is to prepare infrastructure at the Kennedy Space Center that is needed to enable processing and launch of the Space Launch System. Vehicle interfaces and other ground processing and payload integration areas should be simplified to minimize overall costs, enhance safety, and complement the purpose of this section.

(b) **ELEMENTS.**—The program required by this section shall include—

- (1) investments to improve civil and national security operations at the Kennedy Space Center, to enhance the overall capabilities of the Center, and to reduce the long term cost of operations and maintenance;
- (2) measures to provide multi-vehicle support, improvements in payload processing, and partnering at the Kennedy Space Center; and
- (3) such other measures, including investments to improve launch infrastructure at NASA flight facilities scheduled to launch cargo to the ISS under the commercial orbital transportation services program as the Administrator may consider appropriate.

**(c) REPORT ON NASA LAUNCH SUPPORT AND INFRASTRUCTURE MODERNIZATION PROGRAM.**—

(1) **REPORT REQUIRED.**—Not later than 120 days after the date of the enactment of this Act, the Administrator shall submit to the appropriate committees of Congress a report on the plan for the implementation of the NASA launch support and infrastructure modernization program.

(2) **ELEMENTS.**—The report required by this subsection shall include—

- (A) a description of the ground infrastructure plan tied to the Space Launch System and potential ground investment activities at other NASA centers related to supporting the development of the Space Launch System;
- (B) a description of proposed initiatives intended to be conducted jointly or in cooperation with Cape Canaveral Air Force Station, Florida, or other installations or components of the United States Government; and
- (C) a description of plans to use funds authorized to be appropriated by this Act to improve non-NASA facilities, which plans shall include a business plan outlining the nature and scope of investments planned by other parties.

**SEC. 306. REPORT ON EFFECTS OF TRANSITION TO SPACE LAUNCH SYSTEM ON THE SOLID AND LIQUID ROCKET MOTOR INDUSTRIAL BASES.**

(a) **REPORT REQUIRED.**—Not later than 120 days after the date of the enactment of this Act, the Administrator shall submit to Congress a report setting forth an assessment, prepared by the Administrator, in consultation with the Secretary of Defense and the Secretary of Commerce, of the effects of the retirement of the Space Shuttle, and of the transition to the Space Launch System developed pursuant to section 302, on the solid rocket motor industrial base and the liquid rocket motor industrial base in the United States.

(b) **MATTERS TO BE ADDRESSED.**—In preparing the assessment required by subsection (a), the Administrator shall address the following:

(1) The effects of efficiencies and efforts to stream-line the industrial bases referred to in subsection (a) for support of civil, military, and commercial users.

(2) The extent to which the United States is reliant on non-United States systems, including foreign rocket motors and foreign launch vehicles.

(3) Such other matters as the Administrator, in consultation with the Secretary of Defense and the Secretary of Commerce, may consider appropriate.

**SEC. 307. SENSE OF CONGRESS ON OTHER TECHNOLOGY AND ROBOTIC ELEMENTS IN HUMAN SPACE FLIGHT AND EXPLORATION.**

It is the sense of Congress that a balance is needed in human space flight between using and building upon existing capabilities and investing in and enabling new capabilities. Technology development provides the potential to develop an increased ability to operate and extend human presence in space, while at the same time enhance the nation's economic development and aid in addressing challenges here on Earth. Additionally, the establishment of in-space capabilities, use of space resources, and the ability to repair and reuse systems in space can contribute to the overall goals of extending human presence in space in an international manner, consistent with section 301(a).

42 USC 18326.

**SEC. 308. DEVELOPMENT OF TECHNOLOGIES AND IN-SPACE CAPABILITIES FOR BEYOND NEAR-EARTH SPACE MISSIONS.**

(a) **DEVELOPMENT AUTHORIZED.**—The Administrator may initiate activities to develop the following:

(1) Technologies identified as necessary elements of missions beyond low-Earth orbit.

(2) In-space capabilities such as refueling and storage technology, orbital transfer stages, innovative in-space propulsion technology, communications, and data management that facilitate a broad range of users (including military and commercial) and applications defining the architecture and design of such missions.

(3) Spacesuit development and associated life support technology.

(4) Flagship missions.

(b) **INVESTMENTS.**—In developing technologies and capabilities under subsection (a), the Administrator may make investments—

(1) in space technologies such as advanced propulsion, propellant depots, in situ resource utilization, and robotic payloads or capabilities that enable human missions beyond low-Earth orbit ultimately leading to Mars;

(2) in a space-based transfer vehicle including these technologies with an ability to conduct space-based operations that provide capabilities—

(A) to integrate with the Space Launch System and other space-based systems;

(B) to provide opportunities for in-space servicing of and delivery to multiple space-based platforms; and

(C) to facilitate international efforts to expand human presence to deep space destinations;

(3) in advanced life support technologies and capabilities;

(4) in technologies and capabilities relating to in-space power, propulsion, and energy systems;

(5) in technologies and capabilities relating to in-space propellant transfer and storage;

(6) in technologies and capabilities relating to in situ resource utilization; and

(7) in expanded research to understand the greatest biological impediments to human deep space missions, especially the radiation challenge.

(c) UTILIZATION OF ISS AS TESTBED.—The Administrator may utilize the ISS as a testbed for any technology or capability developed under subsection (a) in a manner consistent with the provisions of this Act.

(d) COORDINATION.—The Administrator shall coordinate development of technologies and capabilities under this section through an overall agency technology approach, as authorized by section 905 of this Act.

**SEC. 309. REPORT REQUIREMENT.**

42 USC 18327.

Within 90 days after the date of enactment of this Act, or upon completion of reference designs for the Space Launch System and Multi-purpose Crew Vehicle authorized by this Act, whichever occurs first, the Administrator shall provide a detailed report to the appropriate committees of Congress that provides an overall description of the reference vehicle design, the assumptions, description, data, and analysis of the systems trades and resolution process, justification of trade decisions, the design factors which implement the essential system and vehicle capability requirements established by this Act, the explanation and justification of any deviations from those requirements, the plan for utilization of existing contracts, civil service and contract workforce, supporting infrastructure utilization and modifications, and procurement strategy to expedite development activities through modification of existing contract vehicles, and the schedule of design and development milestones and related schedules leading to the accomplishment of operational goals established by this Act. The Administrator shall provide an update of this report as part of the President's annual Budget Request.

## TITLE IV—DEVELOPMENT AND USE OF COMMERCIAL CREW AND CARGO TRANSPORTATION CAPABILITIES

42 USC 18341.

**SEC. 401. COMMERCIAL CARGO DEVELOPMENT PROGRAM.**

The Administrator shall continue to support the existing Commercial Orbital Transportation Services program, aimed at enabling the commercial space industry in support of NASA to develop reliable means of launching cargo and supplies to the ISS throughout the duration of the facility's operation. The Administrator may apply funds towards the reduction of risk to the timely start of these services, specifically—

- (1) efforts to conduct a flight test;
- (2) accelerate development; and
- (3) develop the ground infrastructure needed for commercial cargo capability.

**SEC. 402. COMMERCIAL CREW DEVELOPMENT PROGRAM.**

(a) CONTINUATION OF PROGRAM DURING FISCAL YEAR 2011.—The Administrator shall continue, and may expand the number of participants and the activities of, the Commercial Crew Development (CCDEV) program in fiscal year 2011, subject to the provisions of this title.

(b) CONTINUATION OF ACTIVITIES AND AGREEMENTS OF FISCAL YEAR 2010.—In carrying out subsection (a), the Administrator may continue or expand activities and agreements initiated in fiscal year 2010 that reduce risk, develop technologies, and lead to other advancements that will help determine the most effective and efficient means of advancing the development of commercial crew services.

42 USC 18342.

**SEC. 403. REQUIREMENTS APPLICABLE TO DEVELOPMENT OF COMMERCIAL CREW TRANSPORTATION CAPABILITIES AND SERVICES.**

(a) FY 2011 CONTRACTS AND PROCUREMENT AGREEMENTS.—

(1) IN GENERAL.—Except as provided in paragraph (2), the Administrator may not execute a contract or procurement agreement with respect to follow-on commercial crew services during fiscal year 2011.

(2) EXCEPTION.—Notwithstanding paragraph (1), the Administrator may execute a contract or procurement agreement with respect to follow-on commercial crew services during fiscal year 2011 if—

(A) the requirements of paragraphs (1), (2), and (3) of subsection (b) are met; and

(B) the total amount involved for all such contracts and procurement agreements executed during fiscal year 2011 does not exceed \$50,000,000 for fiscal year 2011.

(b) SUPPORT.—The Administrator may, beginning in fiscal year 2012 through the duration of the program, support follow-on commercially-developed crew transportation systems dependent upon the completion of each of the following:

(1) HUMAN RATING REQUIREMENTS.—Not later than 60 days after the date of the enactment of this Act, the Administrator shall develop and make available to the public detailed human

Deadline.  
Public  
information.

rating processes and requirements to guide the design of commercially-developed crew transportation capabilities, which requirements shall be at least equivalent to proven requirements for crew transportation in use as of the date of the enactment of this Act.

(2) **COMMERCIAL MARKET ASSESSMENT.**—Not later than 180 days after the date of the enactment of this Act, the Administrator shall submit to the appropriate committees of Congress an assessment, conducted, in coordination with the Federal Aviation Administration’s Office of Commercial Space Transportation, for purposes of this paragraph, of the potential non-Government market for commercially-developed crew and cargo transportation systems and capabilities, including an assessment of the activities associated with potential private sector utilization of the ISS research and technology development capabilities and other potential activities in low-Earth orbit.

Deadline.

(3) **PROCUREMENT SYSTEM REVIEW.**—The Administrator shall review current Government procurement and acquisition practices and processes, including agreement authorities under the National Aeronautics and Space Act of 1958, to determine the most cost-effective means of procuring commercial crew transportation capabilities and related services in a manner that ensures appropriate accountability, transparency, and maximum efficiency in the procurement of such capabilities and services, which review shall include an identification of proposed measures to address risk management and means of indemnification of commercial providers of such capabilities and services, and measures for quality control, safety oversight, and the application of Federal oversight processes within the jurisdiction of other Federal agencies. A description of the proposed procurement process and justification of the proposed procurement for its selection shall be included in any proposed initiation of procurement activity for commercially-developed crew transportation capabilities and services and shall be subject to review by the appropriate committees of Congress before the initiation of any competitive process to procure such capabilities or services. In support of the review by such committees, the Comptroller General shall undertake an assessment of the proposed procurement process and provide a report to the appropriate committees of Congress within 90 days after the date on which the Administrator provides the description and justification to such committees.

Reports.  
Deadline.

(4) **USE OF GOVERNMENT-SUPPLIED CAPABILITIES AND INFRASTRUCTURE.**—In evaluating any proposed development activity for commercially-developed crew or cargo launch capabilities, the Administrator shall identify the anticipated contribution of government personnel, expertise, technologies, and infrastructure to be utilized in support of design, development, or operations of such capabilities. This assessment shall include a clear delineation of the full requirements for the commercial crew service (including the contingency for crew rescue). The Administrator shall include details and associated costs of such support as part of any proposed development initiative for the procurement of commercially-developed crew or cargo launch capabilities or services.

Standards.

(5) **FLIGHT DEMONSTRATION AND READINESS REQUIREMENTS.**—The Administrator shall establish appropriate milestones and minimum performance objectives to be achieved before authority is granted to proceed to the procurement of commercially-developed crew transportation capabilities or systems. The guidelines shall include a procedure to provide independent assurance of flight safety and flight readiness before the authorization of United States government personnel to participate as crew onboard any commercial launch vehicle developed pursuant to this section.

(6) **COMMERCIAL CREW RESCUE CAPABILITIES.**—The provision of a commercial capability to provide ISS crew services shall include crew rescue requirements, and shall be undertaken through the procurement process initiated in conformance with this section. In the event such development is initiated, the Administrator shall make available any relevant government-owned intellectual property deriving from the development of a multi-purpose crew vehicle authorized by this Act to commercial entities involved with such crew rescue capability development which shall be relevant to the design of a crew rescue capability. In addition, the Administrator shall seek to ensure that contracts for development of the multi-purpose crew vehicle contain provisions for the licensing of relevant intellectual property to participating commercial providers of any crew rescue capability development undertaken pursuant to this section. If one or more contractors involved with development of the multi-purpose crew vehicle seek to compete in development of a commercial crew service with crew rescue capability, separate legislative authority must be enacted to enable the Administrator to provide funding for any modifications of the multi-purpose crew vehicle necessary to fulfill the ISS crew rescue function.

**SEC. 404. REPORT ON INTERNATIONAL SPACE STATION CARGO RETURN CAPABILITY.**

Not later than 120 days after the date of the enactment of this Act, the Administrator shall submit to the appropriate committees of Congress a report on potential alternative commercially-developed means for the capability for a soft-landing return on land from the ISS of—

- (1) research samples or other derivative materials; and
- (2) small to mid-sized (up to 1,000 kilograms) equipment for return and analysis, or for refurbishment and redelivery, to the ISS.

**TITLE V—CONTINUATION, SUPPORT, AND EVOLUTION OF THE INTERNATIONAL SPACE STATION**

42 USC 18351. **SEC. 501. CONTINUATION OF THE INTERNATIONAL SPACE STATION THROUGH 2020.**

(a) **POLICY OF THE UNITED STATES.**—It shall be the policy of the United States, in consultation with its international partners in the ISS program, to support full and complete utilization of the ISS through at least 2020.

(b) **NASA ACTIONS.**—In furtherance of the policy set forth in subsection (a), NASA shall pursue international, commercial, and intragovernmental means to maximize ISS logistics supply, maintenance, and operational capabilities, reduce risks to ISS systems sustainability, and offset and minimize United States operations costs relating to the ISS.

**SEC. 502. MAXIMUM UTILIZATION OF THE INTERNATIONAL SPACE STATION.** 42 USC 18352.

(a) **IN GENERAL.**—With assembly of the ISS complete, NASA shall take steps to maximize the productivity and use of the ISS with respect to scientific and technological research and development, advancement of space exploration, and international collaboration.

(b) **NASA ACTIONS.**—In carrying out subsection (a), NASA shall, at a minimum, undertake the following:

(1) **INNOVATIVE USE OF U.S. SEGMENT.**—The United States segment of the ISS, which has been designated as a National Laboratory, shall be developed, managed and utilized in a manner that enables the effective and innovative use of such facility, as provided in section 504.

(2) **INTERNATIONAL COOPERATION.**—The ISS shall continue to be utilized as a key component of international efforts to build missions and capabilities that further the development of a human presence beyond near-Earth space and advance United States security and economic goals. The Administrator shall actively seek ways to encourage and enable the use of ISS capabilities to support these efforts.

(3) **DOMESTIC COLLABORATION.**—The operations, management, and utilization of the ISS shall be conducted in a manner that provides opportunities for collaboration with other research programs and objectives of the United States Government in cooperation with commercial suppliers, users, and developers.

**SEC. 503. MAINTENANCE OF THE UNITED STATES SEGMENT AND ASSURANCE OF CONTINUED OPERATIONS OF THE INTERNATIONAL SPACE STATION.** 42 USC 18353.

(a) **IN GENERAL.**—The Administrator shall take all actions necessary to ensure the safe and effective operation, maintenance, and maximum utilization of the United States segment of the ISS through at least September 30, 2020.

(b) **VEHICLE AND COMPONENT REVIEW.**—

(1) **IN GENERAL.**—In carrying out subsection (a), the Administrator shall, as soon as is practicable after the date of the enactment of this Act, carry out a comprehensive assessment of the essential modules, operational systems and components, structural elements, and permanent scientific equipment on board or planned for delivery and installation aboard the ISS, including both United States and international partner elements, for purposes of identifying the spare or replacement modules, systems and components, elements, and equipment that are required to ensure complete, effective, and safe functioning and full scientific utilization of the ISS through September 30, 2020.

Assessment.

(2) **DATA.**—In carrying out the assessment, the Administrator shall assemble any existing data, and provide for the development of any data or analysis not currently available, that is necessary for purposes of the assessment.

## (c) REPORTS.—

## (1) REPORT ON ASSESSMENT.—

(A) REPORT REQUIRED.—Not later than 90 days after the date of the enactment of this Act, the Administrator shall submit to the appropriate committees of Congress a report on the assessment required by subsection (b).

(B) ELEMENTS.—The report required by this paragraph shall include, at minimum, the following:

(i) A description of the spare or replacement modules, systems and components, elements, and equipment identified pursuant to the assessment that are currently produced, in inventory, or on order, a description of the state of their readiness, and a schedule for their delivery to the ISS (including the planned transportation means for such delivery), including for each such module, system or component, element, or equipment a description of—

(I) its specifications, including size, weight, and necessary configuration for launch and delivery to the ISS;

(II) its function;

(III) its location; and

(IV) its criticality for ISS system integrity.

(ii) A description of the spare or replacement modules, systems and components, elements, and equipment identified pursuant to the assessment that are not currently produced, in inventory, or on order, including for each such module, system or component, element, or equipment a description of—

(I) its specifications, including size, weight, and necessary configuration for launch and delivery to the ISS;

(II) its function;

(III) its location;

(IV) its criticality for ISS system integrity;

and

(V) the anticipated cost and schedule for its design, procurement, manufacture, and delivery to the ISS.

(iii) A detailed summary of the delivery schedule and associated delivery vehicle requirements necessary to transport all spare and replacement elements considered essential for the ongoing and sustained functionality of all critical systems of the ISS, both in and of themselves and as an element of an integrated, mutually dependent essential capability, including an assessment of the current schedule for delivery, the availability of delivery vehicles to meet that schedule, and the likelihood of meeting that schedule through such vehicles.

## (2) GAO REPORT.—

(A) REPORT REQUIRED.—Not later than 90 days after the submittal to Congress under paragraph (1) of the assessment required by subsection (b), the Comptroller General of the United States shall submit to the appropriate committees of Congress a report on the assessment. The report shall set forth an evaluation of the assessment

by the Comptroller General, including an evaluation of the accuracy and level of confidence in the findings of the assessment.

(B) COOPERATION WITH GAO.—The Administrator shall provide for the monitoring and participation of the Comptroller General in the assessment in a manner that permits the Comptroller General to prepare and submit the report required by subparagraph (A).

(d) UTILIZATION OF RESEARCH FACILITIES AND CAPABILITIES.—Utilization of research facilities and capabilities aboard the ISS (other than exploration-related research and technology development facilities and capabilities, and associated ground support and logistics), shall be planned, managed, and supported as provided in section 504. Exploration-related research and technology development facilities, capabilities, and associated ground support and logistics shall be planned, managed, and supported by the appropriate NASA organizations and officials in a manner that does not interfere with other activities under section 504.

(e) SPACE SHUTTLE MISSION TO ISS.—

(1) SPACE SHUTTLE MISSION.—The Administrator shall fly the Launch-On-Need Shuttle mission currently designated in the Shuttle Flight Manifest dated February 28, 2010, to the ISS in fiscal year 2011, but no earlier than June 1, 2011, unless required earlier by an operations contingency, and pending the results of the assessment required by paragraph (2) and the determination under paragraph (3)(A).

Time period.

(2) ASSESSMENT OF SAFE MEANS OF RETURN.—The Administrator shall provide for an assessment by the NASA Engineering and Safety Center of the procedures and plans developed to ensure the safety of the Space Shuttle crew, and alternative means of return, in the event the Space Shuttle is damaged or otherwise unable to return safely to Earth.

(3) SCHEDULE AND PAYLOAD.—The determination of the schedule and payload for the mission authorized by paragraph (1) shall take into account the following:

(A) The supply and logistics delivery requirements of the ISS.

(B) The findings of the study required by paragraph (2).

(4) FUNDS.—Amounts authorized to be appropriated by section 101(2)(B) shall be available for the mission authorized by paragraph (1).

(f) SPACE SHUTTLE MANIFEST FLIGHT ASSURANCE.—

(1) IN GENERAL.—The Administrator shall take all actions necessary to preserve Space Shuttle launch capability through fiscal year 2011 in a manner that enables the launch, at a minimum, of missions and primary payloads in the Shuttle flight manifest as of February 28, 2010.

(2) CONTINUATION OF CONTRACTOR SUPPORT.—The Administrator may not terminate any contract that provides the system transitions necessary for shuttle-derived hardware to be used on either the multi-purpose crew vehicle described in section 303 or the Space Launch System described in section 302.

**SEC. 504. MANAGEMENT OF THE ISS NATIONAL LABORATORY.**

42 USC 18354.

(a) COOPERATIVE AGREEMENT WITH NOT-FOR PROFIT ENTITY FOR MANAGEMENT OF NATIONAL LABORATORY.—

(1) **IN GENERAL.**—The Administrator shall provide initial financial assistance and enter into a cooperative agreement with an appropriate organization that is exempt from taxation under section 501(c)(3) of the Internal Revenue Code of 1986 to manage the activities of the ISS national laboratory in accordance with this section.

(2) **QUALIFICATIONS.**—The organization with which the Administrator enters into the cooperative agreement shall develop the capabilities to implement research and development projects utilizing the ISS national laboratory and to otherwise manage the activities of the ISS national laboratory.

(3) **PROHIBITION ON OTHER ACTIVITIES.**—The cooperative agreement shall require the organization entering into the agreement to engage exclusively in activities relating to the management of the ISS national laboratory and activities that promote its long term research and development mission as required by this section, without any other organizational objectives or responsibilities on behalf of the organization or any parent organization or other entity.

(b) **NASA LIAISON.**—

(1) **DESIGNATION.**—The Administrator shall designate an official or employee of the Space Operations Mission Directorate of NASA to act as liaison between NASA and the organization with which the Administrator enters into a cooperative agreement under subsection (a) with regard to the management of the ISS national laboratory.

(2) **CONSULTATION WITH LIAISON.**—The cooperative agreement shall require the organization entering into the agreement to carry out its responsibilities under the agreement in cooperation and consultation with the official or employee designated under paragraph (1).

(c) **PLANNING AND COORDINATION OF ISS NATIONAL LABORATORY RESEARCH ACTIVITIES.**—The Administrator shall provide initial financial assistance to the organization with which the Administrator enters into a cooperative agreement under subsection (a), in order for the organization to initiate the following:

(1) Planning and coordination of the ISS national laboratory research activities.

(2) Development and implementation of guidelines, selection criteria, and flight support requirements for non-NASA scientific utilization of ISS research capabilities and facilities available in United States-owned modules of the ISS or in partner-owned facilities of the ISS allocated to United States utilization by international agreement.

(3) Interaction with and integration of the International Space Station National Laboratory Advisory Committee established under section 602 of the National Aeronautics and Space Administration Authorization Act of 2008 (42 U.S.C. 17752) with the governance of the organization, and review recommendations provided by that Committee regarding agreements with non-NASA departments and agencies of the United States Government, academic institutions and consortia, and commercial entities leading to the utilization of the ISS national laboratory facilities.

(4) Coordination of transportation requirements in support of the ISS national laboratory research and development objectives, including provision for delivery of instruments, logistics

support, and related experiment materials, and provision for return to Earth of collected samples, materials, and scientific instruments in need of replacement or upgrade.

(5) Cooperation with NASA, other departments and agencies of the United States Government, the States, and commercial entities in ensuring the enhancement and sustained operations of non-exploration-related research payload ground support facilities for the ISS, including the Space Life Sciences Laboratory, the Space Station Processing Facility and Payload Operations Integration Center.

(6) Development and implementation of scientific outreach and education activities designed to ensure effective utilization of ISS research capabilities including the conduct of scientific assemblies, conferences, and other fora for the presentation of research findings, methods, and mechanisms for the dissemination of non-restricted research findings and the development of educational programs, course supplements, interaction with educational programs at all grade levels, including student-focused research opportunities for conduct of research in the ISS national laboratory facilities.

(7) Such other matters relating to the utilization of the ISS national laboratory facilities for research and development as the Administrator may consider appropriate.

(d) RESEARCH CAPACITY ALLOCATION AND INTEGRATION OF RESEARCH PAYLOADS.—

(1) ALLOCATION OF ISS RESEARCH CAPACITY.—As soon as practicable after the date of the enactment of this Act, but not later than October 1, 2011, ISS national laboratory managed experiments shall be guaranteed access to, and utilization of, not less than 50 percent of the United States research capacity allocation, including power, cold stowage, and requisite crew time onboard the ISS through September 30, 2020. Access to the ISS research capacity includes provision for the adequate upmass and downmass capabilities to utilize the ISS research capacity, as available. The Administrator may allocate additional capacity to the ISS national laboratory should such capacity be in excess of NASA research requirements.

Deadline.

(2) ADDITIONAL RESEARCH CAPABILITIES.—If any NASA research plan is determined to require research capacity onboard the ISS beyond the percentage allocated under paragraph (1), such research plan shall be prepared in the form of a requested research opportunity to be submitted to the process established under this section for the consideration of proposed research within the capacity allocated to the ISS national laboratory. A proposal for such a research plan may include the establishment of partnerships with non-NASA institutions eligible to propose research to be conducted within the ISS national laboratory capacity. Until September 30, 2020, the official or employee designated under subsection (b) may grant an exception to this requirement in the case of a proposed experiment considered essential for purposes of preparing for exploration beyond low-Earth orbit, as determined by joint agreement between the organization with which the Administrator enters into a cooperative agreement under subsection (a) and the official or employee designated under subsection (b).

(3) **RESEARCH PRIORITIES AND ENHANCED CAPACITY.**—The organization with which the Administrator enters into the cooperative agreement shall consider recommendations of the National Academies Decadal Survey on Biological and Physical Sciences in Space in establishing research priorities and in developing proposed enhancements of research capacity and opportunities for the ISS national laboratory.

(4) **RESPONSIBILITY FOR RESEARCH PAYLOAD.**—NASA shall retain its roles and responsibilities in providing research payload physical, analytical, and operations integration during pre-flight, post-flight, transportation, and orbital phases essential to ensure safe and effective flight readiness and vehicle integration of research activities approved and prioritized by the organization with which the Administrator enters into the cooperative agreement and the official or employee designated under subsection (b).

## **TITLE VI—SPACE SHUTTLE RETIREMENT AND TRANSITION**

42 USC 18361.     **SEC. 601. SENSE OF CONGRESS ON THE SPACE SHUTTLE PROGRAM.**

(a) **FINDINGS.**—Congress makes the following findings:

(1) The Space Shuttle program represents a national asset consisting of critical skills and capabilities, including the ability to lift large payloads into space and return them to Earth.

(2) The Space Shuttle has carried more than 355 people from 16 nations into space.

(3) The Space Shuttle has projected the best of American values around the world, and Space Shuttle crews have sparked the imagination and dreams of the world's youth and young at heart.

(b) **SENSE OF CONGRESS.**—It is the sense of Congress that—

(1) it is essential that the retirement of the Space Shuttle and the transition to new human space flight capabilities be done in a manner that builds upon the legacy of this national asset; and

(2) it is imperative for the United States to retain the skills and the industrial capability to provide a follow-on Space Launch System that is primarily designed for missions beyond near-Earth space, while offering some potential for supplanting shuttle delivery capabilities to low-Earth orbit, particularly in support of ISS requirements, if necessary.

42 USC 18362.     **SEC. 602. RETIREMENT OF SPACE SHUTTLE ORBITERS AND TRANSITION OF SPACE SHUTTLE PROGRAM.**

Schedule.     (a) **IN GENERAL.**—The Administrator shall retire the Space Shuttle orbiters pursuant to a schedule established by the Administrator and in a manner consistent with provisions of this Act regarding potential requirements for contingency utilization of Space Shuttle orbiters for ISS requirements.

(b) **UTILIZATION OF WORKFORCE AND ASSETS IN FOLLOW-ON SPACE LAUNCH SYSTEM.**—

(1) **UTILIZATION OF VEHICLE ASSETS.**—In carrying out subsection (a), the Administrator shall, to the maximum extent practicable, utilize workforce, assets, and infrastructure of the Space Shuttle program in efforts relating to the initiation of

a follow-on Space Launch System developed pursuant to section 302 of this Act.

(2) OTHER ASSETS.—With respect to the workforce, assets, and infrastructure not utilized as described in paragraph (1), the Administrator shall work closely with other departments and agencies of the Federal Government, and the private sector, to divest unneeded assets and to assist displaced workers with retraining and other placement efforts. Amounts authorized to be appropriated by section 101(2)(B) shall be available for activities pursuant to this paragraph.

**SEC. 603. DISPOSITION OF ORBITER VEHICLES.**

42 USC 18363.

(a) IN GENERAL.—Upon the termination of the Space Shuttle program as provided in section 602, the Administrator shall decommission any remaining Space Shuttle orbiter vehicles according to established safety and historic preservation procedures prior to their designation as surplus government property. The orbiter vehicles shall be made available and located for display and maintenance through a competitive procedure established pursuant to the disposition plan developed under section 613(a) of the National Aeronautics and Space Administration Authorization Act of 2008 (42 U.S.C. 17761(a)), with priority consideration given to eligible applicants meeting all conditions of that plan which would provide for the display and maintenance of orbiters at locations with the best potential value to the public, including where the location of the orbiters can advance educational opportunities in science, technology, engineering, and mathematics disciplines, and with an historical relationship with either the launch, flight operations, or processing of the Space Shuttle orbiters or the retrieval of NASA manned space vehicles, or significant contributions to human space flight. The Smithsonian Institution, which, as of the date of enactment of this Act, houses the Space Shuttle Enterprise, shall determine any new location for the Enterprise.

Determination.

(b) DISPLAY AND MAINTENANCE.—The orbiter vehicles made available under subsection (a) shall be displayed and maintained through agreements and procedures established pursuant to section 613(a) of the National Aeronautics and Space Administration Authorization Act of 2008 (42 U.S.C. 17761(a)).

Contracts.  
Procedures.

(c) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to NASA such sums as may be necessary to carry out this section. The amounts authorized to be appropriated by this subsection shall be in addition to any amounts authorized to be appropriated by title I, and may be requested by the President as supplemental requirements, if needed, in the appropriate fiscal years.

## TITLE VII—EARTH SCIENCE

**SEC. 701. SENSE OF CONGRESS.**

It is the sense of Congress that—

(1) Earth observations are critical to scientific understanding and monitoring of the Earth system, to protecting human health and property, to growing the economy of the United States, and to strengthening the national security and

international posture of the United States. Additionally, recognizing the number of relevant participants and activities involved with Earth observations within the United States Government and internationally, Congress supports the strengthening of collaboration across these areas;

(2) NASA plays a critical role through its ability to provide data on solar output, sea level rise, atmospheric and ocean temperature, ozone depletion, air pollution, and observation of human and environment relationships;

(3) programs should utilize open standards consistent with international data-sharing principles and obtain and convert data from other government agencies, including data from the United States Geological Survey, and data derived from satellites operated by NOAA as well as from international satellites are important to the study of climate science and such cooperative relationships and programs should be maintained;

(4) Earth-observing satellites and sustained monitoring programs will continue to play a vital role in climate science, environmental understanding, mitigation of destructive environmental impacts, and contributing to the general national welfare; and

(5) land remote sensing observation plays a critical role in Earth science, and the national space policy supports this role by requiring operational land remote sensing capabilities.

42 USC 18371. **SEC. 702. INTERAGENCY COLLABORATION IMPLEMENTATION APPROACH.**

Deadline.

Reports.  
Deadline.

The Director of OSTP shall establish a mechanism to ensure greater coordination of the research, operations, and activities relating to civilian Earth observation of those Agencies, including NASA, that have active programs that either contribute directly or indirectly to these areas. This mechanism should include the development of a strategic implementation plan that is updated at least every 3 years, and includes a process for external independent advisory input. This plan should include a description of the responsibilities of the various Agency roles in Earth observations, recommended cost-sharing and procurement arrangements between Agencies and other entities, including international arrangements, and a plan for ensuring the provision of sustained, long term space-based climate observations. The Director shall provide a report to Congress within 90 days after the date of enactment of this Act on the implementation plan for this mechanism.

42 USC 18372. **SEC. 703. TRANSITIONING EXPERIMENTAL RESEARCH TO OPERATIONS.**

Implementation  
plan.  
Deadline.

The Administrator shall coordinate with the Administrator of NOAA and the Director of the United States Geological Survey to establish a formal mechanism that plans, coordinates, and supports the transitioning of NASA research findings, assets, and capabilities to NOAA operations and United States Geological Survey operations. In defining this mechanism, NASA should consider the establishment of a formal or informal Interagency Transition Office. The Administrator of NASA shall provide an implementation plan for this mechanism to Congress within 90 days after the date of enactment of this Act.

**SEC. 704. DECADAL SURVEY MISSIONS IMPLEMENTATION FOR EARTH OBSERVATION.** 42 USC 18373.

The Administrator shall undertake to implement, as appropriate, missions identified in the National Research Council's Earth Science Decadal Survey within the scope of the funds authorized for the Earth Science Mission Directorate.

**SEC. 705. EXPANSION OF EARTH SCIENCE APPLICATIONS.**

It is the sense of the Congress that the role of NASA in Earth Science applications shall be expanded with other departments and agencies of the Federal government, State and local governments, tribal governments, academia, the private sector, non-profit organizations, and international partners. NASA's Earth science data can increasingly aid efforts to improve the human condition and provide greater security.

**SEC. 706. INSTRUMENT TEST-BEDS AND VENTURE CLASS MISSIONS.**

The Administrator shall pursue innovative ways to fly instrument-level payloads for early demonstration or as co-manifested payloads. The Congress encourages the use of the ISS as an accessible platform for the conduct of such activities. Additionally, in order to address the cost and schedule challenges associated with large flight systems, NASA should pursue smaller systems where practicable and warranted.

**SEC. 707. SENSE OF CONGRESS ON NPOESS FOLLOW-ON PROGRAM.**

It is the Sense of the Congress that—

(1) polar orbiting satellites are vital for weather prediction, climate and environmental monitoring, national security, emergency response, and climate research;

(2) the National Polar Orbiting Environmental Satellite System has suffered from years of steadily rising cost estimates and schedule delays and an independent review team recommended that the System be restructured to improve the probability of success and protect the continuity of weather and climate data;

(3) the Congress supports the decision made by OSTP in February, 2010, to restructure the program to minimize schedule slips and cost overruns, clarify the responsibilities and accountability of NASA, NOAA, and the Department of Defense, and retain necessary coordination across civil and defense weather and climate programs;

(4) the Administrator of NOAA and the Secretary of Defense should maximize the use of assets from the NPOESS program as they establish the NOAA Joint Polar Satellite System at NASA's Goddard Space Flight Center, and the Department of Defense's Defense Weather Satellite System;

(5) the Administrator of NOAA and the Secretary of Defense should structure their programs in order to maintain satellite data continuity for the Nation's weather and climate requirements; and

(6) the Administrator of NOAA and the Secretary of Defense should provide immediate notification to the Congress of any impediments that may require Congressional intervention in order for the agencies to meet launch readiness dates, together with any recommended actions.

**TITLE VIII—SPACE SCIENCE**42 USC 18381. **SEC. 801. TECHNOLOGY DEVELOPMENT.**

The Administrator shall ensure that the Science Mission Directorate maintains a long term technology development program for space and Earth science. This effort should be coordinated with an overall Agency technology investment approach, as authorized in section 905 of this Act.

42 USC 18382. **SEC. 802. SUBORBITAL RESEARCH ACTIVITIES.**

(a) **IN GENERAL.**—The report of the National Academy of Sciences, Revitalizing NASA's Suborbital Program: Advancing Science, Driving Innovation and Developing Workforce, found that suborbital science missions were absolutely critical to building an aerospace workforce capable of meeting the needs of current and future human and robotic space exploration.

Designation.

(b) **MANAGEMENT.**—The Administrator shall designate an officer or employee of the Science Mission Directorate to act as the responsible official for all Suborbital Research in the Science Mission Directorate. The designee shall be responsible for the development of short- and long term strategic plans for maintaining, renewing and extending suborbital facilities and capabilities, monitoring progress towards goals in the plans, and be responsible for integration of suborbital activities and workforce development within the agency, thereby ensuring the long term recognition of their combined value to the directorate, to NASA, and to the Nation.

(c) **ESTABLISHMENT OF SUBORBITAL RESEARCH PROGRAM.**—The Administrator shall establish a Suborbital Research Program within the Science Mission Directorate that shall include the use of sounding rockets, aircraft, high altitude balloons, suborbital reusable launch vehicles, and commercial launch vehicles to advance science and train the next generation of scientists and engineers in systems engineering and systems integration which are vital to maintaining critical skills in the aerospace workforce. The program shall integrate existing suborbital research programs with orbital missions at the discretion of the designated officer or employee and shall emphasize the participation of undergraduate and graduate students and post-doctoral researchers when formulating announcements of opportunity.

(d) **REPORT.**—The Administrator shall report to the appropriate committees of Congress on the number and type of suborbital missions conducted in each fiscal year and the number of undergraduate and graduate students participating in the missions. The report shall be made annually for each fiscal year under this section.

(e) **AUTHORIZATION.**—There are authorized to be appropriated to the Administrator such sums as may be necessary to carry out this section.

**SEC. 803. OVERALL SCIENCE PORTFOLIO-SENSE OF THE CONGRESS.**

Congress reaffirms its sense that a balanced and adequately funded set of activities, consisting of research and analysis grants programs, technology development, small, medium, and large space missions, and suborbital research activities, contributes to a robust and productive science program and serves as a catalyst for innovation.

**SEC. 804. IN-SPACE SERVICING.**

42 USC 18383.

The Administrator shall continue to take all necessary steps to ensure that provisions are made for in-space or human servicing and repair of all future observatory-class scientific spacecraft intended to be deployed in Earth-orbit or at a Lagrangian point to the extent practicable and appropriate. The Administrator should ensure that agency investments and future capabilities for space technology, robotics, and human space flight take the ability to service and repair these spacecraft into account, where appropriate, and incorporate such capabilities into design and operational plans.

**SEC. 805. DECADAL RESULTS.**

42 USC 18384.

NASA shall take into account the current decadal surveys from the National Academies' Space Studies Board when submitting the President's budget request to the Congress.

**SEC. 806. ON-GOING RESTORATION OF RADIOISOTOPE THERMOELECTRIC GENERATOR MATERIAL PRODUCTION.**

42 USC 18385.

(a) **FINDINGS.**—The Congress finds the following:

(1) The United States has led the world in the scientific exploration of space for nearly 50 years.

(2) Missions such as Viking, Voyager, Cassini, and New Horizons have greatly expanded knowledge of our solar system and planetary characteristics and evolution.

(3) Radioisotope power systems are the only available power sources for deep space missions making it possible to travel to such distant destinations as Mars, Jupiter, Saturn, Pluto, and beyond and maintain operational control and systems viability for extended mission durations.

(4) Current radioisotope power systems supplies and production will not fully support NASA missions planned even in the next decade and, without a new domestic production capability, the United States will no longer have the means to explore the majority of the solar system by the end of this decade.

(5) Continuing to rely on Russia or other foreign sources for radioisotope power system fuel production is not a secure option.

(6) Reestablishing domestic production will require a long lead-time. Thus, meeting future space exploration mission needs requires that a restart project begin at the earliest opportunity.

(b) **IN GENERAL.**—The Administrator shall, in coordination with the Secretary of Energy, pursue a joint approach beginning in fiscal year 2011 towards restarting and sustaining the domestic production of radioisotope thermoelectric generator material for deep space and other science and exploration missions. Funds authorized by this Act for NASA shall be made available under a reimbursable agreement with the Department of Energy for the purpose of reestablishing facilities to produce fuel required for radioisotope thermoelectric generators to enable future missions.

Contracts.

(c) **REPORT.**—Within 120 days after the date of enactment of this Act, the Administrator and the Secretary of Energy shall submit a joint report to the appropriate committees of Congress on coordinated agreements, planned implementation, and anticipated schedule, production quantities, and mission applications under this section.

42 USC 18386. **SEC. 807. COLLABORATION WITH ESMD AND SOMD ON ROBOTIC MISSIONS.**

Deadline.  
Plans.

The Administrator shall ensure that the Exploration Systems Mission Directorate and the Space Operations Mission Directorate coordinate with the Science Mission Directorate on an overall approach and plan for interagency and international collaboration on robotic missions that are NASA or internationally developed, including lunar, Lagrangian, near-Earth orbit, and Mars spacecraft, such as the International Lunar Network. Within 90 days after the date of enactment of this Act, the Administrator shall provide a plan to the appropriate committees of Congress for implementation of the collaborative approach required by this section. The Administrator may not cancel or initiate any Exploration Systems Mission Directorate or Science Mission Directorate robotic project before the plan is submitted to the appropriate committees of Congress.

42 USC 18387. **SEC. 808. NEAR-EARTH OBJECT SURVEY AND POLICY WITH RESPECT TO THREATS POSED.**

Deadline.

(a) **POLICY REAFFIRMATION.**—Congress reaffirms the policy set forth in section 102(g) of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2451(g)) relating to surveying near-Earth asteroids and comets.

(b) **IMPLEMENTATION.**—The Director of the OSTP shall implement, before September 30, 2012, a policy for notifying Federal agencies and relevant emergency response institutions of an impending near-Earth object threat if near-term public safety is at risk, and assign a Federal agency or agencies to be responsible for protecting the United States and working with the international community on such threats.

42 USC 18388. **SEC. 809. SPACE WEATHER.**

(a) **FINDINGS.**—The Congress finds the following:

(1) Space weather events pose a significant threat to modern technological systems.

(2) The effects of severe space weather events on the electric power grid, telecommunications and entertainment satellites, airline communications during polar routes, and space-based position, navigation and timing systems could have significant societal, economic, national security, and health impacts.

(3) Earth and Space Observing satellites, such as the Advanced Composition Explorer, Geostationary Operational Environmental Satellites, Polar Operational Environmental Satellites, and Defense Meteorological Satellites, provide crucial data necessary to predict space weather events.

(b) **ACTION REQUIRED.**—The Director of OSTP shall—

(1) improve the Nation's ability to prepare, avoid, mitigate, respond to, and recover from potentially devastating impacts of space weather events;

(2) coordinate the operational activities of the National Space Weather Program Council members, including the NOAA Space Weather Prediction Center and the U.S. Air Force Weather Agency; and

(3) submit a report to the appropriate committees of Congress within 180 days after the date of enactment of this Act that—

(A) details the current data sources, both space- and ground-based, that are necessary for space weather forecasting; and

(B) details the space- and ground-based systems that will be required to gather data necessary for space weather forecasting for the next 10 years.

## TITLE IX—AERONAUTICS AND SPACE TECHNOLOGY

### SEC. 901. SENSE OF CONGRESS.

It is the sense of Congress that—

(1) aeronautics research remains vital to NASA's mission and deserves continued support;

(2) NASA aeronautics research should be guided by, and consistent with, the National Aeronautics Research and Development Policy that guides the Nation's aeronautics research and development activities;

(3) the OSTP-led National Science and Technology Council Aeronautics Science and Technology subcommittee remains essential to developing and coordinating national aeronautics research and development plans and their prioritization for funding, and that it is also important that the plans include a focus on research, development, test, and evaluation infrastructure plans, as well as research and development goals and objectives; and

(4) technology research conducted by NASA as part of the larger national aeronautics effort would help to secure, sustain, and advance the leadership role of the United States in global aviation.

### SEC. 902. AERONAUTICS RESEARCH GOALS.

42 USC 18401.

The Administrator should ensure that NASA maintains a strong aeronautics research portfolio ranging from fundamental research through systems research with specific research goals, including the following:

(1) AIRSPACE CAPACITY.—NASA's Aeronautics Research Mission Directorate shall address research needs of the Next Generation Air Transportation System, including the ability of the National Airspace System to handle up to 3 times the current travel demand by 2025.

(2) ENVIRONMENTAL SUSTAINABILITY.—The Directorate shall consider and pursue concepts to reduce noise, emissions, and fuel consumption while maintaining high safety standards and shall pursue research related to alternative fuels.

(3) AVIATION SAFETY.—The Directorate shall proactively address safety challenges with new and current air vehicles and with operations in the Nation's current and future air transportation system.

### SEC. 903. RESEARCH COLLABORATION.

42 USC 18402.

(a) DEPARTMENT OF DEFENSE.—The Administrator shall continue to coordinate with the Secretary of Defense, through the National Partnership for Aeronautics Testing, to develop and implement joint plans for those elements of the Nation's research,

Plans.

development, testing, and engineering infrastructure that are of common interest and use.

(b) FEDERAL AVIATION ADMINISTRATION.—The Administrator shall continue to coordinate with, and work closely with, the Administrator of the Federal Aviation Administration, under the framework of the Senior Policy Council, in development of the Next Generation Air Transportation Program. The Administrator shall encourage the Council to explore areas for greater collaboration, including areas where NASA can help to accelerate the development and demonstration of NextGen technologies.

42 USC 18403.

**SEC. 904. GOAL FOR AGENCY SPACE TECHNOLOGY.**

It is critical that NASA maintain an Agency space technology base that helps align mission directorate investments and supports long term needs to complement mission-directorate funded research and support, where appropriate, multiple users, building upon its Innovative Partnerships Program and other partnering approaches.

**SEC. 905. IMPLEMENTATION PLAN FOR AGENCY SPACE TECHNOLOGY.**

Deadline.

Within 120 days after the date of enactment of this Act, NASA shall submit a plan to the appropriate committees of Congress that outlines how NASA's space technology program will meet the goal described in section 904, including an explanation of how the plan will link to other mission-directorate technology efforts outlined in sections 608, 801, and 802 of this Act.

42 USC 18404.

**SEC. 906. NATIONAL SPACE TECHNOLOGY POLICY.**

President.

(a) IN GENERAL.—The President or the President's designee, in consultation with appropriate Federal agencies, shall develop a national policy to guide the space technology development programs of the United States through 2020. The policy shall include national goals for technology development and shall describe the role and responsibilities of each Federal agency that will carry out the policy. In developing the policy, the President or the President's designee shall utilize external studies that have been conducted on the state of United States technology development and have suggested policies to ensure continued competitiveness.

**(b) CONTENT.—**

(1) At a minimum, the national space technology development policy shall describe for NASA—

(A) the priority areas of research for technology investment;

(B) the basis on which and the process by which priorities for ensuing fiscal years will be selected;

(C) the facilities and personnel needed to carry out the technology development program; and

(D) the budget assumptions on which the policy is based, which for fiscal years 2011, 2012, and 2013 shall be the authorized level for NASA's technology program authorized by this Act.

(2) The policy shall be based on the premise that the Federal Government has an established interest in conducting research and development programs that help preserve the role of the United States as a global leader in space technologies and their application.

President.

(3) CONSIDERATIONS.—In developing the national space technology development policy, the President or the President's

designee shall consider, and include a discussion in the report required by subsection (c), of the following issues:

(A) The extent to which NASA should focus on long term, high-risk research or more incremental technology development, and the expected impact of that decision on the United States economy.

(B) The extent to which NASA should address military and commercial needs.

(C) How NASA will coordinate its technology program with other Federal agencies.

(D) The extent to which NASA will conduct research in-house, fund university research, and collaborate on industry research and the expected impact of that mix of funding on the supply of United States workers for industry.

(4) CONSULTATION.—In the development of the national space technology development policy, the President or the President's designee shall consult widely with academic and industry experts and with other Federal agencies. The Administrator may enter into an arrangement with the National Academy of Sciences to help develop the policy.

President.

(c) REPORT.—

(1) POLICY.—Not later than 1 year after the date of enactment of this Act, the President shall transmit a report setting forth national space technology policy to the appropriate committees of Congress and to the Senate Committee on Appropriations and the House of Representatives Committee on Appropriations.

(2) IMPLEMENTATION.—Not later than 60 days after the President transmits the report required by paragraph (1) to the Congress, the Administrator shall transmit a report to the same committees describing how NASA will carry out the policy.

**SEC. 907. COMMERCIAL REUSABLE SUBORBITAL RESEARCH PROGRAM.**

42 USC 18405.

(a) IN GENERAL.—The report of the National Academy of Sciences, Revitalizing NASA's Suborbital Program: Advancing Science, Driving Innovation and Developing Workforce, found that suborbital science missions were absolutely critical to building an aerospace workforce capable of meeting the needs of current and future human and robotic space exploration.

(b) MANAGEMENT.—The Administrator shall designate an officer or employee of the Space Technology Program to act as the responsible official for the Commercial Reusable Suborbital Research Program in the Space Technology Program. The designee shall be responsible for the development of short- and long term strategic plans for maintaining, renewing and extending suborbital facilities and capabilities.

Designation.

(c) ESTABLISHMENT.—The Administrator shall establish a Commercial Reusable Suborbital Research Program within the Space Technology Program that shall fund the development of payloads for scientific research, technology development, and education, and shall provide flight opportunities for those payloads to microgravity environments and suborbital altitudes. The Commercial Reusable Suborbital Research Program may fund engineering and integration demonstrations, proofs of concept, or educational experiments for commercial reusable vehicle flights. The program shall

endeavor to work with NASA's Mission Directorates to help achieve NASA's research, technology, and education goals.

(d) REPORT.—The Administrator shall submit a report annually to the appropriate committees of Congress describing progress in carrying out the Commercial Reusable Suborbital Research program, including the number and type of suborbital missions planned in each fiscal year.

(e) AUTHORIZATION.—There are authorized to be appropriated to the Administrator \$15,000,000 for each of fiscal years 2011 through 2013 to carry out this section.

## TITLE X—EDUCATION

### SEC. 1001. REPORT ON EDUCATION IMPLEMENTATION OUTCOMES.

Not later than 120 days after the date of the enactment of this Act, the Administrator shall submit to the appropriate committees of Congress a report on the metrics, internal and external relationships, and resources committed by NASA to each of the following:

- (1) The development of a national STEM workforce.
- (2) The retention of students in STEM disciplines as reflected by their education progression over time.
- (3) The development of strategic partnerships and linkages between STEM formal and informal education providers.

### SEC. 1002. SENSE OF CONGRESS ON THE EXPERIMENTAL PROGRAM TO STIMULATE COMPETITIVE RESEARCH.

It is the sense of Congress that—

(1) the Experimental Program to Stimulate Competitive Research of NASA strengthens the research capabilities of jurisdictions that historically have not participated equally in competitive aerospace and aerospace-related research activities;

(2) the Experimental Program to Stimulate Competitive Research of NASA has provided the American taxpayer with an excellent return on investment;

(3) the Experimental Program to Stimulate Competitive Research of NASA has been successful in helping to achieve broader geographical distribution of research and development support by improving the research infrastructure in States that historically have received limited Federal research and development funds; and

(4) in order to continue improvement and to increase efficiency the award of grants under the Experimental Program to Stimulate Competitive Research of NASA should be coordinated with the award of grants under the Experimental Program to Stimulate Competitive Research of the National Science Foundation, the Department of Energy, the Department of Agriculture, the Department of Defense, the Environmental Protection Agency, and the National Institutes of Health.

42 USC 18421.

### SEC. 1003. SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS COMMERCIAL ORBITAL PLATFORM PROGRAM.

A fundamental and unique capability of NASA is in stimulating science, technology, engineering, and mathematics education in the United States. In ensuring maximum use of that capability, NASA shall—

(1) establish a program to annually sponsor scientific and educational payloads developed with United States student and educator involvement to be flown on commercially available orbital platforms, when available and operational, with the goal of launching at least 50 such payloads (with at least one from each of the 50 States) to orbit on at least one mission per year;

Establishment.  
Deadline.

(2) contract with providers of commercial orbital platform services for their use by the STEM-Commercial Orbital Platform program, preceded by the issuance of a request for proposal, not later than 90 days after the date of enactment of this Act, to enter into at least one funded, competitively-awarded contract for commercial orbital platform services and make awards within 180 days after such date; and

Contracts.  
Deadline.

(3) engage with United States students and educators and make available NASA’s science, engineering, payload development, and payload operations expertise to student teams selected to participate in the STEM-Commercial Orbital Platform program.

## TITLE XI—RE-SCOPING AND REVITALIZING INSTITUTIONAL CAPABILITIES

### SEC. 1101. SENSE OF CONGRESS.

It is the sense of Congress that NASA needs to re-scope, and as appropriate, down-size, to fit current and future missions and expected funding levels. Eighty percent of NASA’s facilities are over 40 years old. Additionally, in a number of areas NASA finds itself “holding onto” facilities and capabilities scaled to another era.

### SEC. 1102. INSTITUTIONAL REQUIREMENTS STUDY.

Within 1 year after the date of enactment of this Act, the Administrator shall provide to the appropriate committees of Congress a comprehensive study that, taking into account the long term direction provided by this Act, carefully examines NASA’s structure, organization, and institutional assets and identifies a strategy to evolve toward the most efficient retention, sizing, and distribution of facilities, laboratories, test capabilities, and other infrastructure consistent with NASA’s missions and mandates. The Administrator should pay particular attention to identifying and removing unneeded or duplicative infrastructure. The Administrator should include in the study a suggested reconfiguration and reinvestment strategy that would conform the needed equipment, facilities, test equipment, and related organizational alignment that would best meet the requirements of missions and priorities authorized and directed by this Act. As part of this strategy, the Administrator should include consideration and application of the findings and recommendations of the National Research Council report, Capabilities for the Future: An Assessment of NASA Laboratories for Basic Research, prepared in response to section 1003 of the National Aeronautics and Space Administration Authorization Act of 2008 (42 U.S.C. 17812).

Deadline.

**SEC. 1103. NASA CAPABILITIES STUDY REQUIREMENT.**

Panel.

Upon completion of the study required by Section 1102, the Administrator shall establish an independent panel to examine alternative management models for NASA's workforce, centers, and related facilities in order to improve efficiency and productivity, while nonetheless maintaining core Federal competencies and keeping appropriately governmental functions internal to NASA. The study shall include a recommended implementation strategy, which shall identify any additional legislative authorities necessary to enable implementation of the recommended strategy, including recommended actions to provide aid and assistance to eligible communities to mitigate adverse impacts resulting from implementation of the proposed strategy. The Administrator shall provide the results of this study to the appropriate committees of Congress within 1 year after the date on which the study is begun.

Deadline.

**SEC. 1104. SENSE OF CONGRESS ON COMMUNITY TRANSITION SUPPORT.**

The Congress recognizes and supports current executive branch efforts to assist and provide aid to communities that are adversely impacted by NASA program changes, contract or program cancellations, or proposed institutional changes, so as to minimize the social and economic impacts to those communities, workers, and businesses. Communities eligible for such aid would be those in close proximity to NASA mission-related centers and their component facilities located in Alabama, California, Florida, Louisiana, Maryland, Mississippi, New Mexico, Ohio, Texas, and Virginia which may be impacted by program changes authorized or directed by this Act or by the implementation strategy developed pursuant to section 1103.

42 USC 18431.

**SEC. 1105. WORKFORCE STABILIZATION AND CRITICAL SKILLS PRESERVATION.**

Prior to receipt by the Congress of the study, recommendations, and implementation strategy developed pursuant to section 1103, none of the funds authorized for use under this Act may be used to transfer the functions, missions, or activities, and associated civil service and contractor positions, from any NASA facility without authorization by the Congress to implement the proposed strategy. The Administrator shall preserve the critical skills and competencies in place at NASA centers prior to enactment of this Act in order to facilitate timely implementation of the requirements of this Act and to minimize disruption to the workforce. The Administrator may not implement any reduction-in-force or other involuntary separations of permanent, non-Senior-Executive-Service, civil servant employees before September 30, 2013, except for cause on charges of misconduct, delinquency, or inefficiency.

**TITLE XII—OTHER MATTERS****SEC. 1201. REPORT ON SPACE TRAFFIC MANAGEMENT.**

The Administrator shall submit to the appropriate committees of Congress a report on a status on the initiation of discussions

with other nations on a framework to address space traffic management concerns, as required by section 1102 of the National Aeronautics and Space Administration Act Authorization Act of 2008 (42 U.S.C. 17821).

**SEC. 1202. NATIONAL AND INTERNATIONAL ORBITAL DEBRIS MITIGATION.** 42 USC 18441.

(a) FINDINGS.—Congress makes the following findings:

(1) A national and international effort is needed to develop a coordinated approach towards the prevention, negation, and removal of orbital debris.

(2) The guidelines issued by the Inter-Agency Space Debris Coordination Committee provide a consensus understanding of 10 national space agencies (including NASA) plus the European Space Agency on the necessity of mitigating the creation of space debris and measures for doing so. NASA's participation on the Committee should be robust, and NASA should urge other space-relevant Federal agencies (including the Departments of State, Defense, and Commerce) to work to ensure that their counterpart agencies in foreign governments are aware of these national commitments and the importance in which the United States holds them.

(3) Key components of such an approach should include—

(A) a process for debris prevention through agreements regarding spacecraft design, operations, and end-of-life disposition plans to minimize orbiting vehicles or elements which are nonfunctional;

(B) the development of a robust Space Situational Awareness network that can identify potential collisions and provide sufficient trajectory and orbital data to enable avoidance maneuvers;

(C) the interagency development of an overall strategy for review by the President, with recommendations for proposed international collaborative efforts to address this challenge.

(b) INTERNATIONAL DISCUSSION.—

(1) IN GENERAL.—The Administrator shall, in consultation with such other departments and agencies of the Federal Government as the Administrator considers appropriate, continue and strengthen discussions with the representatives of other space-faring countries, within the Inter-Agency Space Debris Coordination Committee and elsewhere, to deal with this orbital debris mitigation.

(2) INTERAGENCY EFFORT.—For purposes of carrying out this subsection, the Director of OSTP, in coordination with the Director of the National Security Council and using the President's Council of Advisors on Science and Technology coordinating mechanism, shall develop an overall strategy for review by the President, with recommendations for proposed international collaborative efforts to address this challenge.

**SEC. 1203. REPORTS ON PROGRAM AND COST ASSESSMENT AND CONTROL ASSESSMENT.** 42 USC 18442.

(a) FINDINGS.—Congress makes the following findings:

(1) The adherence of NASA to program cost and schedule targets and discipline across NASA programs remains a concern.

(2) The James Webb Space Telescope has exceeded its cost estimate.

(3) In 2007 the Government Accountability Office issued a report on NASA's high risk acquisition performance.

(4) In response, NASA prepared a corrective action plan two years ago.

(b) REPORTS.—

(1) REPORTS REQUIRED.—Not later than 90 days after the date of the enactment of this Act, and not later than April 30 of each year thereafter, the Administrator shall submit to the appropriate committees of Congress a report on the implementation during the preceding year for the corrective action plan referred to in subsection (a)(4).

(2) ELEMENTS.—Each report under this subsection shall set forth, for the year covered by such report, the following:

(A) A description of each NASA program that has exceeded its cost baseline by 15 percent or more or is more than 2 years behind its projected development schedule.

(B) For each program specified under subparagraph (A), a plan for such decrease in scope or requirements, or other measures, to be undertaken to control cost and schedule, including any cost monitoring or corrective actions undertaken pursuant to the National Aeronautics and Space Administration Authorization Act of 2005 (Public Law 109-155), and the amendments made by that Act.

42 USC 18443.

**SEC. 1204. ELIGIBILITY FOR SERVICE OF INDIVIDUAL CURRENTLY SERVING AS ADMINISTRATOR OF NASA.**

The individual serving in the position of Administrator of the National Aeronautics and Space Administration as of the date of the enactment of this Act comes from civilian life and is therefore eligible to serve in such position, in conformance with section 202 of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2472(a)).

**SEC. 1205. SENSE OF CONGRESS ON INDEPENDENT VERIFICATION AND VALIDATION OF NASA SOFTWARE.**

It is the sense of Congress that—

(1) safety is at the heart of every NASA mission;

(2) the Office of Safety and Mission Assurance remains vital to assuring the safety of all NASA activities;

(3) among the most important activities of the Office of Safety and Mission Assurance is the performance of independent safety and mission assurance assessments and process verification reviews;

(4) as NASA embarks on a new path, independent verification and validation of software must be of the highest priority to ensure safety throughout all NASA programs;

(5) NASA's activities depend on software integrity to achieve their goals and deliver a successful mission to the American people;

(6) independent verification and validation is necessary to ensure that safety-critical software will operate dependably and support mission success;

(7) the creation of the Independent Verification and Validation Facility of NASA was the direct result of recommendations made by the National Research Council and the Report of

the Presidential Commission on the Space Shuttle Challenger Accident;

(8) the mission-critical software of NASA must operate dependably and safely;

(9) the Independent Verification and Validation Facility of NASA plays an important role in assuring the safety of all NASA activities by improving methodologies for risk identification and assessment, and providing recommendations for risk mitigation and acceptance; and

(10) the Independent Verification and Validation Facility shall be the sole provider of independent verification and validation services for software created by or for NASA.

**SEC. 1206. COUNTERFEIT PARTS.**

42 USC 18444.

(a) **IN GENERAL.**—The Administrator shall plan, develop, and implement a program, in coordination with other Federal agencies, to detect, track, catalog, and reduce the number of counterfeit electronic parts in the NASA supply chain.

Plans.

(b) **REQUIREMENTS.**—In carrying out the program, the Administrator shall establish—

(1) counterfeit part identification training for all employees that procure, process, distribute, and install electronic parts that will—

(A) teach employees how to identify counterfeit parts;

(B) educate employees on procedures to follow if they suspect a part is counterfeit;

(C) regularly update employees on new threats, identification techniques, and reporting requirements; and

(D) integrate industry associations, manufacturers, suppliers, and other Federal agencies, as appropriate;

(2) an internal database to track all suspected and confirmed counterfeit electronic parts that will maintain, at a minimum—

Database.

(A) companies and individuals known and suspected of selling counterfeit parts;

(B) parts known and suspected of being counterfeit, including lot and date codes, part numbers, and part images;

(C) countries of origin;

(D) sources of reporting;

(E) United States Customs seizures; and

(F) Government-Industry Data Exchange Program reports and other public or private sector database notifications; and

(3) a mechanism to report all information on suspected and confirmed counterfeit electronic parts to law enforcement agencies, industry associations, and other databases, and to issue bulletins to industry on counterfeit electronic parts and related counterfeit activity.

(c) **REVIEW OF PROCUREMENT AND ACQUISITION POLICY.**—

(1) **IN GENERAL.**—In establishing the program, the Administrator shall amend existing acquisition and procurement policy to purchase electronic parts from trusted or approved manufacturers. To determine trusted or approved manufacturers, the Administrator shall establish a list, assessed and adjusted at least annually, and create criteria for manufacturers to meet in order to be placed onto the list.

List.  
Deadline.  
Criteria.

- (2) **CRITERIA.**—The criteria may include—
- (A) authentication or encryption codes;
  - (B) embedded security markings in parts;
  - (C) unique, harder to copy labels and markings;
  - (D) identifying distinct lot and serial codes on external packaging;
  - (E) radio frequency identification embedded into high-value parts;
  - (F) physical destruction of all defective, damaged, and sub-standard parts that are by-products of the manufacturing process;
  - (G) testing certifications;
  - (H) maintenance of procedures for handling any counterfeit parts that slip through;
  - (I) maintenance of secure facilities to prevent unauthorized access to proprietary information; and
  - (J) maintenance of product return, buy back, and inventory control practices that limit counterfeiting.

(d) **REPORT TO CONGRESS.**—Within one year after the date of enactment of this Act, the Administrator shall report on the progress of implementing this section to the appropriate committees of Congress.

42 USC 18445.

**SEC. 1207. INFORMATION SECURITY.**(a) **MONITORING RISK.**—

(1) **UPDATE ON SYSTEM IMPLEMENTATION.**—Not later than 120 days after the date of enactment of this Act, and on a biennial basis thereafter, the chief information officer of NASA, in coordination with other national security agencies, shall provide to the appropriate committees of Congress—

(A) an update on efforts to implement a system to provide dynamic, comprehensive, real-time information regarding risk of unauthorized remote, proximity, and insider use or access, for all information infrastructure under the responsibility of the chief information officer, and mission-related networks, including contractor networks;

(B) an assessment of whether the system has demonstrably and quantifiably reduced network risk compared to alternative methods of measuring security; and

(C) an assessment of the progress that each center and facility has made toward implementing the system.

(2) **EXISTING ASSESSMENTS.**—The assessments required of the Inspector General under section 3545 of title 44, United States Code, shall evaluate the effectiveness of the system described in this subsection.

(b) **INFORMATION SECURITY AWARENESS AND EDUCATION.**—

(1) **IN GENERAL.**—In consultation with the Department of Education, other national security agencies, and other agency directorates, the chief information officer shall institute an information security awareness and education program for all operators and users of NASA information infrastructure, with the goal of reducing unauthorized remote, proximity, and insider use or access.

(2) **PROGRAM REQUIREMENTS.**—

Deadlines.  
Assessments.

(A) The program shall include, at a minimum, ongoing classified and unclassified threat-based briefings, and automated exercises and examinations that simulate common attack techniques.

(B) All agency employees and contractors engaged in the operation or use of agency information infrastructure shall participate in the program.

(C) Access to NASA information infrastructure shall only be granted to operators and users who regularly satisfy the requirements of the program.

(D) The chief human capital officer of NASA, in consultation with the chief information officer, shall create a system to reward operators and users of agency information infrastructure for continuous high achievement in the program.

(c) **INFORMATION INFRASTRUCTURE DEFINED.**—In this section, the term “information infrastructure” means the underlying framework that information systems and assets rely on to process, transmit, receive, or store information electronically, including programmable electronic devices and communications networks and any associated hardware, software, or data.

#### **SEC. 1208. NATIONAL CENTER FOR HUMAN PERFORMANCE.**

(a) **IN GENERAL.**—The National Center for Human Performance is located in Houston’s Texas Medical Center which is home to 49 non-profit and academic patient care, biomedical research, and health educational institutions serving 6 million patients each year, and works collaboratively with individuals and organizations, including NASA, to advance science and research on human performance in space, health, the military, athletics, and the arts.

(b) **DESIGNATION AS INSTITUTION OF EXCELLENCE.**—The National Center for Human Performance is designated as an Institution of Excellence for Human Performance dedicated to understanding and improving all aspects of human performance.

#### **SEC. 1209. ENHANCED-USE LEASING.**

(a) **SENSE OF THE CONGRESS.**—It is the sense of the Congress that the NASA enhanced-use leasing program is a fiscally responsible program to further maintain the exploration-related infrastructure of our Nation’s space centers while ensuring continued private utilization of these Federal assets, and every effort should be made to ensure effective utilization of this program.

#### **SEC. 1210. SENSE OF CONGRESS CONCERNING THE STENNIS SPACE CENTER.**

It is the sense of the Congress that the Stennis Space Center represents the national capability for development and certification of liquid propulsion technologies vital to our Nation’s space flight program, and that the Federal government should fully utilize that resource and continue to make the testing facility available for further development of commercial aerospace capabilities.

## **TITLE XIII—COMPLIANCE WITH STATUTORY PAY-AS-YOU-GO ACT OF 2010**

### **SEC. 1301. COMPLIANCE PROVISION.**

The budgetary effects of this Act, for the purpose of complying with the Statutory Pay-As-You-Go-Act of 2010, shall be determined by reference to the latest statement titled “Budgetary Effects of PAYGO Legislation” for this Act, submitted for printing in the Congressional Record by the Chairman of the Senate Budget Committee, provided that such statement has been submitted prior to the vote on passage.

Approved October 11, 2010.

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#### **LEGISLATIVE HISTORY—S. 3729:**

**HOUSE REPORTS:** No. 111-576 (Comm. on Science and Technology).

**SENATE REPORTS:** No. 111-278 (Comm. on Commerce, Science, and Transportation).

**CONGRESSIONAL RECORD, Vol. 156 (2010):**

Aug. 5, considered and passed Senate.

Sept. 29, considered and passed House.



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**DEPARTMENT OF COMMERCE**

**National Oceanic and Atmospheric  
Administration**

**RIN 0648–XT66**

**Taking and Importing Marine  
Mammals; Taking Marine Mammals  
Incidental to Space Vehicle and Test  
Flight Activities from Vandenberg Air  
Force Base, CA**

**AGENCY:** National Marine Fisheries  
Service, National Oceanic and  
Atmospheric Administration,  
Commerce.

**ACTION:** Notice of issuance of a Letter  
of Authorization.

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**SUMMARY:** In accordance with the  
Marine Mammal Protection Act  
(MMPA), as amended, and  
implementing regulations, notification  
is hereby given that a letter of  
authorization (LOA) has been issued to  
the 30th Space Wing, U.S. Air Force  
(USAF), to take four species of seals and

sea lions incidental to rocket and missile launches on Vandenberg Air Force Base (VAFB), California, a military readiness activity.

**DATES:** Effective February 7, 2010, through February 6, 2011.

**ADDRESSES:** The LOA and supporting documentation are available for review by writing to P. Michael Payne, Chief, Permits, Conservation, and Education Division, Office of Protected Resources, National Marine Fisheries Service (NMFS), 1315 East-West Highway, Silver Spring, MD 20910-3225 or by telephoning one of the contacts listed below (FOR FURTHER INFORMATION CONTACT). Documents cited in this notice may be viewed, by appointment, during regular business hours, at the aforementioned address and at the Southwest Regional Office, NMFS, 501 West Ocean Boulevard, Suite 4200, Long Beach, CA 90802.

**FOR FURTHER INFORMATION CONTACT:** Candace Nachman, Office of Protected Resources, NMFS, (301) 713-2289 ext. 156, or Monica DeAngelis, NMFS, (562) 980-3232.

**SUPPLEMENTARY INFORMATION:**

**Background**

Section 101(a)(5)(A) of the MMPA (16 U.S.C. 1361 *et seq.*) directs NMFS to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and regulations are issued. The National Defense Authorization Act (Public Law 108-136) removed the "small numbers" and "specified geographical region" limitations for a "military readiness activity." Under the MMPA, the term "taking" means to harass, hunt, capture, or kill or to attempt to harass, hunt, capture, or kill marine mammals.

Authorization may be granted for periods up to 5 years if NMFS finds, after notification and opportunity for public comment, that the taking will have a negligible impact on the species or stock(s) of marine mammals and will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses. In addition, NMFS must prescribe regulations that include permissible methods of taking and other means effecting the least practicable adverse impact on the species and its habitat and on the availability of the species for

subsistence uses, paying particular attention to rookeries, mating grounds, and areas of similar significance. The regulations must include requirements for monitoring and reporting of such taking.

Regulations governing the taking of Pacific harbor seals (*Phoca vitulina richardsi*), northern elephant seals (*Mirounga angustirostris*), California sea lions (*Zalophus californianus*), and northern fur seals (*Callorhinus ursinus*), by harassment, incidental to missile and rocket launches, aircraft flight test operations, and helicopter operations at VAFB, were issued on February 6, 2009 (74 FR 6236), and remain in effect until February 6, 2014. For detailed information on this action, please refer to that document. These regulations include mitigation, monitoring, and reporting requirements for the incidental take of marine mammals during missile and rocket launches at VAFB.

This LOA is effective from February 7, 2010, through February 6, 2011, and authorizes the incidental take, by Level B harassment only, of the four marine mammal species listed above that may result from the launching of up to 30 space and missile vehicles and up to 20 rockets annually from VAFB, as well as from aircraft and helicopter operations. Harbor seals haul-out on several sites on VAFB, and harbor seals, California sea lions, elephant seals, and northern fur seals are found on various haul-out sites and rookeries on San Miguel Island (SMI). Currently, six space launch vehicle programs use VAFB to launch satellites into polar orbit: Delta II, Taurus, Atlas V, Delta IV, Falcon, and Minotaur. Also a variety of small missiles, several types of interceptor and target vehicles, and fixed-wing aircrafts are launched from VAFB.

The activities under these regulations create two types of noise: continuous (but short-duration) noise, due mostly to combustion effects of aircraft and launch vehicles, and impulsive noise, due to sonic boom effects. Launch operations are the major source of noise on the marine environment from VAFB. The operation of launch vehicle engines produces significant sound levels. The noise generated by VAFB activities will result in the incidental harassment of pinnipeds, both behaviorally and in terms of physiological (auditory) impacts. The noise and visual disturbances from space launch vehicle and missile launches and aircraft and helicopter operations may cause the

animals to move towards or enter the water. Take of pinnipeds will be minimized through implementation of the following mitigation measures: (1) all aircraft and helicopter flight paths must maintain a minimum distance of 1,000 ft (305 m) from recognized seal haul-outs and rookeries; (2) missile and rocket launches must, whenever possible, not be conducted during the harbor seal pupping season of March through June; (3) VAFB must avoid, whenever possible, launches which are predicted to produce a sonic boom on the Northern Channel Islands during the primary pinniped pupping seasons of March through June; and (4) monitoring methods will be reviewed by NMFS if post-launch surveys determine that an injurious or lethal take of a marine mammal occurred. VAFB will also use monitoring surveys, audio-recording equipment, and time-lapse video to monitor the animals before, during, and after rocket launches, and to measure sound levels generated by the launches. Reports will be submitted to NMFS after each LOA expires, and a final comprehensive report, which will summarize all previous reports and assess cumulative impacts, will be submitted before the rule expires.

**Summary of Request**

On December 18, 2009, NMFS received a request for a LOA renewal pursuant to the aforementioned regulations that would authorize, for a period not to exceed 1 year, take of marine mammals, by harassment, incidental to space vehicle and test flight activities at VAFB.

**Summary of Activity and Monitoring Under the 2009 LOA**

In compliance with the 2009 LOA, VAFB submitted an annual report on the activities at VAFB, covering the period of February 7 through November 30, 2009. The report also contained information on a February 6, 2009, launch that was covered under the 2008 LOA, as it was not described in any previous reports. A summary of that report (ManTech SRS Technologies, 2009) follows.

During the reporting period covered by the 2009 LOA, there were a total of six launches from VAFB: two missile launches and four space vehicle launches. The dates, locations, and monitoring required for the launches are summarized in Tables 1 and 2 below.

TABLE 1. SUMMARY OF SPACE VEHICLE LAUNCHES FROM VAFB AND MONITORING CONDUCTED IN 2009.

Vehicle	Date (2009)	Time	Launch Site	Monitoring Conducted
Delta II NOAA-N Prime	6-Feb	0222 PST	SLC-2W	SMI
Taurus OCO	24-Feb	0155 PST	576E	No
Delta II STSS ATRR	5-May	1324 PDT	SLC-2W	VAFB/SMI
Delta II Worldview-II	8-Oct	1151 PDT	SLC-2W	SMI
Atlas V DMSP-18	18-Oct	0912 PDT	SLC-3E	VAFB (Acoustics)

TABLE 2. SUMMARY OF ALL OTHER LAUNCHES FROM VAFB AND MONITORING CONDUCTED IN 2009.

Launch Vehicle	Date (2009)	Time	Launch Site	Monitored
Minuteman III GT-195 GM	29-Jun	0301 PDT	LF-04	Yes
Minuteman III GT-195 GM-2	23-Aug	0901 PDT	LF-09	No

The Taurus OCO launch occurred outside of the VAFB harbor seal pupping season, and a sonic boom of greater than 1 lb/ft<sup>2</sup> (psf) was not predicted to occur at SMI as a result of the launch; therefore, no biological or acoustical monitoring was required or conducted. Similarly, the Minuteman III GT-195 GM-2 launch occurred outside of the VAFB harbor seal pupping season; therefore, no biological or acoustical monitoring was required or performed on VAFB.

In 2009, there were 5,934 tower operations and 651 range operations from the VAFB Airfield. Tower operations include all arrivals and departures from the airfield, while range operations include activities such as overflights, flight tests, etc. Helicopter and fixed-wing operations occurred on both north and south VAFB. There were no observed impacts to pinnipeds from these activities.

#### *Delta II NOAA-N Prime*

Since this launch occurred outside of the harbor seal pupping season, no monitoring was required on VAFB. However, the modeling program, PCBoom3, predicted that a sonic boom greater than 1 psf could impact SMI, so biological and acoustical monitoring were required at SMI. Counts of northern elephant seals done between February 1 and 7, 2009 at East Adams Cove on the west side of SMI recorded from 225 to 249 seals. Post-launch counts fell within the pre-launch range. The number of elephant seal pups in the focal group over the course of the monitoring period ranged from 185 to 218 pups. Post-launch counts of pups exceeded pre-launch counts. No elephant seals exhibited a change in behavior or moved toward or into the

water; no vigilant or alert behaviors were observed. The four pups observed to be suckling prior to the launch remained suckling throughout the observation period (0200 to 0246 PST). Post-launch analysis of the digital audio tape (DAT) recording showed that no sonic boom had been recorded.

Between 18 and 22 dead pups were seen each day during the launch monitoring period, both before and after the launch occurred. On February 7, 2009, the second day after the launch, two of the dead pups were noted to be "freshly dead." These two fresh dead pups were thought to have been a result of high swell that was present on the monitored beach. High swells and tides are one of the major causes of mortality in dependent elephant seal pups (Le Boeuf and Laws, 1994).

A dead adult female elephant seal, with puncture marks in her back, was observed near the tide line on 6 February in the morning following the launch. Photographs revealed bite marks on the dead seal just below the neck, indicating that the female was likely killed by an aggressive male attempting to mate with her (Le Boeuf and Mesnick, 1990). In summary, based on post-launch analysis, there was no evidence of injury, mortality, or abnormal behavior in any of the monitored elephant seals on SMI as a result of this launch.

#### *Delta II STSS ATRR*

Since this launch occurred during the harbor seal pupping season and a sonic boom greater than 1 psf was predicted to occur at SMI, monitoring was required on both VAFB and SMI. Diurnal observations of harbor seals at the Spur Road haul-out on north VAFB were conducted from May 2-4 and 6-7, 2009. Between zero and 27 adult and

juvenile seals and between zero and one harbor seal pup were observed during the monitoring period. A time-lapse video recorder revealed that no seals were hauled out at the site during the launch due to the presence of a coyote that caused all the seals to flush into the water prior to the launch.

On SMI, observations of California sea lions and northern elephant seals were conducted from May 2-7, 2009 at West Judith Cove on the west side of SMI. There were between 262 and 684 sea lions observed each day. Only two pups were observed being whelped during the monitoring period, and both died soon after birth and prior to the launch. The number of elephant seals observed over the course of the monitoring period ranged from 97 to 339 seals. A sonic boom was heard. Monitors reported that the boom did not cause the sea lions, elephant seals, or gulls in the area to alert, and no animals raised their heads in response to the sound. In summary, there was no evidence of injury, mortality, or abnormal behavior in any of the monitored harbor seals at VAFB or the monitored sea lions or elephant seals on SMI as a result of the Delta II STSS ATRR launch.

#### *Delta II Worldview-II*

Since this launch occurred outside of the harbor seal pupping season, no monitoring was required on VAFB. However, the modeling program, PCBoom3, predicted that a sonic boom greater than 1 psf could impact SMI, so biological and acoustical monitoring were required at SMI. Immediately prior to the launch, monitors were able to view 938 adult and pup California sea lions, 282 adult and pup northern fur seals, and 48 subadult and female northern elephant seals. The launch

vehicle was not seen or heard during the launch window, and no sonic boom was heard or recorded. None of the monitored animals made any visible movements outside of normal behavior during or after the launch, and animals continued to haul out at the site and persist in high numbers immediately after the launch. In summary, there was no evidence of injury, mortality, or abnormal behavior of the monitored pinnipeds on SMI as a result of this launch.

#### *Atlas V DMSP-18*

This launch occurred outside of the harbor seal pupping season, and no sonic boom greater than 1 psf was predicted to impact SMI. Therefore, no biological or acoustical monitoring was required at VAFB or SMI. However, due to an equipment malfunction during the acoustic recording of the initial Atlas V launch in March 2008, only an incomplete acoustic profile was obtained. Therefore, acoustic monitoring of this second Atlas V launch was performed. The results are contained in the 2009 annual LOA report (ManTech SRS Technologies, 2009).

#### *Minuteman III GT-199 GM*

Due to the Minuteman's westward launch trajectory, no sonic boom modeling or launch monitoring was required on SMI for this launch. Additionally, no acoustic recordings were required as noise from the Minuteman launch vehicle has been well quantified by measurements performed for previous Minuteman launches. However, since this launch occurred during the harbor seal pupping season on VAFB, biological monitoring was required at VAFB. Diurnal observations of harbor seals were conducted at the Lion's Head haul-out site from June 26 through July 1, 2009. The number of harbor seals observed during the monitoring period ranged from three to 11 seals. Post-launch counts exceeded pre-launch counts. No pups were seen during the launch monitoring period. Additionally, no seals were present within the video recorder frame at the time of the launch. In summary, there was no evidence of injury, mortality, or abnormal behavior in any monitored harbor seals on VAFB resulting from this launch.

#### **Authorization**

The USAF complied with the requirements of the 2009 LOA, and NMFS has determined that the marine mammal take resulting from the 2009 launches is within that analyzed in and anticipated by the associated

regulations. Accordingly, NMFS has issued a LOA to the 30th Space Wing, USAF authorizing the take by harassment of marine mammals incidental to space vehicle and test flight activities at VAFB. Issuance of this LOA is based on findings described in the preamble to the final rule (74 FR 6236, February 6, 2009) and supported by information contained in VAFB's 2009 annual report that the activities described under this LOA will have a negligible impact on marine mammal stocks. The provision requiring that the activity not have an unmitigable adverse impact on the availability of the affected species or stock for subsistence uses does not apply for this action.

Dated: January 25, 2010.

**Helen M. Golde,**

*Deputy Director, Office of Protected Resources, National Marine Fisheries Service.*

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[4910-13]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

Office of Commercial Space Transportation

**AGENCY:** Federal Aviation Administration (FAA)

**ACTIONS:** Finding of No Significant Impact (FONSI) and Record of Decision (ROD)

**SUMMARY:** The FAA participated as a cooperating agency with the National Aeronautics and Space Administration (NASA) in the preparation of the August 2009 *Environmental Assessment for the Expansion of the Wallops Flight Facility Launch Range* (the EA) in accordance with the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. 4321-4347 (as amended) and Council on Environmental Quality NEPA implementing regulations (40 Code of Federal Regulations (CFR) Parts 1500 to 1508) to evaluate the potential environmental impacts of the proposed expansion of the Mid-Atlantic Regional Spaceport (MARS) at the NASA Goddard Space Flight Center Wallops Flight Facility (WFF). As the MARS expansion would require Federal actions (as defined in 40 CFR Section 1508.18) involving both NASA and the FAA, the EA was prepared to satisfy the NEPA obligations of both agencies. NASA, as the WFF property owner and lead agency, is responsible for ensuring overall compliance with applicable environmental statutes, including NEPA. The FAA (Office of Commercial Space Transportation) served as a cooperating agency in the preparation of the EA because of its role in (1) licensing the Virginia Commercial Space Flight Authority (VCSFA) which operates MARS as a commercial launch site and (2) issuing licenses or permits to operate commercial launch and reentry vehicles at MARS. The FAA is using the EA in this FONSI/ROD to support the modification or renewal of VCSFA's Launch Site Operator License and issuance of licenses or experimental permits for commercial launch and reentry vehicles at MARS.

Under the Proposed Action in the EA, NASA and MARS facilities would be upgraded to support up to and including medium large class suborbital and orbital expendable launch vehicle (ELV) launch activities from WFF. NASA's Preferred Alternative includes site improvements required

to support launch operations (such as facility construction and infrastructure improvements); testing, fueling, and processing operations; up to two static fire tests per year; launching up to six orbital-class vehicles per year from Pad 0-A; and the reentry of associated crew or cargo capsules. Implementation of NASA's Preferred Alternative would result in a maximum of 18 orbital-class vehicle launches from MARS Launch Complex 0 (twelve existing launches from Pad 0-B and six additional launches from Pad 0-A). As several different launch and reentry vehicles could launch from MARS Pad 0-A, the largest launch vehicle and payload (which could include a reentry vehicle), in terms of size, weight, and dimension, was chosen as the demonstration, or "envelope," vehicle and payload to provide a benchmark for assessing impacts on resources at WFF and the surrounding environment. Orbital Sciences Corporation's Taurus II would be the largest ELV expected to be launched from MARS Pad 0-A under the Proposed Action. Therefore, the Taurus II was selected as the envelope launch vehicle for purposes of the EA. Orbital Science Corporation's Cygnus Capsule and Space Exploration Technologies Corporation's Dragon Capsule were evaluated as potential reentry vehicles, because they may be carried by the Taurus II and Falcon 9, respectively.

NASA issued a FONSI on August 29, 2009, which stated that the environmental impacts associated with the Proposed Action would not individually or cumulatively have a significant impact on the quality of the human environment, and therefore the preparation of an Environmental Impact Statement (EIS) was not required.

Based on its independent review and consideration, the FAA issues this FONSI/ROD concurring with the analysis of impacts and findings in the EA and formally adopts the EA to support the modification or renewal of VCSFA's Launch Site Operator License and issuance of launch and reentry licenses or experimental permits to operate commercial vehicles at MARS. In addition, the FAA is using a May 2010 U.S. Fish and Wildlife (USFWS) Biological Opinion (as required by Section 7 of the Endangered Species Act) and a December 2009 USFWS consultation letter (as required by Section 4(f) of the Department of Transportation Act) to further support its environmental determination in this FONSI/ROD for modifying or renewing VCSFA's Launch Site Operator License and for issuing licenses or permits to operate commercial launch and reentry vehicles at MARS.

After reviewing and analyzing available data and information on existing conditions, potential impacts, and measures to mitigate those impacts, the FAA has determined that neither modification or renewal of VCSFA's Launch Site Operator License nor issuance of launch and reentry licenses or experimental permits to operate commercial vehicles at MARS are Federal actions that would significantly affect the quality of the human environment within the meaning of NEPA. Therefore, the preparation of an EIS is not required, and the FAA is issuing this FONSI/ROD. The FAA made this determination in accordance with all applicable environmental laws and FAA regulations. NASA's EA is incorporated by reference in this FONSI/ROD.

**FOR A COPY OF THE ENVIRONMENTAL ASSESSMENT:** Visit the following internet address: [http://sites.wff.nasa.gov/code250/expansion\\_ea.html](http://sites.wff.nasa.gov/code250/expansion_ea.html) or contact Mr. Daniel Czelusniak, Environmental Specialist, Federal Aviation Administration, 800 Independence Avenue, SW, Washington, DC 20591, by e-mail at [Daniel.Czelusniak@faa.gov](mailto:Daniel.Czelusniak@faa.gov), or by phone at (202) 267-5924.

**PURPOSE AND NEED:** The purpose of the action is to fulfill the FAA Office of Commercial Space Transportation's responsibilities, under the Commercial Space Launch Amendments Act (CSLA) and Executive Order 12465, for oversight of commercial space launch activities, including licensing of launch sites and launch and reentry activities. The FAA's proposed modification or renewal of the license to operate MARS as a commercial launch site, and issuing licenses or permits to operate commercial launch and reentry vehicles, would be consistent with the agency's responsibilities under the CSLA.

The need for action results from the statutory direction from Congress, FAA's regulations, and a Presidential Executive Order, which encourage, facilitate, and promote commercial space launches and reentries by the private sector and facilitate the strengthening and expansion of the U.S. space transportation infrastructure, in accordance with the applicable requirements.<sup>1</sup>

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<sup>1</sup> The Commercial Space Launch Amendments Act of 2004 (Public Law 108-492), the Commercial Space Transportation Competitiveness Act of 2000 (Public Law 106-405); Executive Order 12465, Commercial Expendable Launch Vehicle Activities (February 24, 1984); CFR Title 14, Aeronautics and Space, Parts 400-450, Commercial Space Transportation, Federal Aviation Administration, Department of Transportation; the Commercial Space Act of 1998 (Public Law 105-303); the U.S. Space Transportation Policy of 2004; and the National Space Policy of 1996 and 2006.

**PROPOSED ACTION:** Under the Proposed Action, the FAA would modify or renew VCSFA's Launch Site Operator License to operate MARS as a commercial launch site. The FAA could modify VCSFA's Launch Site Operator License in accordance with changes proposed in the EA, which include the following proposed changes:

- Modifications to the boat dock on the north end of Wallops Island to accommodate unloading of ELVs and spacecraft;
- Construction of a Payload Processing Facility, Payload Fueling Facility, Horizontal Integration Facility, and Liquid Fueling Facility;
- Construction of new roads and minor upgrades to existing roads to transport cargo;
- Construction of a new MARS launch complex including a pad access ramp, launch pad, and deluge system; and
- Minor interior modifications to existing facilities to support launches, including modifications to the launch control buildings, communication support systems, radar system, and antennas.

Additionally, the FAA could issue launch and reentry licenses or experimental permits to operate commercial vehicles at MARS Pad 0-A. The EA analyzed the potential environmental impacts of a maximum of six additional orbital-class vehicle launches per year that would occur at Pad 0-A, resulting in a maximum of 18 orbital-class vehicle launches from MARS (12 existing launches from Pad 0-B, and six additional launches from Pad 0-A). In addition to launches, static test firing of rocket engines (up to two per year) would occur at Pad 0-A. All commercial launch or reentry vehicles that would operate under a launch or reentry license or experimental permit would be expected to fall within the parameters analyzed in the EA (e.g., number of launches, type of vehicles, payload). Applicants proposing vehicle types and launch rates that are not substantially the same as addressed in the EA in terms of potential impacts could be subject to an additional or supplemental environmental review.

**ALTERNATIVES CONSIDERED:** Alternatives analyzed as part of this FONSI/ROD included (1) the Proposed Action and (2) the No Action Alternative. Under the No Action Alternative, the FAA would not modify or renew VCSFA's Launch Site Operator License and

would not issue commercial launch or reentry licenses or experimental permits to future applicants. Commercial launch vehicle operators would not be authorized to conduct commercial launch vehicle operations at MARS Pad 0-A, and VCSFA could only operate the commercial launch facility under the current terms and conditions of the existing Launch Site Operator License.

## **ENVIRONMENTAL IMPACTS**

The following presents a brief summary of the potential environmental impacts considered in the EA. This FONSI/ROD incorporates the EA by reference and is based on the potential impacts discussed in the EA. The FAA has determined the analysis of impacts presented in the EA represents the best available information regarding the potential impacts associated with the FAA's regulatory responsibilities described in this FONSI/ROD.

### **Air Quality**

Construction activities would generate fugitive dust and combustion emissions from equipment and vehicles. Operational emissions would occur from generators, boilers, vehicles, marine vessels, and equipment associated with preparations for launches. These operations would result in minor emissions of pollutants. NASA and MARS would obtain any necessary air emission permits from the Virginia Department of Environmental Quality (VDEQ) and would mitigate potentially adverse impacts to air quality, for both construction and operations, by implementing site-specific best management practices such as fugitive dust control and regular engine/system maintenance. Emissions from launches would consist primarily of rocket exhaust. In the area immediately surrounding the launch pad, short-term potentially adverse impacts resulting from rocket exhaust could include high temperature exhaust gases and elevated carbon monoxide concentrations. No violation of the National Ambient Air Quality Standards (NAAQS) is anticipated due to the EA's Proposed Action. Furthermore, no adverse impact from rocket exhaust beyond the immediate launch area is anticipated.

### **Biological Resources**

Long-term adverse impacts to vegetation would occur due to the removal of trees and wetland vegetation due to the construction of the Payload Processing Facility, Payload Fueling Facility,

and road improvements. However, impacts would be localized and would not present a substantial adverse effect. Approximately 0.0156 acre of wetlands would be affected. As required by Section 404 of the Clean Water Act, NASA and MARS have obtained a Nationwide Permit from the U.S. Army Corps of Engineers for expansion of the WFF. Minor adverse effects on vegetation from launches would also occur but would be limited to a localized area around Pad 0-A. Short-term adverse impacts to wildlife and migratory birds may occur during construction activities, launches, and static fire activities. Long-term impacts may occur due to the loss of wetland and forest habitat. To mitigate impacts to wetlands, NASA and MARS would provide compensatory wetland restoration, enhancement, and preservation to ensure no net loss of wetlands and to improve habitat conditions on WFF property.

Spent ELV stages would fall and sink into the ocean many miles offshore and no adverse effects on marine species are anticipated as a result. Similarly, during a controlled, destructive reentry of the Cygnus Capsule, any surviving components that do not burn up in the atmosphere would be expected to land and sink in the ocean. The Dragon Capsule would land in the ocean during a controlled reentry and would be recovered by a recovery vessel. There is a remote possibility that surviving pieces of debris could initially present minor impacts to marine life or vessels on or near the ocean surface. However, once the pieces travel a few feet below the ocean surface, their velocity would be slowed to the point that the potential for direct impact on sea life would be low. Additionally, although highly unlikely, toxic materials from launch failures have a small potential to adversely affect marine mammals or managed fish species and their habitats in the vicinity of the project area. Implementation of emergency cleanup procedures would mitigate any impacts.

NASA consulted with the National Marine Fisheries Service (NMFS) regarding potential impacts to Essential Fish Habitat (EFH) from the proposed boat dock improvements. NMFS responded that the proposed boat dock improvements would not result in substantial adverse effects to EFH, managed species, or their prey species.

Initially, NASA consulted informally with the USFWS regarding effects of the EA's Proposed Action on listed sea turtles, piping plover, seabeach amaranth, and the candidate red knot.

During this consultation, NASA found that proposed construction would not adversely affect listed species. However, the exterior lighting on proposed facilities and the noise and vibration associated with larger ELV operations (i.e., static fire testing and launches) may adversely affect nesting sea turtles and piping plovers. To mitigate impacts, NASA would implement lighting management procedures, as appropriate, during sea turtle nesting season, and would continue to monitor impacts on the piping plover and establish “off limits” areas during nesting season. Due to the historically low density of nesting sea turtles within the action area, and with the implementation of the above described mitigation measures, no substantial effect to listed species would be expected.

NASA prepared a Biological Assessment for the EA in accordance with the Endangered Species Act and initiated formal consultation with the USFWS. Prior to the USFWS issuing a Biological Opinion, NASA published the EA. The USFWS issued a Biological Opinion on May 10, 2010, stating:

*After reviewing the status of the piping plover, green sea turtle, leatherback sea turtle, loggerhead sea turtle, and seabeach amaranth, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service’s biological opinion that the ongoing and expanded orbital rocket program at WFF and other ongoing operations and use of the facility, as proposed, is not likely to jeopardize the continued existence of the piping plover, green sea turtle, leatherback sea turtle, loggerhead sea turtle, or seabeach amaranth, and is not likely to destroy or adversely modify designated critical habitat. Critical habitat for the piping plover and sea turtles has been designated, however, this action does not affect that area and no destruction or adverse modification of the critical habitat is anticipated.*

The USFWS included terms and conditions that NASA must follow to be exempt from the prohibitions of Section 9 (“take”) of the Endangered Species Act. These terms and conditions set out in the USFWS’ Biological Opinion include the following:

1. NASA must continue to implement the Wallops Island Protected Species Monitoring Plan for the duration of the Proposed Action, and provide an annual report summarizing the survey and monitoring efforts, the location and status of all occurrences of the protected species that are recorded, and any additional relevant information. Reports should be provided to the USFWS’s Virginia Field Office in digital format by December 31 of each year.

2. NASA must report any evidence of potential nesting activity of green sea turtles or leatherback sea turtles on Wallops Island to the USFWS's Virginia Field Office within one business day of observing activity.
  
3. NASA must implement video monitoring of plover nests most likely to be affected by launch activities (those located close to launch pads) during launches to measure and record bird responses. This monitoring shall be conducted for at least each of the first 10 large rocket launches (those launches for which noise levels are expected to exceed 100 dB within potential plover nesting habitat) that occur after issuance of this Biological Opinion. If no plover nests are active within areas expected to be subjected to sound levels greater than 100 dB, other similar shorebird species nesting in similar habitat should be monitored as surrogates to provide information on species responses. Monitoring shall include measurement of actual sound intensity at the monitoring site during launch, weather conditions, and other factors which may contribute to responses. Monitoring shall take place two hours prior to, during, and at least two hours after the launch. Within five business days of each launch, a DVD of the monitoring and a report in digital format containing the additional measurements will be provided to the USFWS's Virginia Field Office. Following documentation of avian responses from the first launches, NASA may request USFWS concurrence to discontinue this monitoring. If this is not requested, or if concurrence is not provided, NASA must continue this monitoring.
  
4. NASA must develop a training and familiarization program for all security personnel conducting patrols in areas where listed species may occur. This training programming shall include basic biological information about all listed species and be sufficient to allow personnel to at least tentatively identify the species and provide basic information to recreational users about appropriate avoidance and minimization measures. This training should be offered to interested recreational beach users.

5. NASA must develop a reporting system so that any personnel who observe listed species or potential occurrences of listed species on WFF can provide the information to personnel who can investigate the report. The intent of this is to use every opportunity possible to implement avoidance and minimization measures. Within 60 days of the date of the Biological Opinion, NASA must provide the USFWS with an electronic draft of the reporting system for review and approval.
  
6. NASA must take care in handling any dead specimens of proposed or listed species that are found to preserve biological material in the best possible state. In conjunction with the preservation of any dead specimens, the finder has the responsibility to ensure that evidence intrinsic to determining the cause of death of the specimen is not unnecessarily disturbed. The finding of dead specimens does not imply enforcement proceedings pursuant to the Endangered Species Act. The reporting of dead specimens is required to enable the USFWS to determine if take is reached or exceeded and to ensure that the terms and conditions are appropriate and effective. Upon locating a dead specimen, NASA must notify the USFWS's Virginia Law Enforcement Office and the USFWS's Virginia Field Office at the numbers and addresses provided in the Biological Opinion.

NASA has committed to implementing all the terms and conditions listed in the USFWS's Biological Opinion.

### **Cultural Resources**

Ground disturbance would be located outside of areas designated as having moderate or high potential for archeological resources. No adverse effects on aboveground historic properties are anticipated. NASA consulted with the Virginia Department of Historic Resources (VDHR). VDHR concurred with NASA's determination that NASA's Proposed Action would not adversely affect any historic properties.

### **Geology and Soils**

No adverse impacts to geologic resources are anticipated from the EA's Proposed Action. Construction activities would result in disturbance of the ground surface and would have the

potential to cause soil erosion. Additionally, spills or leaks that may occur during storage or transportation of materials would have the potential to affect soils. NASA and MARS would minimize adverse impacts to soils by acquiring Virginia Stormwater Management Program permits, as necessary, and developing and implementing site-specific Stormwater Pollution Prevention Plans and Erosion and Sediment Control Plans prior to ground-disturbing activities.

#### **Land Use and Section 4(f) Resources**

All construction activities and rocket launches would occur within Virginia's Coastal Management Area. VDEQ concurred with NASA's determination that NASA's Proposed Action is consistent with the enforceable policies of the Virginia Coastal Resources Management Program.

NASA concluded the EA's Proposed Action would not be considered a constructive or physical use of any Section 4(f) properties, and therefore, would not result in substantial impairment of Section 4(f) properties. On December 2, 2009, the FAA sent a letter to the USFWS summarizing NASA's Section 4(f) determination and requesting written concurrence with the determination. On December 22, 2009, the USFWS signed the letter, concurring with NASA and the FAA.

#### **Noise**

Construction and transportation activities would have the potential to generate temporary increases in noise levels from heavy equipment operations. To mitigate impacts, NASA and MARS would require that workers wear hearing protection in accordance with Occupational Safety and Health Administration standards. Therefore, impacts to the occupational health of construction workers as a result of construction noise are not expected.

Launches and static test firing would create loud instantaneous noise that may be heard for several miles from WFF. The marshland and water surrounding Wallops Island act as a buffer zone for noise generated during rocket launches. The EA's Proposed Action is not expected to have noise impacts on any non-compatible land use in the surrounding areas in excess of applicable thresholds of significance. To minimize public disturbance, NASA and MARS would

continue to notify the public in advance of planned operations via widely available media outlets, including the internet, local radio stations, and newspapers.

**Physical Resources (Water Resources [Surface Water, Ground Water, Floodplains], Hazardous Materials, Pollution Prevention, and Solid Waste)**

*Surface Water*

No direct discharges to surface waters, including wetlands, are anticipated. Construction activities, spills, or leaks during storage or transportation of materials, launch emissions, and launch failures would all have the potential to affect surface waters including wetlands. Any accidental release of contaminants or liquid fuels would be addressed in accordance with the existing WFF Integrated Contingency Plan (ICP).

Launch of a Taurus II would result in the emission of carbon monoxide (CO) and carbon dioxide (CO<sub>2</sub>) at Pad 0-A. When CO and CO<sub>2</sub> combine with water vapor in the air, carbonic acid may form, which could result in the deposition of carbonic acid on the ground surface in the area surrounding the launch pad. The effects of carbonic acid deposition on the adjacent tidal wetland area would be minimal as carbonic acid is a weak acid normally found in rainwater. The natural buffering capacity of the nearby surface waters and wetlands would resist substantial changes in pH. Additionally, stormwater within the Pad 0-A complex would be retained in basins designed to facilitate infiltration and evaporation.

In the unlikely occurrence of a launch failure, spilled rocket propellant 1 (RP-1) could enter the tidal wetlands close to the launch pad. Because some propellant would likely be burned prior to failure, it is unlikely that the maximum amount of RP-1 held in the tanks would be spilled. NASA and MARS would follow the emergency response and cleanup procedures outlined in the WFF ICP.

Temporary adverse impacts on marine waters in the area immediately surrounding the north Wallops Island boat basin would occur during improvements to the dock. Additionally, spent ELV stages falling into the ocean would impact the marine environment. Similarly, during a controlled, destructive reentry of the Cygnus Capsule, any surviving components that do not

burn up in the atmosphere would be expected to land and sink in the ocean. The Dragon Capsule would land in the ocean during a controlled reentry and would be recovered by a recovery vessel. Based on past analyses, it is expected that the environmental impact of reentry from orbital debris would be negligible. Marine waters would be affected if a barge or vessel were to accidentally spill its fuels or lubricants into the ocean or estuary environment. Toxic concentrations are not anticipated in the open ocean due to the mixing and dilution rates associated with the wave movement and the vastness of the ocean environment. Therefore, adverse impacts on marine waters would be short-term and localized.

#### *Ground Water*

NASA would provide potable water to the Payload Processing Facility, Payload Fueling Facility, and Horizontal Integration Facility for drinking water supply, fire suppression, and industrial water use. In addition, static fire testing and launches would require the use of deluge water. Although WFF's water use would increase, maximum withdrawal amounts would be within the limit allowed by NASA's existing groundwater withdrawal permit.

#### *Floodplains*

All facility construction and infrastructure improvements would take place within the 100-year and 500-year floodplains. Because Wallops Island is the location for WFF's core launch range functions, and is entirely within the floodplain, no practicable alternatives exist. The functionality of the floodplain on Wallops Island would not be substantially reduced due to the presence of proposed facilities because the footprint of the facilities would not cover a substantial area of the island. Flood control measures for handling and storage of hazardous wastes and materials includes location of the substances above the flood level, and moving hazardous wastes and materials outside of the floodplain when substantial storms are imminent. NASA would ensure that its actions comply with Executive Order (EO) 11988, Floodplain Management, and 14 CFR 1216.2 (NASA Regulations on Floodplain and Wetland Management) to the maximum extent possible. The EA served as NASA's means for facilitating public review as required by EO 11988. No significant impacts to the floodplain on Wallops Island are anticipated due to launch activities.

### *Hazardous Materials, Pollution Prevention, and Solid Waste*

The principal hazardous materials used would be liquid propellants, hypergolic propellants, pressurized gases, and various solvents and compounds used to process the ELV and spacecraft. To mitigate potential environmental impacts from an accident (e.g., leak, fire, or explosion), NASA and MARS would manage all hazardous materials and waste in accordance with applicable Federal, state, and local regulations, and the WFF ICP.

Ground disturbances during construction may have the potential to uncover munitions and explosives of concern (MEC) on Wallops Island. To mitigate potential impacts, a qualified MEC specialist would evaluate the area proposed for ground disturbance and conduct a survey of the area if necessary prior to construction activities.

ELV upper stages and spacecraft placed into orbit would generate orbital debris that could re-enter the Earth's atmosphere. All orbital missions originating from WFF would comply with NASA's processes, as well as any applicable licensing agency's processes (as appropriate), for limiting generation of orbital debris, assessing the risk of reentry, and ensuring public safety.

### **Socioeconomics, Environmental Justice, and Children's Environmental Health and Safety**

Construction activities would temporarily increase local employment opportunities and benefit local stores and businesses. Launch support activities would create up to 125 new jobs to the area. Tax revenue would increase as a result, and the local economy would benefit from launches (e.g., tourism, services and commodities support, lodging).

NASA has prepared an Environmental Justice Implementation Plan (EJIP) to comply with EO 12898, *Federal Action to Address Environmental Justice in Minority Populations and Low Income Populations*. The EJIP concluded that Federal actions conducted at or by WFF do not disproportionately or adversely affect low-income or minority populations.

EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, encourages Federal agencies to consider the potential effects of Federal policies, programs, and activities on children. The closest day care centers, schools, camps, nursing homes, and

hospitals are addressed within the EJIP. None of these facilities are in the planned flight path of the ELV, and all are beyond the safety zone around Pad 0-A.

Construction activities at the WFF site could result in short-term impacts to human health and safety and the increased usage of local fire, police, and medical services. Operation of fueling and processing facilities and ELV launches would not present substantial impacts to public safety as all operations would be conducted in accordance with mission-specific ground and flight safety plans.

### **Cumulative Impacts**

This section presents a brief summary of the potential cumulative environmental impacts considered in the EA. This FONSI/ROD incorporates the EA by reference and is based on the potential impacts discussed in the EA that consider the past, present, and reasonably foreseeable future activities at WFF and in the surrounding areas that would affect the resources impacted by the EA's Proposed Action. Cumulative impacts were evaluated for potentially affected resources including air quality, biological resources, and water resources. Other than those described in the EA, no additional substantial cumulative impacts are anticipated when added to other known past, present, and reasonably foreseeable future actions within the WFF area. None of the potential effects described in the EA considered cumulatively, however, rise to the level of significance.

### *Air Quality*

Construction-related activities under the EA's Proposed Action and other projects planned at WFF would occur at different locations and at different times over a period of several years. Such activities would result in fugitive particulate emissions from site preparation and wind erosion. Best management practices would be implemented on each project to minimize those emissions. Exhaust emissions from the vehicles and equipment associated with these construction projects occurring at WFF would be short-term, negligible, and localized.

Minimal and short-term cumulative impacts from construction-related activities are anticipated. Cumulative emissions from these construction projects are unlikely to lead to adverse air quality

impacts because these projects' contribution to regional emissions would be minor and any effect on regional concentrations of air pollutants would be insignificant. Regional concentrations are in attainment, with no indication that a redesignation for any criteria pollutant is imminent, and consequently any increases due to cumulative emissions would not cause concentrations to approach the NAAQS. There would not be a substantial effect on local or regional air quality, or violation of NAAQS.

Launch activity would have only a localized impact on air quality. Long-term effects are not expected because the launches would be small in number and would occur as independent events separated in time. No substantial cumulative impacts to air quality and no violation of the NAAQS are expected due to launch activities.

The EA's Proposed Action would emit small amounts of greenhouse gases (GHGs) compared to global emissions. To help reduce GHG emissions from its facilities and activities, WFF would comply with the federally mandated EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*. EO 13423 instructs Federal agencies to conduct their environmental, transportation, and energy-related activities in an environmentally, economically, and fiscally sound efficient and sustainable manner. It also directs Federal agencies to implement sustainable practices for energy efficiency, reductions in GHG emissions, and use of renewable energy. Substantial cumulative impacts to the global climate from the EA's Proposed Action, when added to other known and foreseeable regional actions, are not anticipated.

### *Biological Resources*

Potential cumulative impacts to terrestrial wildlife and migratory birds could result from habitat alteration and disturbance under the EA's Proposed Action and other projects planned at WFF. However, vast areas of habitat will remain on Wallops Island and the surrounding area, and no substantial cumulative impacts on wildlife or migratory birds are anticipated.

Three of the four current and reasonably foreseeable projects identified in the EA do not involve activity in marine waters. However, two potential projects at WFF could affect tidal wetlands and therefore impact Essential Fish Habitat (EFH). EFH assessments will be included in the

NEPA documents for these projects as necessary, and NASA will consult with NMFS Habitat Conservation Division to develop appropriate mitigation measures, if needed. One of the potential projects (the WFF Shoreline Restoration and Infrastructure Protection Program) would involve activity in marine waters. In February 2010, NASA issued a Draft Programmatic EIS for the Shoreline Restoration and Infrastructure Protection Program. The environmental analysis contained in the Draft Programmatic EIS indicates potential temporary, localized adverse impacts to marine mammals. NASA initiated formal consultation with the USFWS and NMFS, and a Biological Assessment is currently being prepared by NASA as a component of the formal consultation process. Once the USFWS and NMFS issue a Biological Opinion, NASA will finalize the consultation process by obtaining any required incidental take permits from the USFWS and NMFS and implementing any identified mitigation measures. As such, no substantial cumulative effects to marine mammals or EFH from current and proposed projects described in the EA are anticipated.

The EA determined that although the proposed and current launch activities may adversely affect both federally protected piping plover and sea turtles, the effect on either is not likely to be substantial. As mentioned above, NASA prepared a Biological Assessment for potential effects to listed species, and the USFWS issued a Biological Opinion, stating that NASA's Proposed Action is not likely to jeopardize the continued existence of the listed species, and is not likely to destroy or adversely modify designated critical habitat. NASA must comply with the terms and conditions listed in the Biological Opinion.

As all future projects at WFF would be subject to Section 7 review and consultation, NASA would adhere to all avoidance and mitigation measures issued by USFWS. The current range of operations on Wallops Island, when combined with NASA's Proposed Action and other WFF projects, is not anticipated to result in substantial adverse cumulative effects to federally listed species.

*Physical Resources (Water Resources [Surface Water, Groundwater, Floodplains], Hazardous Materials, Pollution Prevention, and Solid Waste)*

The EA's Proposed Action would have a minor and temporary impact on the water resources of the affected region. The incremental contribution to cumulative water resource impacts from the EA's Proposed Action would not be substantial.

Historically, many rocket launches have occurred at MARS Launch Complex 0, and local water resources have been exposed to launch impacts by many past actions. Impacts on water resources from other launches at WFF may result from incidental spills and release of propellants from on-pad accidents or emergencies, launch anomalies, or rocket stages falling in the ocean. Such spills or releases may affect surface water, including wetlands. Emergency response and cleanup procedures would be employed to address on-pad accidents and emergency releases, and solid waste recovery and treatment would reduce the severity of launch anomalies.

The current and proposed projects on Wallops Island would impact 3.7 hectares (9.1 acres) of wetlands. Previous compensation resulted in 1.5 hectares (3.7 acres) of wetlands gained. Therefore, the cumulative impact of past, current, and proposed projects on Wallops Island would result in a net loss of 2.2 hectares (5.4 acres) of wetlands, which would require compensatory mitigation. NASA would obtain necessary permits including Section 404 and Section 10 permits for all proposed projects that could affect wetlands. Additionally, NASA is currently preparing a Wetlands Inventory and Management Plan for WFF. The goal of this effort is to provide strategic regulatory, environmental, and land use analysis of all wetlands on the Main Base, Wallops Mainland, and Wallops Island in order to develop a comprehensive long-term wetland management plan for the facility. Because NASA would implement compensatory wetland mitigation measures to offset any impacts and ensure no net loss of wetlands, no substantial cumulative adverse impacts to wetlands are anticipated.

Current and reasonably foreseeable projects are not expected to increase potable water demand at WFF. WFF would monitor groundwater withdrawal rates to ensure continued compliance with WFF's VDEQ groundwater withdrawal permit.

**AGENCY FINDINGS:** In accordance with applicable law, the FAA makes the following findings/determinations based on the appropriate information and data contained in the EA:

- Certification under 49 U.S.C. 44502(b) (formerly Section 308 of the Federal Aviation Act of 1958, as amended). I certify that the proposed improvement project is reasonably necessary for use in air commerce or for national defense.
- Based on the EA, no significant environmental impacts would be incurred as a result of the Federal action.

**DECISION AND ORDER:** As a cooperating agency, the FAA participated in the preparation of the EA. The FAA decision in this ROD is based on a comparative examination of environmental impacts for each of the alternatives studied during the environmental review process. The EA discloses the potential environmental impacts for each of the alternatives and provides a full and fair discussion of those impacts. There would be no significant impacts, including no cumulative impacts, to the natural environment or surrounding population as a result of the EA's Proposed Action.

The FAA believes the selected alternative best fulfills the purpose and need identified in the EA. In contrast, the No-Action Alternative fails to meet the purpose and need identified in the EA. For reasons summarized earlier in this FONSI/ROD, and supported by disclosures and analysis detailed in the EA, the FAA has determined that the EA's Proposed Action is a reasonable, feasible, practicable, and prudent alternative for a Federal decision in light of the established goals and objectives. An FAA decision to take the required actions and approvals is consistent with its statutory mission and policies supported by the findings and conclusions reflected in the environmental documentation and this FONSI/ROD.

The FAA has determined that environmental and other relevant concerns presented by interested agencies and private citizens have been sufficiently addressed in the EA, hereby acknowledged and fully and properly considered in the decision-making resulting in the FONSI/ROD. The FAA concludes there are no outstanding environmental issues to be resolved by it with respect to the EA's Proposed Action.

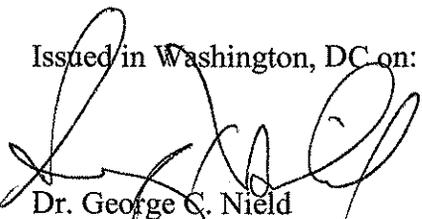
After reviewing the EA and all its related materials, I have carefully considered the FAA's goals and objectives in relation to various aeronautical aspects of the proposed development actions

described in the EA, including the purpose and need to be met, the alternative means of achieving them, the environmental impacts of these alternatives, the mitigation necessary to preserve and enhance the environment, and the costs and benefits of achieving the stated purpose and need. While this decision does not constitute approval or commitment of Federal funding, it does provide the environmental findings and approval necessary as conditions precedent to funding actions in accordance with established procedures and applicable requirements.

After careful and thorough consideration of the facts contained herein, the undersigned finds that the proposed Federal action is consistent with existing national environmental policies and objectives as set forth in Section 101 of NEPA and other applicable environmental requirements and will not significantly affect the quality of the human environment or otherwise include any condition requiring consultation pursuant to Section 102(2)(c) of NEPA.

This FONSI/ROD represents the FAA's final decision and approvals for the actions identified, including those taken under the provisions of Title 49 of the United States Code, Subtitle VII, Parts A and B. These actions constitute a final order of the Administrator subject to review by the Court of Appeals of the United States in accordance with the provisions of 49 U.S.C. § 46110.

Issued in Washington, DC on: August 3, 2010

  
Dr. George C. Nield  
Associate Administrator for  
Commercial Space Transportation

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# Rules and Regulations

Federal Register

Vol. 75, No. 233

Monday, December 6, 2010

This section of the FEDERAL REGISTER contains regulatory documents having general applicability and legal effect, most of which are keyed to and codified in the Code of Federal Regulations, which is published under 50 titles pursuant to 44 U.S.C. 1510.

The Code of Federal Regulations is sold by the Superintendent of Documents. Prices of new books are listed in the first FEDERAL REGISTER issue of each week.

## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 431

#### Waiver of Acceptable Mission Risk Restriction for Reentry and a Reentry Vehicle

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of waiver.

**SUMMARY:** This notice of waiver concerns two petitions for waiver submitted to the FAA by Space Exploration Technologies Corp. (SpaceX): A petition to waive the requirement that a waiver petition be submitted at least sixty days before the proposed effective date; and a petition to waive the restriction that the combined risk to the public from the launch and reentry of a reentry vehicle not exceed an expected average number of 0.00003 casualties ( $E_c \leq 30 \times 10^{-6}$ ) from debris. The first petition is unnecessary because, as explained below, SpaceX demonstrated good cause for its late filing. The FAA grants the second petition and waives the restriction that the combined risk to the public from the launch and reentry of a reentry vehicle not exceed an expected average number of 0.00003 casualties ( $E_c \leq 30 \times 10^{-6}$ ) from debris.

**FOR FURTHER INFORMATION CONTACT:** For technical questions concerning this waiver, contact Philip Brinkman, Licensing Program Lead, Commercial Space Transportation—Licensing and Safety Division, 800 Independence Avenue, SW., Washington, DC 20591; telephone: (202) 267-7715; e-mail: [phil.brinkman@faa.gov](mailto:phil.brinkman@faa.gov). For legal questions concerning this waiver, contact Laura Montgomery, Senior Attorney for Commercial Space Transportation, AGC-200, Office of the Chief Counsel, Regulations Division,

Federal Aviation Administration, 800 Independence Avenue, SW., Washington, DC 20591; telephone: (202) 267-3150.

#### SUPPLEMENTARY INFORMATION:

##### Background

On October 11, 2010, SpaceX submitted a waiver petition to the Federal Aviation Administration's (FAA's) Office of Commercial Space Transportation (AST) requesting two waivers with respect to a reentry license for Dragon, a reentry vehicle, to be carried aboard Falcon 9 flight 002. First, SpaceX requested a waiver of 14 CFR 404.3(b)(5), which requires that a waiver petition be submitted at least sixty days before the proposed effective date of the waiver. Second, SpaceX requested a waiver of 14 CFR 431.35(b)(1)(i),<sup>1</sup> which prohibits a mission involving a reentry vehicle when the total expected average number of casualties ( $E_c$ ) for that mission exceeds  $30 \times 10^{-6}$ .

The FAA licenses the launch of a launch vehicle, reentry of a reentry vehicle, and the operation of a launch or reentry site under authority granted to the Secretary of Transportation in the Commercial Space Launch Act of 1984, as amended, codified in 49 U.S.C. Subtitle IX, chapter 701 (Chapter 701), and delegated to the FAA Administrator. The Associate Administrator for Commercial Space Transportation exercises licensing authority under Chapter 701.

SpaceX is a private commercial space flight company. It has entered into a Space Act Agreement with the National Aeronautics and Space Administration (NASA) as part of NASA's Commercial Orbital Transportation Services (COTS) program. The COTS program is designed to stimulate efforts by the private sector to demonstrate safe, reliable, and cost-effective space transportation to the International Space Station.

The petition addresses an upcoming demonstration flight that SpaceX plans to undertake as part of the COTS program. At the time of the filing of the petition, the launch was scheduled for November 8, 2010. SpaceX's Falcon 9 launch vehicle will launch a reentry vehicle, named Dragon, into orbit. Once

<sup>1</sup> Even though Dragon is a reentry vehicle and not a reusable launch vehicle, 14 CFR 435.35 incorporates and applies section 431.35 to all reentry vehicles.

Dragon is in orbit, it will be subjected to a ground-implemented health check. The health check is designed to check time-dependent variables to ensure the health and functionality of the propellant, power, and avionics subsystems. If Dragon passes the health check, a ground operator will issue a remote command to reenter, which will initiate Dragon's reentry and ultimately result in Dragon splashing down in the ocean off the coast of Southern California. If Dragon fails the health check, the ground operator will issue a remote command that will disable Dragon's reentry, leaving Dragon in orbit.

While planning for this mission, SpaceX calculated that  $21 \times 10^{-6}$  is the expected average number of casualties ( $E_c$ ) to which the public will be exposed by vehicle or vehicle debris impact hazards associated with the launch of Falcon 9 and reentry of Dragon. Because this  $E_c$  was less than the  $30 \times 10^{-6}$  limit imposed by 14 CFR 431.35(b)(1)(i), SpaceX believed that it complied with the regulations.

The FAA informed SpaceX that the FAA assessed the risk for the launch of Falcon 9 and reentry of Dragon as  $47 \times 10^{-6}$ . The  $E_c$  for the launch of Falcon 9 is  $19 \times 10^{-6}$ , and by adding an  $E_c$  of  $7 \times 10^{-6}$  to account for the nominal reentry of Dragon and an  $E_c$  of  $21 \times 10^{-6}$  to account for the possibility that Dragon will initiate a failed attempt at reentry, the FAA obtained a total  $E_c$  value of  $47 \times 10^{-6}$  for the launch of Falcon 9 and reentry of Dragon. Because the FAA's calculations resulted in a total  $E_c$  value that exceeded the  $30 \times 10^{-6}$  limit imposed by section 431.35(b)(1)(i), the FAA informed SpaceX that it would need to obtain a waiver.

In response, SpaceX filed two petitions for a waiver. First, SpaceX requested a waiver of the requirement that a petition be submitted at least sixty days before the proposed effective date of the waiver. Second, SpaceX requested a waiver of the restriction that the total  $E_c$  for a launch and reentry not exceed  $30 \times 10^{-6}$ . In its waiver request, SpaceX emphasized that it had attempted to ensure public safety by adopting the following risk mitigation measures for Dragon:

1. Dragon's thermal protection system has been modified so that if it enters facing down it will burn and demise.

2. Dragon can keep orbiting in order to increase the probability of initiating a safe reentry.

3. Dragon will automatically vent its propellants if it is not able to reenter as planned. Venting occurs autonomously, but SpaceX has the ability to issue a back-up command from the ground.

4. In the case of a failed or degraded deorbit burn, Dragon automatically drains propellants and subsequently deploys its parachutes.

5. A ground command received through one of three receivers and through multiple RF links, via TDRSS and multiple ground stations, can command the venting of any remaining fuel and the draining of battery power to reduce the possibility of explosion or toxic fumes when Dragon lands.

6. Dragon has the ability to autonomously guide itself to a pre-determined site located more than 780 km from the coastline.

7. Dragon has the ability to monitor its safety-critical systems in real-time.

8. Dragon has over 100% margin on both power and propellant budgets.

9. Dragon has a space-grade Inertial Measurement Unit and space-grade flight computer, both of which have extensive flight heritage including use on the International Space Station.

10. Dragon has redundant drogue parachutes and dual redundant main parachutes.

11. The vehicle's thrusters are plumbed such that Dragon can deorbit and reenter with the loss of any two entire propulsion modules.

12. The vehicle has backup capabilities within all of its major subsystems.

#### Waiver Criteria

Chapter 701 allows the FAA to waive a license requirement if the waiver (1) will not jeopardize public health and safety, safety of property, (2) will not jeopardize national security and foreign policy interests of the United States, and (3) will be in the public interest. 49 U.S.C. 70105(b)(3) (2010); 14 CFR 404.5(b) (2010).

#### Section 404.3 Waiver Petition

Section 404.3(b)(5) requires that a petition for a waiver be submitted at least sixty days before the proposed effective date of the waiver. However, this section also provides that a petition may be submitted late if the petitioner shows good cause. *Id.* (b)(5).

Here, SpaceX submitted its waiver petition on October 11, 2010, which was less than sixty days from its planned November 8, 2010, launch date. However, in its petition, SpaceX explained that it initially calculated the

risk for the launch of Falcon 9 and the reentry of Dragon in a different manner than the FAA, and was not aware that a waiver would be required until so informed by the FAA. Once the FAA informed SpaceX that it needed to obtain a waiver, SpaceX proceeded to apply for the waiver "in a timely fashion." As such, the FAA has found that SpaceX had good cause for submitting its waiver petition less than sixty days from the planned November 8, 2010, launch date. Therefore, SpaceX's late submission does not violate section 404.3(b)(5), and a waiver of that section is unnecessary.

#### Section 431.35(b)(1)(i) Waiver Petition

Section 431.35(b)(1)(i) prohibits a launch and reentry mission if the total  $E_c$  for that mission exceeds  $30 \times 10^{-6}$ . For reasons described below, the FAA waives this restriction to allow SpaceX to conduct a mission whose total  $E_c$  is  $47 \times 10^{-6}$ , where launch and reentry are each less than  $30 \times 10^{-6}$ . In deciding whether or not to issue a waiver, the FAA had to analyze whether the waiver: (1) Would jeopardize public health and safety or safety of property; (2) would jeopardize national security and foreign policy interests of the United States; and (3) was in the public interest. *See* 49 U.S.C. 70105(b)(3); 14 CFR 404.5(b).

##### A. Public Health and Safety and Safety of Property

In order to determine whether granting a waiver would jeopardize public health and safety or safety of property, the FAA considered: (1) Whether section 431.35 requires that the  $E_c$  calculations account for the possibility of a random uncontrolled reentry that occurs as a result of a reentry vehicle ceasing to function upon arrival in orbit; (2) whether granting a waiver would be consistent with the safety rationale underlying section 431.35; and (3) whether there were any other factors that would impact the waiver decision in this case.

##### i. Random Uncontrolled Reentry

At the outset, the FAA first addressed whether to account for random uncontrolled reentry not associated with a licensed reentry. Section 431.35 could apply to two types of random uncontrolled reentry: (1) A random uncontrolled reentry occurring as a result of a failed reentry attempt; and (2) a random uncontrolled reentry occurring as a result of a reentry vehicle ceasing to function upon arrival in orbit.

The preamble to the final rule provides ambiguous guidance on this matter. *Commercial Space Transportation Reusable Launch*

*Vehicle and Reentry Licensing Regulations, Final Rule*, 65 FR 56618 (Sep. 19, 2000). When discussing the possibility of requiring contingency abort locations for reentries, the preamble states that an applicant would have to show that an uncontrolled random reentry would not exceed acceptable risk criteria for the mission. *Id.* at 56641. Another part of the preamble states that risk to public safety from a reentry that is "essentially random or otherwise non-nominal" would be assessed as part of the licensing process and an applicant would have to demonstrate that such a reentry would not exceed acceptable risk criteria for the mission. *Id.* at 56623 n.2. As a result of this waiver petition, the FAA has had to address to which of the two possible random reentry scenarios this assessment must apply.

One possible interpretation of the preamble is that section 431.35 requires that the  $E_c$  calculations account for the possibility of a random uncontrolled reentry that occurs as a result of a reentry vehicle ceasing to function upon arrival in orbit. However, this interpretation would be problematic because Chapter 701 limits the FAA's licensing of reentry to scenarios involving purposeful reentry. *See* 49 U.S.C. 70102(12) (defining "reentry" as a purposeful act); *see also* 65 FR at 56624 (clarifying that, under Chapter 701, section 431.35 is intended to regulate scenarios in which "survivability by design is combined with the purposeful act of reentry"). Because a random uncontrolled reentry arising out of a reentry vehicle ceasing to function upon arrival in orbit is not purposeful and is thus not licensed, an interpretation that section 431.35 applies to this type of reentry would conflict with Chapter 701.

The better approach is to limit the risk associated with a random uncontrolled reentry to that caused by a failed reentry attempt. Because an attempt at a reentry is a purposeful act and thus requires a license, the FAA should account for the risk associated with a random uncontrolled reentry that occurs as a result of a failed attempt. *See* 49 U.S.C. at 70102(12); 65 FR at 56624.

Under the above rationale, the total  $E_c$  for the reentry of Dragon is the  $E_c$  for nominal reentry ( $7 \times 10^{-6}$ ) plus the  $E_c$  for the possibility of a failed attempt at reentry ( $21 \times 10^{-6}$ ), which results in a total reentry  $E_c$  of  $28 \times 10^{-6}$ . When the  $E_c$  for the launch of Falcon 9 ( $19 \times 10^{-6}$ ) is added to the reentry  $E_c$  of Dragon, the combined  $E_c$  for the Falcon 9 launch and Dragon reentry comes out to  $47 \times 10^{-6}$ .

ii. Consistency With Rationale for Section 431.35

The next matter that the FAA addressed was whether granting a waiver in this case would be consistent with the safety rationale underlying section 431.35. In the preamble to the notice of proposed rulemaking (NPRM), the FAA explained that, when it was drafting section 431.35, it decided to use a single aggregate risk threshold for a mission involving the launch and reentry of a reentry vehicle. *Commercial Space Transportation Reusable Launch Vehicle and Reentry Licensing Regulations*, NPRM, 64 FR 19626, 19635 (Apr. 21, 1999). However, the FAA also acknowledged that there could be circumstances where it would be appropriate to separate launch from reentry risk, such as where different operators were involved and could be apportioned allowable risk thresholds, or where intervening events or time made reentry risks sufficiently independent of launch risks as to warrant separate consideration. *Id.*

Here, the health check of Dragon, a different vehicle than the Falcon 9 launch vehicle, that will take place once Dragon is in orbit is an intervening event that makes the launch risk associated with the launch of Falcon 9 independent of the reentry risk associated with the reentry of Dragon. The health check will permit SpaceX to reevaluate Dragon's condition after the launch has taken place, and to make a fresh determination about whether Dragon should be permitted to reenter. If, after conducting a post-launch health check of Dragon, SpaceX finds safety concerns associated with reentry, SpaceX will be able to issue a command to disable Dragon's reentry. As such, because the reentry of Dragon is based on the results of an in-orbit health check that will be conducted independently of the launch, the risks associated with the launch of Falcon 9 and reentry of Dragon are sufficiently independent to warrant separate consideration in this case.

Evaluating these risks separately, the  $E_c$  for the launch of Falcon 9 is  $19 \times 10^{-6}$ , which is within the  $30 \times 10^{-6}$  limit imposed by section 431.35(b)(1)(i). Likewise, the  $E_c$  for the reentry of Dragon is  $28 \times 10^{-6}$ , which is also within the  $30 \times 10^{-6}$  limit that the FAA applies to launch hazards. Accordingly, the FAA has determined that granting a waiver in this case would be consistent with the safety rationale underlying section 431.35.

iii. Other Factors Impacting the Waiver Decision

Dragon's mitigation measures were another factor that influenced the FAA's analysis with regard to whether a waiver would jeopardize public health and safety and safety of property. As stated above, the Dragon capsule employs numerous risk mitigation measures to reduce the risk to the public from the launch of Falcon 9 and reentry of Dragon.

The FAA has taken particular notice of the way in which Dragon's electrical power system (batteries), flight computer, and propulsion system will reduce risk to the public. For instance, Dragon has more than four times the propellant needed for a safe reentry in the target area. The additional propellant increases the probability that Dragon will land in its nominal target area instead of a population center. Dragon also has three parachutes, which decrease risk to the public because only one of these parachutes is necessary for a low impact landing. The additional parachutes reduce the chance that Dragon will crash into the ground while attempting to land.

SpaceX has also designed the Dragon reentry vehicle to vent propellants in the case of an aborted or off-nominal reentry. This mitigation measure greatly reduces the risk to the public because it allows Dragon to safely dispose of hazardous propellant materials if something should go wrong with the mission.

As a result of Dragon's mitigation measures, as well as the other considerations discussed above, the FAA has determined that granting a waiver in this case would not jeopardize public health and safety or safety of property.

*B. National Security and Foreign Policy Implications*

The FAA has identified no national security or foreign policy implications associated with granting this waiver.

*C. Public Interest*

Two of the public policy goals of Chapter 701 are: (1) To promote economic growth and entrepreneurial activity through use of the space environment; and (2) to encourage the United States private sector to provide launch and reentry vehicles and associated services. 49 U.S.C. 70101(b)(1) and (2). Here, granting this waiver is consistent with the public interest goals articulated by Chapter 701.

A goal of the COTS program's mission is to ultimately develop the capability to

resupply the International Space Station. SpaceX's demonstration launch of Falcon 9 and reentry of Dragon is a step toward achieving that goal. This demonstration launch is important in light of the fact that the U.S. Government is ending the Space Shuttle Program and NASA plans to rely upon its COTS Program to develop a robust domestic commercial space transportation capability. This capability will provide the United States with the ability to resupply the International Space Station. As such, granting SpaceX's waiver request will be consistent with Chapter 701's policy goals by: (1) Promoting SpaceX's entrepreneurial activity in the space environment; and (2) encouraging a private U.S. company to develop and launch a launch vehicle (Falcon 9) and a reentry vehicle (Dragon).

**Summary and Conclusion**

A waiver will not jeopardize public health and safety or safety of property because: (1) The risk associated with the launch of Falcon 9 and the risk associated with the reentry of Dragon are each under an  $E_c$  of  $30 \times 10^{-6}$ ; and (2) the Dragon capsule employs numerous risk mitigation measures including an in-orbit health check. The waiver also will not jeopardize national security and foreign policy interests of the United States. A waiver is in the public interest because it furthers the statutory goals of Chapter 701. For the foregoing reasons, the FAA has waived the restriction that the combined risk to the public from the launch of Falcon 9 and reentry of Dragon cannot exceed an expected average number of 0.00003 casualties ( $30 \times 10^{-6}$ ) from debris.

Issued in Washington, DC, on November 30, 2010.

**Kenneth Wong,**

*Commercial Space Transportation, Licensing and Safety Division Manager.*

[FR Doc. 2010-30402 Filed 12-3-10; 8:45 am]

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**FEDERAL COMMUNICATIONS COMMISSION****47 CFR Part 25**

[IB Docket No. 02–10; FCC 09–63]

**Procedures to Govern the Use of Satellite Earth Stations on Board Vessels in the 5925–6425 MHz/3700–4200 MHz Bands and 14.0–14.5 GHz/11.7–12.2 GHz Bands****AGENCY:** Federal Communications Commission.**ACTION:** Final Rule; announcement of effective date.

**SUMMARY:** In this document, the Commission announces that the Office of Management and Budget (OMB) has approved, for a period of three years, the information collection requirements associated with Sections 25.221(b)(1)(i) through (iii), 25.222(b)(1)(i) through (iii), 25.221(b)(1)(iv)(A), (B), 25.222(b)(1)(iv)(A), (B), 25.221(b)(2)(i) through (v), 25.222(b)(2)(i) through (v), 25.221(b)(4) and 25.222(b)(4) of the Commission's rules, and that these rules will take effect as of the date of this notice. On September 15, 2009, the Commission published the summary document of the Order on Reconsideration, In the Matter of Procedures to Govern the Use of Satellite Earth Stations on Board Vessels in the 5925–6425 MHz/3700–4200 MHz Bands and 14.0–14.5 GHz/11.7–12.2 GHz, IB Docket No. 02–10, FCC 09–63, at 74 FR 47100. This published item stated that the Commission will publish a notice in the Federal Register announcing when OMB approval for the rule sections which contain information collection requirements has been received and when the revised rules will take effect. This notice is consistent with the statement in the published summary document of the Order on Reconsideration.

**DATES:** Section 25.221(b)(1)(i) through (iii), 25.222(b)(1)(i) through (iii), 25.221(b)(1)(iv)(A), (B), 25.222(b)(1)(iv)(A), (B), 25.221(b)(2)(i) through (v), 25.222(b)(2)(i) through (v), 25.221(b)(4) and 25.222(b)(4) published at 74 FR 47100 on September 15, 2009 are effective on February 23, 2010.

**FOR FURTHER INFORMATION CONTACT:** Jennifer Balatan or Howard Griboff, Policy Division, International Bureau, FCC, (202) 418–1460 or via the Internet at: Jennifer.Balatan@fcc.gov or Howard.Griboff@fcc.gov.

**SUPPLEMENTARY INFORMATION:** This document announces that, on December 1, 2009, OMB approved, for a period of three years, the information collection

requirements contained in Sections 25.221(b)(1)(i) through (iii), 25.222(b)(1)(i) through (iii), 25.221(b)(1)(iv)(A), (B), 25.222(b)(1)(iv)(A), (B), 25.221(b)(2)(i) through (v), 25.222(b)(2)(i) through (v), 25.221(b)(4) and 25.222(b)(4) of the Commission's rules. The Commission publishes this notice to announce the effective date of these rules. If you have any comments on the burden estimates listed below, or how the Commission can improve the collections and reduce any burdens caused thereby, please contact Cathy Williams, Federal Communications Commission, Room 1–C823, 445 12th Street, SW., Washington, DC 20554. Please include OMB Control Number 3060–1061 in your correspondence. The Commission also will accept your comments via the Internet if you send them to PRA@fcc.gov. To request materials in accessible formats for people with disabilities (Braille, large print, electronic files, audio format), send an e-mail to fcc504@fcc.gov or call the Consumer & Governmental Affairs Bureau at (202)418–0530 (voice), (202) 418–0432 (TTY).

**Synopsis**

As required by the Paperwork Reduction Act of 1995 (44 U.S.C. 3507), the Commission is notifying the public that it received OMB approval on December 1, 2009, for the information collection requirements contained in the Commission's rules at 47 CFR Sections 25.221(b)(1)(i) through (iii), 25.222(b)(1)(i) through (iii), 25.221(b)(1)(iv)(A), (B), 25.222(b)(1)(iv)(A), (B), 25.221(b)(2)(i) through (v), 25.222(b)(2)(i) through (v), 25.221(b)(4) and 25.222(b)(4).

Under 5 CFR 1320, an agency may not conduct or sponsor a collection of information unless it displays a current, valid OMB Control Number.

No person shall be subject to any penalty for failing to comply with a collection of information subject to the Paperwork Reduction Act that does not display a valid OMB Control Number. The OMB Control Number is 3060–1061 and the total annual reporting burdens and costs for respondents are as follows:

OMB Control No.: 3060–1061.

OMB Approval Date: December 1, 2009.

Expiration Date: December 31, 2012.

Title: Earth Stations on Board Vessels (ESV).

Form No.: Not applicable.

Type of Review: Revision of a currently approved collection.

Respondents: Business or other for-profit entities.

Number of Respondents and Responses: 15 respondents; 15 responses.

Estimated Time per Response: Estimated time is different for each response – the response with the shortest duration takes an estimated 0.25 hours to complete and the response with the longest duration takes an estimated 24 hours to complete.

Frequency of Response: Recordkeeping requirement; On occasion reporting requirement; Third party disclosure requirement.

Obligation to Respond: Required to obtain or retain benefits. The Commission has statutory approval for the information collection requirements under Sections 4(i), 7(a), 303(c), 303(f), 303(g) and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. 154(i), 157(a), 303(c), 303(f), 303(g) and 303(r).

Total Annual Burden: 264 hours.

Total Annual Cost: \$149,925.

Privacy Act Impact Assessment: No impact(s).

Nature and Extent of Confidentiality: There is no need for confidentiality pertaining to the information collection requirements in this collection.

Needs and Uses: On July 31, 2009, the Federal Communications Commission (“Commission”) released an Order on Reconsideration titled, “In the Matter of the Procedures to Govern the Use of Satellite Earth Stations on Board Vessels in the 5925–6425 MHz/ 3700–4200 MHz Bands and 14.0–14.5 GHz/11.7–12.2 GHz Bands” (FCC 09–63, IB Docket No. 02–10 (“ESV Reconsideration Order”). In the ESV Reconsideration Order, the Commission resolved various concerns raised regarding the operational restrictions placed on ESVs that are designed to protect the fixed-satellite service (FSS), operating in the C-band and Ku-band, and the terrestrially-based fixed service (FS), operating in the C-band, from harmful interference. The Commission adopted rule changes that should provide ESV operators with greater operational flexibility while continuing to ensure that the other services in these bands are protected from harmful interference.

The information collection requirements accounted for in this collection are necessary to determine the technical and legal qualifications of applicants or licensees to operate a station, transfer or assign a license, and to determine whether the authorization is in the public interest, convenience and necessity. Without such information, the Commission could not determine whether to permit respondents to provide telecommunication services in the U.S.

Therefore, the Commission would be unable to fulfill its statutory responsibilities in accordance with the Communications Act of 1934, as amended, and the obligations imposed on parties to the World Trade Organization (WTO) Basic Telecom Agreement.

Federal Communications Commission.

**Marlene H. Dortch,**

*Secretary,*

*Office of the Secretary,*

*Office of Managing Director.*

[FR Doc. 2010-3381 Filed 2-22-10; 8:45 am]

**BILLING CODE 6712-01-S**

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**FEDERAL COMMUNICATIONS  
COMMISSION****47 CFR Parts 74 and 78**

[ET Docket No. 03–254; FCC 10–15]

**Coordination Between the Non-  
Geostationary and Geostationary  
Satellite Orbit****AGENCY:** Federal Communications  
Commission.**ACTION:** Final rule.

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**SUMMARY:** In this document the Commission specifies rules and procedures to be used for frequency coordination between terrestrial Broadcast Auxiliary Service and Cable Television Relay Service (BAS/CARS) operations and geostationary satellite orbit (GSO) or non-geostationary satellite orbit (NGSO) fixed-satellite service (FSS) operations in the 6875–7075 MHz (7 GHz) and 12750–13250 MHz (13 GHz) bands. At this time the Commission did not adopt a “Growth Zone” proposal that would have supplemented our existing terrestrial coordination procedures between NGSO FSS space-to-Earth operations and existing fixed service (FS) operations in the 10.7–11.7 GHz (10 GHz) band, and will retain our existing coordination rules.**DATES:** Effective May 5, 2010.**FOR FURTHER INFORMATION CONTACT:**  
James Miller, (202) 418–7351, e-mail  
*James.Miller@fcc.gov*.**SUPPLEMENTARY INFORMATION:** This is a summary of the Commission’s Report and Order, ET Docket No. 03–254, FCC 10–15, adopted January 14, 2010, and

released January 20, 2010. The full text of the document is available on the Commission's Internet site at <http://www.fcc.gov>. It is also available for inspection and copying during regular business hours in the FCC Reference Center (Room CY-A257), 445 12th St., SW., Washington, DC 20554. The full text may also be purchased from the Commission's duplication contractor, Best Copy and Printing Inc., Portals II, 445 12th St., SW., Room CY-B402, Washington, DC 20554, telephone (202) 488-5300; fax (202) 488-5563; e-mail [FCC@BCPIWEB.com](mailto:FCC@BCPIWEB.com).

### Summary of the Report and Order

1. In the *Report and Order (R&O)*, the Commission specified rules and procedures to be used for frequency coordination between terrestrial Broadcast Auxiliary Service and Cable Television Relay Service (BAS/CARS) operations and geostationary satellite orbit (GSO) or non-geostationary satellite orbit (NGSO) fixed-satellite service (FSS) operations in the 6875–7075 MHz (7 GHz) and 12750–13250 MHz (13 GHz) bands. The Commission did not adopt at this time a “Growth Zone” proposal that would have supplemented our existing terrestrial coordination procedures between NGSO FSS space-to-Earth operations and existing fixed service (FS) operations in the 10.7–11.7 GHz (10 GHz) band, and will retain our existing coordination rules. The Commission decisions supports actions intended to allow new satellite services in frequency bands used by various fixed and mobile operations and addresses issues raised in the *Notice of Proposed Rulemaking (NPRM)*, 69 FR 4908, February 2, 2004, in this proceeding. This action permits satellite and terrestrial services operating in these bands to continue to coordinate their spectrum use in an efficient manner.

2. Based on the record, the Commission requires the use of the “notice and response” prior coordination procedures for coordination between GSO or NGSO FSS and fixed BAS/CARS operations. The Commission concludes that requiring the use of these procedures for coordination of operations in these services will enable more efficient use of the 7 GHz and 13 GHz bands by permitting the different services to coordinate and operate on a cooperative basis. Moreover, as indicated in the *NPRM*, the Commission believes that uniform coordination procedures for similar services will simplify our rules and the frequency coordination process.

3. The Commission also requires GSO or NGSO FSS applicants to use the

“notice and response” prior coordination procedures when they initiate coordination with mobile BAS/CARS licensees. The prior coordination process provides the opportunity for GSO or NGSO FSS applicants, prior to the licensing and operation of an earth station, to identify and implement measures to protect against potential harmful interference, and will facilitate sharing during mobile BAS/CARS service deployments. For example, FSS applicants can consider existing BAS/CARS receiver locations when making site selections, and can incorporate attenuation measures into their facility designs.

4. The Commission permits mobile BAS/CARS to coordinate with GSO or NGSO FSS entities under either the “notice and response” prior coordination procedures or the *ad hoc* coordination procedures discussed in further detail in the R&O. The record reflects that local broadcast coordinators should be able to assist in identifying mobile television pickup operations (“TVPU”) receive sites for protection, thereby facilitating GSO or NGSO FSS coordination. Further, as noted by Boeing, GSO and NGSO FSS earth stations can work cooperatively with TVPU licensees regarding the specifics of sharing agreements pursuant to such coordination.

5. The Commission finds that the “notice and response” process in the prior coordination procedures will provide ample opportunity for fixed or mobile BAS/CARS incumbents to identify and provide details regarding potentially affected facilities when coordinating with GSO or NGSO FSS operators. The process provides sufficient flexibility for all affected parties to reach agreement concerning measures for reducing the likelihood of interference. The Commission recognizes that there are challenges inherent in coordination between a permanent fixed operation, such as GSO or NGSO FSS earth station, and temporary fixed or mobile BAS/CARS operations, such as those involving news gathering trucks or helicopters. Unlike coordination between one fixed operation and another fixed operation—a scenario to which “notice and response” prior coordination procedures typically apply, coordination between fixed operations and temporary fixed or mobile operations requires an anticipation of where the temporary fixed or mobile operations may occur at a future time beyond the coordination.

6. The Commission looks to the parties to exercise flexibility in order to ensure successful sharing through these procedures. For example, the

Commission expects prospective FSS licensees to select sites sufficiently removed from typical mobile BAS/CARS areas of use to reasonably accommodate the frequencies and look angles for which the FSS licensees seek coordination. Moreover, because NGSO FSS use of the 7 GHz and 13 GHz bands is limited to feeder links, the Commission expects NGSO FSS licensees to seek coordination only for frequencies and look angles that they reasonably anticipate using over the life of the system. Similarly, while BAS and CARS licensees are often authorized to operate over a large geographic area, such as a metropolitan area, the Commission does not envision that they will object to prior coordination requests from FSS licensees on the sole basis that an earth station placed in or near their licensed area could impinge upon future deployment of temporary fixed or mobile BAS/CARS operations anywhere in that area. Rather, BAS/CARS licensees should object only where they anticipate interference into fixed receive sites used in conjunction with mobile BAS/CARS transmitters, or into areas in which they reasonably expect to operate. Such areas may include, for example, those in which they have operated on past occasions or which are likely to require coverage for news events in the future, such as convention centers, court houses, or sports venues. The Commission envisions that such coordination between FSS and BAS/CARS licensees in the band will lead to efficient shared use of the bands, including the availability of some spectrum for both FSS and BAS/CARS licensees in or near high-demand markets.

7. While the Commission sets forth expectations, it does not believe that it is necessary to modify the rules for “notice and response” prior coordination procedures in this regard. The Commission rejects SBE's suggestions for additional protection for BAS/CARS operations as “preclusion” or “keep away” areas, as the overall record generated in the proceeding offers no compelling reason for deviating from a “notice and response” coordination approach. Moreover, the Commission agrees with those commenting parties that argue that many of SBE's proposals would make the coordination process potentially more burdensome and complex with minimal benefit in return. Also, to the extent that SBE requests that the Commission revisit those rules relating to the scope of FSS operations in the band—such as limiting the coordination of earth stations to only the spectrum

and look angles to be put in use at the start of operations—the Commission agrees with other commenters that such matters have been fully considered and addressed in prior proceedings and see no need to revisit them here.

8. In the *NPRM*, the Commission expressed its belief that use of these criteria will be as successful for protecting fixed BAS/CARS receivers as they have proven to be for FS and other receivers. The Commission had sought comment as to whether or to what values the interference protection criteria contained in §§ 101.105(a), (b), and (c) should be amended in order to address the protection of mobile and fixed receivers used in conjunction with mobile BAS/CARS stations. Commenters provided no views on this matter.

9. Accordingly, the Commission extends the existing “notice and response” coordination procedures in §§ 25.203(c) and 25.251(a) to coordination of new GSO and NGSO FSS earth stations with fixed BAS/CARS stations in the 7 GHz and 13 GHz bands. For coordination of new fixed BAS/CARS stations with GSO or NGSO FSS earth stations, the Commission apply the coordination procedures set forth in § 101.103(d) by amending §§ 74.638(b) and 78.36(b) to reflect the part 101 procedures. The Commission adopted the approach described in the *NPRM*, and applies the existing FS interference protection criteria in §§ 101.105(a), (b), and (c) for the protection of fixed BAS/CARS receivers by new GSO or NGSO FSS earth stations. While the Commission recognizes that mobile BAS/CARS facilities have somewhat different characteristics from fixed facilities that can affect their potential to cause and receive interference, the Commission continues to believe that the overall structure of the Commission’s existing prior coordination procedures provide sufficient flexibility for the parties to negotiate solutions that will reduce the likelihood of interference. As indicated in the *NPRM* and demonstrated by the success of its use with coordination of related services, the Commission believes that the approaches described for coordinating FSS (both NGSO and GSO) and BAS/CARS mobile operations achieve a balance between the needs of FSS licensees for certainty and reliability and the needs of BAS/CARS for flexibility. Thus, the Commission will apply the existing FS interference protection criteria in §§ 101.105(a), (b), and (c) for the protection of mobile BAS/CARS receivers by new GSO or NGSO FSS earth stations.

10. The Commission continues to believe that allowing BAS/CARS operators to choose between “notice and response” and *ad hoc* coordination will promote sharing in the 7 GHz and 13 GHz bands and minimize the coordination burdens and need for its regulatory oversight. The Commission notes that the *ad hoc* coordination process requires the cooperation of the affected parties, but affords mobile services maximum flexibility with regard to deployment. However, the more formal “notice and response” coordination procedures can provide GSO or NGSO FSS operators with additional certainty of protection from mobile BAS/CARS operations by providing the opportunity to identify potential sharing concerns and take appropriate action prior to licensing and operation. For example, the Commission notes that some of these decisions—such as site location and design—are most logically made before FSS operators begin operation; if later, a mobile BAS/CARS licensee opts to exercise *ad hoc* coordination, the Commission would expect the coordination process to be facilitated because those prior decisions promoted a more favorable overall sharing environment. Furthermore, as discussed in the *NPRM*, these two coordination approaches have been adequate to address sharing with BAS/CARS fixed operations and offer sufficient protection between mobile BAS/CARS and GSO or NGSO FSS operations while achieving an important goal of avoiding unnecessary burden and regulatory oversight.

11. For the foregoing reasons, the Commission allows mobile BAS/CARS entities initiating coordination to use either prior coordination or *ad hoc* procedures when coordinating with GSO or NGSO FSS operations in the 7 GHz and 13 GHz bands (as discussed, GSO or NGSO FSS and fixed BAS/CARS applicants must use the prior coordination rules). Accordingly, the Commission modifies its rules to clarify the bands in which applicants for mobile BAS/CARS have the flexibility to use either the informal *ad hoc* or more structured “notice and response” prior coordination procedures.

#### **Growth Zones Proposal**

12. In the *NPRM*, the Commission sought comment on a “Growth Zones” proposal that would change the NGSO FSS earth station siting rules in part 25 of the Commission rules to promote sharing between NGSO FSS and terrestrial fixed services in the 10 GHz band. The “Growth Zones” proposal was based on a pleading by SkyBridge L.L.C.

(“SkyBridge”), an NGSO FSS applicant, and the Fixed Wireless Communications Coalition (“FWCC”), an association representing FS licensees in the 10 GHz band. The proposal was intended to modify and supplement the prior coordination procedures between NGSO FSS and FS operations in the band. The parties proposed a mechanism to identify counties where the growth of fixed point-to-point operations was likely (referred to as “growth zones”). Skybridge and FWCC proposed that siting of NGSO FSS earth stations in a growth zone be subject to a list of conditions in order to permit the siting of earth stations in areas of intense FS use while ensuring the deployment of future fixed service operations in those areas. The proposal was designed to address what was expected to be an imminent, substantial, and novel sharing scenario between the newly authorized NGSO FSS and terrestrial incumbents.

13. The Commission sought comment on the “Growth Zones” proposal offered by SkyBridge and FWCC. Subsequently, SkyBridge contacted the Commission and declined to accept its 10 GHz band NGSO FSS authorization. The only other remaining NGSO FSS licensee, Virtual Geosatellite LLC (“VirtualGeo”), subsequently surrendered its license. Thus, the imminent deployment of NGSO FSS earth stations in this band that was anticipated at the time of the *NPRM* is no longer at issue.

14. The Commission concludes that, given the developments with respect to the NGSO FSS applicants and licensees, the “Growth Zones” proposal is no longer ripe for consideration. The proposal was intended to address the needs and compromises reached by those specific parties. Now, with neither the original satellite proponent nor any other NGSO FSS applicant currently pursuing licensing in the 10 GHz band, it would be inappropriate to act on the proposal at this time, therefore, the Commission is not adopting the “Growth Zones” proposal. The Commission’s decision not to adopt that plan is without prejudice to the merits of the proposal, and the Commission notes that parties are free to bring this matter before the Commission again if changing conditions warrant its consideration. Further, the prior coordination procedures between NGSO FSS and FS operations in the band that the Commission had previously adopted remain in effect.

### Final Regulatory Flexibility Analysis

15. As required by the Regulatory Flexibility Act ("RFA"),<sup>1</sup> an Initial Regulatory Flexibility Analysis ("IRFA") was incorporated in the *Notice of Proposed Rule Making* ("NPRM") in this proceeding. The Commission sought written comment on the proposals in the NPRM, including comments on the IRFA.<sup>2</sup> The present Final Regulatory Flexibility Analysis ("FRFA") conforms to the RFA.

#### A. Need for, and Objectives of, the Report and Order

16. By this action ("Report & Order"), the Commission modifies our frequency coordination rules to promote sharing between non-geostationary satellite orbit ("NGSO") and geostationary satellite orbit ("GSO") fixed-satellite service ("FSS") operations and various terrestrial services operating in several frequency bands. The Commission declined to adopt a joint proposal by SkyBridge L.L.C. and the Fixed Wireless Communications Coalition ("SkyBridge/FWCC Growth Zone Proposal") to supplement our existing coordination procedures to promote sharing between new NGSO FSS space-to-Earth ("downlink") operations and existing Fixed Service ("FS") operations in the 10.7–11.7 GHz ("10 GHz") band.<sup>3</sup> The Commission adopts such proposals for amending our frequency coordination rules to address situations where NGSO FSS and GSO FSS operations share spectrum with terrestrial operations in the FS, Broadcast Auxiliary Service ("BAS") and Cable Television Relay Service ("CARS") in various bands. Specifically, it:

- Apply the existing parts 25 and 101 "notice and response" coordination rules for coordination of new FSS (both NGSO and GSO) earth stations with mobile BAS/CARS operations in the 6875–7075 MHz ("7 GHz") and 12750–13250 MHz ("13 GHz") bands, and consider whether any additions or modifications to the rules are needed to

address the operating characteristics of mobile services;

- Allow either the parts 74 and 78 informal *ad hoc* coordination rules or the part 101 "notice and response" coordination rules to be used for the coordination of mobile BAS/CARS operations with FSS (both NGSO and GSO) earth stations, in the 7 GHz and 13 GHz bands, and consider whether any additions or modifications of these rules are needed; and,

- Apply the existing parts 25 and 101 "notice and response" coordination rules for sharing between new NGSO FSS earth stations and fixed BAS/CARS operations in the 7 GHz and 13 GHz bands.

The Commission undertook this proceeding to facilitate the introduction of new satellite and terrestrial services while promoting interference protection among the various users in these bands.

#### B. Summary of Significant Issues Raised by Public Comments and Response to IRFA

17. There were no comments filed that specifically addressed the rules and policies proposed in the IRFA.

#### C. Description and Estimate of the Number of Small Entities to Which the Rules Will Apply

18. The RFA generally defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction."<sup>4</sup> In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act.<sup>5</sup> A small business concern is one which: (1) Is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration ("SBA").<sup>6</sup> A small organization is generally "any not-for-profit enterprise which is independently owned and operated and is not dominant in its field."<sup>7</sup> Nationwide, there are a total of approximately 29.6 million small businesses, according to

the SBA.<sup>8</sup> A "small organization" is generally "any not-for-profit enterprise which is independently owned and operated and is not dominant in its field."<sup>9</sup> Nationwide, as of 2002, there were approximately 1.6 million small organizations.<sup>10</sup> The term "small governmental jurisdiction" is defined generally as "governments of cities, towns, townships, villages, school districts, or special districts, with a population of less than fifty thousand."<sup>11</sup> Census Bureau data for 2002 indicate that there were 87,525 local governmental jurisdictions in the United States.<sup>12</sup> We estimate that, of this total, 84,377 entities were "small governmental jurisdictions."<sup>13</sup> Thus, we estimate that most governmental jurisdictions are small.

19. *Cable Television Distribution Services*. Since 2007, these services have been newly defined within the broad economic census category of Wired Telecommunications Carriers; that category is defined as follows: "This industry comprises establishments primarily engaged in operating and/or providing access to transmission facilities and infrastructure that they own and/or lease for the transmission of voice, data, text, sound, and video using wired telecommunications networks. Transmission facilities may be based on a single technology or a combination of technologies."<sup>14</sup> The SBA has developed an associated small business size standard for this category, and that is: All such firms having 1,500 or fewer employees. To gauge small business prevalence for these cable services we must, however, use current census data that are based on the previous category of Cable and Other Program Distribution and its associated size standard; that size standard was: All such firms having \$13.5 million or less in annual receipts.<sup>15</sup> According to Census Bureau data for 2002, there were a total of 1,191

<sup>8</sup> See SBA, Office of Advocacy, "Frequently Asked Questions," <http://web.sba.gov/faqs/faqindex.cfm?areaID=24> (revised Sept. 2009).

<sup>9</sup> 5 U.S.C. 601(4).

<sup>10</sup> Independent Sector, *The New Nonprofit Almanac & Desk Reference* (2002).

<sup>11</sup> 5 U.S.C. 601(5).

<sup>12</sup> U.S. Census Bureau, *Statistical Abstract of the United States: 2006*, Section 8, page 272, Table 415.

<sup>13</sup> We assume that the villages, school districts, and special districts are small, and total 48,558. See U.S. Census Bureau, *Statistical Abstract of the United States: 2006*, section 8, page 273, Table 417. For 2002, Census Bureau data indicate that the total number of county, municipal, and township governments nationwide was 38,967, of which 35,819 were small. *Id.*

<sup>14</sup> U.S. Census Bureau, 2007 NAICS Definitions, "517110 Wired Telecommunications Carriers" (partial definition); <http://www.census.gov/naics/2007/def/ND517110.HTM#N517110>.

<sup>15</sup> 13 CFR 121.201, NAICS code 517110.

<sup>1</sup> See 5 U.S.C. 603. The RFA, see 5 U.S.C. 601–612, has been amended by the Small Business Regulatory Enforcement Fairness Act of 1996 ("SBREFA"), Public Law No. 104–121, Title II, 110 Stat. 857 (1996).

<sup>2</sup> NPRM, 69 FR 4908 (Feb. 02, 2004), para. 64 and Appendix B.

<sup>3</sup> SkyBridge/FWCC *Ex Parte* comments in ET Docket No. 98–206, filed December 8, 1999, at 3. These *ex parte* comments are included in the docket file for this proceeding. SkyBridge filed one of the petitions for rulemaking (RM–9147) to which ET Docket No. 98–206 responds and was one of four applicants for NGSO FSS satellite systems in the 10 GHz band. The FWCC is a coalition of microwave equipment manufacturers, licensees, and their associations, and communications service providers and their associations, interested in terrestrial fixed microwave communications.

<sup>4</sup> 5 U.S.C. 601(6).

<sup>5</sup> See *Id.* 601(3) (incorporating by reference the definition of "small business concern" in 15 U.S.C. 632). Pursuant to the RFA, the statutory definition of a small business applies "unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment, establishes one or more definitions of such term which are appropriate to the activities of the agency and publishes such definition(s) in the **Federal Register**." *Id.*

<sup>6</sup> See Small Business Act, 15 U.S.C. 632.

<sup>7</sup> 5 U.S.C. 601(4).

firms in this category that operated for the entire year.<sup>16</sup> Of this total, 1,087 firms had annual receipts of under \$10 million, and 43 firms had receipts of \$10 million or more but less than \$25 million.<sup>17</sup> Thus, the majority of these cable firms can be considered to be small.

20. *Cable Companies and Systems.* The Commission has also developed its own small business size standards, for the purpose of cable rate regulation. Under the Commission's rules, a "small cable company" is one serving 400,000 or fewer subscribers, nationwide.<sup>18</sup> Industry data indicate that, of 1,076 cable operators nationwide, all but eleven are small under this size standard.<sup>19</sup> In addition, under the Commission's rules, a "small system" is a cable system serving 15,000 or fewer subscribers.<sup>20</sup> Industry data indicate that, of 7,208 systems nationwide, 6,139 systems have under 10,000 subscribers, and an additional 379 systems have 10,000–19,999 subscribers.<sup>21</sup> Thus, under this second size standard, most cable systems are small.

21. *Cable System Operators.* The Communications Act of 1934, as amended, also contains a size standard for small cable system operators, which is "a cable operator that, directly or through an affiliate, serves in the aggregate fewer than 1 percent of all subscribers in the United States and is not affiliated with any entity or entities whose gross annual revenues in the aggregate exceed \$250,000,000."<sup>22</sup> The Commission has determined that an operator serving fewer than 677,000 subscribers shall be deemed a small operator, if its annual revenues, when combined with the total annual revenues of all its affiliates, do not

exceed \$250 million in the aggregate.<sup>23</sup> Industry data indicate that, of 1,076 cable operators nationwide, all but ten are small under this size standard.<sup>24</sup> We note that the Commission neither requests nor collects information on whether cable system operators are affiliated with entities whose gross annual revenues exceed \$250 million,<sup>25</sup> and therefore we are unable to estimate more accurately the number of cable system operators that would qualify as small under this size standard.

22. *Satellite Telecommunications and All Other Telecommunications.* These two economic census categories address the satellite industry. The first category has a small business size standard of \$15 million or less in average annual receipts, under SBA rules.<sup>26</sup> The second has a size standard of \$25 million or less in annual receipts.<sup>27</sup> The most current Census Bureau data in this context, however, are from the (last) economic census of 2002, and we will use those figures to gauge the prevalence of small businesses in these categories.<sup>28</sup>

23. The category of Satellite Telecommunications "comprises establishments primarily engaged in providing telecommunications services to other establishments in the telecommunications and broadcasting industries by forwarding and receiving communications signals via a system of satellites or reselling satellite telecommunications."<sup>29</sup> For this category, Census Bureau data for 2002 show that there were a total of 371 firms that operated for the entire year.<sup>30</sup> Of this total, 307 firms had annual receipts of under \$10 million, and 26 firms had receipts of \$10 million to \$24,999,999.<sup>31</sup>

<sup>23</sup> 47 CFR 76.901(f); see Public Notice, *FCC Announces New Subscriber Count for the Definition of Small Cable Operator*, DA 01-158 (Cable Services Bureau, Jan. 24, 2001).

<sup>24</sup> These data are derived from: R.R. Bowker, *Broadcasting & Cable Yearbook 2006*, "Top 25 Cable/Satellite Operators," pages A-8 & C-2 (data current as of June 30, 2005); Warren Communications News, *Television & Cable Factbook 2006*, "Ownership of Cable Systems in the United States," pages D-1805 to D-1857.

<sup>25</sup> The Commission does receive such information on a case-by-case basis if a cable operator appeals a local franchise authority's finding that the operator does not qualify as a small cable operator pursuant to 76.901(f) of the Commission's rules. See 47 CFR 76.909(b).

<sup>26</sup> 13 CFR 121.201, NAICS code 517410.

<sup>27</sup> 13 CFR 121.201, NAICS code 517919.

<sup>28</sup> 13 CFR 121.201, NAICS codes 517410 and 517910 (2002).

<sup>29</sup> U.S. Census Bureau, 2007 NAICS Definitions, "517410 Satellite Telecommunications"; <http://www.census.gov/naics/2007/def/ND517410.HTM>.

<sup>30</sup> U.S. Census Bureau, 2002 Economic Census, Subject Series: Information, "Establishment and Firm Size (Including Legal Form of Organization)," Table 4, NAICS code 517410 (issued Nov. 2005).

<sup>31</sup> *Id.* An additional 38 firms had annual receipts of \$25 million or more.

Consequently, we estimate that the majority of Satellite Telecommunications firms are small entities that might be affected by our action.

24. The second category of All Other Telecommunications comprises, *inter alia*, "establishments primarily engaged in providing specialized telecommunications services, such as satellite tracking, communications telemetry, and radar station operation. This industry also includes establishments primarily engaged in providing satellite terminal stations and associated facilities connected with one or more terrestrial systems and capable of transmitting telecommunications to, and receiving telecommunications from, satellite systems."<sup>32</sup> For this category, Census Bureau data for 2002 show that there were a total of 332 firms that operated for the entire year.<sup>33</sup> Of this total, 303 firms had annual receipts of under \$10 million and 15 firms had annual receipts of \$10 million to \$24,999,999.<sup>34</sup> Consequently, we estimate that the majority of All Other Telecommunications firms are small entities that might be affected by our action.

25. *Television Broadcasting.* This Economic Census category "comprises establishments primarily engaged in broadcasting images together with sound. These establishments operate television broadcasting studios and facilities for the programming and transmission of programs to the public."<sup>35</sup> The SBA has created the following small business size standard for Television Broadcasting firms: Those having \$14 million or less in annual receipts.<sup>36</sup> The Commission has estimated the number of licensed commercial television stations to be 1,379.<sup>37</sup> In addition, according to Commission staff review of the BIA Publications, Inc., Master Access Television Analyzer Database (BIA) on March 30, 2007, about 986 of an

<sup>32</sup> U.S. Census Bureau, 2007 NAICS Definitions, "517919 All Other Telecommunications"; <http://www.census.gov/naics/2007/def/ND517919.HTM#N517919>.

<sup>33</sup> U.S. Census Bureau, 2002 Economic Census, Subject Series: Information, "Establishment and Firm Size (Including Legal Form of Organization)," Table 4, NAICS code 517910 (issued Nov. 2005).

<sup>34</sup> *Id.* An additional 14 firms had annual receipts of \$25 million or more.

<sup>35</sup> U.S. Census Bureau, 2007 NAICS Definitions, "515120 Television Broadcasting" (partial definition); <http://www.census.gov/naics/2007/def/ND515120.HTM#N515120>.

<sup>36</sup> 13 CFR 121.201, NAICS code 515120 (updated for inflation in 2008).

<sup>37</sup> See *FCC News Release*, "Broadcast Station Totals as of December 31, 2007," dated March 18, 2008; [http://www.fcc.gov/Daily\\_Releases/Daily\\_Business/2008/db0318/DOC-280836A1.pdf](http://www.fcc.gov/Daily_Releases/Daily_Business/2008/db0318/DOC-280836A1.pdf).

<sup>16</sup> U.S. Census Bureau, 2002 Economic Census, Subject Series: Information, Table 4, Receipts Size of Firms for the United States: 2002, NAICS code 517510 (issued November 2005).

<sup>17</sup> *Id.* An additional 61 firms had annual receipts of \$25 million or more.

<sup>18</sup> 47 CFR 76.901(e). The Commission determined that this size standard equates approximately to a size standard of \$100 million or less in annual revenues. *Implementation of Sections of the 1992 Cable Act: Rate Regulation*, Sixth Report and Order and Eleventh Order on Reconsideration, 10 FCC Rcd 7393, 7408 (1995).

<sup>19</sup> These data are derived from: R.R. Bowker, *Broadcasting & Cable Yearbook 2006*, "Top 25 Cable/Satellite Operators," pages A-8 & C-2 (data current as of June 30, 2005); Warren Communications News, *Television & Cable Factbook 2006*, "Ownership of Cable Systems in the United States," pages D-1805 to D-1857.

<sup>20</sup> 47 CFR 76.901(c).

<sup>21</sup> Warren Communications News, *Television & Cable Factbook 2006*, "U.S. Cable Systems by Subscriber Size," page F-2 (data current as of Oct. 2005). The data do not include 718 systems for which classifying data were not available.

<sup>22</sup> 47 U.S.C. 543(m)(2); see 47 CFR 76.901(f) & nn. 1-3.

estimated 1,374 commercial television stations (or approximately 72 percent) had revenues of \$13 million or less.<sup>38</sup> The Commission therefore estimates that the majority of commercial television broadcasters are small entities.

26. The Commission notes, that in assessing whether a business concern qualifies as small under the above definition, business (control) affiliations<sup>39</sup> must be included. Our estimate, therefore, likely overstates the number of small entities that might be affected by our action, because the revenue figure on which it is based does not include or aggregate revenues from affiliated companies. In addition, an element of the definition of “small business” is that the entity not be dominant in its field of operation. The Commission is unable at this time to define or quantify the criteria that would establish whether a specific television station is dominant in its field of operation. Accordingly, the estimate of small businesses to which rules may apply does not exclude any television station from the definition of a small business on this basis and is therefore possibly over-inclusive to that extent. In addition, the Commission has estimated the number of licensed noncommercial educational (NCE) television stations to be 380.<sup>40</sup> These stations are non-profit, and therefore considered to be small entities.<sup>41</sup> There are also 2,295 low power television stations (LPTV).<sup>42</sup> Given the nature of this service, we will presume that all LPTV licensees qualify as small entities under the above SBA small business size standard.

27. *Radio Stations.* This Economic Census category “comprises establishments primarily engaged in broadcasting aural programs by radio to the public. Programming may originate in their own studio, from an affiliated network, or from external sources.”<sup>43</sup> The SBA has established a small business size standard for this category, which is: Such firms having \$7 million

or less in annual receipts.<sup>44</sup> According to Commission staff review of BIA Publications, Inc.’s *Master Access Radio Analyzer Database* on March 31, 2005, about 10,840 (95%) of 11,410 commercial radio stations had revenues of \$6 million or less. Therefore, the majority of such entities are small entities.

28. The Commission notes, however, that in assessing whether a business concern qualifies as small under the above size standard, business affiliations must be included.<sup>45</sup> In addition, to be determined to be a “small business,” the entity may not be dominant in its field of operation.<sup>46</sup> It notes that it is difficult at times to assess these criteria in the context of media entities, and our estimate of small businesses may therefore be over-inclusive.

29. *Wireless Telecommunications Carriers (except Satellite).* Since 2007, the Census Bureau has placed wireless firms within this new, broad, economic census category.<sup>47</sup> Prior to that time, such firms were within the now-superseded categories of “Paging” and “Cellular and Other Wireless Telecommunications.”<sup>48</sup> Under the present and prior categories, the SBA has deemed a wireless business to be small if it has 1,500 or fewer employees.<sup>49</sup> Because Census Bureau data are not yet available for the new category, we will estimate small business prevalence using the prior categories and associated data. For the category of Paging, data for 2002 show that there were 807 firms that operated for the entire year.<sup>50</sup> Of this total, 804 firms had employment of 999 or fewer employees, and three firms had employment of 1,000 employees or

more.<sup>51</sup> For the category of Cellular and Other Wireless Telecommunications, data for 2002 show that there were 1,397 firms that operated for the entire year.<sup>52</sup> Of this total, 1,378 firms had employment of 999 or fewer employees, and 19 firms had employment of 1,000 employees or more.<sup>53</sup> Thus, we estimate that the majority of wireless firms are small.

#### D. Description of Projected Reporting, Recordkeeping, and Other Compliance Requirements

30. The Commission adopted changes to the parts 74 and 78 rules governing coordination between NGSO FSS and other terrestrial services. Generally our “notice and response” and *ad hoc* coordination rules will govern the use of shared frequencies between FSS and BAS/CARS terrestrial services in the 7 and 13 GHz bands.<sup>54</sup> As noted in the section titled “Need for, and Objectives of, the Proposed Rules,” *supra*, in the 7 and 13 GHz bands, we are applying existing parts 25 and 101 “notice and response” coordination rules for coordination of new FSS earth stations with mobile BAS/CARS operations; allowing either existing part 74, and 78 *ad hoc* coordination rules or part 101 “notice and response” coordination rules for coordination of new BAS/CARS mobile operations with FSS earth stations; and applying existing parts 25 and 101 “notice and response” coordination rules for coordination of new FSS earth stations and new fixed BAS/CARS operations.<sup>55</sup>

#### E. Steps Taken To Minimize Significant Economic Impact on Small Entities, and Significant Alternatives Considered

31. The RFA requires an agency to describe any significant, specifically small business, alternatives that it has considered in reaching its proposed approach, which may include the following four alternatives (among others): “(1) The establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small

<sup>38</sup> We recognize that BIA’s estimate differs slightly from the FCC total given *supra*.

<sup>39</sup> “[Business concerns] are affiliates of each other when one concern controls or has the power to control the other or a third party or parties controls or has to power to control both.” 13 CFR 21.103(a)(1).

<sup>40</sup> See FCC News Release, “Broadcast Station Totals as of December 31, 2007,” dated March 18, 2008; [http://www.fcc.gov/Daily\\_Releases/Daily\\_Business/2008/db0318/DOC-280836A1.pdf](http://www.fcc.gov/Daily_Releases/Daily_Business/2008/db0318/DOC-280836A1.pdf).

<sup>41</sup> See generally 5 U.S.C. 601(4), (6).

<sup>42</sup> See FCC News Release, “Broadcast Station Totals as of December 31, 2007,” dated March 18, 2008; [http://www.fcc.gov/Daily\\_Releases/Daily\\_Business/2008/db0318/DOC-280836A1.pdf](http://www.fcc.gov/Daily_Releases/Daily_Business/2008/db0318/DOC-280836A1.pdf).

<sup>43</sup> U.S. Census Bureau, 2007 NAICS Definitions, “515112 Radio Stations”; <http://www.census.gov/naics/2007/def/ND515112.HTM#N515112>.

<sup>44</sup> 13 CFR 121.201, NAICS code 515112 (updated for inflation in 2008).

<sup>45</sup> “Concerns and entities are affiliates of each other when one controls or has the power to control the other, or a third party or parties controls or has the power to control both. It does not matter whether control is exercised, so long as the power to control exists.” 13 CFR 121.103(a)(1) (an SBA regulation).

<sup>46</sup> 13 CFR 121.102(b) (an SBA regulation).

<sup>47</sup> U.S. Census Bureau, 2007 NAICS Definitions, “517210 Wireless Telecommunications Categories (Except Satellite)”; <http://www.census.gov/naics/2007/def/ND517210.HTM#N517210>.

<sup>48</sup> U.S. Census Bureau, 2002 NAICS Definitions, “517211 Paging”; <http://www.census.gov/epcd/naics02/def/NDEF517.HTM>; U.S. Census Bureau, 2002 NAICS Definitions, “517212 Cellular and Other Wireless Telecommunications”; <http://www.census.gov/epcd/naics02/def/NDEF517.HTM>.

<sup>49</sup> 13 CFR 121.201, NAICS code 517210 (2007 NAICS). The now-superseded, pre-2007 CFR citations were 13 CFR 121.201, NAICS codes 517211 and 517212 (referring to the 2002 NAICS).

<sup>50</sup> U.S. Census Bureau, 2002 Economic Census, Subject Series: Information, “Establishment and Firm Size (Including Legal Form of Organization),” Table 5, NAICS code 517211 (issued Nov. 2005).

<sup>51</sup> *Id.* The census data do not provide a more precise estimate of the number of firms that have employment of 1,500 or fewer employees; the largest category provided is for firms with “1000 employees or more.”

<sup>52</sup> U.S. Census Bureau, 2002 Economic Census, Subject Series: Information, “Establishment and Firm Size (Including Legal Form of Organization),” Table 5, NAICS code 517212 (issued Nov. 2005).

<sup>53</sup> *Id.* The census data do not provide a more precise estimate of the number of firms that have employment of 1,500 or fewer employees; the largest category provided is for firms with “1000 employees or more.”

<sup>54</sup> See NPRM paras. 11–14, *supra*. See list of obligations at Notice para. 9, *supra*.

<sup>55</sup> See NPRM paras. 22, 34.

entities; (2) the clarification, consolidation, or simplification of compliance and reporting requirements under the rule for such small entities; (3) the use of performance rather than design standards; and (4) an exemption from coverage of the rule, or any part thereof, for such small entities.<sup>56</sup>

32. The Commission adopted its proposals to provide adequate spectrum sharing criteria to minimize the potential for interference of these new NGSO FSS operations on incumbent operations, many of which qualify as small entities. Our coordination rules will ensure that BAS, CARS, and NGSO FSS services can operate sharing these bands without impacting other services' operations. We also note that, in the Discussion Section of the *NPRM*, the Commission requested comment from small businesses and other small entities concerning the alternatives proposed for our coordination rules.<sup>57</sup> The Commission also requested comment on our conclusions and any alternatives to our proposals that could minimize the impact of this action on small entities.

*F. Federal Rules That May Duplicate, Overlap, or Conflict With the Proposed Rules*

33. None.

*Report to Congress:* The Commission will send a copy of this Report and Order, including this FRFA in a report to be sent to Congress pursuant to the Congressional Review Act.<sup>58</sup> In addition, the Commission will send a copy of the Report and Order, including this FRFA, to the Chief Counsel for Advocacy of the SBA.

**Ordering Clauses**

34. Pursuant to sections 4(i), 303(c), 303(f), and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. 154(i), 303(c), 303(f), and 303(r), the Report and Order *is adopted* and that parts 74 and 78 of the Commission's rules *are amended* as specified in Appendix C, effective 30 days after publication in the **Federal Register**.

35. The Commission's Consumer Information and Governmental Affairs Bureau, Reference Information Center, *shall send* a copy of this Report and Order, including the Final Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

36. *It is further ordered* that ET Docket No. 03-254 *is terminated*.

**List of Subjects**

*47 CFR Part 74*

Communications equipment, Reporting and recordkeeping requirements, and Television.

*47 CFR Part 78*

Cable television, Communications equipment, and Reporting and recordkeeping requirements.

Federal Communications Commission.

**Marlene H. Dortch,**

*Secretary.*

**Final Rules**

■ For the reasons discussed in the preamble, the Federal Communications Commission amends 47 CFR parts 74 and 78 as follows:

**PART 74—EXPERIMENTAL RADIO, AUXILIARY, SPECIAL BROADCAST AND OTHER PROGRAM DISTRIBUTION SERVICES**

■ 1. The authority citation for part 74 continues to read as follows:

**Authority:** 47 U.S.C. 154, 303,307, 336(f), 336(h) and 554.

■ 2. Section 74.638 is amended by revising paragraph (a), paragraph (b), the introductory text of paragraph (c), and paragraph (d) to read as follows:

**§ 74.638 Frequency coordination.**

(a) Coordination of all frequency assignments for fixed stations in all bands above 2110 MHz, and for mobile (temporary fixed) stations in the bands 6425–6525 MHz and 17.7–19.7 GHz, will be in accordance with the procedure established in paragraph (b) of this section, except that the prior coordination process for mobile (temporary fixed) assignments may be completed orally and the period allowed for response to a coordination notification may be less than 30 days if the parties agree. Coordination of all frequency assignments for all mobile (temporary fixed) stations in all bands above 2110 MHz, except the bands 6425–6525 MHz and 17.7–19.7 GHz, will be conducted in accordance with the procedure established in paragraph (b) of this section or with the procedure in paragraph (d) of this section. Coordination of all frequency assignments for all fixed stations in the band 1990–2110 MHz will be in accordance with the procedure established in paragraph (c) of this section. Coordination of all frequency assignments for all mobile (temporary fixed) stations in the band 1990–2110 MHz will be conducted in accordance

with the procedure in paragraph (d) of this section.

(b) For each frequency coordinated under this paragraph, the interference protection criteria in 47 CFR 101.105(a), (b), and (c) and the frequency usage coordination procedures in 47 CFR 101.103(d) will apply.

(c) For each frequency coordinated under this paragraph, the following frequency usage coordination procedures will apply:

\* \* \* \* \*

(d) For each frequency coordinated under this paragraph, applicants are responsible for selecting the frequency assignments that are least likely to result in mutual interference with other licensees in the same area. Applicants may consult local frequency coordination committees, where they exist, for information on frequencies available in the area. In selecting frequencies, consideration should be given to the relative location of receive points, normal transmission paths, and the nature of the contemplated operation.

**PART 78—CABLE TELEVISION RELAY SERVICE**

■ 3. The authority citation for part 78 continues to read as follows:

**Authority:** Secs. 2, 3, 4, 301, 303, 307, 308, 309, 48 Stat., as amended, 1064, 1065, 1066, 1081, 1082, 1083, 1084, 1085; 47 U.S.C. 152, 153, 154, 301, 303, 307, 308, 309.

■ 4. Section 78.36 is amended by revising paragraph (a), the introductory text of paragraph (b), paragraph (b)(1), the introductory text of paragraph (c), and paragraph (d) to read as follows:

**§ 78.36 Frequency coordination.**

(a) Coordination of all frequency assignments for fixed stations in all bands above 2110 MHz, and for mobile (temporary fixed) stations in the bands 6425–6525 MHz and 17.7–19.7 GHz, will be in accordance with the procedure established in paragraph (b) of this section, except that the prior coordination process for mobile (temporary fixed) assignments may be completed orally and the period allowed for response to a coordination notification may be less than 30 days if the parties agree. Coordination of all frequency assignments for all mobile (temporary fixed) stations in all bands above 2110 MHz, except the bands 6425–6525 MHz and 17.7–19.7 GHz, will be conducted in accordance with the procedure established in paragraph (b) of this section or with the procedure in paragraph (d) of this section. Coordination of all frequency

<sup>56</sup> 5 U.S.C. 603(c)(1)–(c)(4).

<sup>57</sup> See *NPRM* para. 28, *supra*.

<sup>58</sup> See 5 U.S.C. 801(a)(1)(A).

assignments for all fixed stations in the band 1990–2110 MHz will be in accordance with the procedure established in paragraph (c) of this section. Coordination of all frequency assignments for all mobile (temporary fixed) stations in the band 1990–2110 MHz will be conducted in accordance with the procedure in paragraph (d) of this section.

(b) For each frequency coordinated under this part, the interference protection criteria in 47 CFR 101.105(a), (b), and (c) and the following frequency usage coordination procedures will apply:

(1) *General requirements.* Proposed frequency usage must be prior coordinated with existing licensees, permittees, and applicants in the area, and other applicants with previously filed applications, whose facilities could affect or be affected by the new proposal in terms of frequency interference on active channels, applied-for channels, or channels coordinated for future growth. Coordination must be completed prior to filing an application for regular authorization, or a major amendment to a pending application, or any major modification to a license. In coordinating frequency usage with stations in the fixed satellite service, applicants must also comply with the requirements of 47 CFR 101.21(f). In engineering a system or modification thereto, the applicant must, by appropriate studies and analyses, select sites, transmitters, antennas and frequencies that will avoid interference in excess of permissible levels to other users. All applicants and licensees must cooperate fully and make reasonable efforts to resolve technical problems and conflicts that may inhibit the most effective and efficient use of the radio spectrum; however, the party being coordinated with is not obligated to suggest changes or re-engineer a proposal in cases involving conflicts. Applicants should make every reasonable effort to avoid blocking the growth of systems as prior coordinated. The applicant must identify in the application all entities with which the technical proposal was coordinated. In the event that technical problems are not resolved, an explanation must be submitted with the application. Where technical problems are resolved by an agreement or operating arrangement between the parties that would require special procedures be taken to reduce the likelihood of interference in excess of permissible levels (such as the use of artificial site shielding) or would result in a reduction of quality or capacity of

either system, the details thereof may be contained in the application.

\* \* \* \* \*

(c) For each frequency coordinated under this part, the following frequency usage coordination procedures will apply:

\* \* \* \* \*

(d) For each frequency coordinated under this part, applicants are responsible for selecting the frequency assignments that are least likely to result in mutual interference with other licensees in the same area. Applicants may consult local frequency coordination committees, where they exist, for information on frequencies available in the area. In selecting frequencies, consideration should be given to the relative location of receive points, normal transmission paths, and the nature of the contemplated operation.

[FR Doc. 2010-7567 Filed 4-2-10; 8:45 am]

**BILLING CODE 6712-01-P**

**FCC REPORT TO CONGRESS  
AS REQUIRED BY THE ORBIT ACT  
ELEVENTH REPORT**

Adopted: **June 14, 2010**

Released: **June 15, 2010**

By the Commission:

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**FCC REPORT TO CONGRESS AS REQUIRED BY THE ORBIT ACT****ELEVENTH REPORT**

This report is submitted in accordance with the requirements of the Open-Market Reorganization for the Betterment of International Telecommunications Act (the “ORBIT Act”)<sup>1</sup> which has an objective of ensuring that INTELSAT and Inmarsat are privatized in a pro-competitive manner. To this end, the Act requires the submission of annual reports to Congress as noted below.

Section 646 states:

(a) ANNUAL REPORTS - The President and the Commission shall report to the Committees on Commerce and International Relations of the House of Representatives and the Committees on Commerce, Science, and Transportation and Foreign Relations of the Senate within 90 calendar days of the enactment of this title, and not less than annually thereafter, on the progress made to achieve the objectives and carry out the purposes and provisions of this title. Such reports shall be made available immediately to the public.

(b) CONTENTS OF REPORTS - The reports submitted pursuant to subsection (a) shall include the following:

- (1) Progress with respect to each objective since the most recent preceding report.
- (2) Views of the Parties with respect to privatization.
- (3) Views of the industry and consumers on privatization.
- (4) Impact privatization has had on United States industry, United States jobs, and United States industry’s access to the global marketplace.<sup>2</sup>

**I. Progress as to Objectives and Purposes**

The purpose of the ORBIT Act is “to promote a fully competitive global market for satellite communication services for the benefit of consumers and providers of satellite services

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<sup>1</sup> 47 U.S.C. § 701 (2000).

<sup>2</sup> 47 U.S.C. § 765(e).

and equipment by fully privatizing the intergovernmental satellite organizations, INTELSAT<sup>3</sup> and Inmarsat.<sup>4</sup>

The ORBIT Act, as originally passed in 2000: (1) mandates the privatization of INTELSAT and Inmarsat; (2) establishes criteria to ensure a pro-competitive privatization; (3) requires the Commission to determine whether INTELSAT, Inmarsat, and the INTELSAT spin-off New Skies Satellites N.V. (“New Skies”), have been privatized in a manner that will harm competition in the United States; (4) requires the Commission to use the privatization criteria specified in the ORBIT Act as a basis for making its competition determination; and (5) directs the Commission to “limit through conditions or deny” applications or requests to provide “non-core” services to, from, or within the United States if it finds that competition will be harmed.<sup>5</sup> The Act provides for certain exceptions to limitations on non-core services in the event of such a determination. The Act also prohibits the Commission from authorizing certain “additional” services pending privatization consistent with the criteria in the Act.<sup>6</sup> In addition, the Act directs the Commission to undertake a rulemaking proceeding to assure users in the United States the opportunity for direct access to the INTELSAT system. In October 2004, Congress amended the ORBIT Act, adding Sections 621(5)(F) and (G), to provide a certification process as an alternative to the initial public offering (“IPO”) requirements under Sections 621(5)(A) and (B). In July 2005, Congress further amended the ORBIT Act, striking certain privatization criteria for Intelsat separated entities, removing certain restrictions on separated entities and successor to Intelsat and for other purposes.<sup>7</sup>

The Commission made its first report to Congress on its actions to implement the ORBIT Act on June 15, 2000, following enactment of the Act on March 17, 2000.<sup>8</sup> The Commission

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<sup>3</sup> The intergovernmental satellite body INTELSAT later created Intelsat LLC, a privately-held U.S. corporation that is now the licensee of those satellite assets formerly held by INTELSAT. *See* discussion at page 4, *infra*.

<sup>4</sup> 47 U.S.C. § 761 NOTE.

<sup>5</sup> The Act defines “non-core” services as “services other than public-switched network voice telephony and occasional-use television” with respect to INTELSAT, and as “services other than global maritime distress and safety services or other existing maritime or aeronautical services for which there are not alternative providers” with respect to Inmarsat. 47 U.S.C. § 769(a)(11).

<sup>6</sup> The Act defines “additional” services as direct-to-home (“DTH”) or direct broadcast satellite (“DBS”) video services, or services in the Ka or V bands” for INTELSAT and as “those non-maritime or non-aeronautical mobile services in the 1.5 and 1.6 GHz band on planned satellites or the 2 GHz band” for Inmarsat. 47 U.S.C. § 769(a)(12).

<sup>7</sup> Open-Market Reorganization for the Betterment of International Telecommunications Act, Pub. L. No. 106-180, 114 Stat. 48 (2000), *as amended*, Pub. L. No. 107-233, 116 Stat. 1480 (2002), *as amended*, Pub. L. No. 108-228, 118 Stat. 644 (2004), *as amended*, Pub. L. No. 108-371, 118 Stat. 1752 (October 25, 2004), *as amended*, Pub. L. No. 109-34, 119 Stat. 377 (July 12, 2005). In the July 2005 amendment to the ORBIT Act, Congress added a requirement that the Commission submit to Congress a separate annual report that analyzes the competitive market conditions with respect to domestic and international satellite communications services. The first Annual Report was released on March 26, 2007. *FCC Annual Report and Analysis of Competitive Market Conditions with Respect to Domestic and International Satellite Communications Services*, FCC 07-34, IB Docket No. 06-67 (“*Satellite Competition Report*”).

<sup>8</sup> *FCC Report to Congress as Required by the ORBIT Act*, 15 FCC Rcd 11288 (2000).

made its second report on June 15, 2001;<sup>9</sup> its third report on June 14, 2002;<sup>10</sup> its fourth report on June 11, 2003;<sup>11</sup> its fifth report on June 15, 2004;<sup>12</sup> its sixth report on June 15, 2005;<sup>13</sup> its seventh report on June 15, 2006;<sup>14</sup> its eighth report on June 15, 2007;<sup>15</sup> its ninth report on June 13, 2008,<sup>16</sup> and its tenth report on June 15, 2009.<sup>17</sup>

### A. Commission Actions and Activities

Since August of 2000, the Commission has undertaken a number of actions either required by the ORBIT Act, or related to its objectives and purposes. The Commission has taken the actions described below to ensure that INTELSAT, Inmarsat, and New Skies have been privatized in a pro-competitive manner, consistent with the privatization criteria of the ORBIT Act.<sup>18</sup> The Commission has also taken actions to implement certain deregulatory measures in the ORBIT Act.<sup>19</sup>

#### *INTELSAT*

- In August 2000, the Commission granted conditional licensing authority to Intelsat LLC, (“Intelsat”), a separate, privately held U.S. corporation, created by INTELSAT to hold U.S. satellite authorizations and associated space segment assets.<sup>20</sup> Under this licensing authority, the Commission permitted Intelsat’s licenses to become effective upon “privatization,” meaning the transfer of INTELSAT’s satellites and associated assets to Intelsat and the transfer of its International Telecommunications Union (“ITU”) network filings to the U.S. registry. Intelsat received conditional U.S.

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<sup>9</sup> *FCC Report to Congress as Required by the ORBIT Act*, 16 FCC Rcd 12810 (2001).

<sup>10</sup> *FCC Report to Congress as Required by the ORBIT Act*, 17 FCC Rcd 11458 (2002).

<sup>11</sup> *FCC Report to Congress as Required by the ORBIT Act*, 18 FCC Rcd 12525 (2003).

<sup>12</sup> *FCC Report to Congress as Required by the ORBIT Act*, 19 FCC Rcd 10891 (2004).

<sup>13</sup> *FCC Report to Congress as Required by the ORBIT Act*, 20 FCC Rcd 11382 (2005).

<sup>14</sup> *FCC Report to Congress as Required by the ORBIT Act*, 21 FCC Rcd 6740 (2006).

<sup>15</sup> *FCC Report to Congress as Required by the ORBIT Act*, 22 FCC Rcd 11347 (2007).

<sup>16</sup> *FCC Report to Congress as Required by the ORBIT Act*, FCC 08-152 (2008).

<sup>17</sup> *FCC Report to Congress as Required by the ORBIT Act*, 24 FCC Rcd 8686 (2009).

<sup>18</sup> 47 U.S.C. §§ 761, 763, 763a, 763b, 763c, and 765g.

<sup>19</sup> 47 U.S.C. §§ 765 and 765d(1).

<sup>20</sup> Application of Intelsat LLC for Authority to Operate, and to Further Construct, Launch, and Operate C-band and Ku-band Satellites that Form a Global Communications System in Geostationary Orbit, *Memorandum Opinion, Order and Authorization*, 15 FCC Rcd 15460, *recon. denied*, 15 FCC Rcd 25234 (2000), *further proceedings*, 16 FCC Rcd 12280 (2001) (“*Intelsat Licensing Order*”).

authorizations for INTELSAT's existing satellites, planned satellites, and planned system modifications associated with INTELSAT's frequency assignments in the fixed satellite services ("FSS") C- and Ku-bands existing as of privatization.<sup>21</sup>

- Later in 2000, INTELSAT adopted plans to distribute shares in Intelsat to its Signatories on July 18, 2001.<sup>22</sup> In May 2001, the Commission found that, although the initial public offering (IPO) required under the privatization requirements of the ORBIT Act had not yet been completed, INTELSAT would privatize in a manner consistent with the non-IPO privatization provisions of the ORBIT Act, upon completion of its plans to distribute Intelsat shares to its Signatories.<sup>23</sup> INTELSAT later distributed shares to its Signatories, as it had planned.
- On July 28, 2003, Loral Satellite Inc. ("Debtor-in-Possession" or "DIP"), and Loral SpaceCom Corporation (DIP), and Intelsat North America, LLC filed an application seeking authority to assign five non-common carrier space station licenses to Intelsat North America. On February 11, 2004, the Commission granted authority to assign those licenses subject to certain conditions and limitations.<sup>24</sup> Loral was providing services, such as Direct-to-Home ("DTH"), that are "additional services" as defined

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<sup>21</sup> *Intelsat Licensing Order*, 15 FCC Rcd 15460. The conventional C-band refers to the 3700-4200/5925-6425 MHz frequency bands. Intelsat is also authorized to operate in the extended C-band frequencies 3625-3700/5850-5925/6425-6650 MHz on certain satellites at certain orbital locations. In addition, Intelsat is authorized to operate in the extended C-band frequencies 3420-3625 MHz on the Intelsat-805 satellite at 55.5° W.L. for service to non-U.S. locations. The 3420-3600 MHz portion of this frequency band is not a satellite band in the United States and is operated by Intelsat outside the United States subject to potential interference from worldwide shipborne U.S. military radar operations. The conventional Ku-band refers to the 11.7-12.2/14.0-14.5 GHz frequency bands. Intelsat is also authorized to operate in the extended Ku-frequency bands 10.95-11.2/11.45-11.7/12.5-12.75/13.75-14.0 GHz on certain satellites at certain orbital locations.

<sup>22</sup> Upon privatization, former INTELSAT Signatories and non-Signatory investing entities were issued shares in Intelsat Ltd. according to their March 2001 investment shares in INTELSAT.

<sup>23</sup> Application of Intelsat LLC for Authority to Operate, and to Further Construct, Launch, and Operate C-band and Ku-band Satellites that Form a Global Communications System in Geostationary Orbit, *Memorandum Opinion, Order and Authorization*, 16 FCC Rcd 12313, 12290 (para. 71) (2001) ("*Intelsat LLC ORBIT Act Compliance Order*").

<sup>24</sup> Loral Satellite, Inc. (Debtor-in-Possession) and Loral SpaceCom Corporation (Debtor-in-Possession), and Intelsat North America, LLC, Applications for Consent to Assignments of Space Station Authorizations and Petition for Declaratory Ruling Under Section 310(b)(4) of the Communications Act of 1934, as Amended, *Authorization and Order*, 19 FCC Rcd 2404 (Int'l Bur., 2004) ("*Loral/Intelsat Order*"). On March 4, 2004, the Commission adopted a Supplemental Order clarifying the date the Special Temporary Authority was to commence. Loral Satellite, Inc. (Debtor-in-Possession) and Loral SpaceCom Corporation (Debtor-in-Possession), and Intelsat North America, LLC, Applications for Consent to Assignments of Space Station Authorizations and Petition for Declaratory Ruling Under Section 310(b)(4) of the Communications Act of 1934, as Amended, *Supplemental Order*, 19 FCC Rcd 4029 (Int'l Bur., 2004).

in the ORBIT Act. Intelsat was granted authority to provide additional services to the then-existing Loral customers.<sup>25</sup>

- Intelsat was originally required by the ORBIT Act to conduct an IPO by October 1, 2001, in order to “substantially dilute” ownership by former INTELSAT Signatories.<sup>26</sup> Subsequently, in 2002 and 2004, Congress amended the ORBIT Act to extend the deadline for Intelsat to conduct its IPO.<sup>27</sup> In October 2004, Congress added Sections 621(5)(F) and (G) to the ORBIT Act, to provide a certification process as an alternative to the IPO requirements under Sections 621(5)(A) and (B).<sup>28</sup>
- On December 22, 2004, the Commission authorized the transfer of control of Intelsat’s licenses and authorizations to Zeus Holdings Limited (“Zeus”),<sup>29</sup> a private equity group, organized under the law of Bermuda, which would acquire 100 percent of the equity and voting interests of Intelsat (“Zeus/Intelsat Transaction”).<sup>30</sup>

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<sup>25</sup> *Loral/Intelsat Order*, 19 FCC Rcd at 2429 (para. 65).

<sup>26</sup> Pub. L. No. 106-180, 114 Stat. 48 (2000). Congress also gave the Commission discretion to extend the IPO deadline to no later than December 31, 2002. INTELSAT Request for Extension of Time Under Section 621(5) of the ORBIT Act, *Order*, 16 FCC Rcd. 18185 (2001).

<sup>27</sup> Pub. L. No. 107-233, 116 Stat. 1480 (2002) (extending Intelsat's IPO deadline to December 31, 2003, and giving the Commission the discretionary authority to further extend the deadline to no later than June 30, 2004); Public Law No. 108-228, 118 Stat. 644 (2004) (extending Intelsat’s IPO deadline to June 30, 2005, and giving the Commission the discretionary authority to further extend the deadline to no later than December 31, 2005).

<sup>28</sup> Public Law No. 108-371, 118 Stat. 1752 (2004).

<sup>29</sup> Zeus Holdings Limited subsequently changed its name to Intelsat Holdings, Ltd. See footnote 29, *infra*.

<sup>30</sup> *Intelsat, Ltd., Transferor, and Zeus Holdings Limited, Transferee, Consolidated Application for Consent to Transfers of Control of Holders of Title II and Title III Authorizations and Petition for Declaratory Ruling Under Section 310 of the Communications Act of 1934, As Amended*, IB Docket No. 04-366, Order and Authorization, DA 04-4034, 19 FCC Rcd 24820 (Int’l Bur., WTB and OET 2004) (“*Intelsat-Zeus Order*”). In early 2005, the Commission granted authority to interpose Intelsat Subsidiary Holding Company Ltd. into the chain of ownership and modified its foreign ownership ruling to include new Bermuda-based intermediate parent Intelsat Subsidiary Holding Company Ltd. *Intelsat, Ltd.*, File No. ISP-PDR-20050203-00004, Grant of Authority, Public Notice, Report No. TEL-00884, DA 05-479, 20 FCC Rcd 4052, 4053 (Int’l Bur., 2005); *Intelsat North America LLC*, File No. SAT-T/C-20050203-00022, and *Intelsat LLC*, File No. SAT-T/C-20050203-00023, Grant of Authority, Public Notice, Report No. SAT-00276, DA 05-594 (Int’l Bur., March 4, 2005), at 1-2; *Intelsat LLC*, File Nos. SES-T/C-20050203-00138, -00139 and -00140, and *Intelsat MTC LLC*, File No. SES-T/C-20050203-00141, Grant of Authority, Report No. SES-00691 (Int’l Bur. March 2, 2005), at 26-27; *Intelsat USA License Corp.*, File No. ITC-T/C-20050418-00279, *Intelsat General Corporation*, File No. ITC-T/C-20050418-00280, and *Intelsat MTC LLC*, File No. ITC-T/C-20050418-0281, Grant of Authority, Public Notice, Report No. TEL-00931, DA 05-2192 (Int’l Bur., 2005), at 3-4. During 2005, Zeus Holdings Limited changed its name to Intelsat Holdings, Ltd. See, e.g., *Intelsat USA License Corp.*, Report No. TEL-00931, at 3.

- On April 8, 2005, the Commission determined that (a) Intelsat was in compliance with the alternative certification process under Sections 621(5)(F) and 621(5)(G) of the ORBIT Act; (b) that Intelsat can forgo the requirement for an IPO and the public listing of securities; and that (c) Intelsat was no longer subject to the provisions of Section 602 that prohibited Intelsat from providing “additional services.”<sup>31</sup>
- On May 24, 2005, the Commission granted Intelsat’s request for approval of the *pro forma* assignments of space station authorizations and related Tracking, Telemetry and Control (“TT&C”) earth station licenses, from Intelsat to Intelsat North America LLC.<sup>32</sup>
- On June 19, 2006, the Commission approved the merger of Intelsat Holdings, Ltd. with PanAmSat Holding Corporation (“PanAmSat”).<sup>33</sup> The FCC action approving the transaction granted applications for the transfer of control, to Intelsat, of Commission-issued licenses and authorizations held by PanAmSat and its subsidiaries. Upon consummation of the transaction on July 3, 2006, PanAmSat became a wholly-owned subsidiary of Intelsat continuing operation as a separate corporate entity.
- On December 19, 2007, the Commission granted a series of applications filed by Intelsat Holdings, Ltd. and Serafina Holdings Limited (“Serafina”) seeking consent to transfer of control of Intelsat Holdings, Ltd., and its six subsidiary licensees from Intelsat’s existing control group of four private equity firms to Serafina, a then newly-formed Bermuda company indirectly controlled by BC Partners Holdings Limited, a U.K.-based investment firm organized under the laws of Guernsey, a British Crown Dependency.<sup>34</sup> Serafina and Intelsat subsequently consummated the proposed transaction.

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<sup>31</sup> Intelsat, Ltd. Petition for Declaratory Ruling that Intelsat, Ltd. Complies With Section 621(5)(F) of the ORBIT Act, *Memorandum Opinion and Order*, FCC 05-86, IB Docket No. 05-18, 20 FCC Rcd 8604 (2005) (“*Intelsat Certification Order*”).

<sup>32</sup> Intelsat LLC, Assignor, and Intelsat North America LLC, Assignee, Applications for Consent to Pro Forma Assignment of Space Station Authorizations and Related TT&C Earth Station Licenses, File Nos., SAT-ASG-20050418-00084, SAT-ASG-20050418-00085, SES-ASG-20050502-00519, SES-ASG-20050502-00520, SES-ASG-20050502-00562, DA-05-1545, Public Notice, Report No. SAT-00294, March 27, 2005.

<sup>33</sup> Constellation, LLC, Carlyle PanAmSat I, LLC, Carlyle PanAmSat II, LLC, PEP PAS, LLC, PEOP PAS, LLC, Transferors, Intelsat Holdings, LTD, Transferee, Consolidated Application for Authority to Transfer Control of PanAmSat Licensee Corp. and PanAmSat H-2 Licensee Corp., *Memorandum Opinion and Order*, 21 FCC Rcd 7368 (2006) (“*Intelsat-PanAmSat Order*”).

<sup>34</sup> Intelsat Holdings, Ltd., Transferor, and Serafina Holdings Limited, Transferee, Consolidated Application for Consent to Transfer Control of Holders of Title II and Title III Authorizations, IB Docket No. 07-181, *Memorandum Opinion and Order*, 22 FCC Rcd 22151 (2007).

- On February 21, 2008, the Commission released an order<sup>35</sup> modifying certain space station licenses held by Intelsat North America to include two conditions requested jointly by Intelsat and the International Telecommunications Satellite Organization (“ITSO”).<sup>36</sup> The conditions were two of three conditions initially proposed by ITSO.<sup>37</sup> The adoption of the two conditions was supported by the State Department, after consultations with NTIA.<sup>38</sup>
- On January 20, 2010, Intelsat General Corporation was granted a pro forma transfer of control of Intelsat General Corporation’s international Section 214 authority from Intelsat Global, Ltd. (Bermuda) to Intelsat Global, S.A. (Luxembourg), effective December 15, 2009. All of Intelsat’s (Bermuda) direct and indirect subsidiaries were migrated from Bermuda and reorganized as Luxembourg entities. There was no change in the ultimate ownership and control of Intelsat General Corporation.<sup>39</sup>

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<sup>35</sup> Petition of the International Telecommunications Satellite Organization under Section 316 of the Communications Act, as Amended, IB Docket No. 06-137, *Order of Modification*, DA 08-444, 23 FCC Rcd 2764 (Int’l Bur., 2008) (*Order of Modification*). The modification implemented a Commission order, pursuant to Section 316 of the Communications Act of 1934, as amended, to impose the two conditions. *See* Petition of the International Telecommunications Satellite Organization under Section 316 of the Communications Act, as Amended, IB Docket No. 06-137, *Order Proposing Modification*, DA 07-4715, 22 FCC Rcd 20093 (Int’l Bur., 2007). Intelsat North America, while stating that it did not object to the proposed conditions in principle, filed a Limited Protest to Seek Clarification as to the circumstances in which the conditions would apply. Intelsat North America Limited Protest to Seek Clarification, IB Docket No. 06-137 (filed January 10, 2008) at 1-2. The request for clarification was granted in part, and denied in part, in the February 2008 modification order.

<sup>36</sup> ITSO is the residual, post-privatization intergovernmental organization, governed by international agreement (“ITSO Agreement”) that oversees the Intelsat public service obligations established as part of the 2001 privatization. *See* Agreement Relating to the International Telecommunications Satellite Organization (ITSO Agreement) (November 17, 2000), Art. III(a) (“... the main purpose of ITSO is to ensure, through the Public Services Agreement, that the Company provides, on a commercial basis, international public telecommunications services, in order to ensure performance of the Core Principles.”), available at <http://www.itso.int>. The United States is a party to the ITSO Agreement, with the State Department serving as the U.S. representative. *See Order of Modification*, 23 FCC Rcd at 2764. The two conditions explicitly obligate Intelsat to remain a signatory to the Public Services Agreement between Intelsat and ITSO approved by the ITSO Twenty-fifth Assembly of Parties, and provide, for licensing purposes, that no entity can be considered a successor-in-interest to Intelsat under the ITSO Agreement unless the entity has undertaken to perform the obligations of the Public Services Agreement.

<sup>37</sup> Petition of ITSO, IB Docket No. 06-137 (filed July 10, 2006) (“Petition”).

<sup>38</sup> Letter from Ambassador David A. Gross, United States Coordinator, International Communications and Information Policy, U.S. Department of State, to the Honorable Kevin J. Martin, Chairman, Federal Communications Commission, IB Docket No. 06-137 (dated March 15, 2007) at 1, 3-4. *See also*, Letter from Steven W. Lett, Deputy United States Coordinator, International Communications and Information Policy, U.S. Department of State to Helen Domenici, Chief, International Bureau, Federal Communications Commission, IB Docket No. 06-137 (filed February 1, 2008).

<sup>39</sup> Intelsat General Corporation notification of Transfer of Control from Intelsat Global, Ltd. (Bermuda) to Intelsat Global, S.A. (Luxembourg), DA-10-110 (January 20, 2010).

- Pursuant to the United States' obligations as the notifying administration to the ITU<sup>40</sup> for Intelsat's fixed satellite service C- and Ku-band assignments transferred at privatization, the Commission has participated in a number of international satellite coordination negotiations as Intelsat's licensing Administration. Since the 2009 Orbit Act Report to Congress, the Commission has participated in coordination meetings with the Russian Federation and Malaysia on behalf of Intelsat and a number of other U.S. licensees. Over the past reporting period, satellite coordination agreements have been concluded via correspondence with Canada.
- The United States has a coordination process whereby U.S. operators may reach operational arrangements with operators of other Administrations. These operational arrangements are then submitted to the operators' respective Administrations for approval. Once approved by both Administrations, the operational arrangements become, or form the basis for, a coordination agreement between the Administrations under the ITU procedures. Since the 2009 Orbit Act Report to Congress, Intelsat has concluded operational arrangements by correspondence with Canada and the United Kingdom. In due course, this process will lead to coordination agreements between the United States and the foreign Administration.
- Since the June 15, 2009 Tenth Annual Report, Intelsat has filed a number of requests for license authorizations and modifications. The Commission has reviewed these requests and acted on them consistent with the Commission's licensing rules and processes.<sup>41</sup>

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<sup>40</sup> As the notifying administration on behalf of Intelsat, the Commission is responsible for discharging the obligation undertaken in the Constitution of the ITU, in the Convention of the ITU, and in the Administrative regulations. Article 1, Section 1.2, International Telecommunication Union Radio Regulations.

<sup>41</sup> *See, e.g.*, Intelsat North America LLC, STA Application, Modification Request, File No. SAT-MOD-20090309-00034, DA 09-1363 (grant of authority on June 17, 2009 with conditions); PanAmSat Licensee Corp, Modification Request, File No. SAT-MOD-20090108-00004, DA 09-1516 (grant of authority on July 8 2009 with conditions); Intelsat North America LLC, Modification Request, File No. SAT-MOD-20090204-00015, DA 09-1547, (grant of authority on July 16, 2009 with conditions); PanAmSat Licensee Corp., Launch and Operate Application, File No. SAT-RPL-20090123-00007, DA 09-2162 (grant of authority on October 1, 2009 with conditions); Intelsat North America LLC, Launch and Operate Application, File No. SAT-LOA-20090410-00043, DA 10-205 (grant of authority on November 25, 2009, with conditions); Intelsat North America LLC, Request for Special Temporary Authority, File No. SAT-STA-20100111-00046, DA 10-281 (grant stamp on February 12, 2010 with conditions); Intelsat North America, LLC, Request for Special Temporary Authority, File No. SAT-STA-20100315-0046, DA 10-587 (grant stamp with conditions on April 1, 2010); Intelsat North America LLC, Launch and Operate Application, File No. SAT-A/O-20091223-00151, DA 10-614 (grant stamp on April 2, 2010 with conditions).

*Inmarsat*

- Inmarsat privatized on April 15, 1999, prior to enactment of the ORBIT Act. The ORBIT Act specified a number of criteria for determining whether Inmarsat's privatization is pro-competitive. On October 9, 2001, the Commission released an Order in which it concluded that Inmarsat had privatized in a manner consistent with the non-IPO requirements of Sections 621 and 624 of the ORBIT Act.<sup>42</sup>
- In its decision, having found that Inmarsat had privatized in a manner consistent with the non-IPO requirements of the Act,<sup>43</sup> the Commission granted Comsat Corporation, Stratos Mobile Networks, LLC, SITA Information Computing Canada, Inc., Honeywell, Inc., Marisat Communications Network, Inc., and Deere & Company regular earth station authority to use certain Inmarsat satellites for communications services to, from, or within the United States.
- The ORBIT Act originally required Inmarsat to conduct an IPO no later than October 1, 2000.<sup>44</sup> Subsequently, Congress amended the ORBIT Act several times to extend the deadline for Inmarsat to conduct an IPO.<sup>45</sup> Ultimately, in October 2004, Congress amended the ORBIT Act, extending the IPO deadline until June 30, 2005 and adding Sections 621(5)(F) and (G) to provide a certification process as an alternative to the IPO requirements under Sections 621(5)(A) and (B).<sup>46</sup>
- On June 14, 2005, the Commission determined that Inmarsat was in compliance with the alternative certification process under Sections 621(5)(F) and 621(5)(G) of the ORBIT Act, that Inmarsat could forgo the requirement for an IPO and the public listing of securities, and that Inmarsat was no longer subject to the provisions of Section 602 that prohibited Inmarsat from providing additional services.<sup>47</sup>

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<sup>42</sup> Comsat Corporation *et al*, *Memorandum Opinion, Order and Authorization*, 16 FCC Rcd 21661 (2001) (“*Inmarsat ORBIT Act Compliance Order*”).

<sup>43</sup> 47 U.S.C. § 761(a), which precludes Commission authorization of additional services by Inmarsat until Inmarsat has privatized in accordance with the Act.

<sup>44</sup> Pub. L. No. 106-180, 114 Stat. 48 (2000).

<sup>45</sup> On June 30, 2003, Congress extended Inmarsat's IPO deadline to June 30, 2004, and gave the Commission discretion to further extend this deadline to no later than December 31, 2004. ORBIT Technical Corrections Act of 2003, Pub. L. No. 108-39, § 763, 117 Stat. 835 (2003). Inmarsat Ventures Limited Request for Extension of Time under Section 621(5) of the Communications Satellite Act of 1962, as amended by the Open-Market Reorganization for the Betterment of International Telecommunications Act, *Order*, 19 FCC Rcd 11387 (2004).

<sup>46</sup> Public Law No. 108-371, 118 Stat. 1752 (October 25, 2004).

<sup>47</sup> Inmarsat Group Holdings Limited Petition for Declaratory Ruling that Intelsat, Ltd. Complies With Section 621(5)(F) of the ORBIT Act, *Memorandum Opinion and Order*, IB Docket 04-439, FCC 05-126 (2005) (“*Inmarsat Certification*”). Section 681(2) of the ORBIT Act defines “additional services” for Inmarsat as the non-maritime and non-aeronautical services in the 1.5 and 1.6 GHz band on planned

- Beginning in 2005, resellers of Inmarsat satellite services filed applications to continue or, in some cases, to commence operations of mobile earth terminals (“METs”) and gateway land earth stations (“LEs”) in the United States via various Inmarsat satellites not covered by existing coordination agreements for the L-band over North America, including Inmarsat’s fourth generation (“I-4”) satellites.<sup>48</sup> These applications were opposed by Mobile Satellite Ventures Subsidiary LLC (“MSV”), the U.S.-licensed mobile satellite service (“MSS”) operator in the L-band.<sup>49</sup> In order to permit continuity of service to existing Inmarsat customers<sup>50</sup> and to allow use of its new Broadband Global Area Network (“BGAN”) <sup>51</sup> services in support of emergency operations, the Commission granted limited authority to resellers to operate the I-4F2 satellite via an I-4 satellite while their applications for permanent authorization were under consideration.<sup>52</sup>
- On December 21, 2007, Inmarsat and MSV signed a “Spectrum Coordination and Cooperation Agreement” that resolved outstanding differences between the parties regarding use of the L-band.<sup>53</sup> According to the parties, the agreement addresses operations in the L-band in North America, including re-banding of spectrum, coordination of next generation Inmarsat and MSV satellites, resolution of pending

satellites in the 2 GHz band. *See* Pub. L. 106-180 § 602(a) (precluding Commission authorization of additional services by Inmarsat until Inmarsat has privatized in accordance with the Act).

<sup>48</sup> The first two Inmarsat I-4 satellites were launched in 2005. *See* Inmarsat website, “About Inmarsat: Our Satellites,” available online at [http://www.inmarsat.com/About/Our\\_satellites/default.aspx](http://www.inmarsat.com/About/Our_satellites/default.aspx). The third I-4 satellite was launched on August 18, 2008. Press Release, “Successful Launch for Third Inmarsat-4 Satellite,” dated August 18, 2009, available online at [http://www.inmarsat.com/about/investors/Press\\_releases](http://www.inmarsat.com/about/investors/Press_releases).

<sup>49</sup> MSV subsequently changed its name to SkyTerra Communications. *See* Press Release, “Mobile Satellite Ventures Changes Name to SkyTerra,” dated December 8, 2008, available online at <http://www.skyterra.com/media/press-releases.cfm>.

<sup>50</sup> The Commission had previously authorized the requested operations via the third generation Inmarsat 3F4 satellite.

<sup>51</sup> BGAN service is a mobile or portable application that supports both Internet protocol (“IP”) packet-switched data and circuit-switched applications. Inmarsat indicates that BGAN data transmission rates will allow customers to access to e-mail, local area networks, the Internet, intranet/extranet, video conferencing services, video-on-demand, and voice communications (including Voice over IP) from almost anywhere in the world.

<sup>52</sup> *See* Actions Taken, Satellite Communications Services Information, *Public Notice*, Report No. SES-00788 (rel. January 25, 2006); Actions Taken, Satellite Communications Services Information, *Public Notice*, Report No. SES-00821 (rel. May 17, 2006); Actions Taken, Satellite Communications Services Information, *Public Notice*, Report No. SES-00835 (rel. July 5, 2006); Actions Taken, Satellite Communications Services Information, *Public Notice*, Report No. SES-00990 (rel. December 19, 2007).

<sup>53</sup> Press Release, “SkyTerra, Mobile Satellite Ventures and Inmarsat Sign Spectrum Coordination and Cooperation Agreement,” December 21, 2007, available online at <http://www.msvlp.com/media/press-releases-view.cfm?id=158&yr=2007>.

regulatory issues in the United States and Canada, and greater system technical flexibility.

- On March 26, 2008, the Commission reached government-to-government satellite coordination agreements with the United Kingdom and Canada, based upon the “Spectrum Coordination and Cooperation Agreement” of Inmarsat and MSV. In light of these developments, on March 27, 2008, the Commission granted nearly all pending applications for regular authority to continue existing services via Inmarsat satellites.<sup>54</sup> The Commission also granted one reseller’s applications for regular authority to provide new BGAN services via the I-4F2 satellite on April 1, 2008.<sup>55</sup> An additional reseller’s application for regular authority to provide BGAN services via the I-4F2 was granted in January 2009.<sup>56</sup>
- In June 2008, Inmarsat filed an application seeking approval of the indirect transfer of control of Stratos Global Corporation and its wholly-owned subsidiaries from an irrevocable trust to Inmarsat. In January 2009, the Bureau granted this application for transfer of control.<sup>57</sup> On February 17, 2009, Vizada filed an Application for Review, which is currently under consideration.
- On October 21, 2008, the Commission released an Order making administrative changes to the way in which the Commission specifies authorized points of communication in licenses for L-band MSS user terminals using Inmarsat space stations.<sup>58</sup> Specifically, the Commission established a list of Inmarsat satellites approved to serve the United States in the L-band (the “ISAT List”). The list includes all Inmarsat satellites that have been found to meet the Commission’s legal, technical, and policy requirements to access the U.S. market. As a result, earth station licensees and applicants may seek authority to communicate with all Inmarsat satellites on the ISAT List by listing “ISAT” as the point of communication, rather than having to seek authorization to communicate with Inmarsat satellites on a satellite-by-satellite and orbital-location-by-orbital-location basis.

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<sup>54</sup> Actions Taken, Satellite Communications Services Information, *Public Notice*, Report No. SES-01021 (rel. April 2, 2008).

<sup>55</sup> *Id.*

<sup>56</sup> Actions Taken, Satellite Communications Services Information, *Public Notice*, Report No. SES-01103 (rel. January 14, 2009) (granting authority to provide BGAN services via Inmarsat 4F2 to MVS Fed, LLC).

<sup>57</sup> Application of Robert M. Franklin (transferor) and Inmarsat plc (transferee) Consolidated Application for Consent to Transfer of Control of Stratos Global Corporation and Its Subsidiaries from an Irrevocable Trust to Inmarsat, plc., DA 09-117, *Memorandum Opinion and Order and Declaratory Ruling*, 24 FCC Rcd 449 (Int’l Bur., rel. January 16, 2009), *application for review pending*.

<sup>58</sup> Inmarsat, Inc., *Order*, 23 FCC Rcd 15268 (Int’l Bur. 2008).

- Four Inmarsat satellites were included in the original ISAT List.<sup>59</sup> Since the creation of the ISAT List, three Inmarsat satellites have been added to the ISAT List,<sup>60</sup> and the orbital location of one satellite on the ISAT List has been changed to a different location.<sup>61</sup> In addition, on October 22, 2009, Inmarsat's application to operate METs with satellites on the ISAT List was granted.<sup>62</sup>
- In April 2009, Inmarsat's prior distribution arrangements expired and Inmarsat entered into new arrangements with its distributors.<sup>63</sup> Inmarsat also completed the acquisition of the shares of Stratos Global Corporation.<sup>64</sup>
- In August 2008, SkyTerra Communications, Inc. and Harbinger Capital Partners Funds filed a series of applications seeking approval of a transfer of control of SkyTerra Subsidiary LLC from SkyTerra Communications to Harbinger. Harbinger holds approximately 29 percent of the issued and outstanding voting shares of Inmarsat plc and holds convertible bonds in Inmarsat plc. On March 26, 2010, the International Bureau, Office of Engineering and Technology and the Wireless Telecommunications Bureau issued a Memorandum Opinion and Order and Declaratory Ruling approving the proposed transaction subject to conditions.<sup>65</sup> The

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<sup>59</sup> The Inmarsat satellites included in the original ISAT List were the I-3F2 at 15.5° W.L., the I-3F3 at 178° E.L., the I-3F4 at 142° W.L., and the I-4F2 satellite at 52.75° W.L. *See id.*

<sup>60</sup> Inmarsat, Inc., Public Notice: Satellite Communications Services Information Re: Actions Taken, Report No. SES-01097 (Int'l Bur., rel. December 24, 2008) (adding Inmarsat 4F1 at 143.5° E.L. and Inmarsat 4F3 at 97.65° W.L. to ISAT List). On September 8, 2009, Inmarsat 2F1 at 142° W.L. was added, subject to conditions, to the ISAT list. *See* [http://licensing.fcc.gov/ibfswweb/ib.page.FetchAttachment?attachment\\_key=738040](http://licensing.fcc.gov/ibfswweb/ib.page.FetchAttachment?attachment_key=738040)].

<sup>61</sup> Inmarsat plc, Petition for Declaratory Ruling to Modify ISAT List to Reflect Resumed Operations of I-3F4 at 54° W.L., File No. SAT-PPL-20090107-00003; SAT-APL-20090115-00005 (grant stamp on April 6, 2009, with conditions).

<sup>62</sup> Inmarsat Hawaii Inc., Application for Inmarsat Hawaii Blanket MET License, File No. SES-LIC-20090217-00184.

<sup>63</sup> *Inmarsat Group Limited, Form 20-F, Annual Report Pursuant to Section 13 or 15(d) of the Securities and Exchange Act of 1934 for the fiscal year ended December 31, 2008*, April 29, 2009, at 22, 41, available at <http://www.sec.gov/Archives/edgar/data/1291396/000119312509091361/d20f.htm>.

<sup>64</sup> Inmarsat Press Release, "Inmarsat completes acquisition of Stratos Global and implements new distribution terms with partners," April 15, 2009, available at <http://www.inmarsat.com/About/Newsroom/Press/00024905.aspx?language=EN&textonly=False>.

<sup>65</sup> Memorandum Opinion and Order and Declaratory Ruling, DA 10-535, dated March 26, 2010, available on-line at [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/DA-10-535A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-10-535A1.pdf).

transfers of control were consummated on March 29, 2010.<sup>66</sup> Multiple parties filed petitions for reconsideration, which the Commission is currently reviewing.<sup>67</sup>

- In addition, on August 22, 2008, Harbinger Capital Partners Funds filed applications seeking transfer of control of Inmarsat Hawaii, Inc. and Inmarsat Inc. to Harbinger. These applications are pending before the Commission.
- Since the June 15, 2009 Tenth Annual Report, the Commission has granted several earth station applications to communicate with Inmarsat's satellites as a point of communication.<sup>68</sup>

### *New Skies Satellites*

- New Skies is the Netherlands-based INTELSAT spin-off, created in 1998 as INTELSAT's first step toward privatization. On March 29, 2001, the International Bureau's Satellite and Radiocommunication Division added four satellites operated by New Skies to the Commission's Permitted Space Station List<sup>69</sup> ("Permitted List") with conditions to remove secondary status requirements for certain New Skies satellites.<sup>70</sup> This action enabled New Skies to provide satellite services to, from, and

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<sup>66</sup> Letter from Henry Goldberg and Joseph A. Godles to Marlene H. Dortch, dated March 30, 2010, available online at <http://fjallfoss.fcc.gov/ecfs/document/view?id=7020399437>.

<sup>67</sup> See e.g., Petition for Reconsideration, filed by AT&T Inc., April 1, 2010, available on-line at <http://fjallfoss.fcc.gov/ecfs/document/view?id=7020400432>. Petition for Partial Reconsideration, filed by Verizon Wireless, April 1, 2010, available on-line at <http://fjallfoss.fcc.gov/ecfs/document/view?id=7020400197>. The Commission is also considering comments filed by Sprint and the Public Interest Spectrum Coalition in opposition to the AT&T and Verizon petitions.

<sup>68</sup> See, e.g., THRANE & THRANE Airtime Ltd., Request for Special Temporary Authority to use Inmarsat 4F3, File No. SES-STA-20090609-00704 (grant stamp on June 16, 2009 with conditions); Inmarsat Hawaii Inc., Application Modifications to operate with the Inmarsat 4F1, File Nos. SES-MOD-20081224-01717, SES-MOD-20081224-01718, SES-AMD-20090116-00052, SES-AMD-20090116-00053 (grant stamp on July 14, 2009); BT Americas Inc., Request for Special Temporary Authority, File Nos. SES-STA-20090203-00130, SES-STA-20090707-00838 (grant stamp on July 16, 2009 with conditions); Vizada, Inc., Application Modification to add the Inmarsat 4F3 satellite as a point of communication, File No. SES-MFS-20081031-01432 (grant stamp on January 12, 2010); Inmarsat Hawaii Inc., Request for Special Temporary Authority, File No. SES-STA-20100204-00163 (grant stamp on February 23, 2010); LXE Inc., Application Modification, File No. SES-MOD-20090611-00726 (grant stamp on May 11, 2010).

<sup>69</sup> The Permitted List denotes all satellites and services with which U.S. earth stations with "routinely" authorized technical parameters operating in the conventional C- and Ku-bands ("ALSAT" earth stations) are permitted to communicate, without additional Commission action. Those communications must fall within the same technical parameters and conditions established in the earth stations' licenses. Amendment of the Commission's Regulatory Policies to Allow Non-U.S.-Licensed Space Stations to Provide Domestic International Satellite Service in the United States, *First Order on Reconsideration*, 15 FCC Rcd 7207 (1999).

<sup>70</sup> New Skies Satellites, N.V., DA 01-513, *Order*, 16 FCC Rcd 7482 (Int'l Bur., Sat. and Rad. Div., rel. March 29, 2001).

within the United States on a full-term basis.<sup>71</sup>

- On June 25, 2004, the Commission granted an application to transfer control of Commission licenses and authorizations held by New Skies Satellites N.V. and New Skies Networks, Inc. to New Skies Satellites B.V.<sup>72</sup>
- On March 29, 2006, the Commission approved the transfer of control from New Skies Networks, Inc. (“NSN”) to SES GLOBAL S.A. of licenses for six non-common carrier earth stations for communication with non-U.S. licensed satellites that have been added to the Commission’s Permitted List.<sup>73</sup> The Commission also approved the transfer of control of three non-U.S. satellites operated by New Skies that the Commission authorized to provide service to the United States pursuant to the Permitted List.<sup>74</sup> The merger was consummated on March 30, 2006.
- On September 7, 2009, SES S.A. announced that the operations of its subsidiaries New Skies Satellites B.V. and SES Americom would be conducted under the single brand name, SES WORLD SKIES.<sup>75</sup> This change did not affect the underlying legal entities that hold Commission authorizations or U.S. market access rights.
- Currently, three New Skies satellites are on the Permitted List.<sup>76</sup> Earth station operators with ALSAT authority continue to have authority to access New Skies satellites on the Commission’s Permitted List.<sup>77</sup>

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<sup>71</sup> New Skies Satellites, N.V., Petition for Declaratory Ruling, *Order*, 16 FCC Rcd 6740 (Sat. and Rad. Div., 2001).

<sup>72</sup> Application of New Skies Satellites N.V. (Transferor) and New Skies Satellites B.V. (Transferee) Transfer Control of FCC Licenses and Authorizations Held by New Skies Satellites N.V. and New Skies Networks, Inc., 19 FCC Rcd 21232 (2004).

<sup>73</sup> Permitted List available online at <http://www.fcc.gov/ib/sd/se/permitted.html>.

<sup>74</sup> New Skies Satellites Holdings LTD, Transferor, and SES Global S.A., Transferee, Applications to Transfer Control of Authorizations Held By New Skies Networks, Inc. and Notification of Change to Permitted Space Station List, DA 06-699, IB Docket No. 06-23, 21 FCC Rcd 3194, *Public Notice* (Int’l Bur., approved the transfer of control with conditions) (2006).

<sup>75</sup> See [http://www.ses-worldskies.com/worldskies/news\\_and\\_events/news\\_archive/2009/index.php?pressRelease=/pressReleases/archive-by-year/2009/09-09-07/index.php](http://www.ses-worldskies.com/worldskies/news_and_events/news_archive/2009/index.php?pressRelease=/pressReleases/archive-by-year/2009/09-09-07/index.php).

<sup>76</sup> The three New Skies satellites on the Permitted List are: NSS-7 at 42 W.L., NSS 806 at 40.5 W.L., and NSS-9 at 177 WL. One New Skies satellite, NSS-5, was removed from the Permitted List in 2009 after it was moved to a location where it no longer served the United States. New Skies filed a request in December 2009 that the NSS-5 be placed back on the Permitted List at the 20.0° W.L. (340.0° E.L.) orbital location. See, Petition for Declaratory Ruling to be Added to the Permitted List, File Nos. SAT-PPL-20091208-00142, SAT-APL-20100219-00034, Policy Branch Information, Actions Taken, Public Notice, Report No. SAT00-667 (rel. Feb.26, 2010). This request is pending before the Commission.

- An earth station must seek specific authority to communicate with a space station if the earth station does not meet the technical requirements for an ALSAT designation and/or if the earth station seeks to communicate with a satellite in frequency bands other than the conventional C- and Ku-bands. In the last year, the Commission granted numerous earth stations specific authority to communicate with a New Skies satellite.<sup>78</sup>

### *Status of Comsat*

- The ORBIT Act terminated ownership restrictions on COMSAT Corporation (“Comsat”), as mandated by the Communications Satellite Act of 1962. As a result, Lockheed Martin and Comsat jointly filed an application with the Commission for transfer of control of Comsat’s various licenses and authorizations. On July 31, 2000, the Commission found that Lockheed Martin’s purchase of Comsat was in the public interest and authorized Comsat to assign its FCC licenses and authorizations to a wholly-owned subsidiary of Lockheed Martin Corporation.<sup>79</sup>
- On December 18, 2001, the Commission granted requests by Lockheed Martin Global Telecommunications, COMSAT Corporation, and COMSAT General Corporation, together with Telenor Satellite Services Holdings, Inc., Telenor Satellite, Inc., and Telenor Broadband Services, AS request to assign certain Title II

<sup>77</sup> Any of the more than 8360 earth stations that have ALSAT authority can communicate with New Skies satellites that appear on the Permitted List, in the conventional C- and Ku- bands, without any further authorization. *See* note 76 *supra*.

<sup>78</sup> *See, e.g.*, SES Americom, Inc., Application for Modification, File Nos. SES-MOD-20090128-00079, SES-AFS-20090504-00454 and SES-AMD-20090210-00167 (grant stamp on July 23, 2009, with conditions); SES Americom, Inc., Request for Special Temporary Authority, File No. SES-STA-20090520-00630 (grant stamp on July 20, 2009, with conditions); PanAmSat Licensee Corp., Special Temporary Authority applications, File Nos. SES-STA-20090922-01211, SES-STA-20090922-01212 (grant stamp on October 16, 2009, with conditions); KVH Industries, Inc., Application Amendment, File Nos. SES-AFS-20061130-02065, SES-AFS-20090515-00589, SES-AMD-20070723-00976, SES-AMD-20090515-0596, SES-LIC-20060824-01502 (grant stamp on November 2, 2009, with conditions); MTN License Corp., Application Modification, File No. SES-MFS-20090626-00796 (grant stamp on December 15, 2009, with conditions); Vizada, Inc., Application Modification, File No. SES-MFS-20081031-01432 (grant stamp on January 12, 2010, with conditions); SES Americom, Inc., Application Modification, File No. SES-MOD-20100108-00022 (grant stamp on February 16, 2010); Vizada, Inc., Request for Special Temporary Authority, File No. SES-STA-20100128-00131 (grant stamp on February 19, 2010, with conditions); SES Americom, Inc., Application Modification, File No. SES-MFS-20100223-00244 (grant stamp on March 16, 2010, with conditions); Universal Space Network, Inc., License Application, File No. SES-LIC-20100318-00330 (grant stamp on May 4, 2010 with conditions); LXE Inc., Application Modification, File No. SES-MOD-20090611-00726 (grant stamp on May 11, 2010, with conditions).

<sup>79</sup> Lockheed Martin Corporation, Comsat Government Systems, LLC, and Comsat Corporation, Applications for Transfer of Control of Comsat Corporation and Its Subsidiaries, Licensees of Various Satellite, Earth Station, Private Land Mobile Radio and Experimental Licenses, and Holders of International Section 214 Authorizations, *Order and Authorization*, 15 FCC Rcd 22910 (2000), *erratum*, 15 FCC Rcd 23506 (2000); *recon. denied*, 17 FCC Rcd 13160 (2002).

common carrier authorizations and Title III radio licenses held by COMSAT to Telenor.<sup>80</sup> The assignment was in connection with Telenor's acquisition of Comsat Mobile Communications ("CMC"), a business unit of COMSAT Corporation. On January 11, 2002, Telenor completed its purchase of substantially all of the assets of CMC, and all of CMC's licenses and authorizations were transferred to Telenor pursuant to Commission authorization.<sup>81</sup>

- On October 25, 2002, the Commission granted Comsat and Lockheed Martin's jointly filed applications to assign four non-common carrier earth station licenses and an Experimental License to Intelsat.<sup>82</sup>
- On October 29, 2004, Intelsat, Ltd completed the acquisition of the COMSAT General businesses from COMSAT General Corporation, COMSAT New Services, Inc., and Lockheed Martin.<sup>83</sup> The Commission approved the acquisition subject to compliance by Intelsat subsidiaries with the terms of the Intelsat Commitment letter with the Criminal Division of the U.S. Department of Justice, the U.S. Department of Homeland Security, and the Federal Bureau of Investigation.<sup>84</sup>

### *Direct Access*

- Section 641(a) of the ORBIT Act requires that users and service providers be permitted to obtain Level 3 direct access to INTELSAT capacity.<sup>85</sup> Previously, the

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<sup>80</sup> Lockheed Martin Global Telecommunications, Comsat Corporation, and Comsat General Corporation, Assignor and Telenor Satellite Mobile Services, Inc. and Telenor Satellite, Inc., Assignee, Applications for Assignment of Section 214 Authorizations, Private Land Mobile Radio Licenses, Experimental Licenses, and Earth Station Licenses and Petition for Declaratory Ruling Pursuant to Section 310(b)(4) of the Communications Act, *Order and Authorization*, 16 FCC Rcd 22897 (2001), *erratum*, 17 FCC Rcd 2147 (2002).

<sup>81</sup> Comments Invited on Telenor Satellite Services Holdings, Inc. Petition for Declaratory Ruling on Inapplicability of Cost Accounting Requirements, *Public Notice*, 17 FCC Rcd 2444 (2002).

<sup>82</sup> Lockheed Martin Corporation, COMSAT Corporation, and COMSAT Digital Teleport, Inc., Assignors, and Intelsat, Ltd., Intelsat (Bermuda), Ltd., Intelsat LLC and Intelsat USA License Corp., Application for Assignment of Earth Station and Wireless Licenses and Section 214 Authorizations and Petition for Declaratory Ruling, IB Docket No. 02-87, *Order and Authorization*, DA 02-2254, 17 FCC Rcd 27732, (Int'l Bur. & Wireless Tel. Bur., 2002) ("*Lockheed/Comsat/Intelsat Order*").

<sup>83</sup> *Intelsat, Ltd. Form 20-F, Annual Report Pursuant to Section 13 or 15(d) of the Securities and Exchange Act of 1934 for the fiscal year ended December 31, 2004*, at 94.

<sup>84</sup> Applications of Comsat General Corporation, Lockheed Martin Global Telecommunications LLC, Comsat New Services, Inc., Intelsat LLC, and Intelsat MTC LLC to Assign Licenses and Authorizations and Request for a Declaratory Ruling on Foreign Ownership, Authorizations Granted, *Public Notice*, IB Docket No. 04-235, 19 FCC Rcd 21216 (2004).

<sup>85</sup> 47 U.S.C. § 765(a). "(a) ACCESS PERMITTED.--Beginning on the date of enactment of this title, users or providers of telecommunications services shall be permitted to obtain direct access to INTELSAT telecommunications services and space segment capacity through purchases of such capacity or services from INTELSAT. Such direct access shall be at the level commonly referred to by INTELSAT, on the date

Commission decided in a rulemaking proceeding, that Level 3 direct access is in the public interest.<sup>86</sup> The concept of direct access became moot with INTELSAT privatization on July 18, 2001, because Intelsat, as a private company, does not have Signatories.

- Prior to INTELSAT's privatization, the Commission implemented the requirement in Section 641(b) of the ORBIT Act that the Commission complete a rulemaking "to determine if users or providers of telecommunications services have 'sufficient opportunity' to access INTELSAT space segment directly from INTELSAT to meet their service or capacity requirements."<sup>87</sup> In September 2000, the Commission released a Report and Order requiring Comsat to "enter into negotiation with direct access customers on options to make capacity available where it is clear that there is insufficient capacity available that is not controlled by Comsat."<sup>88</sup>
- On March 13, 2001, Comsat submitted a report detailing the results of its negotiations and maintaining that direct access opportunities are increasing for those who want them. For example, the negotiations resulted in a commercial agreement between Comsat and WorldCom. The Commission placed Comsat's report on public notice, including Comsat's request to terminate the proceeding.<sup>89</sup> With INTELSAT's privatization and Intelsat Ltd.'s purchase of Comsat,<sup>90</sup> on November 21, 2002, the Commission released an Order that concluded that the underlying basis for Section 641(b) no longer existed, and terminated the proceeding.<sup>91</sup> In terminating the proceeding, the Commission noted that the termination does not imply any abdication of the Commission's appropriate oversight of Intelsat Ltd., and that as a U.S. licensee, Intelsat Ltd., will be subject to the same Commission oversight as any similarly-situated company authorized to provide services in the United States

of enactment of this title, as 'Level III'." Level 3 direct access permits non-signatory users and service providers to enter into contractual agreements with INTELSAT for space segment capacity at the same rates that INTELSAT charges its Signatories without having to use a Signatory as a middleman. Direct Access to the INTELSAT System, *Report and Order*, IB Docket No. 98-192, 15 FCC Rcd 15703 (1999) (*Direct Access Order*).

<sup>86</sup> See *Direct Access Order*, fn. 85, *supra*..

<sup>87</sup> 47 U.S.C. § 765(b).

<sup>88</sup> Availability of INTELSAT Space Segment Capacity to Users and Service Providers Seeking to Access INTELSAT Directly, *Report and Order*, IB Docket No. 00-91, 15 FCC Rcd 19160 (2000).

<sup>89</sup> Public Notice, Report No. SPB-166, April 6, 2001.

<sup>90</sup> On October 25, 2002, the Commission approved the assignment of various earth station licenses, private land mobile radio licenses and international 214 applications from Comsat Corporation to Intelsat, Ltd.

<sup>91</sup> Availability of INTELSAT Space Segment Capacity to Users and Service Providers Seeking to Access INTELSAT Directly, *Order*, IB Docket No. 00-91, 17 FCC Rcd 24242 (2002).

### *Regulatory Fees*

- The ORBIT Act authorizes the Commission “to impose similar regulatory fees on the United States signatory which it imposes on other entities providing similar services.”<sup>92</sup> On July 10, 2000, the Commission released an Order concluding that Comsat should pay a proportionate share of the fees applicable to holders of Title III authorizations to launch and operate geosynchronous space stations.<sup>93</sup> Consistent with past decisions, the Commission stated that the costs attributable to space station oversight include costs directly related to INTELSAT signatory activities and are distinct from those recovered by other fees that Comsat pays, such as application fees, fees applicable to international bearer circuits, fees covering Comsat's non-Intelsat satellites, and earth station fees.<sup>94</sup> In 2002, the Circuit Court of Appeals for the District of Columbia held that the Commission’s actions to impose regulatory fees on Comsat were justified on the basis that the underlying policy of Section 9 of the Communications Act of 1934, as amended, favoring recovery of regulatory costs gave the Commission good reason to require Comsat to bear its proportionate share of space station fees.<sup>95</sup>
- Post-privatization, Intelsat, as a U.S. licensee, has paid the required regulatory fees mandated by Section 9 of the Communications Act of 1934.

### **B. Status of INTELSAT Privatization**

Intelsat privatized and became a U.S. licensee, as of July 18, 2001, transferring its assets to a commercial corporation. Pursuant to international agreement, an intergovernmental organization known as the International Telecommunications Satellite Organization (“ITSO”) remained. ITSO, through a “Public Services Agreement” with Intelsat, monitors the performance of the company’s public service obligations to maintain global connectivity and global coverage, provide non-discriminatory access to the system, and honor the lifeline connectivity obligation to certain customers, specifically, those customers in poor or underserved countries that have a high degree of dependence on Intelsat.<sup>96</sup> Under these commitments, the privatized Intelsat has made capacity available to lifeline users at fixed pre-privatization costs for approximately 12 years. ITSO has no operational or commercial role.

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<sup>92</sup> 47 U.S.C. § 765a(c). A 1999 decision of the United States Court of Appeals for the District of Columbia Circuit in *PanAmSat Corp. v. FCC*, 198 F.3d 890 (D.C. Cir. 1999), set aside and remanded the Commission’s 1998 fee order, which did not assess a fee against Comsat.

<sup>93</sup> *In re* Assessment and Collection of Regulatory Fees for Fiscal Year 2000, MD Docket No. 00-58, 15 FCC Rcd 6533 (para. 17) (2000).

<sup>94</sup> *Id.*

<sup>95</sup> *See Comsat Corporation vs. FCC and PanAmSat Corp.*, 283 F.3d 344 (D.C. Cir. 2002).

<sup>96</sup> *INTELSAT Assembly of Parties Record of Decisions of the Twenty-Fifth (Extraordinary) Meeting*, AP-25-3E FINAL W/11/00, paras. 6-8 (November 27, 2000) (“2000 Assembly Decision”).

Upon privatization, substantially all of INTELSAT's operational assets and liabilities were transferred to several companies within an affiliated group with a holding company structure. The record before the Commission showed that the companies created fiduciary Boards of Directors and the selection procedure for members of the Board of Directors of Intelsat, Ltd. resulted in a Board that is compliant with the ORBIT Act. The Commission found that privileges and immunities enjoyed by the pre-privatized INTELSAT had been terminated consistent with the requirements of the ORBIT Act.<sup>97</sup> The licensed companies have licenses through notifying Administrations in countries (the United States and the United Kingdom) that have effective competition laws and have commitments under the WTO Agreement that include non-discriminatory access to their satellite markets.<sup>98</sup> These companies are subject to U.S. or U.K. licensing authorities and conduct satellite coordinations according to ITU procedures under the auspices of these authorities.

Additionally, as detailed above, at the end of 2004 the Commission authorized the transfer of control of Intelsat's licenses and authorizations to Zeus, and the transaction was consummated in 2005.<sup>99</sup> Also in 2005, the Commission determined that Intelsat's certification complied with the ORBIT Act and it could forgo an IPO and listing of securities.<sup>100</sup> Thus, the Commission concluded that the provisions relating to additional services under Section 602 of the ORBIT Act were no longer applicable to Intelsat.<sup>101</sup>

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<sup>97</sup> 47 U.S.C. § 763(3) states that "such preferential treatment includes –

(A) privileged or immune treatment by national governments;

(B) privileges or immunities or other competitive advantages of the type accorded INTELSAT and Inmarsat and their signatories through the terms and operation of the INTELSAT Agreement and the associated Headquarters Agreement and the Inmarsat Convention; and

(C) preferential access to orbital locations.

Access to new, or renewal of access to, orbital locations shall be subject to the legal or regulatory processes of a national government that applies due diligence requirements intended to prevent the warehousing of orbital locations.

*See also Intelsat Licensing Order*, 15 FCC Rcd at 15463 ("As an intergovernmental organization, INTELSAT is immune from taxes and suits in national courts, unless it waives its immunity. Its treaty status helps ensure its access to the national markets of member countries.").

<sup>98</sup> *Applications of Intelsat LLC for Authority to Operate, and to Further Construct, Launch and Operate C-band and Ku-band Satellites that form a Global Communications System in Geostationary Orbit*, Intelsat LLC Supplemental Information, at 3 (August 17, 2001).

<sup>99</sup> *See* page 6, *supra*.

<sup>100</sup> *See* pages 6-8, *supra*.

<sup>101</sup> *See, fn.* 4, *supra*, for a definition of "additional services".

## II. Views of INTELSAT Parties on Privatization

The Commission, in response to the Public Notice for this Report, has not received any views directly from the INTELSAT Parties<sup>102</sup> regarding privatization.

## III. Views of Industry and Consumers on Privatization

Inmarsat, Spacenet Inc. (Spacenet),<sup>103</sup> CapRock Communications, Inc. (CapRock),<sup>104</sup> ARTEL Inc. (ARTEL)<sup>105</sup> and Globecom Systems, Inc. (Globecom)<sup>106</sup> filed comments in response to the Commission's March 17, 2010, Public Notice inviting comments related to the development of this Report to Congress.<sup>107</sup> Intelsat filed reply comments, and ARTEL and Globecom filed surreplies.<sup>108</sup>

### A. Inmarsat Privatization Comments

Inmarsat notes that in June 2005, the Commission found that Inmarsat had satisfied the requirement to effectuate a substantial dilution of former Signatory financial interests. Inmarsat further states that, shortly thereafter, Inmarsat completed a successful IPO, and that, today, Inmarsat's shares are traded on the London Stock Exchange. According to Inmarsat, no former Inmarsat Signatory owns five percent or more of the company, and the aggregate ownership of foreign governments is nominal.<sup>109</sup>

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<sup>102</sup> The INTELSAT Parties are nations for which the INTELSAT agreement has entered into force. 47 U.S.C. § 769(a)(4)(A). Following privatization, the ITSO Agreement defines "Party" to mean a State for which the ITSO Agreement has entered into force or has been provisionally applied. *See* Agreement Relating to the International Telecommunications Satellite Organization, As Amended by the Twenty-Fifth (Extraordinary) Assembly of Parties in Washington, D.C. (November 17, 2000), at Art. I(p).

<sup>103</sup> Spacenet "provides satellite communications services in the United States to more than 100,000 customer locations using ... Ku-band transponder capacity that it leases from various satellite operators," Spacenet at 1.

<sup>104</sup> CapRock has over 700 employees worldwide, serves federal civilian and intelligence agencies, provides remote communications services for the Department of Defense, and leases the majority of its satellite capacity from Intelsat, CapRock at 2-3.

<sup>105</sup> ARTEL uses satellite capacity leased from Intelsat to serve Department of Defense, Homeland Security, and other federal agencies ([www.artelinc.com](http://www.artelinc.com)).

<sup>106</sup> Globecom is a provider of international services, licensee of earth stations, and provider of satellite uplink and downlink services to its clients, Globecom Comments at 1.

<sup>107</sup> In anticipation of this Eleventh Report, the Commission issued a Public Notice on March 17, 2010 inviting public comment. On April 14, 2010, the Bureau issued an Order extending the pleading cycle to April 21, 2010. On April 22, 2010, the Bureau issued an Order granting ARTEL and Globecom's request for leave to file surreply and provided all interested parties with an extension to April 28, 2010.

<sup>108</sup> Links to these comments and reply comments can be found in the Appendix, and are included in this Report.

<sup>109</sup> *See*, Inmarsat at 1-2.

Inmarsat outlines its recent investments in new technologies, including its deployment of its fourth generation, Inmarsat 4 (“I-4”) satellite network, its completed construction and Commission authorization for a Satellite Access Station in Hawaii.<sup>110</sup> Inmarsat also notes that it will introduce a world-wide Global Satellite Phone Service with a modernized handset called IsatPhone Pro.<sup>111</sup> Finally, the record reflects that none of the comments filed in response to the March 17, 2010, Public Notice referenced above were directed against Inmarsat practices.

### ***B. Intelsat Privatization Comments***

This year, four commenters – ARTEL, CapRock, Globecomm, and Spacenet – filed comments raising questions about the competitive state of the FSS market, and alleged anticompetitive behavior on the part of Intelsat since the 2006 Intelsat/PanAmSat merger.<sup>112</sup> These comments and Intelsat’s response are summarized below.

#### ***i. The Effect of Intelsat’s Privatization and Other FSS Consolidation***

Generally, ARTEL, CapRock, and Globecomm argue that Intelsat’s privatization coupled with increased industry consolidation has dramatically affected the FSS industry. Spacenet indicates that while Intelsat’s privatization has had a positive impact on the domestic and global telecommunications markets,<sup>113</sup> it agrees that more recent industry consolidation among FSS operators means that the two largest players – Intelsat and SES Global – dominate the FSS market.<sup>114</sup> The commenters maintain that this lack of competition in the global FSS market discourages innovation, allows Intelsat to engage in certain anticompetitive practices, discourages

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<sup>110</sup> See, Inmarsat at 2-4.

<sup>111</sup> See, Inmarsat at 4-5.

<sup>112</sup> See *Intelsat-PanAmSat Order*, n. 31 *supra*.

<sup>113</sup> Spacenet at 2. Spacenet cites the growth in satellite carriage of high definition television, demand for corporate networks, and introduction of broadband payloads as reasons for the 6 percent growth in transponder agreement revenues in 2008 alone.

<sup>114</sup> Spacenet argues that Intelsat and SES now control 83 percent of the data network services transponders serving the United States, resulting in few choices for transponder capacity. Spacenet at 3-4. Globecomm states that Intelsat and SES control 88 percent of the available satellites in Atlantic Ocean Region (AOR). Globecomm Comments at 4. Artel states that the international FSS industry now consists of two super-fleets operating in the AOR and the Pacific Ocean Region (POR); that Intelsat operates 52 satellites today, which is 32 more than it did prior to privatization; that with a geostationary arc crowded with operational satellites and suitable positions occupied or reserved, alternative competitors are unlikely to arise; that Intelsat holds a near monopoly on intercontinental satellite communications between the United States and East Africa, the Middle East, and Central Asia, routes with important foreign policy implications for the United States. ARTEL Comments at 8-11. Artel also points out that for “mission critical” operations where it is necessary to use C-band, Intelsat holds six of the seven operational C-band equipped satellites between 330° and 360° E.L. *Id.* CapRock states that Intelsat and SES WorldSkies together control over 90 satellites, “the bulk of the world’s FSS communications satellite fleet.” CapRock at 8.

entry of new satellite operators, and, more broadly, hinders competition in the market for satellite services.<sup>115</sup>

ii. The Potential for Market Entry by New FSS Operators

Spacenet, ARTEL, CapRock, and Globecom see a lack of available orbital locations as an impediment to any competitor to Intelsat in the FSS market. Spacenet notes, for example, that between 70° W.L. and 131° W.L., “every Ku-band slot is assigned to an operator or is subject to the superior rights of another country,” and “Intelsat and SES Global control or have rights to two-thirds of the 31 slots in this portion of the orbital arc from which service to the United States can be provided.”<sup>116</sup>

In opposition to the other commenters regarding the existence of and potential for new competitors in the FSS market, Intelsat views the satellite industry as increasingly competitive.<sup>117</sup> It argues that fleet operators – e.g., SES, Telesat, Eutelsat – and regional providers – e.g., Hispasat (Brazil), Ciel (Canada), Quetzsat (Mexico) – are part of a competitive market that will grow more competitive with Colombia, Bolivia, and Venezuela planning or having launched new satellite systems.<sup>118</sup> ARTEL explains, however, that none of the new or planned satellites mentioned by Intelsat will ease the need for additional space segment to support communications between the United States and remote points outside the western hemisphere. ARTEL argues that none of the satellites mentioned by Intelsat offers even a single megahertz of C-band space segment capable of supporting intercontinental communications. ARTEL further argues that the satellites listed by Intelsat as evidence of competition have only a handful of aggregate Atlantic Ocean Region and Pacific Ocean Region orbital locations. As a result, ARTEL argues that the operators that do not currently serve intercontinental routes would be prevented by 2-degree spacing limitations from securing viable AOR or POR locations.<sup>119</sup> ARTEL further contends that no “alternative intercontinental fleet of geostationary satellites” has been launched in the last ten years; and that regional satellite systems that serve a narrower footprint occupy the majority of orbital positions capable of supporting intercontinental satellites. Moreover, ARTEL concludes that it is unlikely that orbital locations held by regional systems will become available in the future.<sup>120</sup>

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<sup>115</sup> Spacenet at 2-4.

<sup>116</sup> Spacenet at 4. Spacenet further contends that all but one of the 20 Ku-band orbital locations assigned by the Commission in this section of the arc have been assigned to Intelsat or SES Global.

<sup>117</sup> Intelsat at 6-7.

<sup>118</sup> *Id.* Intelsat notes that in 2009 SES began providing commercial service on two new satellites, and OverHorizon is launching a Ku-band satellite that will provide broadband services. *Id.* at 7.

<sup>119</sup> ARTEL Comments at 7-9.

<sup>120</sup> *Id.* at 11-12. ARTEL maintains that even if such orbital locations were available, it would take at least 3 to 4 years for a new entrant to construct and launch a satellite, even assuming that all the approved frequencies would be available from the abandoned location.

iii. The Role of Integrators/Network Service Providers and Allegations of Anticompetitive Behavior

CapRock explains that the international FSS market may be viewed as having three principal categories: (1) satellite space segment capacity provided by global operators such as Intelsat; (2) subscription services (with or without bundled equipment); and (3) fully-managed, end-to-end network services.<sup>121</sup> The third category reflects the type of services provided by companies such as ARTEL, CapRock, and Globecomm. These providers maintain that in order to offer competitive, market-based solutions for their customers, they must be able to “secure space segment capacity from a mix of regional and global satellite operators so as to optimize coverage and capability.”<sup>122</sup> Accordingly, to the commenters, Intelsat’s control over a large percentage of FSS serving North America means that, in many cases, it is “impossible” for a competitor to provide global satellite communications services without using some Intelsat capacity.<sup>123</sup> In addition, ARTEL, CapRock, and Globecomm allege that Intelsat’s anticompetitive actions are preventing them from accessing Intelsat capacity, to the detriment of some of their end users who are performing critical functions for various U.S. government agencies.<sup>124</sup>

CapRock, Globecomm, and ARTEL all allege anticompetitive behavior by Intelsat that is facilitated through Intelsat General (IGEN), an Intelsat wholly-owned subsidiary.<sup>125</sup> The commenters describe IGEN as the wholesale provider and retail customer of Intelsat services, *i.e.*, it serves as both the “sole point of contact for independent distributors seeking access” as well as a competitor for the same customers in the same market.<sup>126</sup> They allege that IGEN makes Intelsat more “vertically integrated,” *i.e.*, through IGEN, Intelsat has direct access to customers and directly competes for Intelsat space segment capacity against CapRock, ARTEL, and Globecomm and similar competitors.

ARTEL alleges, but does not provide greater detail, that IGEN has refused to provide space segment capacity pricing to competitors seeking that same space segment for an identical project and that IGEN has entered into exclusive arrangements with other satellite operators that “prevent or discourage” those operators from working with competitors to IGEN.<sup>127</sup> Globecomm

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<sup>121</sup> CapRock at 3.

<sup>122</sup> *Id.*

<sup>123</sup> CapRock at 9-10.

<sup>124</sup> *E.g.*, Department of Defense, U.S. Army, U.S. Air Force, Department of Energy, U.S. Space Command, Intelligence Agencies, Federal Aviation Administration, General Services Administration, and Federal Emergency Management Agency.

<sup>125</sup> ARTEL Comments at 5. IGEN was created when Intelsat acquired Comcast General Corp. and PanAmSat’s G2 Satellite Solutions Division. Globecomm at 5. In Intelsat’s 2009 annual report to the Securities and Exchange Commission, Intelsat described IGEN at a “government business subsidiary.” <http://www.sec.gov/Archives/edgar/data/1156871/000119312510051611/d10k.htm>

<sup>126</sup> ARTEL Comments at 4-5.

<sup>127</sup> ARTEL Comments at 5-6.

alleges, but does not provide a specific example, that IGEN receives preferable rates from Intelsat.<sup>128</sup>

CapRock cites two specific allegations of Intelsat anticompetitive behavior. The first relates to IGEN's role as both supplier and competitor, *i.e.*, competitors to IGEN are required by Intelsat to purchase satellite capacity for government-related projects through IGEN – even where IGEN is bidding directly against that competitor.<sup>129</sup> CapRock contends that on one particular bid, Intelsat and IGEN required all bidders to accept “a pre-engineered space segment solution from IGEN,”<sup>130</sup> even though all bidders possessed their own facilities and were capable of designing their own solutions. CapRock indicates that the “forced bundle” was expensive and technically “suboptimal.”<sup>131</sup> CapRock further maintains that IGEN did not utilize the forced bundle in its own bid but that CapRock and other competitors were required to use the bundle if they wanted to access Intelsat space segment capacity.<sup>132</sup> The second involves the Defense Information System Network Satellite Transmission Services-Global Contract (DSTS-G).<sup>133</sup> Under this contract – which was awarded in 2001 to CapRock, ARTEL, and a third contractor<sup>134</sup> – no “satellite fleet operator” (*e.g.*, Intelsat) was able to sell directly to the Department of Defense.<sup>135</sup> This two-tiered structure, according to CapRock, is supposed to spur “market creativity, maintain price competitiveness, and ensure security.”<sup>136</sup> CapRock alleges, however, that in order to “gain greater control over the outcome of every possible satellite capacity procurement,” IGEN implemented a number of measures to favor one prime contractor over another for any given task. As a result, this “Incumbent Pricing Policy” essentially gives a more favorable price to the incumbent on the task order under “re-competition.”<sup>137</sup> Thus, IGEN can “pre-ordain” which

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<sup>128</sup> Globecomm Comments at 3-4.

<sup>129</sup> Caprock.at 9. CapRock contends that IGEN's position as both competitor and supplier has inhibited competition and is ultimately detrimental to end-users. As a result of IGEN's position, ARTEL contends that IGEN has access to proprietary pricing and other details provided by ARTEL and similar competitors. ARTEL Comments at 6.

<sup>130</sup> Caprock at 10.

<sup>131</sup> According to CapRock, the forced bundle required use of some satellites that would reach the end of their lives prior to the expiration of the contract. *Id.*

<sup>132</sup> *Id.* at 10-11.

<sup>133</sup> The DSTS-G is the “primary vehicle by which the DOD and Defense Information Systems Agency (DISA) purchase satellite space segment. *Id.* at 8. CapRock states that a DOD report on commercial satellite expenditures concluded that satellite bandwidth procured under DSTS-G was up to 40 percent lower because prime contractors could exercise flexibility in the marketplace. *Id.* at 4.

<sup>134</sup> All three awardees were “prime contractors.” *Id.* at 8.

<sup>135</sup> This was an IDIQ (Indefinite delivery / indefinite quantity contract). IDIQ contracts allow for an indefinite quantity of supplies or services during a fixed period of time. *See* Federal Acquisition Regulation § 15.501(a).

<sup>136</sup> CapRock at 9.

<sup>137</sup> *Id.*

prime contractor will receive the award by “fixing the Intelsat space segment prices being offered to the three prime contract bidders.”<sup>138</sup>

In addition, CapRock alleges that Intelsat has retaliated against it for raising these competitive concerns by refusing to quote prices for satellite capacity to CapRock in two instances. Instead, CapRock was required to get quotes from IGEN, with prices that CapRock describes as being far above market rates.<sup>139</sup> ARTEL alleges that IGEN has retaliated against and intimidated those distributors that compete against it directly.<sup>140</sup>

Intelsat views these allegations as efforts to “inappropriately ... use the instant proceeding as a forum to hobble Intelsat as a privatized competitor and to restore the regulation in U.S. markets to which” Intelsat was previously subject.<sup>141</sup> Intelsat states that the “limited purpose” of the ORBIT Act Report is to “provide a report to Congress to confirm that Intelsat now operates in the satellite marketplace as a fully privatized company.”<sup>142</sup> Intelsat contends that because the allegations are not based on Intelsat’s former status as an IGO and because these comments are an “inappropriate attempt to inject the FCC into ongoing commercial disputes,” the comments should be dismissed.<sup>143</sup>

#### iv. Scope of the Report and Legacy Issues

Intelsat states that the purpose of the ORBIT Act “is to promote a fully competitive global market for satellite communications services ... by fully privatizing ... Intelsat and Inmarsat.”<sup>144</sup> According to Intelsat, this means that the “sole criteria” for determining whether the Orbit Act’s purpose has been met is whether Intelsat “operate[s] as an independent commercial entity and [has] a pro-competitive ownership structure,” both of which Intelsat contends have been clearly achieved.<sup>145</sup> Similarly, the “limited purpose” of the ORBIT Act Report, according to Intelsat, is to inform Congress whether Intelsat and Inmarsat “have been

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<sup>138</sup> *Id.*

<sup>139</sup> *Id.* at 11. Globecomm and ARTEL also state that Intelsat has retaliated against competitors that have complained about such practices, but neither offers specifics regarding the alleged retaliation. Globecomm Comments at 4; ARTEL Comments at 6.

<sup>140</sup> *Id.* at 5-6.

<sup>141</sup> Intelsat at 2.

<sup>142</sup> *Id.* at 1.

<sup>143</sup> *Id.* at 3, 9. In its surreply, ARTEL notes that Intelsat does not deny ARTEL’s allegation that IGEN engaged in “several anticompetitive and discriminatory actions,” including denying access to the Intelsat fleet to those that have competed against IGEN; retaliating against competitors by refusing to provide pricing and terms for “ongoing, established space segment leases”; asking that competitors not bid on projects of interest to IGEN and denying pricing for those competitors that do not comply; and entering into exclusive relationships that prevent or discourage those operators from working with IGEN’s competitors. ARTEL Surreply at 2-3.

<sup>144</sup> Intelsat at 2-3.

<sup>145</sup> *Id.* at 3.

fully privatized and now compete on a level playing field.” Intelsat concludes that any recommendations made by the commenters that Intelsat be required to implement pre-privatization business practices (*e.g.*, file tariffs or not have direct access to customers) exceed the scope of the ORBIT Act.

Intelsat argues that privatization was “intended to end the separation of Intelsat from end-users and permit Intelsat to compete in the same manner as all other satellite providers” by making “pricing proposals responsive to private and government user needs based on Intelsat’s own business judgment.”<sup>146</sup> Intelsat sees no need for it to be regulated as a “public utility” because the FCC already regulates Intelsat’s service on “thin routes.”<sup>147</sup> Intelsat is subject to FCC regulation, and on those routes, Intelsat still offers switched-voice, private line and occasional-use video services pursuant to tariff.<sup>148</sup> Intelsat maintains that to force it to operate as a common carrier or to provide “uniform prices on all routes” would significantly reduce its ability to compete against other providers.

ARTEL states that the ORBIT Act “directs the Commission to ‘condition or deny’ authority sought by [Intelsat] ... to the extent necessary to protect competition in the commercial satellite market.”<sup>149</sup> Further, ARTEL contends that the Commission must, as the notifying administration, ensure that Intelsat, pursuant to the ITSO Treaty, provide “non-discriminatory access to legacy fleet assets.”<sup>150</sup> ARTEL and Globecom further note that Intelsat no longer publishes tariffs for every space segment, provides transponder guides and contour maps, or sells capacity on a bit rate basis. ARTEL and Globecom views these failures as anticompetitive.

Intelsat, however, also disagrees with the commenters’ conclusion that the Public Services Agreement (PSA) between ITSO and Intelsat requires the Commission to regulate Intelsat pricing. Intelsat also disagrees that the “core principle” of non-discriminatory access in the PSA provides any “basis for additional Commission regulation.”<sup>151</sup> With regard to the PSA and pricing, Intelsat contends that “the PSA is a private contract, uniquely enforceable by ITSO under arbitration procedures.”<sup>152</sup> With regard to ITSO and non-discriminatory access, Intelsat contends that non-discriminatory access is a “safeguard against governments foreclosing Intelsat from serving certain national markets and thus impairing global connectivity and coverage,” and

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<sup>146</sup> *Id.* at 4.

<sup>147</sup> Thin routes are those not yet shown to have competitive alternatives.

<sup>148</sup> *Id.* at 4-5.

<sup>149</sup> ARTEL Comments at 2. Globecom agrees that Intelsat’s behavior is in violation of its obligation under the ITSO Agreement that requires Intelsat to provide non-discriminatory access Intelsat’s system. Globecom Comments at 5.

<sup>150</sup> ARTEL at Comments 2. ARTEL states that Intelsat licenses were modified by the Commission to require that “Intelsat remain a party to an agreement between Intelsat and ITSO that governed Intelsat’s conduct and ensured that it follow the ‘core principles’ of global connectivity ... and non-discriminatory access.”

<sup>151</sup> *Intelsat* at 6.

<sup>152</sup> *Id.* at 5.

is therefore unrelated to Intelsat pricing or commercial relationships with customers such as ARTEL.<sup>153</sup>

v. Commenters' Proposals

ARTEL and CapRock both urge the Commission to initiate a review of the structure of the FSS industry, specifically addressing their concerns about Intelsat's market power, and consider adopting new policies to address their competitive concerns.<sup>154</sup> Globecom requests that the Commission take action to ensure "non-discriminatory access to Intelsat's system."<sup>155</sup> Spacenet suggests that the Commission consider rule changes to promote competition in domestic transponder capacity.<sup>156</sup>

As part of its examining the FSS market, ARTEL suggests that there is a need for greater transparency regarding the terms under which U.S. providers gain access to satellite capacity; a review of Intelsat's obligation to provide transparent and non-discriminatory access; and the consideration of appropriate enforcement and regulatory mechanisms to deal with collusion, intimidation, price fixing, and other deleterious behavior.<sup>157</sup> ARTEL suggests that, as part of this inquiry, the Commission consider the creation of a separate wholesale channel, additional license conditions, and divestiture of vertically integrated assets such as IGEN.<sup>158</sup>

CapRock asks that the Commission initiate comprehensive reform of its policies governing the assignment of rights of use of orbital locations, with the goal of enabling innovation in international satellite communications and encouraging the deployment of newer, more efficient space stations. CapRock asks that the Commission review its policies for assigning orbital locations and that authorization to operate space stations at orbital locations be periodically reviewed. CapRock also suggests that such review provide for the orbital locations being made available to other operators in the event that it is not being utilized in an efficient manner.<sup>159</sup> In addition, CapRock also requests that, in the ORBIT Act Report, the Commission recommend a review of Intelsat/IGEN's role in the provision of satellite services.<sup>160</sup>

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<sup>153</sup> *Id.* at 6.

<sup>154</sup> ARTEL also states that it is not requesting that the Commission take action on these recommendations in the proceeding, but requests that its proposed remedies be included in this Report. ARTEL Surreply at 10.

<sup>155</sup> Globecom Comments at 6.

<sup>156</sup> Spacenet at 7-8.

<sup>157</sup> ARTEL Comments at. i-ii, 14-17.

<sup>158</sup> *Id.* at 16-17.

<sup>159</sup> CapRock suggests that the incumbent be required to demonstrate that replacement satellites add meaningful incremental bandwidth capacity to maintain their orbital slots. CapRock at 15.

<sup>160</sup> CapRock at 17. Outside the scope of the ORBIT Act Report, CapRock requested that the Commission initiate an enforcement action against Intelsat and IGEN relating to the imposition of a "forced bundle" and implementation of their "incumbency pricing policy;" and initiate a proceeding to establish safeguards and procedures to isolate IGEN from inquiries and transactions relating to Intelsat space segment supply.

Globecomm suggests that the Commission take active steps to clarify Intelsat obligations as a signatory to the PSA between Intelsat and ITSO and to ensure that Intelsat satisfies such obligations and establish procedures for addressing noncompliant behavior.<sup>161</sup> Globecomm also recommends that Intelsat only be able to enter the market for competitive facilities through a fully separate subsidiary, and that any Intelsat subsidiary only be able to acquire transponder capacity from Intelsat on a tariffed basis.<sup>162</sup>

Spacenet requests that the Commission reassess its rules and policies with respect to orbital assignments, to promote competition in the market for domestic transponder capacity and to assure continuity of service for data network operators and their customers.<sup>163</sup>

Intelsat rejects the commenters' proposals as not suitable for a fully privatized entity. In particular, Intelsat states that some of the proposals suggested by the commenters would preclude Intelsat from competing for end-user business and hamper its ability to adjust pricing to be responsive to user needs.<sup>164</sup>

#### IV. Impact of Privatization

Section 646 requires that the Commission report on the impact of privatization on U.S. industry, jobs, and industry access to the global market.

##### A. Inmarsat

Inmarsat's privatization appears to have had a positive impact on the domestic market.<sup>165</sup> In its comments, Inmarsat states that it has continued to invest in new technologies for mobile satellite service customers.<sup>166</sup> As an example of this investment, Inmarsat points to its \$1.5 billion investment in its fourth-generation (I-4) satellite network, which is designed to support mobile broadband services, including its BGAN service.<sup>167</sup> Inmarsat launched the third satellite in the I-4 network in 2008 completing fourth-generation worldwide coverage. Inmarsat states that its BGAN service is being utilized in innovative ways by its customers, including in response

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<sup>161</sup> Globecomm Comments at 6. Globecomm suggests that complaint procedures similar to those in 47 U.S.C. § 208 be established, and that the Commission require transparency with regard to rates, terms, and conditions of service provided by Intelsat to its affiliates.

<sup>162</sup> *Id.* at 7.

<sup>163</sup> Spacenet at 7-8.

<sup>164</sup> Intelsat at 4.

<sup>165</sup> Inmarsat is the only commenter that discussed the impact of Inmarsat's privatization.

<sup>166</sup> Inmarsat at 2.

<sup>167</sup> *See* fn. 48, *supra*. BGAN provides voice and broadband service with speeds of almost half a megabit per second using "notebook sized" antennas that are one-third the size, weight and price of traditional Inmarsat antennas. *See* Inmarsat at 2. Inmarsat has also offered similar services to its aeronautical and maritime customers under the names SwiftBroadband and FleetBroadband. *Id.* at 3-4. Other new services are described in Inmarsat's Comments. *Id.* at 4-5.

to recent natural disasters.<sup>168</sup> As another example of its innovative technologies, Inmarsat plans to introduce a worldwide Global Satellite Phone Service (“GSPS”) over its I-4 satellite network. GSPS will support telephony, short message service, fax, data, voicemail, text, email, and location data. Additionally, Inmarsat remains committed to its support of global maritime distress and safety services (“GMDSS”).<sup>169</sup>

#### B. Intelsat

INTELSAT’s privatization from an intergovernmental organization to a fully commercial operation has enabled it to more effectively compete to provide services to U.S. commercial and governmental customers. The privatization of INTELSAT, in 2001, enabled it to compete freely for U.S. satellite business opportunities, led to more competitive choices in the U.S. market than existed before privatization, and continues to encourage the development of service offerings to U.S. customers. As noted above, however, firms that are both competitors and customers of Intelsat have submitted comments in the record of this report that question whether certain practices of Intelsat post-privatization are anti-competitive.

Comments received for the 2010 ORBIT Act Report express contrasting views on the impact of the privatization of Intelsat.<sup>170</sup> Intelsat concludes that the privatization goals of the ORBIT Act have been fulfilled because Intelsat no longer claims the privileges and immunities of an intergovernmental organization, is neither owned nor controlled (directly or indirectly) by any government or former signatory, and is regulated by the Commission on the same basis as other providers of satellite services.<sup>171</sup> Intelsat states privatization continues to have a positive impact on the global marketplace for communications services.<sup>172</sup> Intelsat further states that it remains committed to ensuring continued global connectivity and service to countries dependent on Intelsat’s satellite services. The other commenters disagree with Intelsat’s conclusion that privatization has resulted in a competitive FSS marketplace. These commenters do not agree that the goals of the ORBIT Act have been achieved solely because Intelsat is no longer an IGO.

In 2008, the Commission took action to ensure that Intelsat remains committed to ensuring continued global connectivity and service to countries dependent on Intelsat’s satellite services. The Commission conditioned Intelsat’s licenses to require that Intelsat remain a signatory to the Public Services Agreement between Intelsat and ITSO that was approved by the ITSO Twenty-

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<sup>168</sup> For example, Inmarsat states that it and its distribution partner, Vizada, donated 70 BGAN terminals to the International Telecommunication Union to help countries prepare for and respond during disasters, and the BGAN technology was used by a number of agencies in response to the earthquake in Haiti. *Id.* at 3.

<sup>169</sup> See *Inmarsat PLC Annual Report and Accounts 2009* at 12, available online at [http://www.inmarsat.com/Downloads/English/Investors/Inmarsat\\_Annual\\_Report\\_2009.pdf?language=EN&textonly=False](http://www.inmarsat.com/Downloads/English/Investors/Inmarsat_Annual_Report_2009.pdf?language=EN&textonly=False).

<sup>170</sup> For a more complete discussion of the comments received in this proceeding, see Section III, *supra*.

<sup>171</sup> Intelsat Reply at 1-2.

<sup>172</sup> *Id.* at 6-8, citing SES, Telesat, Eutelsat and Intelsat as competing with integrated systems of multiple satellites, as well as several current regional service providers, including Hispasat (Brazil), Ciel (Canada) and Quetzsat (Mexico) and several planned or newly launched systems (Colombia, Venezuela and Bolivia).

fifth Assembly of Parties.<sup>173</sup> The Commission also conditioned Intelsat's licenses to provide that no entity can be considered a successor-in-interest to Intelsat under the ITSO Agreement unless the entity has undertaken to perform the obligations of the Public Services Agreement.

#### V. Summary

As discussed above, many far-reaching complaints and recommendations have been presented for consideration here since the Public Notice comment period closed at the end of April 2010.<sup>174</sup> Going forward, the Commission will consider the appropriate options for addressing those issues raised by the commenting parties and Intelsat that are within our jurisdiction under the ORBIT Act and other laws. In the interim, the Commission will continue to implement and enforce the requirements of the ORBIT Act. The Commission will also continue to inform Congress of the actions it takes to implement the requirements of the ORBIT Act and the impact of those actions in its next annual report.

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<sup>173</sup> Petition of the International Telecommunications Satellite Organization under Section 316 of the Communications Act, as Amended, *Order of Modification*, 23 FCC Rcd 2764, 2770 (Int'l Bur., 2008).

<sup>174</sup> See fn. 103, above.

## APPENDIX

## Index of Filings:

## Comments, filed April 7, 2010

Comments of Inmarsat PLC, available at  
<http://fjallfoss.fcc.gov/ecfs/document/view?id=7020406671>

Comments of Spacenet Inc., available at  
<http://fjallfoss.fcc.gov/ecfs/document/view?id=7020408222>

Comments of CapRock Communications, Inc., available at  
<http://fjallfoss.fcc.gov/ecfs/document/view?id=7020408252>

Comments of ARTEL, Inc., available at  
<http://fjallfoss.fcc.gov/ecfs/document/view?id=7020408259>

Comments of Globecom Systems Inc., available at  
<http://fjallfoss.fcc.gov/ecfs/document/view?id=7020408174>

## Reply Comments, filed April 21, 2010

Reply Comments of Intelsat LLC, available at  
<http://fjallfoss.fcc.gov/ecfs/document/view?id=7020409961>

## Surreplies, filed April 28, 2010

Surreply of Globecom Systems, Inc., available at  
<http://fjallfoss.fcc.gov/ecfs/document/view?id=7020442163>

Surreply of ARTEL, Inc., available at  
<http://fjallfoss.fcc.gov/ecfs/document/view?id=7020442284>

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FEDERAL COMMUNICATIONS  
COMMISSION

47 CFR Part 73

[ET Docket No. 10-152; FCC 10-194]

Satellite Television Extension and  
Localism Act of 2010 and Satellite  
Home Viewer Extension and  
Reauthorization Act of 2004

AGENCY: Federal Communications  
Commission.

ACTION: Final rule.

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**SUMMARY:** In this document the  
Commission, adopts a point-to-point  
predictive model for determining the  
ability of individual locations to receive  
an over-the-air digital television

broadcast signal at the intensity level  
needed for service through the use of an  
antenna as required by the Satellite  
Television Extension and Localism Act  
of 2010 (STELA). The STELA  
reauthorizes the Satellite Home Viewer  
Extension and Reauthorization Act of  
2004 (SHVERA) by extending the  
statutory copyright license for satellite  
carriage of distant broadcast signals, as  
well as provisions in the  
Communications Act, and by amending  
certain provisions in the  
Communications Act and the Copyright  
Act.

**DATES:** Effective January 21, 2011.  
**ADDRESSES:** Federal Communications  
Commission, 445 12th Street, SW.,  
Washington, DC 20554.  
**FOR FURTHER INFORMATION CONTACT:**  
Alan Stillwell, Office of Engineering  
and Technology, (202) 418-2925,  
e-mail: Alan.Stillwell@fcc.gov, TTY  
(202) 418-2989.

**SUPPLEMENTARY INFORMATION:** This is a  
summary of the Commission's Report  
and Order, ET Docket No. 10-152, FCC

10-194, adopted November 22, 2010  
and released November 23, 2010. The  
full text of this document is available for  
inspection and copying during normal  
business hours in the FCC Reference  
Center (Room CY-A257), 445 12th  
Street, SW., Washington, DC 20554. The  
complete text of this document also may  
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B402, Washington, DC 20554. The full  
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the Consumer & Governmental Affairs  
Bureau at 202-418-0530 (voice), 202-  
418-0432 (tty).

**Summary of Report and Order**

1. The Satellite Television Extension  
and Localism Act of 2010 (STELA)  
reauthorizes the Satellite Home Viewer  
Extension and Reauthorization Act of

2004 (SHVERA) by extending the statutory copyright license for satellite carriage of distant broadcast signals, as well as provisions in the Communications Act, and amending certain provisions in the Communications Act and the Copyright Act. To implement the new statutory regime, the STELA, *inter alia*, requires the Commission to “develop and prescribe by rule a point-to-point predictive model for reliably and presumptively determining the ability of individual locations, through the use of an antenna, to receive signals in accordance with the signal intensity standard in § 73.622(e)(1) of [its rules], or a successor regulation, including to account for the continuing operation of translator stations and low power television stations.” In this action, the Commission has adopted a point-to-point predictive model for determining the ability of individual locations to receive an over-the-air digital television broadcast signal at the intensity level needed for service through the use of an antenna as required by the STELA. The new digital ILLR model will be used as a means for reliably and presumptively determining whether individual households are eligible to receive the signals of distant network-affiliated digital television stations, including TV translator and low power television stations, from their satellite carrier. The predictive model the Commission adopts, which is based on the current model for predicting the intensity of analog television signals at individual locations, will allow such determinations to be made in a timely and cost effective manner for all parties involved, including network TV stations, satellite carriers and satellite subscribers. The Commission is also providing a plan for the model’s continued refinement by use of additional data as it may become available. Under that plan, refinements based on additional data may be proposed by referencing the docket of this proceeding, which will be held open indefinitely for this purpose. Consistent with this intention to refine the model as new information becomes available, the Commission has also initiated a Further Notice of Proposed Rulemaking published elsewhere in this issue, in this proceeding to request comment on possible modifications to the methodology in the digital ILLR model to improve its predictive accuracy as suggested by one of the parties responding to the Notice of Proposed Rulemaking (NPRM), 75 FR 46885, August 4, 2010, in this proceeding.

2. As directed by Congress in the STELA, the Commission is adopting a new digital ILLR model for predicting the ability of individual locations to receive, through use of an antenna, an over-the-air digital television broadcast signal in accordance with the intensity standards specified in § 73.622(e)(1) of our rules. This new model will be established in the Commission’s rules as the point-to-point model for presumptively determining the ability of individual locations to receive with an antenna the digital signals of full service television stations, low power television stations (including digital Class A stations) and TV translator stations. Consistent with the specifications in the STELA, the Commission is basing this new model on the SHVIA ILLR model that it adopted in CS Docket No. 98–201, Report and Order, 64 FR 7113, February 12, 1999, as revised previously, for use in predicting the signal strengths of analog television signals. The new digital ILLR model incorporates parameters and features appropriate for prediction of the signal strengths of digital television signals. The Commission also adopts a procedure for continued refinement of this model through use of additional data and information as it may become available. As part of that effort, the Commission requested comment on possible revisions to the digital ILLR model in the Further Notice of Proposed Rulemaking, published elsewhere in this issue, adopted November 22, 2010 in this proceeding.

3. In developing the new model, the Commission considered, in addition to the modifications necessary to enable the model to predict digital television signal strengths, three ways in which the STELA revises the definition of “unserved household”: (1) The definition now references an “antenna” without specifying the kind of antenna or where it is located; (2) the definition specifically recognizes both a “primary stream” and a “multicast stream” affiliated with a network; and (3) the definition now limits network stations whose signals are to be considered to those network affiliates in the same DMA as the subscriber. The new STELA digital ILLR model and its specifications are described in OET’s new “OET Bulletin No. 73” in Appendix A of the Report and Order.

#### A. The ILLR Model for Digital Television Signals

4. The Commission is adopting the methodology and parameters for describing the basic radiofrequency environment of the SHVIA ILLR model as proposed in the NPRM for the digital

ILLR model. As indicated by the Broadcasters and CDE, the methodology in the ILLR model as modified over time has been time-tested and proven successful. The Commission expects that the new digital ILLR model will provide the same reliable and accurate predictions of signal availability as the analog SHVIA ILLR model. Like its predecessor, the new model incorporates features to account for the radio propagation environment through which television signals pass and the receiving systems used by consumers. These features are described in the “planning factors” that describe a set of assumptions for digital and analog television reception systems. Since digital and analog television signals are transmitted in the same frequency bands, the planning factors affecting basic propagation of signals using the two different modulation methods and the background noise level are the same. The Commission is not modifying in the digital ILLR model any of the parameters of the SHVIA ILLR model that describe basic propagation and the background noise levels. The planning factors that are different for digital and analog signals include antenna location (outdoor vs. indoor) and performance, time and location variability, and land use and land cover. The Commission’s decisions on each of these features in the digital ILLR model are discussed. The Commission also observes that the planning factor differences for antenna location and performance and for time and location variability are incorporated into the threshold signal level for reception for digital television service, which the STELA directs to be set at the noise-limited levels specified in § 73.622(e)(1).

5. The Commission is not including adjustments to account for interference and multipath in the digital ILLR model. As the Commission observed in its 2005 Report to Congress, a receiver’s ability to provide service in the presence of interfering signals is not relevant to the field strength needed to provide service. While the presence of other signals on the same or adjacent channels does have the potential for disrupting service, the effects of other signals are a separate matter from the basic functioning of a receiver in an interference-free environment that forms the basis for the Commission’s field strength standards. With regard to multipath, in the 2005 Report to Congress, the Commission finds that while the sensitivity of television receivers may degrade to a small degree when they process multipath signals, the difficult multipath conditions under which

degradation of as much as 2 dB could occur are not expected to be the norm. Moreover, the incidence of multipath varies significantly over very short distances and the level of multipath and its character is generally not a predictable factor. Further, the Commission sees no indication in the STELA that Congress intended that it add interference or multipath consideration to the signal strength standard. The Commission also observes that at locations where interference or multipath are present, consumers can often take steps such as repositioning or re-orienting their antenna to resolve the impact and achieve reception. Accordingly, the Commission finds no basis or need for including adjustments to the digital ILLR model for interference or multipath.

6. The Commission is not adopting the revisions to the estimating methodology proposed by Mr. Shumate as it has not had an opportunity to fully explore the changes he suggests. Therefore, the Commission is not addressing his proposals for improving the ILLR methodology in the Further Notice of Proposed Rulemaking herein. Nonetheless, the Commission believes there may be merit in the improvements he describes for the methodology for predicting digital television signal strengths at individual locations and perhaps more generally, and that they warrant further investigation as possible modifications to the digital ILLR model. The Commission will explore these improvements through a Further Notice of Proposed Rulemaking that is included in the instant action. It also is not acting on Adaptrum's suggestion that we allow optional use of the digital ILLR model for prediction of signal strengths for purposes of identifying unused spectrum in the TV bands where unlicensed devices could operate as it is beyond the scope of this proceeding.

7. Antenna Location and Performance. In the NPRM, the Commission proposed to use the current standard for an outdoor antenna as specified in the DTV planning factors in OET Bulletin No. 69 for predicting digital television signal strengths at individual locations, citing the information and conclusions regarding outdoor and indoor antennas in the 2005 Report to Congress. As set forth in the OET Bulletin No. 73, the prediction model would use an antenna at 6 meters (20 feet) for one-story structures and 9 meters (30 feet) for structures taller than one story. Consistent with Congress' modification of the specification of the receiving antenna to simply say an "antenna," and its concern that using the outdoor antenna model may result in

instances where a consumer who either cannot use an outdoor antenna or cannot receive service using an outdoor antenna and is not able to receive a station's service with an indoor antenna will be found ineligible for satellite delivery of a distant network signal, the Commission again requested comments, suggestions and new information that would provide a solution for satellite television subscribers in such circumstances. In this regard, it indicated that it was particularly interested in new ideas and information that have been developed in the time since the 2005 Report to Congress.

8. The Commission concludes that the current standard for an outdoor antenna as specified in the digital television planning factors in OET Bulletin No. 69 and on which the digital television signal strength standards in § 73.622(e)(1) are based, at the alternative heights proposed in the NPRM, should be used as the basis for predicting digital television signal strengths at individual locations in the digital ILLR model. As discussed in the NPRM, Congress's use of the term "antenna" in the STELA grants the Commission greater flexibility to take into account different types of antennas than was previously available, without requiring the Commission to incorporate any particular type of antenna into the model. The Commission is not persuaded by the Broadcasters' arguments that the omission of the word "outdoor" from the antenna description in the STELA has no significance and that the Commission is required to assume use of an outdoor antenna in predicting digital television signal strengths. While they are correct that the STELA directs the Commission to rely on the ILLR model recommended with respect to digital signals in the 2005 Report to Congress, which assumes use of an outdoor antenna, the Commission believes that STELA's use of the term "rely" provides us latitude in the manner in which the ILLR model is implemented. Their argument that the Commission must specify an outdoor antenna because the minimum signal strengths specified by the STELA are premised on use of an outdoor antenna (through the digital television planning factors), is similarly not persuasive in that, as DIRECTV/DISH observe, other specifications of parameters that include an indoor antenna are possible while still adhering to those signal strengths as the standard.

9. The Commission also is not persuaded by DIRECTV/DISH's arguments that Congress' deletion of the qualifiers specifying a "conventional, stationary, outdoor rooftop receiving

antenna" from the definition of an "unserved household" from the STELA means that a household is now unserved if it cannot receive a signal of sufficient strength by means of a simple indoor antenna. Again, it believes that this change simply affords the Commission latitude to consider all types of antennas in implementing the digital ILLR model. Even assuming that DIRECTV/DISH are correct that more consumers are now using indoor antennas, their argument that Congress was responding to greater use of indoor antennas by consumers misses the fact that consumers are only using indoor antennas where such antennas provide service. As observed in the 2005 Report to Congress, the Commission has always assumed that households will use the type of antenna that they need to achieve service; if an indoor antenna is insufficient for a particular household, it generally will rely on a rooftop antenna. Nothing in the STELA reflects a Congressional intent for the Commission to abandon that assumption. Thus, the Commission disagrees that households that are not able to receive service with an indoor antenna should be considered unserved simply because they do not use an outdoor antenna. The Commission has considered the full range of antenna options in developing the digital TV ILLR prediction model.

10. Turning to the specification of antennas in the prediction model, the Commission finds that an approach that specifies an outdoor antenna at 6 meters above ground for one-story structures and 9 meters above ground for taller structures (household roof-top levels) with gain as specified in the digital television planning factors is most consistent with the directives for the digital TV signal strength prediction model set forth in the STELA. The Commission reached this conclusion for the following reasons. First, given that the STELA specifies use of the digital television signal strength standard in § 73.622(e)(1) of the rules as the threshold metric against which predictions are to be compared to make determinations of "served" and "unserved," it is important and necessary that the signal strengths predicted by the model can be meaningfully compared to that standard. To provide for such comparisons, the signals whose strengths are predicted by the model must have the same qualities as the signal specified in the standard. This can occur only if the assumptions underlying the signal strength needed for reception as described by the

standard are the same as the assumptions underlying the signal predicted by the model and their relationship is well defined, so that the two represent the same conditions of reception. The § 73.622(e)(1) digital television signal strength standard is derived from the assumptions in the digital television planning factors as described in OET Bulletin No. 69 and those assumptions include an outdoor antenna as described above. This signal strength standard is important under the Commission's rules because it serves to define the service boundary or "service contour" of a digital television station and the threshold at which a station's service is considered to be available in areas within that service contour. Congress specified this same signal strength standard for defining "served" and "unserved" locations for purposes of determining households' eligibility for satellite delivery of distant network signals in the STELA. For these reasons, the Commission agrees with the Broadcasters that it is appropriate to incorporate into the digital ILLR model the assumptions in the planning factors in OET Bulletin No. 69, including the specified outdoor antenna, to obtain predictions of signal strength for comparison to the standard specified in the STELA.

11. The Commission also rejects DIRECTV/DISH's proposed adjustments to the signal strength standard to account for differences in the expected signal level and in the gain of indoor and outdoor antennas. It finds that application of these adjustments would significantly alter the digital television service description as defined in the § 73.622(e)(1) signal strength standard by reducing the likelihood that a given location would be predicted to receive service. Under the plan they propose, between 36.7 dB and 46.7 dB (depending on whether the location is in an urban area), or more, would be subtracted from the prediction calculated by the ILLR model for locations that do not have an outdoor antenna. They do not offer any additional modifications to the model or its assumptions to compensate for this proposed change in the signal strength standard; nor are we aware of any modifications that would provide such compensation. In application, DIRECTV/DISH's proposal would raise the signal strength needed for reception of UHF signals from 41 dB $\mu$ V/m to between 77.7 dB $\mu$ V/m and 87.7 dB $\mu$ V/m for households without outdoor antennas. Such a change could, as the broadcasters observe, drastically increase the number of households

eligible for satellite delivery of distant network signals by allowing viewers to claim use of an indoor antenna when such viewers generally could in fact receive service using an outdoor antenna. Notwithstanding the difficulties in developing a model that would provide accurate and reliable indoor predictions, the Commission is concerned that many satellite subscribers who could use an outdoor antenna would have an incentive to take the "easy path" and simply report that they cannot use an outdoor antenna and thereby be evaluated under the indoor antenna standard, when in fact they could readily receive a station's service with outdoor antenna. For example, subscribers located within a station's service area but at distances from its transmitter where indoor reception is not possible could simply assert that they cannot use an outdoor antenna and thus be eligible to receive a distant network signal. This would remove large numbers of viewers from local stations potential audience. In view of Congress' selection of the § 73.622(e)(2) signal strength standard as the threshold for distant signal eligibility in the STELA, the Commission does not believe that Congress envisioned or contemplated such an increase in the numbers of satellite subscribers eligible for delivery of distant network signals.

12. In addition, as the Commission discussed in the 2005 Report to Congress and the NPRM, there are significant difficulties in achieving accurate and reliable estimates of digital television signal strengths in indoor environments, which make it very difficult if not impossible to obtain accurate and reliable predictions of digital television signal strengths indoors. The Commission is concerned that simplification of indoor antenna reception to a single set of circumstances as suggested by DIRECTV/DISH and Mr. Kurby would ignore the significant differences that exist in indoor reception scenarios, particularly with respect to attenuation of signals due to the materials with which a building is constructed, which vary substantially in the degree to which they absorb or reflect signals, and the antenna's location within the structure, which affects the number and pathways of structural features (walls or ground in the case of basements) that signals must penetrate to reach the antenna. In this regard, the Commission also observes that in the DTV transition, it advised consumers of the wide variability in the performance of antennas generally and indoor antennas in particular in materials provided to

the public for the DTV transition. For example, the Commission noted that consumers having problems with indoor antennas needed to check the performance information for the antenna, move the antenna for best reception, place it near a window, as high as possible, away from electronic equipment and change the direction the antenna is facing. Further, the Commission advised that a roof-top antenna may be needed.

13. These differences in indoor reception scenarios are very difficult to account for properly in a model's input values and can also be challenging for a user of a model to assess so as to specify appropriate input values for any particular location. These factors together greatly reduce the reliability and accuracy of any indoor signal strength predictions that might be provided by a model. While the Commission understands that there are also variations in signal strength across outdoor receive locations due to terrain and the presence of man-made terrain features, including aspects of the structure on which an antenna is mounted, that variability is generally much less than the variability of signal strengths indoors which are affected by building materials and location within the building as well as the same terrain and man-made features that affect signals received outdoors. The Commission also expects that there would be an incentive for households in areas where service is not available with an indoor antenna to simply submit that they have an indoor antenna in order to be eligible for distant signal delivery when in fact they could receive that signal with an outdoor antenna under the standard specified in the STELA. This type of behavior would, to the extent it occurred, undermine broadcasters' coverage and complicate our administration of an indoor antenna standard. The Commission also is not persuaded that any of the options for modifying their proposed adjustments that DIRECTV/DISH have submitted in recent ex parte presentations would remedy the problems discussed. None of those suggestions would provide reliable and accurate estimates of indoor signal strengths; nor do they offer modifications that would compensate for the change their plan would make to digital signal strength standard set forth in the STELA. Accordingly, the Commission will use the current standard for an outdoor antenna as specified in the digital television planning factors in OET Bulletin No. 69 in the digital ILLR model.

14. Notwithstanding this decision, the Commission remains aware and

concerned that using the outdoor reception model may result in instances where a consumer who either cannot use an outdoor antenna or cannot receive service using an outdoor antenna and is not able to receive a station's service with an indoor antenna will be found ineligible for satellite delivery of a distant network signal. This concern is mitigated by new local-into-local offerings by satellite carriers, which the Commission believes will significantly reduce the number of instances where satellite subscribers would need to consider requesting delivery of distant network signals. Dish Network now provides local network stations (local-into-local service) in all 210 DMAs. In addition, DIRECTV now provides local-into-local service in all but 60 relatively small markets. The Commission recognizes that DIRECTV/DISH will still have to qualify some distant signals even after they provide local-into-local service in all 210 DMAs. However, the locations that they will not reach with local-into-local service are likely to be in areas with relatively small populations that are at the edge of some DMAs that are served by satellite service "spot beams" that provide localized service to the major portion of a DMA, including its center of population. Those populations are served by their carrier's larger regional coverage signals that do not have the local signals carried on the spot beams. Moreover, the areas not reached by the spot beams will generally be in less densely populated areas where there are generally fewer residences that are not able to use an outdoor antenna. In concluding that the outdoor antenna standard remains appropriate, the Commission has also considered that most subscribers who will request distant signals from their satellite carriers are likely to be in rural areas where use of outdoor antennas is more common and practical than in urban areas. Dish now serves all 210 DMAs and only a small number of Dish subscribers are beyond the spot beams serving those DMAs and therefore potentially eligible for distant signals. Although DIRECTV does not offer local stations in 60 DMAs, these are small market areas and mostly in rural areas where outdoor antennas are likely to be more prevalent.

15. The Commission also observes that under section 339(a)(2)(E) of the Communications Act, satellite TV subscribers who are denied delivery of a distant network signal based on the signal strength predictive model or a measurement may request a waiver, through the subscriber's satellite carrier,

from the station that asserts that such retransmission is prohibited. While the Commission does not know the extent to which stations have granted such waivers, the waiver process is available. It hopes that stations receiving such waiver requests will consider whether the subscriber is in an urban area or residing in a multiple dwelling unit, and therefore confined to reliance on an indoor antenna, and that the stations will act accordingly to grant the waiver request on a case-by-case basis in such circumstances. Finally, the Commission will remain open to consideration of new ideas, approaches and methods for identifying households that cannot use or receive service with an outdoor antenna that are predicted to be served by our digital ILLR predictive model. The Commission is holding this proceeding open for continued refinement of the digital TV ILLR Model, so parties may submit proposals for such new ideas, approaches and methods.

16. Time and Location Variability Factors. The field strength of radio signals, including television signals, at a given distance from a transmitter vary by location and with time due to factors affecting their propagation. The time and location (situational) variability factors are commonly represented using the notation "F(L,T)," where a signal of a specified strength level will be available at L percent of locations T percent of the time. The variations over time are also known as "fading." In the NPRM, the Commission proposed to use 50% as the location variability factor and 90% as the time variability factor in the digital ILLR model, in accordance with the DTV planning factors. The SHVIA ILLR model applicable to analog stations uses 50% as the location variability and 50% as the time variability factor.

17. The Commission continues to believe that the F(50,90) specifications for time and location variability set forth in the digital television planning factors are the appropriate values for those factors in the digital ILLR model. While the Commission understands DIRECTV/DISH's position that viewers desire service to be available nearly all the time and that digital television service does not degrade gradually, the fact is that the propagation paths of terrestrial broadcast television signals are much different than those of sky-based satellite signals and this affects the practically achievable degree of broadcast signal availability. As observed in the NPRM, terrestrial signals follow paths that are close to the surface and are attenuated by the natural and man-made surface features

they encounter along those paths. The attenuation caused by those features results in propagation conditions whereby signal strength varies statistically by location and time. The power and/or antenna height needed to improve broadcast television signal availability increase in a non-linear manner such that it is unrealistic to require such availability to approach 100%. These propagation conditions are much different than those faced by satellite signals, which travel over paths that are generally affected only by weather and other atmospheric conditions.

18. The F(50,90) values for digital television service availability were established based on an industry-Government consensus that relied on the traditional TV service model that worked well for analog TV service and that, as argued by the broadcasters, is also appropriate for digital TV service. Changing the time variability factor value to 99% reliability as requested by the satellite providers would greatly shrink the predicted local DTV service areas and would not reflect the capability of the vast majority of viewers to receive signals. Moreover, as pointed out by the Broadcasters and in MSW's Engineering Statement, the assumed 10% reduction in signal availability over time occurs at the outermost limit of a station's service area and is not the typical statistical figure for reliable reception across a station's entire service area. As the distance to a station's transmitter decreases, time availability of the signal above the noise-limited threshold value also increases. The Commission also observes that households at the edge of a station's service area can often improve their reception (and thereby reduce or eliminate periods when the station's signal is not available) by mounting their antennas higher, using higher gain antennas, or using low-noise pre-amplifiers at their antennas. In addition, it is more likely that a station's signal strength at a household that is located near the edge of its service area will be predicted to be below the threshold needed for reception and therefore eligible for delivery of a distant signal by its satellite provider. Accordingly, the Commission finds no basis for modifying the time variability factor for broadcast television signals for purposes of determining a household's eligibility for delivery of distant network signals and therefore will specify the time and availability factors in the digital ILLR model as F(50,90).

19. Land Use and Land Cover Factors. The land use and land cover (LULC) data provides information on building

structures and other man-made terrestrial features and on land cover features such as forests and open land that can affect radio propagation. Inclusion of this data in the prediction methodology of the SHVIA ILLR TV computer model significantly enhanced the accuracy and reliability of its signal strength predictions. The method for considering these land cover factors is to assign certain signal loss values, in addition to those already factored in the model for terrain variation, as a function of the LULC category of the reception point. More specifically, the field strength predicted by the basic Longley-Rice model is reduced by the clutter loss value associated with the respective LULC category. Reception point environments at individual locations are classified in terms of the codes used in the LULC database of the United States Geological Survey (USGS). In the NPRM, the Commission proposed to apply the LULC categories and clutter loss values for describing land use and land cover features in the digital TV ILLR model in the same manner as currently incorporated into the SHVIA ILLR model. These values were specified in the SHVIA First Report and Order.

20. The Commission concludes that the LULC categories and clutter loss values for describing land use and land cover features in the digital TV ILLR model should be applied in the digital ILLR in the same manner as currently applied in the SHVIA ILLR model. While the Commission understands the seeming inconsistency of using no LULC corrections for VHF signals, it has found previously that the clutter loss values used in the current SHVIA ILLR model, including zero values for VHF signals, strike the correct balance. Analysis of the data on the model's performance shows that using the values used in the SHVIA ILLR model produce approximately an equal number of over-predictions as under-predictions. Thus, the Commission has found a range of clutter values, including zero, that correspond to different land cover types are valid. It sees no merit in DIRECTV/DISH's argument that the studies used by the Commission in determining that the LULC adjustment for VHF signals should be zero were conducted in some of the flattest states in the country. Rather, the Commission finds that the 5 markets examined have varied terrain characteristics that are sufficient to represent the terrain in television markets across the nation. Also, at this time, the Commission is not aware of any LULC database that would provide

more refined or granular information on land use and land clutter than that provided by the USGS LULC database. In this regard, DIRECTV/DISH's suggestion to use Google Earth is not practical as that service provides does not provide data on terrain and surface clutter variation. The Commission also will not alter the LULC correction factors to add additional attenuation to account for lower antenna heights as the model will continue to use the same 30 foot (9 meters) and 20 foot (6 meters) antenna heights used in the SHVIA ILLR model. The Commission also finds that it would not be practical to introduce clutter height and density factors into the clutter calculations of the ILLR software at this time as suggested by Mr. Shumate. Also, there is no height and density information available for the current LULC data. Accordingly, the Commission will apply the land use and land cover categories and USGS clutter loss values for describing land use and land cover features in the digital TV ILLR model in the same manner as these elements are currently incorporated into the SHVIA ILLR model.

21. Multicast program streams. In the NPRM, the Commission stated that it believes that the proposed digital signal strength prediction model would account for multicast as well as primary streams that are transmitted by a station and affiliated with one or more networks. Therefore, it proposed to provide no special adjustment in the model to predict the availability of network signals that are transmitted on multicast streams, rather than on a station's primary program stream. In their comments, the Broadcasters agree with the Commission's position in the NPRM that all multicast streams can be treated equally for purposes of both prediction and measurement of signal strength. They note that all of the streams arrive on the same signal and at the same strength and that the different programming on multicast channels simply consists of different packets within a station's transport stream.

22. The Commission finds that there is no need for adjusting predictions from the digital ILLR model to reflect the added reference to network affiliated multicast streams in the STELA. The prediction of signal strength for a digital television broadcast signal applies regardless of the content, including the presence of multicast program streams. If a household is predicted to receive a station, then all of that station's program streams would be received equally. Accordingly, the Commission will not provide any special adjustment or procedure in the model for network

signals carried on multicast program streams.

#### B. Other Issues

23. Previous findings of eligibility. In the NPRM, the Commission proposed to uphold any previous findings of eligibility for delivery of distant signals based on the predictive model in the event that it were to update that model and a prediction from the updated model were to indicate that a previously unserved location could receive service from a local network station. In its comments, CDE observes that because of changes many television stations are still making to their digital operations, the potential situation arises for those stations that a lack-of-service determination under STELA may be rendered moot at a later date by an upgrade in their television facilities and improved off-the-air service. It asks that the Commission clarify how the predictive model is to be administered for those viewers who opted at one juncture to choose satellite service due to lack of off-the-air service but later are predicted to receive off-the-air service as a result of an upgrade to a stations facilities.

24. The Commission continues to believe that it is appropriate to "grandfather" the eligibility of households in cases where a location was predicted to be unserved by a local network station using an adopted version of the digital ILLR model and the household at that location is receiving a signal of that network from a distant station by its satellite provider. This provision will avoid disruption of the existing services to which households have been accustomed to receiving if the Commission updates the digital ILLR model or a station modifies its transmission facilities. This grandfathering will apply only in cases where the household already is receiving a distant signal from its satellite provider prior to a change in the digital ILLR prediction model or in the coverage of the local station.

25. Analog Low Power TV and TV Translator Stations. Although all full-service television stations converted fully to digital operation on June 12, 2009, TV translator and low power/Class A TV stations were not required to make that conversion and many of those stations continue to broadcast in analog format. In the NPRM the Commission, recognizing the provisions of Section 205 of the STELA and that many TV translators and low power TV stations continue to transmit analog signals, tentatively concluded that it would continue to apply the existing analog SHVIA ILLR model specified in

OET Bulletin No. 72 for predicting signal strengths in distant network eligibility cases involving TV translator and low-power/Class A television stations that use the analog TV standard to broadcast their own programming or to retransmit the content of local digital network stations. In their comments, the Broadcasters support the Commission's proposal to continue to use the analog SHVIA ILLR model for LPTV, Class A, and translator stations that are still broadcasting using the analog transmission standard. They state that, to the extent such stations continue broadcasting in analog, it makes sense to continue to use the Commission's existing tools for predicting analog signal reception, including OET Bulletin 72. They state that those tools have worked well for years and there is no reason not to continue to employ them with this category of stations.

26. Consistent with Section 205 of the STELA, the Commission will continue to apply the methods in OET Bulletin No. 72 for predicting the signal strengths of TV translator and low power/Class A stations that operate using the analog TV standard. It sees no reason or basis for changing from the use of the SHVIA ILLR model for obtaining predictions of signal strength for determining eligibility for satellite delivery of distant network signals for those stations.

27. Procedure for Continued Refinement of the Digital TV ILLR Model. The STELA requires that the Commission establish procedures for continued refinement in the application of the digital TV ILLR model through use of additional data as it becomes available. In the NPRM, the Commission proposed to comply with this requirement by establishing a procedure under which it would consider possible changes to OET Bulletin No. 73 (which describes the model and is referenced in the rules) to implement improvements to the model. The commenting parties did not address our proposals for the procedures for continued refinement of the application of the digital TV ILLR model.

28. The Commission continues to believe the most efficient, effective, fair, transparent and timely approach for revising the digital TV ILLR model if new information becomes available is to hold open the docket in this proceeding and then conduct further rule making as proposed in the NPRM. This plan is consistent with the Commission's past action concerning the SHVIA model. Given that the digital ILLR model is being incorporated into its rules, the Commission believes that this plan also is consistent with the requirements of

section 553 of the Administrative Procedures Act. Parties with new data, analysis or other information relating to improving the predictive model will be able to submit requests to modify the model in the instant docket. The Commission has instructed OET to evaluate such requests and, as appropriate, prepare a Notice of Proposed Rulemaking for consideration by the Commission. The Commission also could initiate rulemaking action on its own motion.

29. Stations to Consider for Distant Signals. Under the SHVIA and the SHVERA, the predicted signal strengths of all the stations affiliated with the same network were considered, regardless of those stations' DMAs. That is, if a satellite subscriber desired to receive the distant signal of the "XYZ" network, then the predicted results from any stations affiliated with the XYZ network would be analyzed for that subscriber's location. If one or more of those affiliated stations were predicted to deliver a signal of the requisite intensity, the subscriber would be predicted "served" by that network and not eligible for a distant signal from that network unless each of the stations predicted to serve the subscriber granted a waiver. Section 102 of the STELA changes this regime by specifying that only "local" stations are to be considered, i.e., stations that are located in the same DMA as the satellite subscriber. In the NPRM, the Commission proposed to address this statutory modification by changing the way the digital ILLR model's results are to be used, rather than through a change in the digital TV ILLR model itself that would limit the signals examined to those located in the same DMA as the subscriber. That is, instead of having the computer software for the model limit consideration of network stations to any such stations in the subscriber's DMA that the model predicts to be available, the Commission proposed to amend its rules to specify that satellite carriers are required to consider only the signals of network stations located in the subscriber's DMA in determining whether a subscriber is eligible for delivery of distant network signals. The commenting parties did not address this issue.

30. The Commission is adopting its proposal to address the statutory change to limit the network stations to be considered in satellite signal delivery eligibility cases to those stations that are located in the same DMA as the satellite subscriber by amending its rules to specify that eligibility determinations are to consider only the signals of network stations located in the

subscriber's DMA. The Commission notes that this statutory change will also reduce the burden associated with distant network signal eligibility waiver requests by reducing the number of stations from which a waiver would need to be requested. In addition, this change will reduce the burden of on-site measurement of signal strengths where such tests are performed for the purpose of determining a satellite subscriber's eligibility to receive distant signals.

#### Procedural Matters

##### Final Regulatory Flexibility Analysis

31. As required by the Regulatory Flexibility Act of 1980, as amended (RFA),<sup>1</sup> an Initial Regulatory Flexibility Analysis (IRFA) was incorporated in the Notice of Proposed Rulemaking (NPRM) to this proceeding.<sup>2</sup> The Commission sought written public comment on the proposals in the NPRM, including comment on the IRFA. The Commission received no comments on the IRFA. This present Final Regulatory Flexibility Analysis ("FRFA") conforms to the RFA.<sup>3</sup>

A. Need for and Objectives of the Report and Order. In this Report and Order, we are adopting a point-to-point predictive model for determining the ability of individual locations to receive an over-the-air digital television broadcast signal at the intensity level needed for service through the use of an antenna as required by the STELA.<sup>4</sup> The new digital ILLR model will be used as a means for reliably and presumptively determining whether individual households are eligible to receive the signals of distant network-affiliated digital television stations, including TV translator and low power television stations, from their satellite carrier. The

<sup>1</sup> See 5 U.S.C. 603. The RFA, see 5 U.S.C. 601 et. seq., has been amended by the Small Business Regulatory Enforcement Fairness Act of 1996 ("SBREFA"), Public Law 104-121, Title II, 110 Stat. 847 (1996). The SBREFA was enacted as Title II of the Contract With America Advancement Act of 1996 (CWAAA).

<sup>2</sup> Implementation of the Satellite Home Viewer Extension and Reauthorization Act of 2004, 20 FCC Rcd 2983, Appendix C (2005) (NPRM).

<sup>3</sup> See 5 U.S.C. 604.

<sup>4</sup> In its implementation provisions, the STELA also requires that the Commission issue an order completing its rulemaking to establish a procedure for on-site measurement of digital television signals in ET Docket No. 06-94. 47 U.S.C. 339(c)(3)(B). In the Notice of Proposed Rulemaking (NPRM) and Further Notice of Rulemaking (FNPRM) preceding the instant Report and Order, the Commission requested additional comment in the ET Docket No. 06-94 signal measurement proceeding. We are today, in a separate action in that docket, issuing a Report and Order to establish the required procedure for on-site measurement of digital television signals. See Report and Order in ET Docket No. 06-94, FCC 10-195, adopted November 22, 2010.

predictive model we are adopting, which is based on the current model for predicting the intensity of analog television signals at individual locations, will allow such determinations to be made in a timely and cost effective manner for all parties involved, including network TV stations, satellite carriers and satellite subscribers. We are also providing a plan for the model's continued refinement by use of additional data as it may become available. Under that plan, refinements based on additional data may be proposed by referencing the docket of this proceeding, which will be held open indefinitely for this purpose. Consistent with this intention to refine the model as new information becomes available, we are also initiating a Further Notice of Proposed Rulemaking herein to request comment on possible modifications to the methodology in the digital Individual Location Longley-Rice (ILLR) model to improve its predictive accuracy as suggested by one of the parties responding to the NPRM in this proceeding.

B. Summary of Significant Issues Raised by Public Comments in Response to the IRFA: There were no comments filed that specifically addressed the rules and policies propose in the IRFA.

C. Description and Estimates of the Number of Small Entities to Which the Rules will apply: The RFA directs agencies to provide a description of and, where feasible, an estimate of the number of small entities that will be affected by the rules adopted herein.<sup>5</sup> The RFA generally defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction."<sup>6</sup> In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act.<sup>7</sup> A small business concern is one which: (1) Is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA).<sup>8</sup>

Nationwide, there are a total of approximately 29.6 million small businesses, according to the SBA.<sup>9</sup> A "small organization" is generally "any not-for-profit enterprise which is independently owned and operated and is not dominant in its field."<sup>10</sup> Nationwide, as of 2002, there were approximately 1.6 million small organizations.<sup>11</sup> The term "small governmental jurisdiction" is defined generally as "governments of cities, towns, townships, villages, school districts, or special districts, with a population of less than fifty thousand."<sup>12</sup> Census Bureau data for 2002 indicate that there were 87,525 local governmental jurisdictions in the United States.<sup>13</sup> We estimate that, of this total, 84,377 entities were "small governmental jurisdictions."<sup>14</sup> Thus, we estimate that most governmental jurisdictions are small.

Cable Television Distribution Services. The "Cable and Other Program Distribution" census category includes cable systems operators, closed circuit television services, direct broadcast satellite services, multipoint distribution systems, satellite master antenna systems, and subscription television services. Since 2007, these services have been defined within the broad economic census category of Wired Telecommunications Carriers; that category is defined as follows: "This industry comprises establishments primarily engaged in operating and/or providing access to transmission facilities and infrastructure that they own and/or lease for the transmission of voice, data, text, sound, and video using wired telecommunications networks. Transmission facilities may be based on a single technology or a combination of technologies. Establishments in this industry use the wired telecommunications network facilities that they operate to provide a variety of services, such as wired telephony services, including VoIP services; wired (cable) audio and video programming distribution; and wired broadband

Internet services. By exception, establishments providing satellite television distribution services using facilities and infrastructure that they operate are included in this industry." The SBA has developed a small business size standard for this category, which is: All such firms having 1,500 or fewer employees. To gauge small business prevalence for these cable services the Commission must, however, use current census data that are based on the previous category of Cable and Other Program Distribution and its associated size standard; that size standard was: All such firms having \$13.5 million or less in annual receipts. According to Census Bureau data for 2002, there were a total of 1,191 firms in this previous category that operated for the entire year. Of this total, 1,087 firms had annual receipts of under \$10 million, and 43 firms had receipts of \$10 million or more but less than \$25 million. Thus, the majority of these firms can be considered small.

Direct Broadcast Satellite (DBS) Service. DBS service is a nationally distributed subscription service that delivers video and audio programming via satellite to a small parabolic "dish" antenna at the subscriber's location. Because DBS provides subscription services, DBS falls within the SBA-recognized definition of Wired Telecommunications Carriers. However, as discussed above, the Commission relies on the previous size standard, Cable and Other Subscription Programming, which provides that a small entity is one with \$13.5 million or less in annual receipts. Currently, only two operators—DirecTV and EchoStar Communications Corporation (EchoStar)—hold licenses to provide DBS service, which requires a great investment of capital for operation. Both currently offer subscription services and report annual revenues that are in excess of the threshold for a small business. Because DBS service requires significant capital, the Commission believes it is unlikely that a small entity as defined by the SBA would have the financial wherewithal to become a DBS licensee. Nevertheless, given the absence of specific data on this point, the Commission acknowledges the possibility that there are entrants in this field that may not yet have generated \$13.5 million in annual receipts, and therefore may be categorized as a small business, if independently owned and operated.

Television Broadcasting. The rules and policies apply to television broadcast licensees and potential licensees of television service. The SBA defines a television broadcast station as

<sup>5</sup> See SBA, Office of Advocacy, "Frequently Asked Questions," <http://web.sba.gov/faqs/faqindex.cfm?areaid=24> (revised Sept. 2009).

<sup>10</sup> 5 U.S.C. 601(4).

<sup>11</sup> Independent Sector, *The New Nonprofit Almanac & Desk Reference* (2002).

<sup>12</sup> 5 U.S.C. 601(5).

<sup>13</sup> U.S. Census Bureau, *Statistical Abstract of the United States: 2006*, Section 8, page 272, Table 415.

<sup>14</sup> We assume that the villages, school districts, and special districts are small, and total 48,558. See U.S. Census Bureau, *Statistical Abstract of the United States: 2006*, section 8, page 273, Table 417. For 2002, Census Bureau data indicate that the total number of county, municipal, and township governments nationwide was 38,967, of which 35,819 were small. Id.

<sup>5</sup> 5 U.S.C. 603(b)(3), 604(a)(3).

<sup>6</sup> Id. 601(6).

<sup>7</sup> 5 U.S.C. 601(3) (incorporating by reference the definition of "small business concern" in the Small Business Act, 15 U.S.C. 632). Pursuant to 5 U.S.C. 601(3), the statutory definition of a small business applies "unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment, establishes one or more definitions of such terms which are appropriate to the activities of the agency and publishes such definitions(s) in the Federal Register."

<sup>8</sup> 15 U.S.C. 632.

a small business if such station has no more than \$14 million in annual receipts.<sup>15</sup> Business concerns included in this industry are those “primarily engaged in broadcasting images together with sound.”<sup>16</sup> The Commission has estimated the number of licensed commercial television stations to be 1,392.<sup>17</sup> According to Commission staff review of the BIA/Kelsey, MAPro Television Database (BIA) as of April 7, 2010, about 1,015 of an estimated 1,380 commercial television stations<sup>18</sup> (or about 74 percent) have revenues of \$14 million or less and thus qualify as small entities under the SBA definition. The Commission has estimated the number of licensed non-commercial educational (NCE) television stations to be 390.<sup>19</sup> We note, however, that, in assessing whether a business concern qualifies as small under the above definition, business (control) affiliations<sup>20</sup> must be included. Our estimate, therefore, likely overstates the number of small entities that might be affected by our action, because the revenue figure on which it is based does not include or aggregate revenues from affiliated companies. The Commission does not compile and otherwise does not have access to information on the revenue of NCE stations that would permit it to determine how many such stations would qualify as small entities.

In addition, an element of the definition of “small business” is that the entity not be dominant in its field of operation. We are unable at this time to define or quantify the criteria that would establish whether a specific

television station is dominant in its field of operation. Accordingly, the estimates of small businesses to which rules may apply do not exclude any television station from the definition of a small business on this basis and are therefore over-inclusive to that extent. Also as noted, an additional element of the definition of “small business” is that the entity must be independently owned and operated. We note that it is difficult at times to assess these criteria in the context of media entities and our estimates of small businesses to which they apply may be over-inclusive to this extent.

Class A TV, LPTV, and TV translator stations. The rules and policies adopted in this Report and Order include licensees of Class A TV stations, low power television (LPTV) stations, and TV translator stations, as well as potential licensees in these television services. The same SBA definition that applies to television broadcast licensees would apply to these stations. The SBA defines a television broadcast station as a small business if such station has no more than \$14 million in annual receipts.<sup>21</sup> Currently, there are approximately 537 licensed Class A stations, 2,386 licensed LPTV stations, and 4,359 licensed TV translators.<sup>22</sup> Given the nature of these services, we will presume that all of these licensees qualify as small entities under the SBA definition. We note, however, that under the SBA’s definition, revenue of affiliates that are not LPTV stations should be aggregated with the LPTV station revenues in determining whether a concern is small. Our estimate may thus overstate the number of small entities since the revenue figure on which it is based does not include or aggregate revenues from non-LPTV affiliated companies. We do not have data on revenues of TV translator or TV booster stations, but virtually all of these entities are also likely to have revenues of less than \$14 million and thus may be categorized as small, except to the extent that revenues of affiliated non-translator or booster entities should be considered.

D. Description of Projected Reporting, Recordkeeping and Other Compliance Requirement for Small Entities. We are adopting the methodology and parameters for describing the basic radiofrequency environment of the SHVIA ILLR model as proposed in the NPRM for the digital ILLR model. As indicated by the Broadcasters and CDE, the methodology in the ILLR model as modified over time has been time-tested

and proven successful. We expect that the new digital ILLR model will provide the same reliable and accurate predictions of signal availability as the analog SHVIA ILLR model. Like its predecessor, the new model incorporates features to account for the radio propagation environment through which television signals pass and the receiving systems used by consumers. These features are described in the “planning factors” that describe a set of assumptions for digital and analog television reception systems.<sup>23</sup> Since digital and analog television signals are transmitted in the same frequency bands, the planning factors affecting basic propagation of signals using the two different modulation methods and the background noise level are the same. We therefore have not modified in the digital ILLR model any of the parameters of the SHVIA ILLR model that describe basic propagation and the background noise levels. The planning factors that are different for digital and analog signals include antenna location (outdoor vs. indoor) and performance, time and location variability, and land use and land cover. We also observe that the planning factor differences for antenna location and performance and for time and location variability are incorporated into the threshold signal level for reception for digital television service, which the STELA directs to be set at the noise-limited levels specified in § 73.622(e)(1).

E. Steps Taken to Minimize Significant Economic Impact on Small Entities, and Significant Alternatives Considered. The RFA requires an agency to describe any significant alternatives that it has considered in reaching its proposed approach, which may include the following four alternatives (among others): (1) The establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance or reporting requirements under the rule for small entities; (3) the use of performance, rather than design, standards; and (4) an exemption from

<sup>15</sup> See 13 CFR 121.201, NAICS Code 515120.

<sup>16</sup> Id. This category description continues, “These establishments operate television broadcasting studios and facilities for the programming and transmission of programs to the public. These establishments also produce or transmit visual programming to affiliated broadcast television stations, which in turn broadcast the programs to the public on a predetermined schedule. Programming may originate in their own studios, from an affiliated network, or from external sources.” Separate census categories pertain to businesses primarily engaged in producing programming. See Motion Picture and Video Production, NAICS code 512110; Motion Picture and Video Distribution, NAICS Code 512120; Teleproduction and Other Post-Production Services, NAICS Code 512191; and Other Motion Picture and Video Industries, NAICS Code 512199.

<sup>17</sup> See News Release, “Broadcast Station Totals as of December 31, 2009,” 2010 WL 676084 (F.C.C.) (dated Feb. 26, 2010) (Broadcast Station Totals); also available at <http://www.fcc.gov/mb/>.

<sup>18</sup> We recognize that this total differs slightly from that contained in Broadcast Station Totals, supra note 446; however, we are using BIA’s estimate for purposes of this revenue comparison.

<sup>19</sup> See Broadcast Station Totals, supra note 239.

<sup>20</sup> “[Business concerns] are affiliates of each other when one concern controls or has the power to control the other or a third party or parties controls or has the power to control both.” 13 CFR 121.103(a)(1).

<sup>21</sup> See 13 CFR 121.201, NAICS Code 515120.

<sup>22</sup> See Broadcast Station Totals, supra note 239.

<sup>23</sup> The planning factors for analog television assume a height of 30 feet, which is slightly different from the height of 10 meters (33 feet) used in the digital planning factors. The planning factors for analog TV are provided in Robert A. O’Connor, “Understanding Television’s Grade A and Grade B Service Contours,” IEEE Transactions on Broadcasting, Vol. BC-14, No. 4, December 1968 (O’Connor) at page 142; the planning factors of digital TV are set forth in OET Bulletin No. 69 at Table 3.

coverage of the rule, or any part thereof, for small entities.<sup>24</sup>

We are not adopting the revisions to the estimating methodology proposed by Mr. Shumate as we have not had an opportunity to fully explore the changes he suggests.<sup>25</sup> Nonetheless, we believe there may be merit in the improvements he describes for the methodology for predicting digital television signal strengths at individual locations and perhaps more generally, and that they warrant our further investigation as possible modifications to the digital ILLR model. We are therefore addressing his proposals for improving the ILLR methodology in the Further Notice of Proposed Rulemaking herein. We also are not acting on Adaptrum's suggestion that we allow optional use of the digital ILLR model for prediction of signal strengths for purposes of identifying unused spectrum in the TV bands where unlicensed devices could operate as it is beyond the scope of this proceeding.<sup>26</sup>

32. Report to Congress: The Commission will send a copy of the Report and Order, including this FRFA, in a report to be sent to Congress pursuant to the Congressional Review Act.<sup>27</sup> In addition, the Commission will send a copy of the Report and Order, including this FRFA, to the Chief Counsel for Advocacy of the SBA.

33. Paperwork Reduction Act Analysis: This document does not contain proposed information collection(s) subject to the Paperwork Reduction Act of 1995 (PRA), Public Law 104-13. In addition, therefore, it does not contain any new or modified "information collection burden for small business concerns with fewer than 25 employees," pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, see 44 U.S.C. 3506(c)(4).

#### Ordering Clauses

34. Pursuant to sections 1, 4, 301, and 339(c)(3) of the Communications Act of 1934, as amended, 47 U.S.C. 151, 154, 301, 339(c)(3), and section 119(d)(10)(a) of the Copyright Act, 17 U.S.C. 119(d)(10)(a), this report and order is hereby adopted.

35. Part 73 of the Commission's rules is amended as specified in Appendix A and such rule amendment shall be effective January 21, 2011.

36. The Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, shall send a copy of this report and order, including the Initial Regulatory Flexibility Certification, and IRFA, to the Chief Counsel for Advocacy of the Small Business Administration.

#### List of Subjects in 47 CFR Part 73

Communications equipment, Reporting and recordkeeping requirements, Television.

Federal Communications Commission.  
Marlene H. Dortch,  
Secretary.

#### Final Rules

■ For the reasons discussed in the preamble, the Federal Communications Commission amends Part 73 to read as follows:

#### PART 73—RADIO BROADCAST SERVICES

■ 1. The authority citation for part 73 continues to read as follows:

Authority: 47 U.S.C. 154, 303, 334, 336 and 339.

■ 2. Section 73.683 is amended by revising paragraphs (d) and (e) to read as follows:

§ 73.683 Field strength contours and presumptive determination of field strength at individual locations.

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(d) For purposes of determining the eligibility of individual households for satellite retransmission of distant network signals under the copyright law provisions of 17 U.S.C. 119(d)(10)(A),

field strength shall be determined by the Individual Location Longley-Rice (ILLR) propagation prediction model. Such eligibility determinations shall consider only the signals of network stations located in the subscriber's Designated Market Area. Guidance for use of the ILLR model in predicting the field strength of analog television signals for such determinations is provided in OET Bulletin No. 72 (stations operating with analog signals include some Class A stations licensed under part 73 of this chapter and some licensed low power TV and TV translator stations that operate under part 74 of this chapter). Guidance for use of the ILLR model in predicting the field strength of digital television signals for such determinations is provided in OET Bulletin No. 73 (stations operating with digital signals include all full service stations and some Class A stations that operate under part 73 of this chapter and some low power TV and TV translator stations that operate under Part 74 of this chapter). OET Bulletin No. 72 and OET Bulletin No. 73 are available at the FCC's Headquarters Building, 445 12th St., SW., Reference Information Center, Room CY-A257, Washington, DC, or at the FCC's Office of Engineering and Technology (OET) Web site: <http://www.fcc.gov/oet/info/documents/bulletins/>.

(e) If a location was predicted to be unserved by a local network station using a version of the ILLR model specified in OET Bulletin No. 72 or OET Bulletin No. 73, as appropriate, and the satellite subscriber at that location is receiving a distant signal affiliated with the same network from its satellite provider, the satellite subscriber shall remain eligible for receiving the distant signal from its satellite provider if that location is subsequently predicted to be served by the local station due to either a change in the ILLR model or a change in the station's operations that change its coverage.

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<sup>24</sup> 5 U.S.C. 603(c).

<sup>25</sup> See para. 16 of the Report and Order, FCC 10-194.

<sup>26</sup> See para. 17 of the Report and Order, FCC 10-194.

<sup>27</sup> See 5 U.S.C. 801(a)(1)(A).

**United States Government Accountability Office  
Washington, DC 20548**

**DOCUMENT FOR PUBLIC RELEASE**

The decision issued on the date below was subject to a GAO Protective Order. This redacted version has been approved for public release.

## Decision

**Matter of:** Space Exploration Technologies Corporation

**File:** B-402186

**Date:** February 1, 2010

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Richard J. Vacura, Esq., Keric B. Chin, Esq., K. Alyse Latour, Esq., and Marc A. Hearron, Esq., Morrison & Foerster LLP, for the protester.  
Kevin C. Dwyer, Esq., David A. Churchill, Esq., Adam G. Unikowsky, Esq., and Caroline E. Keller, Esq., Jenner & Block LLP, for Orbital Sciences Corporation, an intervenor.

Christopher M. McNulty, Esq., Department of the Air Force, for the agency.  
Jonathan L. Kang, Esq., and Ralph O. White, Esq., Office of the General Counsel, GAO, participated in the preparation of the decision.

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### DIGEST

1. Agency reasonably concluded, under the Commercial Space Act of 1998, 42 U.S.C. § 14701 *et seq.* (2006), that cost-effective commercial alternatives to use of intercontinental ballistic missile assets for launch services were not available.
  2. The Commercial Space Act of 1998 does not require notice to Congress of conversion of an intercontinental ballistic missile for space launch services prior to issuance of delivery order to perform such work.
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### DECISION

Space Exploration Technologies Corporation (SpaceX), of Hawthorne, California, protests the issuance of delivery order No. 0026 to Orbital Sciences Corporation, of Dulles, Virginia, by the Department of the Air Force, Space Missile Systems Command, on behalf of the National Aeronautics and Space Administration (NASA), for space launch services for NASA's Lunar Atmosphere and Dust Environment Explorer (LADEE) mission. SpaceX argues that the issuance of the delivery order to Orbital violates the Commercial Space Act of 1998 ("Space Act"), 42 U.S.C. § 14701 *et seq.* (2006) with regard to the Act's requirements to acquire launch services from United States commercial providers, and to notify Congress of the conversion of intercontinental ballistic missile (ICBM) assets for use in space launches.

We deny the protest.

## BACKGROUND

The procurement of space launch services is regulated in part by the Space Act, which states that the government “shall acquire space transportation services from United States commercial providers whenever such services are required in the course of its activities.” 42 U.S.C. § 14731(a). The Space Act further states that the government must “[t]o the maximum extent practicable . . . plan missions to accommodate the space transportation services of United States commercial providers.” Id.

The Space Act provides an exception from the requirement to procure launch services from commercial providers where, “on a case-by-case basis, the [NASA] Administrator or, in the case of a national security issue, the Secretary of the Air Force, determines” that one of seven exceptions applies. Id. § 14731(b). As relevant here, an exception applies where the appropriate official determines that “cost effective space transportation services that meet specific mission requirements would not be reasonably available from United States commercial providers when required.” Id. § 14731(b)(2).

In addition to the provisions of section 14731, the Space Act also states that the government “shall not convert any missile” that was “formerly used by the Department of Defense for national defense purposes.” 42 U.S.C. § 14734(a), (c). However, an exception to the prohibition on missile conversion applies as follows:

A missile described in subsection (c) of this section may be converted for use as a space transportation vehicle by the Federal Government if . . . at least 30 days before such conversion, the agency seeking to use the missile as a space transportation vehicle transmits to the Committee on Armed Services and the Committee on Science of the House of Representatives, and to the Committee on Armed Services and the Committee on Commerce, Science, and Transportation of the Senate, a certification that the use of such missile—

(A) would result in cost savings to the Federal Government when compared to the cost of acquiring space transportation services from United States commercial providers;

(B) meets all mission requirements of the agency, including performance, schedule, and risk requirements;

(C) is consistent with international obligations of the United States;  
and

(D) is approved by the Secretary of Defense or his designee.

Id. § 14734(b).

In 2003, the Air Force awarded an indefinite-delivery/indefinite-quantity (ID/IQ) contract, No. D04701-03-D-0202, to Orbital for space launch services utilizing excess government-owned Peacekeeper ICBM assets, such as engines and other missile components, with a maximum value of \$237 million. To date, the Air Force has issued 26 delivery orders involving Peacekeeper ICBM components under the Orbital ID/IQ contract. AR at 3.

The LADEE mission is intended to analyze the lunar atmosphere while “the Moon is still in a pristine state prior to human activity,” as well as to test communications capabilities from lunar orbit. Agency Report (AR), Tab 20, LADEE Authorization Document, at 5. The LADEE mission requires launch services to transport the LADEE spacecraft into a 50km circular lunar orbit. NASA Decl. ¶ 2.1.<sup>1</sup>

On December 16, 2008, NASA prepared a determination addressing the availability of cost effective commercial space transportation services for the LADEE mission. NASA evaluated eight potential launch vehicles based on four criteria: (1) technical capability, (2) risk, (3) schedule, and (4) cost savings. AR, Tab 5, NASA LADEE Determination, at 2-3. The eight launch vehicles included the Minotaur V, which is a planned 5-stage launch vehicle consisting of three stages that use components from government-furnished Peacekeeper ICBMs, and two launch vehicles offered by SpaceX--the Falcon 1e and Falcon 9. *Id.* As relevant here, NASA reviewed the SpaceX website, and a SpaceX publication, the “Falcon Launch Vehicle Lunar Capability Guide,” which detailed the technical capabilities and schedule availability of the company’s launch vehicles. AR, Tab 22, NASA LADEE Launch Service Approach Summary, at 40, 42. The agency was also aware of the capabilities of the Falcon 9 launch vehicle because it was available for use via delivery orders under a different ID/IQ contract, the NASA Launch Services contract; SpaceX is a vendor under this contract.

As relevant here, NASA concluded that the Minotaur V and Falcon 9 launch vehicles could meet the LADEE mission’s technical requirements, but that the Falcon 1e launch vehicle was not capable of achieving the required trans-lunar orbit. *Id.* While neither the Minotaur V nor the Falcon 9 had a flight history--and NASA noted that neither the Minotaur V nor the Falcon 9 was scheduled for its first launch before early 2009--NASA also noted that the risks involved with using these launch vehicles was mitigated because the government could provide oversight of the mission through the existing contracts. *Id.* at 4-5. However, NASA also concluded that given the government’s experience with the Minotaur V’s design and the scheduled launches of its predecessor, the Minotaur IV--upon which the Minotaur V relies in

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<sup>1</sup> In addition to the Air Force contracting officer statement in response to the protest, NASA provided declarations from the Program Executive for the Launch Services Program, Space Operations Missions Directorate, and the Program Executive for the Access to Space Science Missions Directorate.

part for its design--the Minotaur V had the lowest technical and schedule risk. Id. Finally, NASA concluded that the likely costs for the Falcon 9, in light of the anticipated government oversight required to ensure a successful mission, would be approximately twice those for the Minotaur V. Id. Based on these findings, NASA concluded that, as compared to the Minotaur V, there were no cost effective commercial launch services available from U.S. providers.

On March 13, 2009, the NASA Administrator requested that the Air Force provide launch services for the LADEE mission using a Minotaur V launch vehicle. AR, Tab 5, NASA LADEE Request to Air Force, at 1. The request stated that NASA had determined under the Space Act that no cost effective commercial launch services were available for the LADEE mission. Id.

On August 28, the Air Force issued the current delivery order to Orbital under its ID/IQ contract for launch services for the LADEE mission using a Minotaur V. The cost estimate for the delivery order is approximately \$27 million, based on prices set in the Orbital ID/IQ contract and estimates for other costs. Contracting Officer (CO) Statement at 5.

After learning of the issuance of the delivery order to Orbital in a trade publication, SpaceX sought information from the agency regarding whether the Air Force complied with the provisions of the Space Act. Based on information provided by the agency on October 14, SpaceX filed this protest on October 26.

## DISCUSSION

Space X raises two primary arguments. First, the protester argues that NASA unreasonably concluded under section 14731 of the Space Act that no cost effective commercial launch services were available from U.S. providers. Second, the protester argues that the issuance of the delivery order violates section 14734 of the Space Act because the Air Force did not provide notice to Congress of the conversion of the ICBM assets. As discussed below, we find no merit to either argument.<sup>2</sup>

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<sup>2</sup> For the record, we note that SpaceX is not a vendor under the Orbital ID/IQ contract. We nonetheless view the protester as an interested party to challenge the issuance of the delivery order because the protest argues that the delivery order is outside the scope of the Orbital ID/IQ contract. Bid Protest Regulations, 4 C.F.R. § 21.0(a)(1) (2009); see Poly-Pacific Techs., Inc., B-296029, June 1, 2005, 2005 CPD ¶ 105 at 2 n.1. Specifically, the protester argues that the Orbital ID/IQ contract applies to space launches using excess ICBMs, and that no order can be placed under the Orbital ID/IQ contract unless the exceptions set forth under the Space Act are met. In the absence of a valid exception, the protester argues, the LADEE space launch requirements should be competed amongst all commercial offerors. As  
(continued...)

## Availability of Commercial Launch Services

First, SpaceX argues that NASA improperly concluded that no cost effective commercial launch services were available for the LADEE mission. The protester primarily argues that NASA's determination failed to reasonably consider the capabilities and costs of using either SpaceX's Falcon 1e launch vehicle, or "co-manifesting" the LADEE on a Falcon 9 along with another mission payload. As discussed below, we find no merit to the protester's arguments.

As a preliminary matter, SpaceX generally argues that NASA's determination was flawed because the agency did not solicit information from potential U.S. commercial space launch providers. The Space Act, however, does not require NASA or the Air Force to issue a request for proposals or to solicit information from potential providers to determine the availability of U.S. commercial providers. In the absence of specific guidance or requirements for assessing the applicability of the exceptions under the Space Act, we will review the overall reasonableness of the NASA determination.

As discussed above, NASA reviewed SpaceX's website and its Falcon Capability guide publication, and was aware of the capabilities of the Falcon 9 based on the NASA Launch Services ID/IQ contract. We think that NASA's review of the available information concerning the protester's capabilities was a reasonable approach to meeting the agency's requirements under the Space Act, and to the extent that the protester argues that the agency was required to solicit a proposal or other information from the protester, we disagree.

With regard to SpaceX's specific arguments, the protester first contends that NASA unreasonably concluded that the protester's Falcon 1e launch vehicle was not capable of achieving the required orbit for the mission requirements. NASA found that, based on the published information concerning the Falcon 1e, this launch vehicle was not capable of reaching the required trans-lunar orbit.<sup>3</sup> AR, Tab 5, NASA LADEE Determination, at 2.

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(...continued)

discussed below, however, we conclude that the order complies with the Space Act requirements, and is within the scope of the Orbital ID/IQ contract.

<sup>3</sup> NASA notes that the original mission requirements have changed from a direct trans-lunar orbit to a highly-elliptical Earth orbit wherein the LADEE spacecraft will be captured by the Moon's orbit. NASA Decl. ¶ 2.1. The agency contends, and the protester does not dispute, that this change in requirements does not affect the acceptability of the Falcon 1e launch vehicle for the mission requirements as compared to the original requirements.

The protester does not dispute that the Falcon 1e cannot place the LADEE spacecraft into the required orbit. Instead, the protester contends that the agency did not consider the possibility that a Falcon 1e could place the LADEE spacecraft into the required trans-lunar orbit if an additional Star-30 “kick motor” was used as an upper-stage component of the launch vehicle. NASA states that it was aware that the Falcon 1e could achieve the required orbit by placing an additional kick motor on the spacecraft—a different approach than using a kick motor as an upper stage of a launch vehicle. NASA Decl. ¶ 2.3. In this regard, the Falcon Capability guide states that the required trans-lunar orbit could be achieved by using a “kick motor on the spacecraft.” AR, Tab 38, Falcon Capability Guide, at 4. NASA states, however, that it viewed a spacecraft-based kick motor as an unacceptable approach, because it would require additional development to adapt the LADEE spacecraft for use of such a motor, and because the agency did not have the funding for such an effort. NASA Decl. at 9; AR, Tab 22, NASA LADEE Launch Service Approach Summary, at 5. SpaceX does not clearly state in its protest arguments whether it views the kick motor option as an additional stage in the launch vehicle, or as an addition to the LADEE spacecraft itself. Compare Protest at 23-24 with Protester’s Comments on AR at 26. As discussed above, however, NASA understood, based on the Falcon Capability Guide, that a Falcon 1e could achieve the required orbit only through use of a spacecraft-based motor; NASA also concluded that such an approach was not acceptable. On this record, we think the agency reasonably found that the Falcon 1e was not an acceptable alternative to the Minotaur V.<sup>4</sup>

Next, SpaceX argues that the agency unreasonably assessed the risk and schedule concerns for the Minotaur V and Falcon 9 launch vehicles. As discussed above, NASA’s Space Act determination acknowledged that the Falcon 9 launch vehicle meets the orbit and payload requirements for the LADEE mission. AR, Tab 5, NASA LADEE Determination, at 2. The protester primarily contends that the agency relied too heavily on the service records of the Peacekeeper ICBM, and did not fully assess

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<sup>4</sup> In any event, the agency also states that the payload capability of the Falcon 1e is not sufficient for the LADEE mission. In this regard, the diameter of the LADEE spacecraft is 1.63 meters, whereas the Falcon 1e can accommodate a payload of only 1.55 meters in diameter. NASA Decl. ¶ 2.1; AR, Tab 22, NASA LADEE Launch Service Approach Summary, at 5; Tab 38, Falcon Capability Guide, at 6. SpaceX does not dispute these payload dimensions. While this issue was not discussed in NASA’s determination, we think the record here shows that SpaceX would not have been prejudiced by any error with regard to NASA’s evaluation of the orbital range capabilities of the Falcon 1e. Our Office will not sustain a protest absent a showing of competitive prejudice, that is, unless the protester demonstrates that, but for the agency’s actions, it would have a substantial chance of receiving award. McDonald-Bradley, B-270126, Feb. 8, 1996, 96-1 CPD ¶ 54 at 3; see also, Statistica, Inc. v. Christopher, 102 F.3d 1577, 1681 (Fed. Cir. 1996).

the risks arising from the proposed use of the yet-untested Minotaur V launch vehicle.

In its determination, NASA noted that neither the Minotaur V nor the Falcon 9 had yet been launched, and that neither was scheduled for launches until 2009. *Id.* at 2-3. NASA concluded that because neither the Minotaur V nor Falcon 9 had a launch history, significant government oversight would be required to manage performance risks and ensure successful launches. *Id.*; *see also* NASA Decl. ¶ 4.3. The agency concluded that the Minotaur V provided an acceptable level of technical and schedule risk in light of the “significant flight history” of the Peacekeeper ICBM, whose assets would be used for the Minotaur V, as well as the anticipated government oversight of the mission. AR, Tab 5, NASA LADEE Determination, at 2; *see also* NASA Decl. ¶ 4.9. In contrast, NASA concluded that use of a Falcon 9 launch vehicle without “significant U.S. Government involvement” created unacceptable performance and schedule risks. NASA Decl. ¶ 4.9; *see also* AR, Tab 5, NASA LADEE Determination, at 2-3. To the extent that the protester expresses disagreement with the agency’s determination of the relative risks of using the Minotaur V or Falcon 9, we see no basis to sustain the protest.<sup>5</sup>

Finally, SpaceX challenges NASA’s findings regarding the costs of the Minotaur V and Falcon 9 launch vehicles. NASA estimated that the costs of a Minotaur V launch service would be \$46 million, which includes the delivery order costs, mission support costs, and flight services at NASA facilities. NASA Decl. ¶ 5.2. For the Falcon 9, NASA first considered the \$[deleted] price listed for a launch under SpaceX’s NASA Launch Services ID/IQ contract. *Id.* In addition, the agency determined that other costs not included in this price, such as mission-specific engineering and telemetry services costs, would increase the overall cost for a Falcon 9 launch to \$[deleted].<sup>6</sup> *Id.* NASA noted that the costs of the Falcon 9 were

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<sup>5</sup> SpaceX also argues that the information in NASA’s December 2008 determination and March 2009 request to the Air Force was outdated by the time the delivery order was issued in August 2009. The protester contends that after NASA made its determination, but prior to the Air Force’s issuance of the delivery order, SpaceX made a successful Falcon 1 launch and achieved “significant milestones towards the maiden launch of its Falcon 9 launch vehicle.” Supp. Protest at 4. As discussed above, however, we think NASA reasonably concluded that the Falcon 1e was not suitable for the LADEE mission. NASA also states that the Falcon 1e launch does not clearly demonstrate the likelihood of success for the Falcon 9 because of the differences between these two launch vehicles. NASA Supp. Decl. ¶ 3.1. For example, the Falcon 1e uses a single first-stage engine, whereas the Falcon 9 is more complex, using nine first-stage engines. *Id.* On this record, we find no merit to the protester’s argument.

<sup>6</sup> NASA notes that the SpaceX publication listed a price of \$47 million for a commercial trans-lunar launch on a Falcon 9 launch vehicle. AR, Tab 38, Falcon

(continued...)

higher than those for the Minotaur V because, in part, the Falcon 9 is a larger launch vehicle, and has more capacity than needed for the LADEE mission. See Tab 22, NASA LADEE Launch Service Approach Summary, at 7, 42.

SpaceX argues that NASA's cost analysis failed to account for the cost of the government-furnished Peacekeeper assets, and that the cost evaluation should have neutralized this cost advantage for the Minotaur V. The Space Act, however, does not address how to account for the costs of using government-inventory ballistic missiles, and we see no requirement in the Space Act for such a cost offset.

SpaceX also argues that the agency failed to consider the possibility of co-manifesting the LADEE spacecraft on a Falcon 9 along with another mission payload. The protester contends that the costs of a co-manifested mission would have been shared between the LADEE and another mission, thereby reducing the cost for the LADEE launch. NASA states that it did not consider a co-manifested mission an acceptable alternative because, in the agency's experience, co-manifested missions increase the technical and schedule risk because the two payloads have independent technical and schedule requirements and a co-manifested launch increases the overall risk to each mission. NASA Supp. ¶ 1.8; CO Statement at 10-12. On this record, we find no basis to sustain the protest.

#### Notice to Congress

Next, SpaceX argues that the Air Force violated section 14734 of the Space Act because it did not provide notice to Congress of the conversion of the ICBM assets 30 days prior to the issuance of the delivery order. The Air Force contends that section 14734 does not require notice to Congress until 30 days before the ICBM asset is converted. We think that the Air Force's interpretation of the Space Act is reasonable.<sup>7</sup>

As discussed above, section 14734 of the Space Act states that the government may not convert an ICBM to a space launch vehicle unless, the agency seeking to use the missile advises the appropriate Congressional committees that the conversion will

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(...continued)

Capability Guide, at 8. The agency, however, viewed that price as providing only the basic commercial launch services, and did include the government oversight the agency viewed necessary to acceptably manage the risk for the LADEE mission. NASA Decl. ¶ 5.3.

<sup>7</sup> We note for the record, we also have concerns about whether a challenge alleging failure to provide the required conversion notice under the Space Act, standing alone, states a valid basis for a bid protest. Even if we concluded the notice was not properly provided, our conclusion, it appears, would not implicate the propriety of an agency's selection of a contractor to perform the conversion services.

provide cost savings, meet all mission requirements, is consistent with international obligations, and is approved by the Secretary of Defense. 42 U.S.C. § 14734(b). This notice must be provided “at least 30 days before such conversion.” Id.

The Air Force states that it interprets the term “conversion” as used in section 14734 of the Space Act “to occur when the excess ICBM assets are removed from their storage place and united with commercial components, something that typically does not occur until launch is imminent and long after the contract or delivery order for the applicable launch services has been awarded.” AR at 11. SpaceX concedes that the Space Act does not define the term “conversion,” or otherwise explain when such an event occurs. Protester’s Comments on AR at 39. However, the protester argues the purpose of the Space Act was to promote the U.S. commercial space industry, and that notice to Congress of the conversion of an ICBM should be understood in the context of a contract action that would otherwise eliminate an opportunity for a U.S. commercial space launch provider.

We think that the Air Force’s interpretation of the term conversion as meaning the physical alteration of the ICBM for another purpose is consistent with the plain language of the statute. The plain language of section 14734 of the Space Act merely states that notice must precede “conversion” of ICBM assets, and in the absence of any other explanatory guidance, we see no basis to impose, or read-in, additional criteria or requirements, as suggested by the protester. See Inter-Con Sec. Sys., Inc., B-290493, B-290493.2, Aug. 14, 2002, 2002 CPD ¶ 147 at 3 (citing Chevron, U.S.A., Inc. v. Natural Res. Defense Council, Inc., 467 U.S. 837, 842 (1984)).

Additionally, the Air Force notes that eight space launches involving ICBMs under other contracts have occurred where notice was provided to Congress after the contract or delivery order was awarded, but prior to the physical conversion of the ICBM assets.<sup>8</sup> AR at 11. The Air Force states that for these eight launches, Congress did not object to the agency’s interpretation of the notice requirements. Id. While we do not consider Congress’ lack of objection to the timing of the notice for the eight ICBM conversions as dispositive evidence regarding the proper interpretation of this statutory requirement, we think it provides additional evidence of the reasonableness of the agency’s understanding. On this record, we find no basis to

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<sup>8</sup> The Air Force also states that it also has not given Congress notice of any of the 26 delivery orders issued thus far under the Orbital ID/IQ that call for use of excess ICBMs because the physical conversion of the ICBM assets has not yet occurred. AR at 3.

conclude that the agency violated the notice requirements of section 14734 of the Space Act.<sup>9</sup>

The protest is denied.

Lynn H. Gibson  
Acting General Counsel

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<sup>9</sup> SpaceX raises other collateral issues. For example, the protester argues that correspondence in the record indicates that certain NASA officials were biased or predisposed towards utilizing the Minotaur V launch vehicle, and accordingly failed to give reasonable consideration to other options, such as those that could have been provided by SpaceX. We think the record shows that NASA gave meaningful consideration to the availability of SpaceX's launch vehicles, and that the protester has not demonstrated bias on the part of the agency. We have reviewed all of the protester's arguments and find none has merit.



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United States Government Accountability Office  
Washington, DC 20548

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B-319488

May 21, 2010

Congressional Requesters

Subject: *National Aeronautics and Space Administration—Constellation Program and Appropriations Restrictions, Part I*

In a letter dated March 12, 2010, you requested information and our views on whether the National Aeronautics and Space Administration (NASA) complied with the Impoundment Control Act and with restrictions in the fiscal year 2010 Exploration appropriation when it took certain actions pertaining to the Constellation program. The Exploration appropriation bars NASA from using Exploration funds for “the termination or elimination of any program, project, or activity of the architecture for the Constellation program.” In addition, it bars NASA from using Exploration funds to “create or initiate a new program, project or activity.” You also asked us for information regarding the planning activities of NASA staff after the President released his fiscal year 2011 budget request.

This letter responds to your request for information regarding the planning activities of NASA staff and whether NASA complied with the Exploration appropriation prohibition restricting the use of Exploration funds to “create or initiate a new program, project or activity.” We will respond to your other requests in a separate opinion. After gathering and assessing the information surrounding the Constellation program, it is our view that, at this time, NASA has not violated the Exploration appropriation’s restriction on the use of Exploration funds to “create or initiate a new program, project or activity.”

Our practice when rendering decisions is to obtain the views of the relevant agency to establish a factual record and the agency’s legal position on the subject matter of the request. GAO, *Procedures and Practices for Legal Decisions and Opinions*, GAO-06-1064SP (Washington, D.C.: Sept. 2006), *available at* [www.gao.gov/legal/resources.html](http://www.gao.gov/legal/resources.html). By letter, the NASA General Counsel supplied NASA’s legal views supporting its actions related to the Constellation program as well as relevant information. Letter from General Counsel, NASA, to Assistant General Counsel for Budget Issues, GAO, Apr. 26, 2010. We also gathered information by interviewing NASA staff, reviewing internal NASA communications and documents, and examining documents NASA developed for the Office of Management and Budget (OMB) and the Office of Science and Technology Policy (OSTP).

## BACKGROUND

The primary objective of the Constellation program is to develop capabilities to transport humans to Earth orbit, to the Moon, and back to Earth. NASA, *Fiscal Year 2010 Budget Estimates*, at EXP-3, available at [www.nasa.gov/news/budget/FY2010.html](http://www.nasa.gov/news/budget/FY2010.html) (last visited May 15, 2010). The program also serves as a stepping-stone to future human exploration of Mars and other destinations. *Id.* On February 1, 2010, the President released his 2011 budget request, which proposed the cancellation of Constellation in favor of the creation of a different approach to human space exploration. *Budget of the United States Government for Fiscal Year 2011*, at 129-30, available at [www.gpoaccess.gov/usbudget/fy11/index.html](http://www.gpoaccess.gov/usbudget/fy11/index.html) (last visited May 15, 2010).

Prior to the release of the President's 2011 budget request, Congress enacted the fiscal year 2010 Exploration appropriation, which appropriated about \$3.7 billion for "exploration research and development activities." The appropriation made the funds available until September 30, 2011, with the following limitation:

*"Provided, That notwithstanding section 505 of this Act, none of the funds provided herein and from prior years that remain available for obligation during fiscal year 2010 shall be available for the termination or elimination of any program, project or activity of the architecture for the Constellation program nor shall such funds be available to create or initiate a new program, project or activity, unless such program termination, elimination, creation, or initiation is provided in subsequent appropriations Acts."*

Commerce, Justice, Science, and Related Agencies Appropriations Act, 2010, Pub. L. No. 111-117, div. B, title III, 123 Stat. 3034, 3113, 3142 (Dec. 16, 2009).

After the release of the President's 2011 budget request, OMB and OSTP asked NASA to study ways to implement the Administration's space exploration policies. Accordingly, the Associate Administrator for Exploration on February 5, 2010 sent an e-mail announcing that he was "standing up several teams to help with the planning effort." E-mail from Associate Administrator for Exploration, NASA, to Center Director, Johnson Space Center, NASA, *et al.*, *Subject: Teams to develop near term plans in response to the FY2011 President's Budget Request for ESMD*, Feb. 5, 2010. The e-mail message listed the names of eight teams and a leader for each. *Id.* The Associate Administrator's e-mail message also stated that an additional, pre-existing team would plan for the Human Research Program.<sup>1</sup> *Id.* NASA refers to these teams as "study teams."

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<sup>1</sup> NASA has provided us with information on the activities of eight of the nine study teams. NASA has not yet provided us with information on the activities of the Enhancing International Participation study team.

The teams worked to develop preliminary plans and budget levels to conduct research and development in various technical areas. For example, the Heavy Lift and Propulsion team studied engine development and propulsion research, while the Robotic Precursor team considered the robotic missions that would be necessary as precursors to subsequent human missions. Most teams had a written charter with proposed team members, an overview of the team's tasks, and a rough schedule for the team's work. Though the level of detail in the written charters varied, most charters required a written product or a presentation to OMB and, sometimes, to OSTP.

Of the nine team leaders, at least seven were from headquarters.<sup>2</sup> Eight of the nine team leaders and most team members were either GS-15 or Senior Executive Service employees.<sup>3</sup> The non-leadership team members were based at headquarters or at various NASA Centers nationwide. NASA paid headquarters staff from its Cross Agency Support appropriation account and paid Center staff from its Exploration appropriation account.

Most of the teams accomplished the bulk of their work during a 4- to 6-week period after the teams were established in early February 2010. During this 4- to 6-week period, the teams generally met about once a week in person. This required some travel, as team members were stationed throughout the country. The teams also held other meetings in person or by telephone. NASA employees performed nearly all the work of the teams; the teams used contractor staff only for administrative support functions such as note-taking at meetings. According to NASA, contractor staff did not carry out any of the substantive work of the study teams.

Generally, during the 4- to 6-week period during which each study team was especially active, the team leaders spent most or all of their time on team activities. Most team members spent a majority of their time on non-team activities; however, some team members did spend a majority of their time on team activities. Most of the non-leadership team members completed their team activities in addition to their other work assignments. One team leader told us that, in general, NASA headquarters staff are involved in planning activities while staff at the NASA Centers implement programs. Therefore, she said, her study team activities were aligned with her usual job function, which is planning. One team was a successor to a team that NASA had established prior to the release of the President's 2011 budget request, and another team had already been established prior to the release of the budget request. These two teams built upon previous efforts as they met the requests from OMB and OSTP. Thus, the work activities of these two teams did not change substantially in order to meet the requests from OMB and OSTP.

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<sup>2</sup> One team leader is at the Johnson Space Center in Houston. NASA has not yet provided us the location of the Enhancing International Participation team leader.

<sup>3</sup> NASA has not yet provided us the pay grade of the Enhancing International Participation team leader.

In addition to their internal planning discussions, the teams also communicated with parties external to NASA. Some of the teams issued public requests for information. For example, the Heavy Lift and Propulsion team issued a request for information from industry, academia, and research organizations regarding possible propulsion systems and areas for additional research. The requests for information stated that NASA intended to use the information for planning and acquisition strategy development and that under Federal Acquisition Regulation section 15.201(e), responses to the request are not offers and cannot be accepted by the government to form a binding contract. Another team planned a conference with universities and industry to brief them on NASA's research plans for new technologies, to obtain their feedback, and to discuss additional requests for information. In addition, three study teams have plans to issue broad agency announcements. Under the Federal Acquisition Regulation, agencies may use a broad agency announcement "for the acquisition of basic and applied research and that part of development not related to the development of a specific system or hardware procurement." 48 C.F.R. § 35.016(a).

To our knowledge, none of the teams hired new staff or established new program offices within NASA.<sup>4</sup> Two teams have established a total of three planning offices at NASA centers. One team established two offices to plan future robotic exploration missions, and another team established one office to plan ways to develop new exploration technologies. The activities of most of the teams are now concluding, as six of the nine teams have produced at least some of their final documents. Staff time spent on the teams has declined accordingly.

See attachment for detailed information on the subject matter areas of each team, their membership, the time the team members spent on team activities, and the appropriations charged.

## DISCUSSION

At issue here is whether NASA's actions and use of study teams to conduct planning activities complied with the Exploration appropriation provision that bars NASA from using Exploration funds to "create or initiate a new program, project, or activity, unless such . . . creation[] or initiation is provided in subsequent appropriations Acts."<sup>5</sup> Pub. L. No. 111-117, div. B, title III.

Our analysis begins with the statutory language. In the absence of indications to the contrary, Congress is deemed to use words in their common, ordinary sense.

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<sup>4</sup> NASA has not yet provided us information on the activities of the Enhancing International Participation team.

<sup>5</sup> Because NASA paid for the activities of its headquarters staff from its Cross Agency Support appropriation account, these activities were not subject to the restriction that Congress placed upon the Exploration appropriation account.

B-308715, Apr. 20, 2007. One measure of the common, ordinary meaning of words is a standard dictionary. *Id.* “Create” means “bring (something) into existence,” while “initiate” means “cause (a process or action) to begin.” *The New Oxford American Dictionary* 396–97, 868 (2<sup>nd</sup> ed. 2005). Thus, Congress prohibited NASA from using Exploration funds to bring into being a new program, project, or activity.<sup>6</sup>

Study teams were staffed in part by Center employees, whose salaries are paid from the Exploration appropriation account. The activities of the study teams centered on initial planning related to the proposals in the President’s 2011 budget request. The teams held internal planning discussions and developed documents for OMB and OSTP. These documents contained preliminary plans for the new programs and budget proposals. Some teams also issued public requests for information to gather input from academia and industry for use in further planning activities. Two teams set up planning offices to provide an organizational structure for already existing planning activities in the robotic and emerging technology areas. All these activities focused on planning. The teams did not create any new programs, set up new program offices, or hire or permanently reassign any staff. The teams did not award any contracts or bind NASA to taking any future course of action. Thus, to date, NASA’s study teams have conducted only planning activities and have not brought into being a new program, project, or activity. These actions do not violate the provision in the 2010 Exploration appropriation which bars NASA from using Exploration amounts to create or initiate a new program, project, or activity.

In addition, according to the Associate Administrator for Exploration, NASA also carried out the planning activity to respond to requests for information from OMB and OSTP. E-mail from Associate Administrator for Exploration, NASA, to Center Director, Johnson Space Center, NASA, *et al.*, *Subject: Teams to develop near term plans in response to the FY2011 President’s Budget Request for ESMD*, Feb. 5, 2010. By law, the President must formulate a budget submission, and agencies, including NASA, must develop appropriation requests as part of the budget process. 31 U.S.C. §§ 1105, 1108(b)(1). To provide timely, useful, and accurate information as part of the appropriations process, agencies must engage in various types of planning activities. Planning activities are an essential element of the budget process. The prohibition in the Exploration appropriation does not preclude NASA’s use of the Exploration appropriation to conduct planning activities.

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<sup>6</sup> A “program, project, or activity” is “[a]n element within a budget account. For annually appropriated accounts, the Office of Management and Budget (OMB) and agencies identify PPAs by reference to committee reports and budget justifications.” GAO, *A Glossary of Terms Used in the Federal Budget Process*, GAO-05-734SP (Washington, D.C.: Sept. 2005). For example, NASA’s fiscal year 2010 budget request lists five PPAs within the “Constellation Systems” category: Program Integration and Operations, Orion Crew Exploration Vehicle, Ares I Crew Launch Vehicle, Ares V Cargo Launch Vehicle, and Commercial Crew and Cargo. NASA, *Fiscal Year 2010 Budget Estimates*, at EXP-2, *available at* [www.nasa.gov/news/budget/FY2010.html](http://www.nasa.gov/news/budget/FY2010.html) (last visited May 15, 2010).

NASA's actions thus far are in contrast to those of the Department of Energy (DOE) when it began to implement a loan guarantee program. B-308715, Apr. 20, 2007. GAO was asked whether DOE had violated an appropriations prohibition against implementing or financing a new loan guarantee program. *Id.* There, DOE had staffed and operated a program office, drafted regulations, and solicited and evaluated "pre-applications." *Id.* We found that DOE had taken concrete measures to implement the loan guarantee program and, therefore, that DOE's action violated a statutory provision that barred DOE from using funds to "implement or finance" the loan guarantee program. *Id.*

DOE's activities went beyond those of NASA's study teams. At this time, NASA has not created or initiated a new program, project, or activity. Unlike DOE, NASA has not created a new office or drafted any regulations. In addition, NASA has not initiated any procurement actions.<sup>7</sup> Instead, NASA staff developed preliminary plans. The leaders of three study teams described their work products not as plans, but rather as plans for how to develop a subsequent plan if NASA staff were ever directed to do so. One team leader described the team's product document as a "pre-formulation" document and stated that NASA would need to develop an implementation plan if it were authorized to proceed with a new program. We reviewed the documents that NASA prepared for OMB and OSTP, and their contents are consistent with the team leaders' descriptions.

The preliminary nature of the teams' products is consistent with the circumstances under which the study teams were formed and the short time they had to complete a work product. Several team leaders stated that they had no knowledge of the policy announced in the President's 2011 budget request until it was released to the public on February 1. Most of the teams then had less than 2 months to complete a document, with each team using the full-time work of only a handful of NASA staff and the part-time work of, at most, a few dozen additional staff.

## CONCLUSION

Between February 2010 and the present, NASA study teams conducted preliminary planning activities for the President's proposals regarding future human space flight. These actions did not "create or initiate" a new program, project, or activity in violation of the provision in NASA's fiscal year 2010 appropriation. However, going forward, NASA should be mindful of the appropriations provision and ensure that its

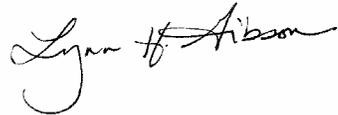
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<sup>7</sup> We note that three teams have plans to issue broad agency announcements. We do not know the content of these announcements; however, the charters for these three teams and the documents they submitted to OMB and OSTP describe preliminary plans for programs, projects, and activities that existed before Congress enacted the fiscal year 2010 Exploration appropriation. Any broad agency announcements must comply with the prohibition in the appropriation.

preliminary planning activities do not evolve into activities that would create or initiate a new program, project, or activity.

We hope the information provided in this opinion is helpful to you. If you have questions, please contact Assistant General Counsel Julia Matta at 202-512-4023 or Managing Associate General Counsel Susan Poling, 202-512-2667.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Lynn H. Gibson". The signature is fluid and cursive, with the first name "Lynn" being the most prominent.

Lynn H. Gibson  
Acting General Counsel

Attachment

*List of Requesters*

The Honorable Robert Aderholt  
The Honorable Ralph Hall  
The Honorable Gene Green  
The Honorable Bill Posey  
The Honorable Pete Olson  
The Honorable John Culberson  
The Honorable Jason Chaffetz  
The Honorable Parker Griffith  
The Honorable Michael D. Rogers  
The Honorable Kevin Brady  
The Honorable Jo Bonner  
The Honorable Spencer Bachus  
The Honorable Steve LaTourette  
The Honorable Ken Calvert  
The Honorable John Fleming  
The Honorable Suzanne Kosmas  
The Honorable Rob Bishop  
House of Representatives

## NASA Use of Study Teams to Develop Plans for the Fiscal Year 2011 President's Budget Request

- NASA established study teams to develop plans for OMB and OSTP on how it would start the new programs and cancel the Constellation program
- Most of the study work occurred during the first 4 to 6 weeks after establishment
- Study teams considered normal planning activity for fiscal year 2011
- Some study teams evolved from existing NASA teams or programs
- As of April 2010, study teams used 14,228 staff hours to complete their work
  - Team participants generally charged their normal charge codes for study team activities
- Most teams have completed their planning activities and no longer meet on a regular basis
- The plans developed are considered a "point of departure" and are being refined
- Most team members still had their regular duties; the team was an additional responsibility
- Study teams did not stand up any new program offices or create any new program managers
- Planning Offices are being established at NASA centers based on proposed center assignments
- Teams called upon as-needed to work on drafting requests for information, supporting workshops, and Fiscal Year 2012 budget development as part of budget formulation process

## Time Used by NASA Study Teams on Fiscal Year 2011 President's Budget Request Planning

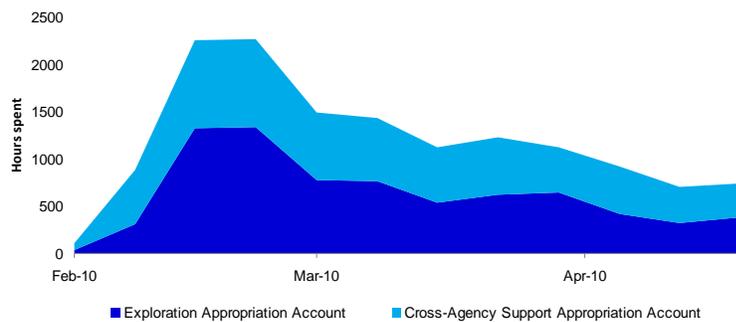
Team	Number of members in Study team	Number of weeks In Operation	Percent of Team Leader Hours Spent on Team Activities	Percent Hours Spent by Members per week	Average Hours per member per week	Total Hours
Heavy Lift and Propulsion Technology	14	10	63	22	9	1,232
Human Research Program	6	10	47	14	6	329
Commercial Crew Development	16	12	62	31	12	2,370
Robotic Precursor	10	12	86	39	16	1,866
Flagship Technology Demonstrations	16	12	97	47	19	3,588
Enabling Technology Development and Demonstration	17	10	94	20	8	1,382
Constellation Transition	43	11	32	16	6	2,958
Participatory Exploration	12	11	47	10	4	504
<b>Average for 8 of 9 teams</b>	<b>17</b>	<b>11</b>	<b>66</b>	<b>25</b>	<b>10</b>	<b>1,779</b>

Source: GAO analysis of NASA data

Note: We did not independently verify the team member hours data provided by NASA. Data not provided for Enhancing International Participation study team.

Page 2

## Time Used by NASA Study Teams has declined Over Time



Source: GAO analysis of NASA data

Note We did not independently verify the team member hours data provided by NASA. Data not provided for Enhancing International Participation study team.

## Demographic Information on NASA Study Team Members

Team	GS-13	GS-14	GS-15	SES and other senior levels	Other or data not available	Hours Spent	
						HQ <sup>a</sup>	Center <sup>b</sup>
Heavy Lift and Propulsion Technology	0	1	9	4	0	646	586
Human Research Program	0	0	2	2	2	222	107
Commercial Crew Development	0	1	7	6	2	1,744	626
Robotic Precursor	0	1	3	6	0	1,160	706
Flagship Technology Demonstrations	1	0	5	4	6	610	2,978
Enabling Technology Development and Demonstration	0	2	12	3	0	586	796
Constellation Transition	3	4	25	10	1	1,448	1,510
Participatory Exploration	1	4	5	1	1	357	147
<b>Totals</b>						<b>6,773</b>	<b>7,455</b>

Source: GAO analysis of NASA data

Note: We did not independently verify the team member hours data provided by NASA. Data not provided for Enhancing International Participation study team

<sup>a</sup> HQ study team member hours charged to Cross Agency Support appropriate on account  
<sup>b</sup> Center study team member hours charged to Exploration appropriation account

## Heavy Lift and Propulsion Technology (HLPT) Study Team

- Established February 15, 2010
- Objective was to develop plans for the HLPT Program is seeking to improve capabilities in heavy lift propulsion performance and flexibility
- The HLPT program is comprised of two major areas
  - First Stage and In-Space Engine Demonstration
  - Foundational Propulsion Research
- 14 members from headquarters, Glenn Research Center (GRC), Langley Research Center (LaRC), Marshall Space Flight Center (MSFC)
- Team used 1,232 staff hours
- Current team activity is generally limited to weekly teleconferences
- Completed Deliverables
  - Gave briefing to OMB and OSTP with corresponding plan document laying out notional plan for HLPT Program
  - Issued a Request for Information on May 4, 2010
- Remaining Deliverables
  - Plans to release a Broad Agency Announcement

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## Human Research Program (HRP) Study Team

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- Established February 15, 2010
- Program intended to investigate and mitigate the highest risks to astronaut health and performance in support of NASA exploration missions
- Tasked with developing plans on how to use increased funding for the existing HRP to address critical areas of human health risks, focusing on biomedical technology, space radiation, and behavioral health
- 6 members from headquarters and Johnson Space Center (JSC)
- Team used 329 staff hours
- Completed Deliverable
  - Gave briefing to OMB and OSTP
- Proposed budget increase applied to existing program elements and currently identified human health risks for Fiscal Years 2011 – 2015
  - Budget program structure not changed
- Will competitively solicit new research content through broad agency research announcements

## Commercial Crew and Cargo Study Team

- Established February 16, 2010
- Commercial Crew – Develop plan for commercial crew services including drafting human rating requirements
- Commercial Cargo – Develop plan for reducing risk and expediting the pace of development of cargo flights
- Team comprised of most members of the Commercialization Evaluation Team already addressing similar issues in 2009
- Total of 16 members from headquarters, JSC, Kennedy Space Center (KSC), and MSFC
- Team used 2,370 staff hours
- Current team activity is fairly low, consisting mostly of periodic emails from the team leader to keep the study team members abreast of NASA's progress in resolving issues that may develop
- Remaining Deliverables
  - 5-year plan for development of commercial crew services leading to competitive selection of one or more crew transportation providers
  - Complete and provide to OMB a draft human rating requirements document for commercial crew services in July 2010

## Exploration Precursor Robotic Missions (xPRM) Study Team

- Established February 8, 2010
- Team is formulating plans to conduct a series of robotic precursor missions to scout targets for future human exploration
  - Potential destinations may include the moon, Mars and its moons, Lagrange points and nearby asteroids
- Planning strategy for two types of missions
  - Medium Class Exploration Missions
    - Life cycle costs of \$800 million or less
  - Small Scout Class Exploration Missions
    - Life cycle costs of \$100 to \$200 million
- 10 members from headquarters, Ames Research Center (ARC), Goddard Space Flight Center (GSFC), JSC, and MSFC
- Team used 1,866 staff hours
- Current team activity is generally limited to emails and teleconferences
- Establishing planning offices at ARC and MSFC
- Remaining Deliverables
  - 5-year budget plan
  - Request for Information to be released in May

## Flagship Technology Demonstrations Study Team

- Established February 15, 2010
- Develop plan for missions that demonstrate transformational technologies in space for advancement of human space exploration
- The team was to establish a “point of departure” for the demonstration missions
  - Plan is to initiate missions in 2011 to support annual launches starting in 2014
  - Much planning work still needs to be completed once NASA receives permission to proceed
- 16 members from headquarters, GRC, GSFC, JSC, LaRC, and MSFC
- Team used 3,588 staff hours
- Study team answering questions as needed, will met again to synthesize RFI input and will hold weekly telecons to keep members informed
- Completed Deliverables
  - Gave briefing to OMB on the plan for the Flagship Technology Demonstration missions
- Remaining Deliverables
  - 5-year budget plan
  - Request for Information to be released in May, responses due in June
  - Team may revise missions based on RFI inputs

## Enabling Technology Development and Demonstration (ETDD) Study Team

- Established February 15, 2010
- ETDD intends to mature exploration technologies so they can be demonstrated in small ground and flight experiments, and transitioned to Flagship, robotic precursor, and other missions of opportunity for validation of key capabilities
- Proposed ETDD program will have projects similar to those in the existing Exploration Technology Development Program
- 17 members from headquarters, ARC, GRC, GSFC, JSC, KSC, LaRC, and MSFC
- Team used 1,382 staff hours
- Study team is holding weekly telecons and will meet again on June
- Glenn Research Center is the lead for ETDD and is establishing a planning office
- Completed Deliverables
  - Gave briefing to OMB on the plan for the ETDD Program
  - Issued a Request for Information on May 10, 2010
- Remaining Deliverables
  - 5-year budget plan
  - Broad Agency Announcement to be released in July

## Constellation Transition Study Team

- Established February 8, 2010
- Objective was to develop initial Constellation program transition plans, outline early actions, and address processes in 14 functional areas. Also included initial transition mapping of resources possibly required by new programs. Did not include Constellation Cancellation or Closeout Implementation Plan
- Leverages Shuttle Transition and Retirement experience, framework and processes
- Team used 2,958 staff hours
- 43 members from headquarters, ARC, GSFC, JSC, KSC, and MSFC
- Comprised of experts on workforce, contracts, facilities and infrastructure, property and hardware, risk and knowledge management, records management, security, IT, communications and partnerships
- Currently the team is awaiting further direction
- Completed Deliverables
  - Initial Plan for Constellation Transition
  - Planning Estimate of Constellation Closeout Office workforce
  - Initial Plan to identify and manage disposition of facilities; Update due July 15, 2010

## Participatory Exploration Study Team

- Established February 8, 2010
- Objective is to increase the ability of the public to experience and participate in NASA missions
- Team developed a plan to establish new office that
  - Supports research technology to include public participation
  - Coordinate Participatory Exploration activities in future missions
  - Act as clearing house for best practices in Participatory Exploration
- Team used 504 staff hours
- 12 members from headquarters, ARC, and JSC
- Plans for 2010
  - External benchmarking
  - Setup system to manage public input/ distribute information to the public
  - Create public polls and/Request for Information on Participatory Exploration design ideas
  - Develop draft technical guidance
  - Develop draft Participatory Exploration policies
  - Conduct best practices workshop
- Completed Deliverables
  - Gave briefing to OMB on the plan



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## GAO Contact and Staff Acknowledgments

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B-320091

July 23, 2010

Congressional Requesters

Subject: *National Aeronautics and Space Administration—Constellation Program and Appropriations Restrictions, Part II*

In a letter dated March 12, 2010, you requested information and our views on whether the National Aeronautics and Space Administration (NASA) complied with the Impoundment Control Act of 1974 and with restrictions in the fiscal year 2010 Exploration appropriation when NASA took certain actions pertaining to the Constellation program. Your letter asked us (1) for information regarding the planning activities of NASA staff after the President submitted his fiscal year 2011 budget request; (2) whether NASA complied with the provision in the Exploration appropriation which prohibits the use of the Exploration appropriation to “create or initiate a new program, project or activity;” (3) whether NASA has obligated Exploration appropriations in a manner consistent with the Impoundment Control Act; and (4) whether NASA complied with the provision in the Exploration appropriation which prohibits the use of the Exploration appropriation for “the termination or elimination of any program, project or activity of the architecture for the Constellation program.”

We responded to your first two questions in a previous letter. B-319488, May 21, 2010. In that letter, we provided information on planning activities and determined that NASA had not violated the provision in the Exploration appropriation that bars NASA from using the Exploration appropriation to “create or initiate a new program, project or activity.” *Id.* This letter responds to your third and fourth questions. In addition, we address questions raised by your staff subsequent to your letter regarding potential contract termination costs. As explained below, we conclude that, to date, NASA has not violated the Impoundment Control Act or the provision in the Exploration appropriation which bars NASA from using the Exploration appropriation for the “termination or elimination of any program, project or activity of the architecture for the Constellation program.” NASA has not withheld Exploration funds from obligation and has obligated the funds at rates comparable to the rates of obligation in years in which NASA obligated nearly all available Exploration funds. In addition, NASA has obligated Exploration funds to carry out the various Constellation programs, projects, and activities.

Our practice when rendering decisions is to obtain the views of the relevant agency and to establish a factual record on the subject matter of the request. GAO,

*Procedures and Practices for Legal Decisions and Opinions*, GAO-06-1064SP (Washington, D.C.: Sept. 2006), *available at* [www.gao.gov/legal/resources.html](http://www.gao.gov/legal/resources.html). By letter of April 26, 2010, the NASA General Counsel supplied NASA's legal views supporting its actions related to the Constellation program as well as relevant information. Letter from General Counsel, NASA, to Assistant General Counsel for Budget Issues, GAO (NASA Letter). We interviewed NASA officials from the Exploration Systems Mission Directorate, the Office of General Counsel, the Office of Procurement, Johnson Space Center, and Marshall Space Flight Center regarding NASA's obligation and contracting practices. We reviewed relevant financial data and contract documents and internal NASA correspondence as well as correspondence between NASA and its contractors. We also interviewed officials of firms operating under contracts with NASA.

## BACKGROUND

The primary objective of the Constellation program is to develop capabilities to transport humans to Earth orbit, to the Moon, and back to Earth. The program also serves as a stepping-stone to future human exploration of Mars and other destinations.<sup>1</sup> On February 1, 2010, the President submitted his fiscal year 2011 budget request, which proposed the cancellation of Constellation in favor of the creation of a different approach to human space exploration.<sup>2</sup>

Prior to the submission of the President's fiscal year 2011 budget request, Congress enacted the fiscal year 2010 Exploration appropriation, which appropriated about \$3.7 billion for "exploration research and development activities." The appropriation made the funds available until September 30, 2011, with the following limitation:

*"Provided, That notwithstanding section 505 of this Act, none of the funds provided herein and from prior years that remain available for obligation during fiscal year 2010 shall be available for the termination or elimination of any program, project or activity of the architecture for the Constellation program nor shall such funds be available to create or initiate a new program, project or activity, unless such program termination, elimination, creation, or initiation is provided in subsequent appropriations Acts."*

Commerce, Justice, Science, and Related Agencies Appropriations Act, 2010, Pub. L. No. 111-117, div. B, title III, 123 Stat. 3034, 3113, 3143 (Dec. 16, 2009).

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<sup>1</sup> For a description of the objectives of the Constellation program, see NASA, *Fiscal Year 2010 Budget Estimates*, at EXP-3, *available at* [www.nasa.gov/news/budget/FY2010.html](http://www.nasa.gov/news/budget/FY2010.html) (last visited July 14, 2010) (2010 Budget Estimates).

<sup>2</sup> *Budget of the United States Government for Fiscal Year 2011*, at 129-30, *available at* [www.gpoaccess.gov/usbudget/fy11/index.html](http://www.gpoaccess.gov/usbudget/fy11/index.html) (last visited July 14, 2010).

On June 9, 2010, the NASA Administrator sent a letter to several members of Congress regarding the status of the Constellation program. Letter from Administrator, NASA, to the Honorable Pete Olson, June 9, 2010 (June 9 Letter). The letter stated that “[w]hile NASA has fully complied with the provisions of the FY 2010 Consolidated Appropriations Act, the pace of some contractual work to date has been affected by the constrained FY 2010 budget profile for the Constellation program.” *Id.* at 1. The letter then stated:

“Within this already constrained budget profile, funding for the Constellation program is further limited after taking into account estimated potential termination liability for Constellation contracts. Current estimates for potential termination liability under Constellation contracts total \$994 million. Once these termination liability estimates are accounted for, the overall Constellation program is confronting a total estimated shortfall of \$991 million for continued program effort for the balance of the year, compared with the revised FY 2010 plan. Given this estimated shortfall, the Constellation program cannot continue all of its planned FY 2010 program activities within the resources available. Under the Anti-Deficiency Act (ADA), NASA has no choice but to correct this situation. Consequently, the Constellation program has formulated an updated funding plan for the balance of FY 2010 . . . .”

*Id.* The letter stated that “NASA intends to pace, rather than terminate, activity on the Constellation contracts,” prioritizing work to be completed in accordance with four stated principles. *Id.* at 2. The four principles are to:

- Maximize retention of personnel/skills and capabilities that can contribute to future technology development,
- Protect advanced development work that could transfer to planned programs as reflected in the FY 2011 budget request,
- Enable a robust transition to work associated with an Orion Crew Escape Vehicle that the President announced in an April 15, 2010 speech, and
- Place a low priority on expenditures for hardware that can be used solely for the program of record and are not applicable to programs as reflected in the FY 2011 budget request.

## DISCUSSION

We address three issues: first, whether NASA has complied with the Impoundment Control Act of 1974; second, whether NASA has complied with the provision in the fiscal year 2010 Exploration appropriation which bars NASA from using the Exploration appropriation for the termination or elimination of any program, project, or activity (PPA) of the architecture for the Constellation program; and third, potential contract termination costs.

## Impoundment Control Act of 1974

Congress enacted the Impoundment Control Act of 1974 to tighten congressional control over presidential impoundments. Among other things, the act established a procedure under which Congress could consider the merits of impoundments proposed by the President. GAO, *Impoundment Control Act: Use and Impact of Rescission Procedures*, GAO-10-320T (Washington, D.C.: Dec. 2009), at 1. An impoundment is any action or inaction by an officer or employee of the federal government that precludes obligation or expenditure of budget authority. GAO, *A Glossary of Terms Used in the Federal Budget Process*, GAO-05-734SP (Washington, D.C.: Sept. 2005), at 61 (Budget Glossary). There are two types of impoundments: deferrals and proposed rescissions. *Id.* Under the act, the President may propose a rescission when he wishes to withhold funds from obligation permanently or submit a deferral proposal when he wishes to withhold funds temporarily. Agencies may withhold budget authority from obligation only if the President has first transmitted a rescission or deferral proposal in a special message to Congress. 2 U.S.C. §§ 683(a), 684(a); *see also* B-308011, Aug. 4, 2006; B-307122, Mar. 2, 2006.

The President has not transmitted a rescission or deferral proposal to Congress pertaining to NASA or the Exploration appropriation. Therefore, NASA may not withhold funds in the Exploration account from obligation. Throughout this fiscal year, NASA has obligated amounts available in the Exploration appropriation at rates comparable to those in preceding years. According to NASA financial data, by June 30, 2010, NASA had obligated 83 percent of the Exploration funds that Congress appropriated for fiscal year 2010. By comparison, the corresponding figure in fiscal years 2009 and 2008 was 73 percent. If NASA continues to obligate funds at its current rate, it will obligate nearly all the funds available in the Exploration appropriation before the end of this fiscal year, just as NASA obligated nearly all the available funds by the end of fiscal years 2009 and 2008. Because the funds appropriated this fiscal year will be available until the end of fiscal year 2011, it is likely that NASA will obligate nearly all available amounts well before the funds expire.<sup>3</sup>

We previously found that an agency violated the Impoundment Control Act when it withheld funds from obligation in response to a legislative proposal that appeared in the President's budget request. B-308011, Aug. 4, 2006. In that case, the agency's apportionment schedule for the appropriation identified over \$2 million set aside in reserve, unavailable for obligation, pending congressional action on the President's

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<sup>3</sup> NASA's 2009 and 2008 appropriations also made the Exploration appropriation available for two fiscal years. Commerce, Justice, Science, and Related Agencies Appropriations Act, 2009, Pub. L. No. 111-8, div. B, title III, 123 Stat. 524, 560, 587-88 (Mar. 11, 2009); Commerce, Justice, Science, and Related Agencies Appropriations Act, 2008, Pub. L. No. 110-161, div. B, title III, 121 Stat. 1844, 1884, 1917 (Dec. 26, 2007). In both years, NASA obligated nearly all available amounts by the end of the first fiscal year of availability.

budget request. In this case, however, we see no evidence that NASA has withheld funds from obligation. NASA has made Exploration appropriations available to program managers for obligation. Accordingly, the managers have obligated the funds at rates comparable to the rates of obligation in years in which NASA obligated nearly all the funds before the end of even the first year of availability. Therefore, we conclude that NASA has not violated the Impoundment Control Act of 1974.

#### Termination or Elimination of Any Program, Project, or Activity (PPA)

The next issue is whether NASA has complied with the provision in the fiscal year 2010 Exploration appropriation which bars NASA from using the Exploration appropriation “for the termination or elimination of any program, project or activity of the architecture for the Constellation program.” To interpret this provision, we begin with the statutory language. *Carcieri v. Salazar*, 555 U.S. \_\_\_, 129 S. Ct. 1058 (2009); *BedRoc Limited, LLC v. United States*, 541 U.S. 176 (2004); B-302548, Aug. 20, 2004. In the absence of indications to the contrary, Congress is deemed to use words in their common, ordinary sense. B-308715, Apr. 20, 2007. To identify the common, ordinary meaning of words, courts look to a standard dictionary. *Mallard v. U.S. District Court*, 490 U.S. 296, 300–02 (1989); *Board of Education of Westside Community Schools v. Mergens*, 496 U.S. 226, 237 (1990); B-308715, Apr. 20, 2007; B-302973, Oct. 6, 2004. In this case, “terminate” means “bring to an end,” while “eliminate” means “completely remove or get rid of (something).” *The New Oxford American Dictionary* 1741, 548 (2<sup>nd</sup> ed. 2005). Thus, the appropriations act prohibits NASA from using the Exploration appropriation to bring any Constellation PPA to an end, or to completely remove or get rid of any Constellation PPA.<sup>4</sup>

A “Program, Project or Activity (PPA)” is an “element within a budget account. For annually appropriated accounts, the Office of Management and Budget (OMB) and agencies identify PPAs by reference to committee reports and budget justifications.”

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<sup>4</sup> The conference report accompanying the fiscal year 2010 Exploration appropriation stated that “funds are also not provided herein to *cancel, terminate or significantly modify contracts* related to the spacecraft architecture of the current program, unless such changes or modifications have been considered in subsequent appropriations Acts.” H.R. Rep. No. 111-366, at 756 (Dec. 8, 2009) (emphasis added). This language differs from that in the statute, which prohibits NASA from using Exploration funds for the “termination or elimination of any *program, project or activity* of the architecture for the Constellation program” (emphasis added). Language in a conference report is part of the statute’s legislative history and is therefore not legally binding. Although courts sometimes turn to legislative history to resolve questions of statutory interpretation when the statutory text is unclear, courts do not “resort to legislative history to cloud a statutory text that is clear.” *Ratzlaf v. United States*, 510 U.S. 135, 147-148 (1994); *see also, e.g., 14 Penn Plaza v. Pyett*, \_\_\_ U.S. \_\_\_, 129 S. Ct. 1456, 1465 (2009); *Shannon v. United States*, 512 U.S. 573, 583 (1994); 55 Comp. Gen. 307, 325 (1975). In this case, because the meaning of the language in the fiscal year 2010 Exploration appropriation is clear from the text of the statute, we do not refer to the statute’s legislative history to aid our interpretation.

Budget Glossary, at 80. NASA's fiscal year 2010 budget request lists five PPAs within the "Constellation Systems" category:

- Program Integration and Operations,
- Orion Crew Exploration Vehicle,
- Ares I Crew Launch Vehicle,
- Ares V Cargo Launch Vehicle, and
- Commercial Crew and Cargo.

2010 Budget Estimates, at EXP-2.

As discussed above, NASA has continued to obligate Exploration appropriations to all five of these PPAs, notwithstanding the President's proposal in his fiscal year 2011 budget submission; in fact, NASA's current rate of obligation is comparable to or exceeds that of the previous two fiscal years. We found no evidence that NASA is withholding Exploration appropriations from obligation in anticipation of future programmatic changes or that NASA is taking any steps to terminate or end the Constellation program, any of the six large contracts for the hardware of the Constellation program, or any of the five PPAs.

NASA financial data show that NASA has allocated funds across the Constellation PPAs (such as the Ares I and Orion programs) in amounts consistent with the allocations given in congressional committee reports and NASA's public budget documents. In continuing to obligate funds for all the various Constellation PPAs, NASA has neither brought to an end nor completely eliminated any Constellation PPA. As we discussed in our previous opinion, NASA has engaged only in preliminary planning activities related to the proposals in the President's fiscal year 2011 budget submission. B-319488, May 21, 2010. Thus, we conclude that, at this time, NASA has not violated the restriction in the fiscal year 2010 Exploration appropriation.

The June 9 Letter informs Congress that NASA will place a priority on funding work that aligns with the programs planned in the President's fiscal year 2011 budget request and with a space vehicle the President proposed in an April 15, 2010 speech. Meanwhile, NASA will "place low priority on expenditures for hardware that can be used solely for" the current program. June 9 Letter, at 2. It is not clear what NASA specifically means by "low priority." However, such shifts in priority do not in themselves amount to the termination or elimination of a PPA. NASA must coordinate many employees and contractors and multiple undertakings in order to carry out each PPA. For example, NASA divides the Ares I PPA into five "project elements," such as the First Stage, the Upper Stage engine, and the Upper Stage. 2010 Budget Estimates, at EXP-14. NASA has discretion in how it carries out the Constellation program consistent with Congress's statutory direction. In making these choices, NASA continues to obligate funds to carry out all of the Constellation PPAs. It has not diverted the Exploration funds to create or initiate a new PPA. Therefore, this course of action also does not violate the language that bars NASA

from terminating or eliminating any PPA of the architecture of the Constellation program.

The June 9 letter stated that the Ares “program will generally provide no additional funding for the first stage contract, descope remaining contracts, and reduce support contractor levels.” However, NASA has continued to obligate funds for the performance of the Ares program. There are two Ares PPAs: the Ares I Crew Launch Vehicle and the Ares V Cargo Launch Vehicle. In June of 2010, NASA obligated an additional \$222 million for the Ares I PPA, and thus has obligated \$1 billion for the PPA during this fiscal year. In addition, in June of 2010, NASA obligated an additional \$9 million for the Ares V PPA, reaching a total of \$60 million in obligations for Ares V during this fiscal year. We are also aware that NASA has decided not to proceed with some procurements and studies that had been planned but not yet awarded. NASA Letter, at 7. After making these decisions, NASA has continued to obligate funds to carry out all of the Constellation PPAs, and has not used Exploration funds to create or initiate a new PPA. Therefore, these actions do not violate the restriction in the fiscal year 2010 Exploration appropriation.

### Termination Costs

Your staff has raised questions about which party bears responsibility for the contractors’ potential termination costs under the Constellation contracts because of public statements that NASA has made concerning the requirements of the Antideficiency Act. The Antideficiency Act provides that agency officials may not authorize obligations exceeding the amount available in an appropriation or before the appropriation is made unless authorized by law. 31 U.S.C. § 1341(a)(1). Generally, an obligation is a “legal duty on the part of the United States which constitutes a legal liability or which could mature into a legal liability by virtue of actions on the part of the other party beyond the control of the United States.” B-300480, Apr. 9, 2003, *quoting* 42 Comp. Gen. 733, 734 (1963).

To carry out the Constellation program, NASA has entered into a multitude of contracts and other procurement instruments. NASA refers to six large contracts for the hardware of the Constellation program as the program’s prime contracts.<sup>5</sup> NASA states that it has not taken any steps to terminate any of the Constellation contracts. NASA Letter, at 8; *Hearing Before the House Committee on Appropriations, Subcommittee on Commerce, Justice, Science, and Related Agencies*, 111<sup>th</sup> Cong. (Mar. 23, 2010) (statement of NASA Administrator).

All of the prime contracts for the Constellation program are cost-reimbursement contracts. NASA Letter, at 10; *see also, e.g.*, NASA Contract No. NNM07AA75C, at 2 (ATK Launch Systems); NASA Contract No. NNJ06TA25C, schedule A, section B, at 2

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<sup>5</sup> NASA entered into prime contracts with ATK Launch Systems, Lockheed Martin, Oceaneering, and Pratt & Whitney Rocketdyne. NASA entered into two separate prime contracts with Boeing.

(Lockheed Martin). In general, these types of contracts require the government to reimburse the contractor for allowable costs incurred in performing the contract, to the extent prescribed in the contract. These contracts establish an estimate of total cost for the purpose of obligating funds and establishing a ceiling that the contractor may not exceed (except at its own risk) without the approval of the contracting officer. Federal Acquisition Regulation (FAR), 48 C.F.R. § 16.301-1.

Some contract termination costs are allowable under the FAR. Generally, termination costs are costs that would not have arisen had the contract not been terminated. FAR § 31.205-42. As required by the FAR, the prime contracts include a provision stating that the government is not obligated to reimburse the contractor for costs incurred in excess of the total allotment that is specified in the contract; this limitation on liability would include termination costs. FAR §§ 32.705-2(b), 52.232-22(f)(1), 52.232-22(h); *see, e.g.*, NASA Contract No. NNM07AA75C, at 33; NASA Contract No. NNJ06TA25C, schedule A, section I, at 3. This limitation on the government's liability is generally known as the "limitation of funds clause." NASA must record an obligation for the entire amount that is allotted to the contract, which represents NASA's legal liability, in order to comply with various fiscal statutes, including the Antideficiency Act.<sup>6</sup>

Under the limitation of funds clause, when the contractor expects that the costs it will incur in the next 60 days of performance will exceed 75 percent of the total amount allotted to the contract, the contractor must notify the agency. FAR § 52.232-22(c). Additionally, 60 days before the end of the period specified in the contract, the contractor must notify the agency of the estimated amount to continue performance under the contract or for any further period specified in the contract's schedule<sup>7</sup> or

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<sup>6</sup> In January 2010, NASA and one of its contractors agreed to modify two of the six Constellation prime contracts to include clauses pertaining to "special termination costs." These clauses enumerated several categories of allowable termination costs and provided that "in the event of a termination for convenience, and subject to negotiation of a termination settlement, funds will be applied to cover Special Termination Costs from amounts available within the Exploration Systems Appropriation or from such other funds appropriated or to be appropriated by Congress for this purpose." NASA Contract No. NNM08AA16C, modification 34 (Boeing Avionics contract), NASA Contract No. NNM07AB03C, modification 57 (Boeing Upper Stage contract.) Further, "the Contractor agrees to perform this contract in such a manner that the Contractor's claim for special termination costs will not exceed" a particular amount (\$29 million for the Avionics contract, \$52 million for the Upper Stage contract.) *Id.* Although these two prime contracts also include the standard limitation of funds clause, the standard limitation of funds clause specifically allows the contractor and the government to agree to exceptions. FAR § 52.232-22(f). As required by law, NASA has recorded obligations corresponding to the amounts for each special termination cost clause. NASA Letter, at 12; B-238581, Oct. 31, 1990.

<sup>7</sup> The contents of the schedule are specified in the FAR, §§ 14.201-1 and 15.204-1.

otherwise agreed upon. FAR § 52.232-22(d). During this and previous fiscal years, the Constellation prime contractors have sent notifications to NASA in accordance with this provision. The contractor is not obligated to continue performance, including any actions related to contract termination, if such performance would cause the contractor to incur costs in excess of the amount allotted. FAR § 52.232-22(f)(2).

The limitation of funds clause creates an incentive for contractors to accurately track both the costs of performance and any termination costs that they may incur. Because the costs that contractors might incur in the event of a termination may be considerable, many contractors consider it prudent to track their estimated termination costs and to consider the possibility of termination in the course of performance. The contractor might believe that it must incur some costs—those related to the contractor’s contractual obligations to third parties, for example—in the event of a termination. Consequently, contractors may take steps to limit their possible liability in the event of a termination. For example, an official of one NASA contractor told us that his company’s standard practice on contracts with agencies other than NASA is to incur costs only up to an amount that would leave the government agency with enough funds available under the allotted amount to reimburse any allowable termination costs that might arise. *See also* B-238581, Oct. 31, 1990 (“Consequently, as dictated by good business practice, [the contractor] kept an accounting of the unliquidated funds which were obligated on the contract so as to guarantee that sufficient amounts remained to liquidate termination costs.”).

Four of the five prime Constellation contractors told us that NASA’s past practice has been to agree to reimburse all termination costs, even if such costs exceeded the amount currently allotted to the contract under the limitation of funds clause.<sup>8</sup> Some of the contractors assert NASA stated in various written and oral communications that NASA would reimburse such costs. The contractors further assert that NASA’s behavior during contract performance also indicated that NASA would reimburse such costs. These four contractors did not take steps to ensure that the funds that NASA allotted to the contract would also be sufficient to reimburse any termination costs that may arise under the contract. Instead, these contractors told us that, in the past, they would incur performance costs up to the amount that NASA had allotted to the contract, without leaving any of the allotted amount available for termination costs.

In August 2009, NASA sent a letter to one contractor which cited the limitation of funds clause and stated that—

“the Government is not obligated to reimburse [the contractor] for costs incurred in excess of the total amount allotted by the Government to this contract . . . Plainly stated, should [the contractor] expend funds

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<sup>8</sup> The fifth Constellation prime contractor told us that the contractor, not NASA, bears the responsibility for accounting for potential termination liability that may arise.

over and above the funds allotted to the subject contract it does so at its own risk.”

Letter from Contracting Officer, NASA, to ATK Launch Systems, Inc., *Subject: Contract NNM07AA75C, Continuing Resolution and Limitation of Funds*, Aug. 14, 2009, at 1. In response, the contractor stated that “NASA has the obligation to reimburse [the contractor] for any termination related costs incurred.” Letter from Manager, Contracts, ATK, to Marshall Space Flight Center, NASA, *Subject: Contracts NAS8-97238 and NNM07AA75C Limitation of Funds*, Sept. 10, 2009, at 1. Stating that “[t]his is the course of conduct that has been in place for many years on NASA contracts,” the contractor concluded that it “will continue to rely on NASA’s long standing course of conduct under which NASA will continue to have the obligation to provide additional funding to [the contractor] for termination related costs.” *Id.*

In March 2010, after the President submitted his fiscal year 2010 budget request, two prime contractors sent letters to NASA stating the contractors’ understanding that NASA would reimburse termination costs even if such costs exceeded the amount NASA had allotted to the contract. Letter from Manager, Contracts, ATK, to Marshall Space Flight Center, NASA, *Subject: Contract NNM07AA75C Proposed Draft Termination Liability Clause*, Mar. 10, 2010; Letter from Contracts Management, Lockheed Martin Space Systems Company, to Contracting Officer, NASA, *Subject: Contract NNJ06TA25C—Notification of Funding Expenditure Limitation*, Mar. 22, 2010. In response letters sent in April 2010, NASA stated that the contractors’ understanding “is inconsistent with written NASA Guidance<sup>9</sup> and, more importantly, the contract’s Limitation of Funds clause.” Letter from Procurement Officer, NASA, to Chief, Contracts Administration, Lockheed Martin Corp., *Subject: Contract NNJ06TA25C, Project Orion, Notification of Funding Expenditure Limitation*, Apr. 23, 2010, at 1; Letter from Procurement Officer, NASA, to ATK Launch Systems, Inc., *Subject: Contract NNM07AA75C Proposed Special Termination Clause*, Apr. 23, 2010, at 1. The letters NASA sent quoted language from the limitation of funds clause stating that “the Government is not obligated to reimburse the Contractor for any costs incurred in excess of the total amount allotted by the Government to this contract, whether incurred in the course of the contract or as a result of termination.” *Id.*; FAR § 52.232-22(h).

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<sup>9</sup> Internal NASA memoranda state NASA policy: “absent specific Congressional or regulatory authority, the Limitation of Funds clause clearly provides that termination costs are subject to the limitation of funds amount in the contract. The maximum amount NASA would be required to pay, as a result of a contract’s termination, would be the funds obligated on the contract.” Memorandum from Associate Administrator for Procurement and from Chief Financial Officer, NASA, *Subject: Procedures for Termination Liability*, Mar. 19, 1997. *See also* Memorandum from Comptroller and from Assistant Administrator for Procurement to Center Directors, NASA, *Subject: Funding for Termination Liability*, Apr. 22, 1992; Memorandum from Associate General Counsel (Contracts) to Director, Program Operations Division, NASA, *Subject: Request for Deviation Regarding Termination Liability*, July 28, 1989.

We take no position in this opinion regarding whether NASA ever promised contractors, explicitly or implicitly, that NASA would reimburse contract termination costs even if they exceeded the total amount allotted to the contract. However, we note that if NASA were to agree to pay termination costs that exceed the total amount allotted under FAR section 52.232-22, such an agreement would be an obligating event. NASA would need to have sufficient funds available to obligate the amount that it agreed to pay; otherwise, NASA would risk violating the Antideficiency Act. *See* B-238581, Oct. 31, 1990.

Current estimates provided to NASA by the prime contractors for potential termination costs total \$994 million. June 9 Letter. NASA explained that it obligates amounts to the contracts and is not reserving these funds for termination costs; however, NASA is negotiating with the prime contractors to formulate appropriate work plans for the balance of this fiscal year. At the end of June 2010, NASA had obligated about \$3.1 billion of the \$3.7 billion that Congress appropriated for the Exploration appropriation this fiscal year. This leaves approximately \$600 million in budget authority in the Exploration account for the remainder of the fiscal year.

We recognize that progress toward meeting key Constellation milestones has slowed and that job losses have occurred.<sup>10</sup> However, the evidence we have gathered to date indicates that NASA is adhering to its policy and the FAR terms incorporated into the Constellation prime contracts concerning allowable costs, including potential termination costs. NASA officials and financial data indicate that NASA continues to obligate funds to the prime contracts and that the obligation rates have not changed in response to either the President's budget request or to the Administrator's June 9 Letter. The agency's obligation of the amounts allotted to the Constellation prime contracts and its adherence to the terms of the FAR with regard to allowable costs help ensure NASA's compliance with the Antideficiency Act and do not constitute a violation of the provision in the fiscal year 2010 Exploration appropriation prohibiting

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<sup>10</sup> Of the five Constellation prime contractors, three contractors state that they are implementing or planning reductions in the workforces assigned to their Constellation contracts. Contractors are reassigning some staff to non-Constellation projects and are laying off other staff. Of these three contractors, one states that the changes were necessary because NASA funded the contract at a lower level than the contractor had previously expected, while another asserts that the changes were necessary because NASA changed its practice with regard to the funding of termination liability. A third contractor states that a combination of these two factors made workforce reductions necessary. Two of these three contractors also have slowed or stopped some procurements from their subcontractors.

The two remaining Constellation prime contractors state that they have not changed staffing levels on their prime contracts. However, one of these contractors also performs work for other Constellation prime contractors as a subcontractor. This contractor states that it has reduced its workforce because of reduced funding from the prime contractor.

NASA from terminating or eliminating any PPAs of the architecture for the Constellation program.

#### CONCLUSION

NASA's actions to date with regard to the Constellation program have not violated either the Impoundment Control Act of 1974 or the provision in the fiscal year 2010 Exploration appropriation that bars NASA from terminating or eliminating any PPAs of the architecture for the Constellation program.

We hope the information provided in this opinion is helpful to you. If you have questions, please contact Assistant General Counsel Julia Matta at (202) 512-4023 or Managing Associate General Counsel Susan A. Poling at (202) 512-2667.

Sincerely yours,

A handwritten signature in black ink that reads "Lynn H. Gibson". The signature is written in a cursive style with a large initial "L" and "G".

Lynn H. Gibson  
Acting General Counsel

*List of Requesters*

The Honorable Robert Aderholt  
The Honorable Ralph Hall  
The Honorable Gene Green  
The Honorable Bill Posey  
The Honorable Pete Olson  
The Honorable John Culberson  
The Honorable Jason Chaffetz  
The Honorable Parker Griffith  
The Honorable Michael D. Rogers  
The Honorable Kevin Brady  
The Honorable Jo Bonner  
The Honorable Spencer Bachus  
The Honorable Steve LaTourette  
The Honorable Ken Calvert  
The Honorable John Fleming  
The Honorable Suzanne Kosmas  
The Honorable Rob Bishop  
House of Representatives

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	Revision: Basic	Effective Date: December 8, 2010

**Commercial Crew Transportation System  
Certification Requirements  
for  
NASA Low Earth Orbit Missions**

**ESMD-CCTSCR-12.10  
Revision-Basic**

A handwritten signature in black ink that reads "Douglas R. Cooke".

Douglas R. Cooke  
Associate Administrator  
Exploration Systems Mission  
Directorate

12/9/10  
Date

CCTS Certification Requirements	Document No: ESMD-CCTSCR-12.10	
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**Record of Revision/Changes**

<b>Revision</b>	<b>Description</b>	<b>Date</b>
Draft	Draft for NASA Request for Information	05/21/2010
Basic	Extensive revision and de-scoping	12/08/2010

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## 1.0 Introduction

The Commercial Crew Transportation System (CCTS) Certification Requirements Document is a consolidated set of technical requirements, standards, and processes built upon the National Aeronautics and Space Administration’s (NASA’s) vast human spaceflight knowledge and experience. The intent of this document is to define the requirements, standards, and certification package contents that will be used to certify a CCTS to carry NASA crewmembers on Low Earth Orbit (LEO) Missions.

NASA plans to purchase commercial crew space transportation services to LEO and the International Space Station (ISS) as part of NASA’s exploration plans and policies. Certification of a commercial space transportation system during development/demonstration and procurement of services, rather than the space system itself, represents a significant departure from the way NASA has approached human spaceflight in the past. Agency policy does not currently mandate human rating for anything but NASA developments. However, as outlined in NASA Procedural Requirement (NPR) 8715.3C, NASA General Safety Program Requirements, paragraph 1.14, Agency policy does require NASA to analyze the risk and decide on necessary steps for safety when putting NASA personnel in harm’s way using designs or operations that NASA does not control. Per this policy, NASA’s approach for commercial crew transport is to base CCTS certification on NPR 8705.2, Human Rating Requirements for Space Systems. This certification will apply to NASA missions only (i.e. those carrying NASA or NASA sponsored crew members). The term ‘human rating’ is intentionally not used when referring to the certification of commercial systems because it implies a broader context of certification to fly any humans. NASA will not be involved in the certification of commercial systems when they are used for other purposes.

### 1.1 Philosophy

Protecting the health and safety of humans is of paramount importance for those involved in or exposed to space activities. For NASA, safety is a core value, and NASA recognizes that there can be no successful missions without first ensuring the safety of all personnel including the public, crew, passengers, and ground personnel. A crew transport capability that meets the safety requirements in this document will be approximately an order of magnitude safer than the Space Shuttle for ascent plus entry. The overall mission risk requirement will depend on the specific Design Reference Mission (DRM).

### 1.2 Purpose

This document defines the requirements, standards and certification package contents that will be used to certify a CCTS for LEO Missions. It will be the responsibility of the NASA Program Manager and Technical Authorities to determine the applicability of individual requirements and standards based on the DRM being certified and apply the Agency risk posture (for the DRM) to arrive at the final set of requirements and standards for certification. The Program Manager will then request Certification from NASA HQ per Agency policy.

### 1.3 Verb Application

Statements containing “shall” are used for binding requirements that must be verified and have an accompanying method of verification; “will” is used as a statement of fact, declaration of purpose, or expected occurrence; and “should” denotes a statement of best practice.

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## 2.0 Reference Documents

Document Number	<i>Title: Description</i>
NPR 8705.2	NASA Human-Rating Requirements for Space Systems

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### 3.0 Approach

#### 3.1 Certification Philosophy

Certification of a spaceflight system to transport NASA or NASA sponsored personnel to/from the ISS or to other low earth orbit destinations consists of four separate functions: 1) validation of the technical and performance requirements/standards; 2) verification of compliance with those requirements/standards; 3) consideration of relevant operational experience; and 4) acceptance of residual technical risk due to hazards, waivers, non-compliances, etc. The NASA Program Manager is responsible for ensuring that the operational and design certification requirements and standards are met through the appropriate instrument (agreement milestone, statement of work, contract requirements, engineering and operations plans etc). The NASA Program Manager is also responsible for ensuring that a CCTS Certification Package (based on the Human Rating Certification Package in NPR 8705.2) is compiled. At each of the major program milestones, the Certification package contents are endorsed by the Program Manager and Technical Authorities (TAs) and the JSC Center Director (for crew risk acceptance). The Program Manager is also responsible for coordination with the Mission Directorate AAs at each milestone, in accordance with the NASA governance model. Thus, the Program Manager will be able to ensure satisfactory progress toward certification. Prior the first crewed flight for the reference mission, the Certification Package is submitted for approval to the NASA Associate Administrator as chair of the Agency PMC.

In the event that existing commercial systems (or elements of a system) are proposed for transport of NASA crewmembers, NASA will take into account the flight history along with existing design, flight data, and test results to determine compliance and/or equivalence in meeting the intent of applicable CCTS Certification Requirements. At the discretion of NASA, modifications to existing space systems may be required along with the appropriate milestone reviews. The CCTS Certification process will still be followed, but may be accelerated and milestones may be combined based on flight history and heritage.

As with earlier requirements and design reviews during the development, NASA will participate in the CCTS Flight Readiness Review for NASA missions. NASA will collectively evaluate CCTS design changes, manufacturing (or refurbishment) process changes, and testing changes to verify the mission falls within the bounds of the CCTS certification and that anomalies from previous missions have been addressed. NASA will decide, based on the flight readiness certification and residual risk posture, whether to authorize the NASA mission. During the operations/services phase, NASA will monitor the safety performance by evaluating the risk based on the significance of observed anomalies, and by updating its independent assessments of safety performance. This will ensure that safety requirements continue to be met and there is an established process for continuous improvement towards achievement of the safety goal.

#### 3.2 Certification Applicability

Based on the mission phases, the required systems for the LEO mission are:

- Spacecraft (includes any Launch Abort or Launch Escape system)
- Launch Vehicle

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- Ground Systems
- Mission Systems

Certification will apply to the integrated spacecraft, launch vehicle, ground systems, and mission systems in combinations specific to the NASA DRM.

### 3.3 Configuration Management

ESMD will maintain configuration management and control of the CCTS Certification Requirements for NASA LEO Missions. The NASA Program Manager for the CCTS development/services will maintain configuration management and control of their specific certification requirements documents for each DRM.

### 3.4 Certification Change Authority

After the NASA Associate Administrator has granted CCTS design Certification, all changes that affect the Certification will be evaluated and approved by the NASA Program Manager and cognizant TAs as part of the flight readiness review process. Any changes that affect the risk to the crew also require endorsement from the JSC Center Director. If determined that a recertification is required, the Program Manager will submit a revised certification package to the NASA Associate Administrator as Chair of the Agency PMC, per the process defined in NPR 8705.2.

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## 4.0 CCTS Certification Package

For a CCTS development, the NASA Program Manager will use an appropriate instrument (agreement milestone, statement of work, contract requirements, etc) to ensure that the delivery of a CCTS Certification package is as described in the subsequent paragraphs.

The form of the CCTS Certification Package is a compilation of pertinent plans and documents, plus presentation material to help guide reviewers through the package. The package collectively illustrates with supporting evidence that the system has met the technical requirements and is safe to carry NASA crewmembers. The CCTS Certification Package shall be maintained under configuration management (especially to referenced/linked material) to clearly track changes made between milestones.

The material provided prior to and during each milestone review will be considered draft and for review/comment. An update will be provided after all changes resulting from the review have been incorporated. The post review CCTS Certification Package will be maintained in a location and in a manner that supports review by the NASA Program and TAs.

The CCTS Certification Package Content is summarized in the Table 4-1 below. The milestones listed are based on a NASA development and may be adapted to the CCTS Program's development plan. The NASA Program Manager will use the detailed description in Chapter 2 of NPR 8705.2 to provide additional guidance (through the applicable instrument). At each of the major program milestones, the Certification package contents are endorsed by the Program Manager and TAs and the JSC Center Director (for crew risk acceptance). The Program Manager is also responsible for coordination with the Mission Directorate AAs at each milestone, in accordance with the NASA governance model. Thus, the Program Manager will be able to ensure satisfactory progress toward certification. Prior the first crewed flight for the reference mission, the Certification Package is submitted for approval to the NASA Associate Administrator as chair of the Agency PMC.

- X - One time item
- I - Initial release of item
- U - Update of item

**Table 4-1 CCTS Certification Package Content**

CCTS Certification Package Content	SRR	SDR	PDR	CDR	ORR
A description of the systems for which CCTS Certification will be requested.	X				
A description of each reference mission for which CCTS Certification is being pursued.	X				
A link to the Safety and Mission Assurance Plan and the documented safety analysis processes.	I	U	U	U	
A description of the program's philosophy as it relates to utilization of the crew's capabilities to execute the mission, prevent aborts, and prevent catastrophic events.	X				

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<b>CCTS Certification Package Content</b>	<b>SRR</b>	<b>SDR</b>	<b>PDR</b>	<b>CDR</b>	<b>ORR</b>
An explanation of how the program plans to implement the CCTS Certification technical requirements or the trade studies/analysis to determine implementation; and a matrix that traces the capability described in chapter 5 to the program requirements (highest level where the capability is implemented).	I	U	U	U	
A description of the Human-Systems Integration Team and their authority within the program.	X				
A list of approved alternate standards documents (in place of those in section 6)	X				
An assessment of the risk of loss of crew and associated level of uncertainty substantiated by evidence.		I	U	U	
A ranking of the safety risks to which the crew is subject.		I	U	U	
A list of all requested waivers and exceptions to CCTS requirements, with justification and disposition, and access to the waivers and exceptions.	I	U	U	U	U
A summary of how safety analysis related to prevention of catastrophic events influenced the system architecture, system design, and the crew survival approach.		I	U	U	
A description of the approach to crew survival for each mission phase of each reference mission being taken by the program; the system capabilities or the trade studies/analysis to determine implementation; and a matrix that traces the capabilities to the program requirements (highest level where the capability is implemented).		I	U	U	
A summary of the level of failure tolerance implemented in the system to include a discussion of the use of dissimilar redundancy and backup systems/subsystems to prevent catastrophic events with special rationale for dynamic flight phases.		I	U	U	U
An explanation of how crew workload will be evaluated for the reference missions.		I	U	U	
The preliminary plan for the flight test program with the number and type of flights.		X			
A summary of the usability and human-system performance testing performed to date and the influence on the system design with links to the detailed test results.			I	U	
A summary of the human error analysis performed to date and the influence on the system design with links to the detailed analysis results.			I	U	U

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<b>CCTS Certification Package Content</b>	<b>SRR</b>	<b>SDR</b>	<b>PDR</b>	<b>CDR</b>	<b>ORR</b>
<p>An updated Flight Test Program with flight objectives linked to program development/validation needs. The breadth and depth of the flight test program will depend on a number of factors including system maturity and depth of insight into the design and verification. The flight test program, which may include a combination of suborbital, orbital, landing, and abort system tests, must be robust enough to prove confidence in the system design. The following flight test objectives shall be addressed before NASA will certify the vehicle:</p> <ul style="list-style-type: none"> <li>• Validate the nominal performance of the system.</li> <li>• Validate the dynamic response characteristics of the system.</li> <li>• Validate the structural integrity of the system.</li> <li>• Demonstrate the critical separation systems performance.</li> <li>• Demonstrate the entry, landing, and recovery systems.</li> <li>• Validate the critical system environments.</li> <li>• Demonstrate the abort system performance during critical phases of flight.</li> <li>• Demonstrate the critical ground and mission support systems.</li> <li>• Demonstrate the reliability of a common launch vehicle and spacecraft configuration.</li> </ul>			I	U	
<p>A plan, with rationale, for verification and validation of the following:</p> <ul style="list-style-type: none"> <li>• Implementation of capabilities identified for crew survivability.</li> <li>• Implementation of CCTS Operational and Design Technical Requirements.</li> <li>• Critical (sub)system performance</li> <li>• Integrated performance of critical (sub)systems.</li> <li>• Critical software performance, security, and safety.</li> <li>• Implementation of the standards cited in NPR 8705.2 paragraph 2.2.5 Human System Standards</li> </ul>	I	U	U	U	U
The configuration control and maintenance plan for the system	I (CCP)			U (CCP)	X (MP)

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<b>CCTS Certification Package Content</b>	<b>SRR</b>	<b>SDR</b>	<b>PDR</b>	<b>CDR</b>	<b>ORR</b>
<p>A summary of the verification and validation results for the following (with links to the detailed results):</p> <ul style="list-style-type: none"> <li>• Implementation of capabilities identified for crew survivability.</li> <li>• Implementation of CCTS Operational and Design Technical Requirements.</li> <li>• Critical (sub)system performance.</li> <li>• Integrated performance of critical (sub)system performance.</li> <li>• Critical software performance, security, and safety.</li> <li>• Integrated human-system performance.</li> <li>• Implementation of the standards cited in NPR 8705.2 paragraph 2.2.5 Human System Standards</li> </ul>					X
A summary of the flight test results for each test objective with links to the detailed test reports.					X
A description of how the crew workload for the reference mission was validated and determined to be acceptable.					X
A summary of how the safety analysis related to loss of crew and loss of mission was updated based on the results of validation/verification and used to support validation/verification of the design in circumstances where testing was not accomplished.					X

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## 5.0 CCTS Operational and Design Certification Technical Requirements

### 5.1 Overview

The technical requirements in this chapter identify capabilities in three primary categories:

- a. System Safety
- b. Crew/Human Control of the System
- c. Crew Survival/Aborts

These requirements are not intended to be all inclusive or an absolute prescription for certification. Compliance with these requirements does not assure a safe system for human missions to LEO. These technical requirements are intended to provide the foundation of capabilities upon which the Program Manager will build by identifying and incorporating additional unique capabilities for each reference mission. Furthermore, some of these requirements were intentionally written to force the design team to bound the problem. The design team should evaluate the intent of these technical requirements and use their talents to deliver the safest practical system that will accomplish the mission within the constraints. Technical requirements, along with history's lessons, legacy solutions, expert opinions, and best practices, are only as good as the implementer's understanding of their origins and assumptions.

The term 'crewed CCTS' refers to the applicable in-space elements (i.e. launch vehicle and spacecraft). Requirements that specify crewed CCTS must be met by the in-space elements without utilizing the capabilities of the ground or mission systems.

### 5.2 System Safety Requirements

#### 5.2.1 The CCTS shall provide the capability to sustain a safe, habitable environment for the crew.

*Rationale: Protection from the hazardous environment of space is fundamental to crew survival. Also, the space system should be inherently safe and designed to minimize risk (e.g., no exposed sharp edges, no exposed high temperature surfaces). This requirement includes protection from known environments such as space radiation hazards. Providing a habitable environment is also fundamental to the integration of the human into the space system. In order for the crew to contribute to the safe conduct of the mission, their basic habitability needs to be met.*

#### 5.2.2 The CCTS shall safely execute the Loss of Crew (LOC) requirements specific to the NASA Design Reference Mission (DRM). The Programs shall determine and document the LOC risk when DRMs are specified. The following are current:

- a. The LOC probability distribution for the ascent phase of a 210 day ISS mission shall have a mean value no greater than 1 in 1000
- b. The LOC probability distribution for the entry phase of a 210 day ISS mission shall have a mean value no greater than 1 in 1000

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- c. The LOC probability distribution for a 210 day ISS mission shall have a mean value no greater than 1 in 270

**5.2.3 The CCTS shall limit the Loss of Mission (LOM) risk for the specified NASA DRMs. The Programs shall determine and document the LOM risk when DRMs are specified. The following are current:**

- a. The LOM probability distribution for a 210 day ISS mission shall have a mean value no greater than 1 in 55
- b. A spacecraft failure that requires the vehicle to enter earlier than the pre-launch planned end of mission timeframe shall be considered a loss of mission

*Rationale: These LOC and LOM requirements are flown down from the NASA ESMD Exploration Architecture Requirements Document (EARD) and are consistent with NASA's defined goals and thresholds for crewed vehicles. The LOC values are part of the overall certification process for the commercial launch vehicle and spacecraft and establish a basis for decision-making relative to safety enhancing features in the design including failure tolerance.*

**5.2.4 The CCTS shall provide failure tolerance to catastrophic events, with the specific level of failure tolerance (one, two, or more) and implementation (similar or dissimilar redundancy) derived from an integrated design and safety analysis.**

- a. Failure of primary structure, structural failure of pressure vessel walls, and failure of pressurized lines are excepted from the failure tolerance requirement provided the potentially catastrophic failures are controlled through a defined process approved by the NASA Program and in which standards and margins are implemented that account for the absence of failure tolerance.
- b. All potentially catastrophic hazards that cannot be controlled using failure tolerance may be excepted from the failure tolerance requirement with specific approval from the NASA Program provided the hazards are controlled through a defined process in which standards and margins are implemented that account for the absence of failure tolerance.

*Rationale: The overall objective is to provide the safest design that can accomplish the mission given the constraints imposed on the program. Since a CCTS development will always have mass, volume, schedule, and cost constraints, choosing where and how to apply failure tolerance requires integrated analyses at the system level to assess safety and mission risks. First and foremost, the failure tolerance is applied at the overall system level to include all capabilities of the system. While failure tolerance is a term frequently used to describe minimum acceptable redundancy, it may also be used to describe two similar systems, dissimilar systems, cross-strapping, or functional interrelationships that ensure minimally acceptable system performance despite failures, or additional features that completely mitigate the effects of failures. Even when assessing failure tolerance at the integrated system level, the increased complexity and the additional utilization of system resources (e.g. mass, power) required by a failure tolerant design may negatively impact overall system safety as the level of failure tolerance is increased.*

*Ultimately, the level and type of redundancy (similar or dissimilar) is an important and often controversial aspect of system design. Since redundancy does not, by itself, make a system safe, it is the*

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*responsibility of the engineering and safety teams to determine the safest practical system design given the mission requirements and constraints. Additionally, the overall system reliability is a significant element of the integrated safety and design analysis used in the determination of the level of redundancy. Redundancy alone without sufficient reliability does not meet the intent of this requirement. Catastrophic events, as defined in this document and consistent with NPR 8715.3, NASA General Safety Program Requirements, include crew fatality and the unplanned loss/destruction of a major element of the crewed space system during the mission that could potentially lead to death or permanent disability of the crew or passengers.*

*Where failure tolerance is not the appropriate approach to control hazards, specific measures need to be employed to: (1) recognize the importance of the hazards being controlled; (2) ensure robustness of the design; and (3) ensure adequate attention/focus is being applied to the design, manufacture, test, analysis, and inspection of the items. The NASA Program will approve any system or component that does not meet this failure tolerance requirement.*

**5.2.5 The CCTS shall provide the appropriate failure tolerance capability defined in 5.2.4 without the use of emergency equipment and systems.**

- a. Appropriate credit may be taken for emergency equipment and systems for the LOC assessments (defined in Section 5.2.2 of this document.)

*Rationale: Emergency systems and equipment, such as fire suppression systems, fire extinguishers, emergency breathing masks, launch/entry pressure suits, ballistic unguided entry capability, and launch aborts, are not to be considered part of the failure tolerance capability. Emergency systems are there to mitigate the effects of a hazard, when the first line of defense, in the form of failure tolerance, cannot prevent the occurrence of the hazardous situation. Emergency systems may be used for LOC assessments even though some of these capabilities such as launch aborts or ballistic entry may return the crew to Earth someplace other than the nominal or backup landing locations and place the crew in a survival situation.*

**5.2.6 For an ISS DRM, the CCTS shall comply with requirements for failure tolerance during ISS proximity operations and the ISS docked phase as defined in SSP 50808 Section 3.3.11.1.**

*Rationale: The ISS Program has specific additional failure tolerance requirements documented in SSP 50808 Section 3.3.11.1. For the ISS, catastrophic hazards are controlled so that no combination of two failures, or two operator errors, or one of each can result in a catastrophic hazardous event. These ISS requirements take precedence for the applicable mission phases and the ISS Program will approve any variance request to these requirements. Even though these additional ISS requirements exist, the CCTS is still required to perform the integrated safety and design analysis to determine the level of failure tolerance.*

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**5.2.7 The CCTS shall be designed to tolerate inadvertent operator action (minimum of one inadvertent action), as identified by a human error analysis, without causing a catastrophic event.**

*Rationale: An operator is defined as any human that commands or interfaces with the space system during the mission, including humans in the control centers. The appropriate level of protection (i.e., one, two, or more inadvertent actions) is determined by an integrated human error and hazard analysis.*

**5.2.8 The CCTS shall tolerate inadvertent operator action in the presence of any single system failure.**

*Rationale: The intent of this requirement is to provide a robust human-system interface design that cannot be defeated by a system failure. Where the system is designed to protect for more than one inadvertent action, the level of protection after a single system failure may be reduced - but still protects from a single inadvertent operator action.*

**5.2.9 The CCTS shall provide the capability to mitigate the hazardous behavior of critical software where the hazardous behavior would result in a catastrophic event.**

*Rationale: According to current software standards, the software system will be designed, developed, and tested to:*

- 1) Prevent hazardous software behavior.
- 2) Reduce the likelihood of hazardous software behavior.
- 3) Mitigate the negative effects of hazardous software behavior.

*However, for complex software systems, it is very difficult to definitively prove the absence of hazardous behavior. Therefore, the crewed system has the capability to mitigate this hazardous behavior if it occurs. The mitigation strategy will depend on the phase of flight and the "time to effect" of the potential hazard. Hazardous behavior includes erroneous software outputs or performance.*

**5.2.10 The CCTS shall provide the capability to detect and annunciate faults that affect critical systems, subsystems, and/or crew health.**

*Rationale: A fault is defined as an undesired system state. A failure is an actual malfunction of a hardware or software item's intended function. The definition of the term "fault" envelopes the word "failure," since faults include other undesired events such as software anomalies and operational anomalies. It is necessary to alert the crew to faults (not just failures) that affect critical functions.*

**5.2.11 The CCTS shall provide the capability to isolate and/or recover from faults identified during system development that would result in a catastrophic event.**

*Rationale: This capability is not intended to imply a failure tolerance capability or expand upon the failure tolerance capability. The intent is to provide isolation and recovery from faults where the system design (e.g., redundant strings or system isolation) enables the implementation of this capability. Also, any faults identified during system development should be protected by isolation and/or recovery.*

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*However, it is acknowledged that not all faults that would cause catastrophic events can be detected or isolated in time to avoid the event. Similarly, system design cannot ensure that once the fault is detected and isolated that a recovery is always possible. However, in these cases, isolation of the fault should prevent the catastrophic event.*

**5.2.12 The CCTS shall provide the capability to utilize health and status data (including system performance data) of critical systems and subsystems to facilitate anomaly resolution during and after the mission.**

*Rationale: Access to health and status data is a key element of anomaly resolution during the mission, which could prevent the crew from executing an abort or prevent the situation from developing into a catastrophic event. Resolving anomalies between missions is just as important. This requirement intentionally does not specify a crash survivable data recorder. That determination is left for the program. The program also determines what data should be available to facilitate anomaly resolution.*

**5.2.13 The CCTS shall provide the capability for autonomous operation of system and subsystem functions, which, if lost, would result in a catastrophic event.**

*Rationale: This capability means that the crewed system does not depend on communication with Earth (e.g., mission control) to perform functions that are required to keep the crew alive.*

**5.2.14 The CCTS shall provide the capability for the crew to readily access equipment involved in the response to emergency situations and the capability to gain access to equipment needed for follow-up/recovery operations.**

*Rationale: Fire extinguishers are one example of the type of equipment needed for immediate response to a fire emergency. "Ready access" means that the crew is able to access the equipment in the time required without the use of tools. The ready access time will depend on the phase of flight and the time to effect of the hazard. Ready access also accounts for suited crewmembers if the equipment could be needed during a mission phase or operation where the crew is suited. A contamination clean-up kit is an example of equipment needed for follow up/recovery operations.*

**5.3 System Control Requirements – General**

**5.3.1 The crewed CCTS shall provide the capability for the crew to monitor, operate, and control the crewed space system and subsystems, where:**

- a. The capability is necessary to execute the mission; or
- b. The capability would prevent a catastrophic event; or
- c. The capability would prevent an abort.

*Rationale: Within the context of this requirement, monitoring is the ability to determine where the vehicle is, its condition, and what it is doing. Monitoring helps to create situational awareness that*

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*improves the performance of the human operator and enhances the mission. Determining the level of operation over individual functions is a decision made separately for specific space systems. Specifically, if a valve or relay can be controlled by a computer, then that same control could be offered to the crew to perform that function. However, a crewmember probably could not operate individual valves that meter the flow of propellant to the engines, but the function could be replaced by a throttle that incorporates multiple valve movements to achieve a desired end state (reduce or increase thrust). Meeting any of the three stated conditions invokes the requirement. The first condition recognizes that the crew performs functions to meet mission objectives and, in those cases, the crew is provided the designated capabilities. The second and third conditions recognize that, in many scenarios, the crew improves the performance and safety of the system and that the designated capabilities support that performance and safety improvement.*

**5.3.2 The crewed CCTS shall provide the capability for the crew to manually override higher level software control/automation (such as automated abort initiation, configuration change, and mode change) when the transition to manual control of the system will not cause a catastrophic event.**

*Rationale: This is a specific capability necessary for the crew to control the crewed space system. While this capability should be derived by the program per paragraph 5.3.1, the critical nature of software control and automation at the highest system level dictates specific mention in these requirements. The program and Technical Authorities will determine the appropriate implementation of this requirement.*

**5.3.3 The CCTS shall provide the capability for humans to remotely monitor, operate, and control the crewed system elements and subsystems, where:**

- a. The remote capability is necessary to execute the mission; or
- b. The remote capability would prevent a catastrophic event; or
- c. The remote capability would prevent an abort.

*Rationale: This capability will likely be implemented using a mission control on Earth. Logically, there will be times when the crew is unavailable to monitor, operate, and control the system. If the crew vacates the CCTS as part of the reference mission (for example, after docking to ISS), there must be a capability for humans to monitor the unoccupied elements. In some of these cases, the crew may be able to perform this function from their new location. In other cases, mission control may perform this function. This requirement is not intended to force 100 percent of communication coverage for all elements of the system.*

**5.4 System Control Requirements – Spacecraft**

**5.4.1 The crewed CCTS shall provide the capability for the crew to manually control the flight path and attitude of their spacecraft, with the following exception: during the atmospheric portion of Earth ascent when structural and thermal margins have been determined to negate the benefits of manual control.**

*Rationale: The capability for the crew to control the spacecraft's flight path is a fundamental element of crew survival. Manual control means that the crew can bypass the automated guidance of the vehicle to*

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*interface directly with the flight control system to affect any flight path within the capability of the flight control system. Limiting the crew to choices presented by the automated guidance function is not a valid implementation of manual control. Manual control does not mean the capability to bypass the flight control system. Also, for phases of flight where there is no active control of the spacecraft, such as when under passive parachutes, then manual control cannot be provided and this requirement would not apply. During the atmospheric portion of Earth ascent (approximately the first 100,000 feet), where the trajectory and attitude are tightly constrained to maintain positive structural and thermal margins, the trajectory and attitude constraints are not typically available independent of guidance. In this case, if the only option is for the crew to follow guidance then nothing is gained by manual control over automated control.*

**5.4.2 The crewed CCTS shall exhibit Level 1 handling qualities (Handling Qualities Rating (HQR) 1, 2 and 3), as defined by the Cooper-Harper Rating Scale, during manual control of the spacecraft's flight path and attitude.**

*Rationale: Level 1 handling qualities are the accepted standard for manual control of flight path and attitude in military aircraft. Level 1 handling qualities will allow the crew to effectively control the spacecraft when necessary for mission completion or to prevent a catastrophic event. Selected manual control scenarios that must meet Level 1 handling qualities will be defined via review of potential manual control scenarios scoped with NASA agreement. Reference NASA TND-5153 for the Cooper-Harper Rating Scale.*

**5.5 System Control requirements – Proximity Operations**

**5.5.1 The CCTS shall provide the capability for the crew to monitor, operate, and control an uncrewed spacecraft during proximity operations, where:**

- a. The capability is necessary to execute the mission; or
- b. The capability would prevent a catastrophic event; or
- c. The capability would prevent an abort.

*Rationale: Proximity operations cover several scenarios, but this term is specifically defined as two (or more) systems operating in space) within the prescribed safe zone for either system. When an un-crewed space system is the active spacecraft performing proximity operations with a crewed spacecraft, this requirement includes the capability for the crew to monitor the trajectory of the un-crewed system. At a minimum, the crewed system will have the capability to send basic trajectory commands to hold/stop, continue, and breakout to the un-crewed spacecraft. Active means the spacecraft is changing the flight path/trajectory/orbital parameters to affect the desired result during proximity operations.*

**5.5.2 The crewed CCTS shall provide the capability for direct voice communication between crewed spacecraft (2 or more) during proximity operations.**

*Rationale: Direct voice communication means that the signal is not routed through mission control or another communication relay satellite.*

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## 5.6 Crew Survival/Abort Requirements

### 5.6.1 Ascent

#### 5.6.1.1 The CCTS shall provide the capability for unassisted crew emergency egress to a safe haven during prelaunch activities.

*Rationale: For contingency situations, where the ground crew is not immediately available, the crew will need the capability for unassisted egress from the vehicle for safety reasons.*

#### 5.6.1.2 The CCTS shall provide abort capability from the launch pad until orbit insertion to protect for the following ascent failure scenarios (minimum list):

- a. Complete loss of ascent thrust/propulsion.
- b. Loss of attitude or flight path control.
- c. Catastrophic event on pad or in flight

*Rationale: Flying a spacecraft through the atmosphere to orbit entails inherent risk. Three crewed launch vehicles have suffered catastrophic failures during ascent or on the launch pad (one Space Shuttle and two Soyuz spacecraft). Both Soyuz crews survived the catastrophic failure due to a robust ascent abort system. Analysis, studies, and past experience all provide data supporting ascent abort as the best option for the crew to survive a catastrophic failure of the launch vehicle. Although not specifically stated, the ascent abort capability incorporates some type of vehicle monitoring to detect failures and, in some cases, impending failures.*

#### 5.6.1.3 The crewed CCTS shall monitor the ascent launch vehicle performance and automatically initiate an abort when an impending catastrophic failure is detected.

*Rationale: Launch vehicle performance monitoring may include specific system or subsystem performance. The program will determine the appropriate parameters to monitor in the launch vehicle. Not all potentially catastrophic failures can be detected prior to manifestation. Similarly, system design and analysis cannot guarantee the crew will survive all catastrophic failures of the launch system, but the abort system should provide the best possible chance for the crew to survive. When an impending catastrophic failure of the launch vehicle is detected, the time to effect requires the abort system to be initiated automatically. Also, if the catastrophic failure itself is detected by a monitoring system, the abort is initiated automatically. This is not intended to require independent implementation by the crewed space system of capabilities inherent to the launch vehicle (the launch vehicle is part of the crewed space system).*

### 5.6.1.4 Ascent Abort

#### 5.6.1.4.1 The CCTS shall provide the capability for the crew to initiate the ascent abort sequence.

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**5.6.1.4.2 The CCTS shall provide the capability for the ground control to initiate the ascent abort sequence.**

*Rationale: The crew and ground control will likely have access to more data than an automated abort system. Therefore, both the crew and ground control have the capability to initiate the abort when necessary for crew survival.*

**5.6.1.5 If a range safety destruct system is incorporated into the design, the CCTS shall automatically initiate the ascent abort sequence when range safety destruct commands are received onboard, with an adequate time delay prior to destruction of the launch vehicle to allow a successful abort.**

*Rationale: Prior to destruction of the launch vehicle by means of a range safety destruct (flight termination) system, the abort system is initiated. An automated initiation of the abort sequence provides the best chance for crew survival while protecting the public from a range safety violation. It is left to the program to determine which range safety command (arm or fire) will result in the initiation of the abort sequence.*

**5.6.2 Orbit**

**5.6.2.1 The crewed CCTS shall provide the capability to autonomously abort the mission from orbit by targeting and performing de-orbits to a safe landing.**

**5.6.3 Reentry Systems**

**5.6.3.1 The crewed CCTS shall provide the capability for unassisted crew emergency egress after landing.**

*Rationale: This requirement assumes the crew is able to function in a 1-g environment. Unassisted means without help from ground or rescue personnel or equipment.*

**5.6.3.2 The crewed CCTS shall provide a safe haven capability for the crew inside the spacecraft after landing until the arrival of the landing recovery team or rescue forces.**

*Rationale: If the crew is physically unable to egress the spacecraft or does not choose to egress the spacecraft due to a hazardous environment outside, then the spacecraft provides a safe haven until the arrival of recovery forces. This requirement is not intended to establish the boundaries of the hazardous environment (for example, the maximum sea state) or the duration of the safe haven. The program, with concurrence from the Technical Authorities, specifies these conditions in their requirements documents. The nominal return to Earth will have well-established timelines and expectations for the habitation conditions inside the spacecraft. Conversely, after an ascent abort or emergency return to Earth, the timeline may be less certain and the expectations of comfort will be different from the nominal mission return.*

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**5.6.3.3 The CCTS shall provide recovery forces with the location of the spacecraft after return to Earth.**

*Rationale: In the event of a contingency, the spacecraft may not return to the nominal preplanned location. Experience has shown that the system needs to provide a means for recovery forces to be provided with the spacecraft location. The ISS Expedition 6 crew returned to Earth in a Soyuz spacecraft. A system failure caused the Soyuz to downmode to a ballistic entry. When this happened, the Soyuz landed 'short' of the targeted landing zone. The system could not provide the recovery forces with an accurate location and the crew was placed in a survival situation while waiting for recovery. Subsequently, the Soyuz system was modified with a location system for recovery forces. This system was successfully utilized on Expedition 15, when another ballistic entry occurred.*

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## 6.0 Technical Authority Mandatory Standards and Requirements

This section lists the documents that contain requirements applicable to CCTS development and operational activities per NASA Federal Acquisition Regulation (FAR) Supplement 1852.223-70 and Safety and Health, paragraphs 1.1.2, 1.4.2.a, 1.4.3.a, and 1.4.4.a of NPR 8705.2B. These requirements have been designated by the NASA Technical Authorities as the superset of requirements for NASA human spaceflight missions to LEO.

The NASA Program Manager and the TAs are responsible for determining the application of these standards and requirements to the specific DRM. The applicable revision of documents listed shall be the current revision in effect on the date of the agreement or contract. When the normative references cited within documents do not have an applicable revision specified, the applicable revision shall also be the current revision in effect on the date of the agreement or contract. The below listed requirements are in addition to all federal/state/local/tribal laws whose applicability takes precedence over NASA requirements unless otherwise stated therein.

The mandatory NASA TA documents are separated into 3 types:

Type 1 documents are those that contain requirements the CCTS Program must meet as written. Any Applicable Document listed within a Type 1 document is considered to be Type 2 document unless specifically noted.

Type 2 documents are those that contain requirements the CCTS Program can either choose to adopt, or propose an alternate. The Program will be allowed to propose alternate requirements and documents that they consider to meet or exceed the intent of the Type 2 document. The cognizant NASA TAs will evaluate the equivalency of the requirements and documents proposed by the CCTS Program. It will be the responsibility of the CCTS Program to demonstrate that a proposed alternate requirement or document fully meets the intent and the requirements of the document(s) listed herein, and obtain formal NASA approval.

Type 3 documents are those that contain requirements where the CCTS Program does not need to either formally adopt the document or recommend an alternate. Rather, these documents represent the ‘best practices’ observed by or normally used by NASA over the substantial development history of both human and non-human space flight missions. As such, they will form an integral reference in the development of Program requirements.

NASA Policy Documents (NPD) and NPR documents can be found at: <http://nodis3.gsfc.nasa.gov/>.  
 NASA Standards can be found at: <http://standards.nasa.gov/documents/nasa>.

### 6.1 Mandatory Health and Medical TA Requirements and Documents

Mandatory Health and Medical TA requirements and documents are fully applicable except as noted in Tables 6-1, 6-2, and 6-3. While these documents are under the control of the Health and Medical TA, documents marked with a “#” are also documents which are required by the Safety and Mission Assurance TA.

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**Table 6-1: Type 1 Health and Medical TA Documents**

<b>Document Number</b>	<b>Document Name</b>	<b>Applicability</b>
NASA-Standard-3001 Volume 1 <sup>1#</sup>	NASA Space Flight Human System Standard Volume 1: Crew Health	Fully Applicable.
NASA-Standard-3001 Volume 2 <sup>1#</sup>	NASA Space Flight Human System Standard Volume 2: Human Factors, Habitability, and Environmental Health	Fully Applicable. Volume 2 is in the approval process and with Volume 1, will supersede NASA-STD 3000 Volume I and II.
FAA HFDS <sup>1#</sup>	Human Factors Design Standard	This Standard is only invoked while NASA-STD 3001 Volume 2 is in the approval cycle. Once approved, FAA HFDS will be superseded by NASA-STD 3001 Volume 1 and 2.
MIL-STD-1472 <sup>1#</sup>	Human Engineering, Design Criteria for Military Systems, Equipment, and Facilities	This Standard is applicable for ground processing only.
NASA-Standard-3000 Volume I – II <sup>1#</sup>	Man-Systems Integration Standards.	This Standard is only invoked while NASA-STD 3001 Volume 2 is in the approval cycle. Once approved, NASA-STD 3000 will be superseded by NASA-STD 3001 Volume 1 and 2.

<sup>1</sup>The Type 1 Health and Medical TA mandatory documents listed above are tailored for use by CCTS Program for an ISS crew transport mission in the following documents. For LEO missions other than ISS crew transport missions, the HMTA mandatory standards must be applied.

- CCT-1002 Commercial Human Systems Integration Requirements <sup>#</sup>
- CCT-XXXX Commercial Medical Operations Requirements Document <sup>#</sup>
- CCT-XXXX Commercial Human Systems Integration Process Document

<sup>#</sup>This Health and Medical TA document is also required by SMA TA.

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**Table 6-2: Type 2 Health and Medical Documents**

Document Number	Document Name	Applicability
	None	

**Table 6-3: Type 3 Health and Medical Documents**

Document Number	Document Name	Applicability
NASA/SP-2010-3407 <sup>1</sup>	Human Integration Design Handbook	

<sup>1</sup>The Human Integration Design Handbook establishes the currently recognized data and guidelines for space facilities and related equipment that directly interface with crewmembers during space flight. The Human Integration Design Handbook was developed to serve as a companion document to NASA-STD-3001, Volume 2 and provides the necessary guidance to comply with the Standard.

## 6.2 Mandatory Engineering TA Requirements and Documents

Mandatory Engineering TA requirements and documents are fully applicable except as noted in Tables 6-4, 6-5, and 6-6. While these documents are under the control of the Engineering TA, documents marked with a “#” are also documents which are required by the Safety and Mission Assurance TA.

**Table 6-4: Type 1 Engineering TA Documents**

Document Number	Document Name	Applicability
	None	

**Table 6-5: Type 2 Engineering TA Documents**

Document Number	Document name	Applicability
NASA-STD-0005	NASA Configuration Management (CM) Standard	Fully applicable.
NASA-STD-4003	Electrical Bonding For NASA Launch Vehicles, Spacecraft, Payloads, And Flight Equipment	Fully applicable.
NASA-STD-4005	Low Earth Orbit Spacecraft Charging Design Standard	Fully applicable.

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Document Number	Document name	Applicability
NASA-STD-5005	Standard for the Design and Fabrication of Ground Support Equipment	Applicable sections are: 4.2.3.2 a & d; 4.2.4.6; 4.3.1 4.6.2.1 a & b; 5.1.2 a & b; 5.1.2.1; 5.2.3; 5.2.8; 5.2.9a; 5.2.13 a & b; 5.2.13.2; 5.4.21; 5.11.3.1.3.1a; 5.11.3.1.3.2a; 5.11.3.1.3.2.1a; 5.11.4.1; 5.11.4.8 a
NASA-STD-5017	Design and Development Requirements for Mechanisms	Sections 4.7 and 4.8.9 are not applicable.
NASA-STD-5019	Fracture Control Requirements For Spaceflight Hardware	Fully applicable.
NASA-STD-6016	Standard Manned Spacecraft Requirements for Materials and Processes	Fully applicable.
NPR 2810.1	Security of Information Technology	Fully applicable.
NPR 7120.5	NASA Space Flight Program and Project Management Requirements	Fully applicable.
NPR 7123.1	NASA Systems Engineering Processes and Requirements	Fully applicable.
NPR 7150.2 <sup>#</sup>	NASA Software Engineering Requirements	Fully applicable.
JSC 65828	Structural Design Requirements and Factors of Safety for Spaceflight Hardware	Revised version of CxP 70135 to remove CxP references and document number, make more generic for commercial crew development.
JSC 65829	Loads and Structural Dynamics Requirements for Spaceflight Hardware	Revised version of CxP 70137 to remove CxP references and document number, requires extensive tailoring to make suitable for commercial crew development.
JSC 62809 <sup>#</sup>	Human Rated Spacecraft Pyrotechnic Specification	Revised version of CxP 70199 to make suitable for commercial crew development.
JSC 65827	Thermal Protection System Design Standard for Spacecraft	Revised version of CxP 72095 to remove CxP references and document number, make more generic for commercial crew development.

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Document Number	Document name	Applicability
JSC 20793 <sup>#</sup>	Crewed Space Vehicle Battery Safety Requirements	Fully applicable.
JSC 62550	Strength Design and Verification Criteria for Glass, Ceramics, and Windows in Human Spaceflight Applications	Currently in work to become NASA-STD-5018. Sections 3.1.5.3/4.1.5.3, 3.1.6.14/4.1.6.14, and 3.4.2/4.4.2 are not applicable.
JSC 65830	Interim Requirements and Standard Practices for Mechanical Joints with Threaded Fasteners in Spaceflight Hardware	Fully applicable.
JSC 65985	Deployable Aerodynamic Decelerator Requirements for Human Spaceflight	Fully applicable.
MIL-STD-461	Requirements for the Control of Electromagnetic Interference Characteristics of Subsystems and Equipment	Fully applicable.
MIL-STD-464	Electromagnetic Environmental Effects Requirements for Systems	Fully applicable.
MIL-STD-981 <sup>#</sup>	Design, Manufacturing and Quality Standards for Custom Electromagnetic Devices for Space Applications	Fully applicable.
MIL-STD-1540E/ Aerospace Report No. TR-2004 (8583) -1 Rev. A	Test Requirements for Launch, Upper-Stage, and Space Vehicles	Fully applicable.
AIAA S-111-2005	Qualification and Quality Requirements for Space Solar Cells	Fully applicable – if part of architecture
AIAA-S-112-2005	Qualification and Quality Requirements for Space Solar Panels	Fully applicable – if part of architecture
ANSI/ESD S20.20-1999 <sup>#</sup>	ESD Association Standard for the Development of an Electrostatic Discharge Control Program for Protection of Electrical and Electronic Parts, Assemblies	Fully applicable.
IPC-2221	Generic Standard on Printed Board Design	Fully applicable.
IPC-2222	Sectional Design Standard for Rigid Organic Printed Boards	Fully applicable.
IPC-6011 1996	Generic Performance Specification for Rigid Printed Boards	Fully applicable.
IPC-6012	Qualification and Performance Specification for Rigid Printed Boards	Fully applicable.

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Document Number	Document name	Applicability
IPC-CM-770E	Component Mounting Guidelines for Printed Boards	Fully applicable.
SAE ARP 5412A	Aircraft Lightning Environment and Related Test Waveforms	Fully applicable.
SAE ARP 5413	Certification of Aircraft Electrical/Electronic Systems for the Indirect Effects of Lightning	Fully applicable.
SAE ARP 5414A	Aircraft Lightning Zoning	Fully applicable.
SAE ARP 5577	Aircraft Lightning Direct Effects Certification	Fully applicable.

**Table 6-6: Type 3 Engineering TA Documents**

Document Number	Document Name	Applicability Comments
GSFC-STD-1000	Goddard Space Flight Center Rules for the Design, Development, Verification, and Operation of Flight Systems	
JPR 8080.5	JSC Design and Procedural Standards	
KSC-DE-512	Facility, System, and Equipment General Design Requirements	
KSC-NE-9439	KSC Design Engineering Handbook for Design and Development of Ground Systems	
NESC-RP-06-108/05-173-E	Design, Development Test and Evaluation (DDT&E) Considerations for Safe and Reliable Human Rated Spacecraft Systems	
RTCA DO-160E	Environmental Conditions and Test Procedures for Airborne Equipment	
SAE ARP 5416	Aircraft Lightning Test Methods	

### 6.3 Mandatory SMA TA Requirements and Documents

The SMA TA does not have any documents that are “Type 1” documents as previously defined. Requirements of special interest to NASA are noted on the table with a “\*” that come from regulations placed on NASA (i.e.; Federal Law), affect national policy (i.e.; orbital debris), or are of special interest to the NASA Administrator (i.e.; safety).

Mandatory SMA TA requirements and documents are fully applicable except as noted in Tables 6-7, 6-8, and 6-9.

**Table 6-7: Type 1 SMA TA Documents**

Document Number	Document Name	Applicability
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	None	
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**Table 6-8: Type 2 SMA TA Documents**

Document Number	Document Name	Applicability
NPD 8700.1	NASA Policy for Safety and Mission Success	5.f, 5.g, 5.j, & 5.k
NPD 8710.5*	Policy for Pressure Vessels and Pressurized Systems	Fully applicable when operating on a NASA Facility, and when NASA personnel or critical NASA hardware are exposed to the PV/S. For flight hardware paragraphs 5.b.2-3
NPD 8730.1	Metrology and Calibration	Paragraphs 1.a & 1.b.
NPD 8730.2	NASA Parts Policy	Chapter 1*, Attachment A
NPR 8000.4	Risk Management Procedures and Guidelines	Fully applicable.
NPR 8621.1	NASA Procedural Requirements for Mishap and Close Call Reporting, Investigating, and Recordkeeping	<i>See Note #1</i>
NPR 8705.5	Probabilistic Risk Assessment (PRA) Procedures for NASA Programs and Projects	If PRAs are delivered to NASA, the format and content in this document is fully applicable.
NPR 8705.6	Safety and Mission Assurance Audits, Reviews, and Assessments	Only 4.2.6
NPR 8715.3	NASA General Safety Program Requirements	Only paragraphs 1.3.1.a*, 1.3.1.b, 1.5.2, 1.5.3*, 1.7, 2.5, 2.6 (with 2.6.1.b*) 2.7, 2.8, 3.2.3*, 3.5.1*, 3.8.2*, 3.11.2*, 3.12.2*, and 3.18.6*, and Chapter 6* (for any quantity of radioactive material in the launch system or spacecraft)
NPR 8715.5	Range Safety Program	Fully applicable when using NASA launch facilities/ranges
NPR 8715.6	NASA Procedural Requirements for Limiting Orbital Debris	1.3.10, 1.3.13, 2.1, & Chapters 2 & 3

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Document Number	Document Name	Applicability
NPR 8735.1	Procedures for Exchanging Parts, Materials, and Safety Problem Data Utilizing the Government-Industry Data Exchange Program (GIDEP) and NASA Advisories	Guidance in addition to NASA FAR Supplement for paragraphs 1.2.4, 4.1, 4.3, and 4.4.
NPR 8735.2	Management of Government Quality Assurance Functions for NASA Contracts	Fully applicable *
NASA-STD 8709.20	Management of Safety and Mission Assurance Technical Authority (SMA TA) Requirements	Fully applicable
NASA-STD 8719.12*	Safety Standard for Explosives, Propellants, and Pyrotechnics	Fully applicable to spacecraft and launch site. Personnel protection must be provided to all NASA personnel per document when NASA personnel are operating at CCT company or facility/location.
NASA-STD 8719.13	NASA Software Safety Standard	Fully applicable
NASA-STD 8719.14*	Process for Limiting Orbital Debris	<i>See Note #2.</i>
NASA-STD 8719.17*	NASA Requirements for Ground-Based Pressure Vessels and Pressurized Systems (PV/S)	Fully applicable when operating on a NASA Facility, when NASA personnel or critical NASA hardware are exposed to the PV/S and for flight hardware
NASA-STD 8739.1	Workmanship Standard for Staking and Conformal Coating of Printed Wiring Boards and Electronic Assemblies	Fully applicable.
NASA-STD 8739.4	Crimping, Interconnecting Cables, Harnesses, and Wiring	Fully applicable.
NASA-STD 8739.5	Fiber Optic Terminations, Cable Assemblies, and Installation	Fully applicable.
NASA-STD 8739.8	Software Assurance Standard	Only Sections 6.0, 7.1, 7.2.4, 7.3, & 7.4.

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Document Number	Document Name	Applicability
ANSI Z117.1	Safety Requirements for Confined Spaces	Fully applicable.
ANSI Z136.2	Safe Use of Optical Fiber Communication Systems Utilizing Laser Diode and LED Sources	Fully applicable when fiber optics are used.
ANSI/AIAA S-080	Space Systems-Metallic Pressure Vessels, Pressurized Structures, and Pressure Components	Fully applicable.
ANSI/AIAA S-081	Space Systems – Composite Overwrapped Pressure Vessels (COPV)	Fully applicable.
ANSI/ESD S20.20	Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Electrically Initiated Explosive Devices)	Fully applicable.
ANSI/NCSL Z540.3-2006	Requirements for the Calibration of Measuring and Test Equipment	Fully applicable.
ASTM Manual 36	Safe Use of Oxygen and Oxygen Systems: Guidelines for Oxygen System Design, Materials Selection, Operations, Storage, and Transportation	Fully applicable.
GEIA-STD-005-1	Performance Standard for Aerospace and High Performance Electronic Systems Containing Lead-Free Solder	Fully applicable.
IEEE 730-2002	IEEE Standard for Software Quality Assurance Plans	Fully applicable.
IPC J-STD-001D	J-STD 001D, Requirements for Soldered Electrical and Electronic Assemblies	Fully applicable with IPC J-STD-001DS Amendment 1.
IPC J-STD-001DS Amendment 1	Space Applications Electronic Hardware Addendum to J-STD 001D, Requirements for Soldered Electrical and Electronic Assemblies	Fully applicable.
SAE/AS5553*	Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition	Fully applicable.
SAE/AS9100	Quality Management Systems – Aerospace-Requirements	Fully applicable.

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**Note #1: NPR 8621.1 Applicability:**

NASA-STD 8621.1 is fully applicable to NASA spaceflight programs in addition to the mishap response requirements in NASA FAR Supplement 1852.223-70 paragraph d/e.

**Note #2: NASA-STD 8719.14 Applicability:**

NASA-STD 8719.14 is fully applicable to NASA spaceflight programs.

The CCTS Program shall provide a full Orbital Debris Assessment Report (ODAR) per Appendix A prior to the first flight of each configuration as a part of HR Cert. For follow-on flights of a configuration, a memorandum delineating changes from the delivered ODAR will be provided.

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**Table 6-9: Type 3 SMA TA Documents**

Document Number	Document Name	Applicability Comments
NPR 8621.1	NASA Procedural Requirements for Mishap and Close Call Reporting, Investigating, and Recordkeeping	Reference in addition to requirements noted in Table 6-1
NPD 8700.3	SMA Policy for NASA Spacecraft, Instruments, and Launch Services	Reference
NPD 8720.1	NASA Reliability and Maintainability (R&M) Program Policy	Reference
NPR 8715.3	NASA General Safety Program Requirements	Paragraphs not addressed in Tables 6-1 or 6-2
ANSI/ISO/IEC 17025-2000	General Requirements for Competence of Testing and Calibration Laboratories	Reference
ANSI/NCSL Z540.1-1994 (R2002)	General Requirements for Calibration Laboratories and Measuring and Test Equipment	Reference
AS 9003	Inspection and Test Quality System	Reference
NASA-STD 2202-93	Software Formal Inspections Standard	Reference
GIDEP S0300-BT-PRO-010	GIDEP Operations Manual	Reference
GIDEP S0300-BU-GYD-010	Government-Industry Data Exchange (GIDEP) Requirements Guide	Reference
GSFC-STD-1000	Goddard Space Flight Center Rules for the Design, Development, Verification, and Operation of Flight Systems	Reference

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## Appendix A: Acronyms

Acronyms	Phrase
AIAA	American Institute of Aeronautics and Astronautic
ANSI	American National Standards Institute
ARP	Aerospace Recommended Practice
CCTS	Commercial Crew Transportation System
CDR	Critical Design Review
CHRP	Commercial Human-Rating Plan
COPV	Composite Overwrapped Pressure Vessels
CxP	Constellation Program
DDT&E	Design, Development, Test, & Evaluation
DRM	Design Reference Mission
EEE	Electrical, Electronic, and Electromechanical
ESD	Electrostatic Discharge
FAA	Federal Aviation Administration
FAR	Federal Acquisition Regulation
FCOD	Flight Crew Operations Directorate
GEIA	Government Electronics and Information Technology Association
GFE	Government Furnished Equipment
GIDEP	Government Industry Data Exchange Program
GSFC	Goddard Spaceflight Center
HFDS	Human Factors Design Standard
HRCP	Human-Rating Certification Package
IEEE	Institute of Electrical and Electronics Engineers
IPC	IPC – Association Connecting Electronics Industries
ISS	International Space Station
JPL	Jet Propulsion Laboratory
JPR	JSC Procedural Requirement
JSC	Johnson Space Center
KSC	Kennedy Space Center
LEO	Low Earth Orbit
MIL	Military
MIL-HDBK	Military Handbook
MIL-STD	Military Standard
NASA	National Aeronautics and Space Administration
NESC	NASA Engineering and Safety Center
NPD	NASA Policy Document
NPR	NASA Procedural Requirement
ODAR	Orbital Debris Assessment Report
ORR	Operational Readiness Review
PDR	Preliminary Design Review

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<b>Acronyms</b>	<b>Phrase</b>
PMC	Program Management Council
PRA	Probabilistic Risk Assessment
RTCA	Radio Technical Committee for Aeronautics
R&M	Reliability and Maintainability
SAE	SAE International
SDR	System Definition Review
SMA	Safety and Mission Assurance
SRR	System Requirements Review
SSP	Space Station Program
STD	Standard
TA	Technical Authority

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## Appendix B: Definitions

Term	Definition
Abort	The forced early return of the crew to a nominal or contingency landing site when failures or the existence of uncontrolled catastrophic hazards prevent continuation of the mission profile and a return is required for crew survival. The crew is safely returned to a landing site in the space system nominally used for entry and landing/touchdown. Same as Mission Abort.
Analysis	A verification method utilizing techniques and tools such as math models, prior test data, simulations, analytical assessments, etc. Analysis may be used in lieu of, or in addition to, other methods to ensure compliance to specification requirements. The selected techniques may include, but not be limited to, engineering analysis, statistics and qualitative analysis, computer and hardware simulations, and analog modeling. Analysis may be used when it can be determined that rigorous and accurate analysis is possible, test is not cost effective, and verification by inspection is not adequate.
Ascent	The period of time from initial motion away from the launch pad until physical separation from the launch vehicle during nominal flight or during an abort.
Ascent Abort	An abort performed during ascent, where the crewed spacecraft is separated from the launch vehicle without the capability to achieve a safe stable orbit. The crew is safely returned to a landing site in a portion of the spacecraft nominally used for entry and landing/touchdown.
Automated	Automatic (as opposed to human) control of a system or operation.
Autonomous	Ability of a space system to perform operations independent from any ground-based systems. This includes no communication with, or real-time support from, mission control or other ground systems.
Catastrophic Event	An event resulting in the death or permanent disability of a crewmember or an event resulting in the unplanned loss/destruction of a major element of the CCTS during the mission that could potentially result in the death or permanent disability of a crewmember.
Catastrophic Hazard	A condition that could result in the death or permanent disability of a crewmember or in the unplanned loss/destruction of a major element of the CCTS during the mission that could potentially result in the death or permanent disability of a crewmember.
Crew	Any human onboard the spacecraft after the hatch is closed for flight or onboard the spacecraft during flight.

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<b>Term</b>	<b>Definition</b>
Commercial Crew Transportation System (CCTS)	The collection of all space-based and ground-based systems (encompassing hardware and software) used to conduct space missions or support activity in space, including, but not limited to, the integrated space vehicle, space-based communication and navigation systems, launch systems, and mission/launch control. (This definition is the same as the definition of Space System found in NPR 8705.2).
CCTS Certification	CCTS Certification is the documented authorization granted by the NASA Associate Administrator that allows the use of the CCTS within its prescribed parameters for its defined reference missions. CCTS Certification is obtained prior to the first crewed flight (for flight vehicles) or operational use (for other systems).
Critical Software	Any software component whose behavior or performance could lead to a catastrophic event or abort. This includes the flight software as well as ground-control software.
Demonstration	A method of verification that consists of a qualitative determination of the properties of a test article. This qualitative determination is made through observation, with or without special test equipment or instrumentation, which verifies characteristics such as human engineering features, services, access features, and transportability. Demonstration requirements are normally implemented within a test plan, operations plan, or test procedure.
Emergency	Either an ISS emergency or medical emergency unless specifically stated.
Emergency Egress	Capability for a crew to exit the vehicle and leave the hazardous situation or catastrophic event within the specified time. Flight crew emergency egress can be unassisted or assisted by ground personnel.
Emergency Equipment and Systems	Systems (Ground or Flight) that exist solely to prevent loss of life in the presence of imminent catastrophic conditions. Examples include fire suppression systems and extinguishers, emergency breathing devices, and crew escape systems. Emergency systems are not considered a leg of failure tolerance for the nominal, operational equipment and systems, and do not serve as a design control to prevent the occurrence of a catastrophic condition. Emergency equipment and systems are not required to be designed and tested to the full range of functional, performance and certification requirements defined for the nominal, operational equipment and systems
Failure Tolerance	The ability to sustain a certain number of failures and still retain a specific capability (e.g. capability to control hazards, capability to continue the mission, etc.). A component, subsystem, or system that cannot sustain at least one failure is not considered to be failure tolerant.
Habitable	The environment that is necessary to sustain the life of the crew and to allow the crew to perform their functions in an efficient manner. These environments are described in NASA-STD-3000.

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<b>Term</b>	<b>Definition</b>
Hazard	A state or a set of conditions, internal or external to a system, that has the potential to cause harm (Source - NPR 8715.3).
Hazard Analysis	The process of identifying hazards and their potential causal factors.
Health & Status Data	Data including Emergency, Caution, and Warning data that can be analyzed or monitored describing the ability of the system or system components to meet their performance requirements.
Human Error	Either an action that is not intended or desired by the human or a failure on the part of the human to perform a prescribed action within specified limits of accuracy, sequence, or time that fails to produce the expected result and has led or has the potential to lead to an unwanted consequence.
Human-System Integration	The process of integrating human operations into the system design through analysis, testing, and modeling of human performance, interface controls/displays, and human-automation interaction to improve safety, efficiency, and mission success.
Loss of Crew	Death or permanently debilitating injury to one or more crewmembers.
Loss of Mission	Loss of or the inability to complete the primary mission objectives defined in DRM
Manual Control	The crew's ability to bypass automation in order to exert direct control over a space system or operation. For control of a spacecraft's flight path, manual control is the ability for the crew to affect any flight path within the capability of the flight control system. Similarly, for control of a spacecraft's attitude, manual control is the ability for the crew to affect any attitude within the capability of the flight/attitude control system.
Mission	The mission begins with entry of the crew into the spacecraft, includes delivery of the crew to/from ISS, and ends with successful delivery of the crew to NASA after landing.
NASA Crew	The NASA crewmembers or the NASA sponsored crewmembers. These include international partner crewmembers.
Passenger	Any human on board the space system while in flight that has no responsibility to perform any mission task for that system. Often referred to as "Space Flight Participant."
Proximity Operations	Two or more vehicles operating in space near enough to each other so as to have the potential to affect each other. This includes rendezvous and docking (including hatch opening), undocking, and separation (including hatch closing).
Reliability	The probability that a system of hardware, software, and human elements will function as intended over a specified period of time under specified environmental conditions.

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<b>Term</b>	<b>Definition</b>
Rescue	The process of locating the crew, proceeding to their position, providing assistance, and transporting them to a location free from danger.
Risk	The combination of (1) the probability (qualitative or quantitative) including associated uncertainty that the space system will experience an undesired event (or sequences of events) such as internal system or component failure or an external event and (2) the magnitude of the consequences (personnel, public, and mission impacts) and associated uncertainties given that the undesired event(s) occur(s).
Risk Assessment	An evaluation of a risk item that determines (1) what can go wrong, (2) how likely is it to occur, and (3) what the consequences are.
Safe Haven	A functional association of capabilities and environments that is initiated and activated in the event of a potentially life-threatening anomaly and allows human survival until rescue, the event ends, or repair can be affected.
Safety	The absence from those conditions that can cause death, injury, occupational illness, damage to or loss of equipment or property, or damage to the environment.
Software	Computer instructions or data, stored electronically. Systems software includes the operating system and all the utilities that enable the computer to function. Applications software includes programs that do real work for users, such as word processors, spreadsheets, data management systems, and analysis tools. Software can be Commercial Off-The-Shelf (COTS), Contractor developed, Government Furnished, or combinations thereof.
Technical Authority	The NASA individual who specifically maintains technical responsibility for establishment of, changes to, and waivers of requirements in a designated area. There are three Technical Authorities: Engineering, Safety and Mission Assurance, Health and Medical.
Test	A method of verification in which technical means, such as the use of special equipment, instrumentation, simulation techniques, and the application of established principles and procedures are used for the evaluation of components, subsystems, and systems to determine compliance with requirements. Test will be selected as the primary method when analytical techniques do not produce adequate results; failure modes exist which could compromise personnel safety, adversely affect flight systems or payload operation, or result in a loss of mission objectives; or for any components directly associated with Space Station and orbiter interfaces. The analysis of data derived from tests is an integral part of the test program, and should not be confused with analysis as defined above. Tests will be used to determine quantitative compliance to requirements and produce quantitative results.
Validation	Proof that the product accomplishes the intended purpose. May be determined by a combination of test, analysis, and demonstration.

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<b>Term</b>	<b>Definition</b>
Verification	Proof of compliance with a requirement or specifications based on a combination of test, analysis, demonstration, and inspection.
Verification Plan	A formal document listing the specific technical process to be used to show compliance with each requirement.
Waiver	A written authorization allowing relief from a requirement.

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NATIONAL SPACE POLICY  
*of the*  
UNITED STATES *of* AMERICA

JUNE 28, 2010





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# Introduction

“More than by any other imaginative concept, the mind of man is aroused by the thought of exploring the mysteries of outer space. Through such exploration, man hopes to broaden his horizons, add to his knowledge, improve his way of living on earth.”

— President Dwight Eisenhower, June 20, 1958

“Fifty years after the creation of NASA, our goal is no longer just a destination to reach. Our goal is the capacity for people to work and learn and operate and live safely beyond the Earth for extended periods of time, ultimately in ways that are more sustainable and even indefinite. And in fulfilling this task, we will not only extend humanity’s reach in space—we will strengthen America’s leadership here on Earth.”

— President Barack Obama, April 15, 2010

The space age began as a race for security and prestige between two superpowers. The opportunities were boundless, and the decades that followed have seen a radical transformation in the way we live our daily lives, in large part due to our use of space. Space systems have taken us to other celestial bodies and extended humankind’s horizons back in time to the very first moments of the universe and out to the galaxies at its far reaches. Satellites contribute to increased transparency and stability among nations and provide a vital communications path for avoiding potential conflicts. Space systems increase our knowledge in many scientific fields, and life on Earth is far better as a result.

The utilization of space has created new markets; helped save lives by warning us of natural disasters, expediting search and rescue operations, and making recovery efforts faster and more effective; made agriculture and natural resource management more efficient and sustainable; expanded our frontiers; and provided global access to advanced medicine, weather forecasting, geospatial information, financial operations, broadband and other communications, and scores of other activities worldwide. Space systems allow people and governments around the world to see with clarity, communicate with certainty, navigate with accuracy, and operate with assurance.

The legacy of success in space and its transformation also presents new challenges. When the space age began, the opportunities to use space were limited to only a few nations, and there were limited consequences for irresponsible or unintentional behavior. Now, we find ourselves in a world where the benefits of space permeate almost every facet of our lives. The growth and evolution of the global economy has ushered in an ever-increasing number of nations and organizations using space. The now-ubiquitous and interconnected nature of space capabilities and the world’s growing dependence on them mean that irresponsible acts in space can have damaging consequences for all of us. For example,

decades of space activity have littered Earth's orbit with debris; and as the world's space-faring nations continue to increase activities in space, the chance for a collision increases correspondingly.

As the leading space-faring nation, the United States is committed to addressing these challenges. But this cannot be the responsibility of the United States alone. All nations have the right to use and explore space, but with this right also comes responsibility. The United States, therefore, calls on all nations to work together to adopt approaches for responsible activity in space to preserve this right for the benefit of future generations.

From the outset of humanity's ascent into space, this Nation declared its commitment to enhance the welfare of humankind by cooperating with others to maintain the freedom of space.

The United States hereby renews its pledge of cooperation in the belief that with strengthened international collaboration and reinvigorated U.S. leadership, all nations and peoples—space-faring and space-benefiting—will find their horizons broadened, their knowledge enhanced, and their lives greatly improved.

# Principles

In this spirit of cooperation, the United States will adhere to, and proposes that other nations recognize and adhere to, the following principles:

- It is the shared interest of all nations to act responsibly in space to help prevent mishaps, misperceptions, and mistrust. The United States considers the sustainability, stability, and free access to, and use of, space vital to its national interests. Space operations should be conducted in ways that emphasize openness and transparency to improve public awareness of the activities of government, and enable others to share in the benefits provided by the use of space.
- A robust and competitive commercial space sector is vital to continued progress in space. The United States is committed to encouraging and facilitating the growth of a U.S. commercial space sector that supports U.S. needs, is globally competitive, and advances U.S. leadership in the generation of new markets and innovation-driven entrepreneurship.
- All nations have the right to explore and use space for peaceful purposes, and for the benefit of all humanity, in accordance with international law. Consistent with this principle, “peaceful purposes” allows for space to be used for national and homeland security activities.
- As established in international law, there shall be no national claims of sovereignty over outer space or any celestial bodies. The United States considers the space systems of all nations to have the rights of passage through, and conduct of operations in, space without interference. Purposeful interference with space systems, including supporting infrastructure, will be considered an infringement of a nation’s rights.
- The United States will employ a variety of measures to help assure the use of space for all responsible parties, and, consistent with the inherent right of self-defense, deter others from interference and attack, defend our space systems and contribute to the defense of allied space systems, and, if deterrence fails, defeat efforts to attack them.

# Goals

Consistent with these principles, the United States will pursue the following goals in its national space programs:

- **Energize competitive domestic industries** to participate in global markets and advance the development of: satellite manufacturing; satellite-based services; space launch; terrestrial applications; and increased entrepreneurship.
- **Expand international cooperation** on mutually beneficial space activities to: broaden and extend the benefits of space; further the peaceful use of space; and enhance collection and partnership in sharing of space-derived information.
- **Strengthen stability in space** through: domestic and international measures to promote safe and responsible operations in space; improved information collection and sharing for space object collision avoidance; protection of critical space systems and supporting infrastructures, with special attention to the critical interdependence of space and information systems; and strengthening measures to mitigate orbital debris.
- **Increase assurance and resilience of mission-essential functions** enabled by commercial, civil, scientific, and national security spacecraft and supporting infrastructure against disruption, degradation, and destruction, whether from environmental, mechanical, electronic, or hostile causes.
- **Pursue human and robotic initiatives** to develop innovative technologies, foster new industries, strengthen international partnerships, inspire our Nation and the world, increase humanity's understanding of the Earth, enhance scientific discovery, and explore our solar system and the universe beyond.
- **Improve space-based Earth and solar observation** capabilities needed to conduct science, forecast terrestrial and near-Earth space weather, monitor climate and global change, manage natural resources, and support disaster response and recovery.

All actions undertaken by departments and agencies in implementing this directive shall be within the overall resource and policy guidance provided by the President; consistent with U.S. law and regulations, treaties and other agreements to which the United States is a party, other applicable international law, U.S. national and homeland security requirements, U.S. foreign policy, and national interests; and in accordance with the Presidential Memorandum on Transparency and Open Government.

# Intersector Guidelines

In pursuit of this directive's goals, all departments and agencies shall execute the following guidance:

## *Foundational Activities and Capabilities*

- **Strengthen U.S. Leadership In Space-Related Science, Technology, and Industrial Bases.** Departments and agencies shall: conduct basic and applied research that increases capabilities and decreases costs, where this research is best supported by the government; encourage an innovative and entrepreneurial commercial space sector; and help ensure the availability of space-related industrial capabilities in support of critical government functions.
- **Enhance Capabilities for Assured Access To Space.** United States access to space depends in the first instance on launch capabilities. United States Government payloads shall be launched on vehicles manufactured in the United States unless exempted by the National Security Advisor and the Assistant to the President for Science and Technology and Director of the Office of Science and Technology Policy, consistent with established interagency standards and coordination guidelines. Where applicable to their responsibilities departments and agencies shall:
  - Work jointly to acquire space launch services and hosted payload arrangements that are reliable, responsive to United States Government needs, and cost-effective;
  - Enhance operational efficiency, increase capacity, and reduce launch costs by investing in the modernization of space launch infrastructure; and
  - Develop launch systems and technologies necessary to assure and sustain future reliable and efficient access to space, in cooperation with U.S. industry, when sufficient U.S. commercial capabilities and services do not exist.
- **Maintain and Enhance Space-based Positioning, Navigation, and Timing Systems.** The United States must maintain its leadership in the service, provision, and use of global navigation satellite systems (GNSS). To this end, the United States shall:
  - Provide continuous worldwide access, for peaceful civil uses, to the Global Positioning System (GPS) and its government-provided augmentations, free of direct user charges;
  - Engage with foreign GNSS providers to encourage compatibility and interoperability, promote transparency in civil service provision, and enable market access for U.S. industry;
  - Operate and maintain the GPS constellation to satisfy civil and national security needs, consistent with published performance standards and interface specifications. Foreign positioning, navigation, and timing (PNT) services may be used to augment and strengthen the resiliency of GPS; and
  - Invest in domestic capabilities and support international activities to detect, mitigate, and increase resiliency to harmful interference to GPS, and identify and implement, as necessary and appropriate, redundant and back-up systems or approaches for critical infrastructure, key resources, and mission-essential functions.

- **Develop and Retain Space Professionals.** The primary goals of space professional development and retention are: achieving mission success in space operations and acquisition; stimulating innovation to improve commercial, civil, and national security space capabilities; and advancing science, exploration, and discovery. Toward these ends, departments and agencies, in cooperation with industry and academia, shall establish standards, seek to create opportunities for the current space workforce, and implement measures to develop, maintain, and retain skilled space professionals, including engineering and scientific personnel and experienced space system developers and operators, in government and commercial workforces. Departments and agencies also shall promote and expand public-private partnerships to foster educational achievement in Science, Technology, Engineering, and Mathematics (STEM) programs, supported by targeted investments in such initiatives.
- **Improve Space System Development and Procurement.** Departments and agencies shall:
  - Improve timely acquisition and deployment of space systems through enhancements in estimating costs, technological risk and maturity, and industrial base capabilities;
  - Reduce programmatic risk through improved management of requirements and by taking advantage of cost-effective opportunities to test high-risk components, payloads, and technologies in space or relevant environments;
  - Embrace innovation to cultivate and sustain an entrepreneurial U.S. research and development environment; and
  - Engage with industrial partners to improve processes and effectively manage the supply chains.
- **Strengthen Interagency Partnerships.** Departments and agencies shall improve their partnerships through cooperation, collaboration, information sharing, and/or alignment of common pursuits. Departments and agencies shall make their capabilities and expertise available to each other to strengthen our ability to achieve national goals, identify desired outcomes, leverage U.S. capabilities, and develop implementation and response strategies.

### *International Cooperation*

**Strengthen U.S. Space Leadership.** Departments and agencies, in coordination with the Secretary of State, shall:

- Demonstrate U.S. leadership in space-related fora and activities to: reassure allies of U.S. commitments to collective self-defense; identify areas of mutual interest and benefit; and promote U.S. commercial space regulations and encourage interoperability with these regulations;
- Lead in the enhancement of security, stability, and responsible behavior in space;
- Facilitate new market opportunities for U.S. commercial space capabilities and services, including commercially viable terrestrial applications that rely on government-provided space systems;
- Promote the adoption of policies internationally that facilitate full, open, and timely access to government environmental data;

- Promote appropriate cost- and risk-sharing among participating nations in international partnerships; and
- Augment U.S. capabilities by leveraging existing and planned space capabilities of allies and space partners.

**Identify Areas for Potential International Cooperation.** Departments and agencies shall identify potential areas for international cooperation that may include, but are not limited to: space science; space exploration, including human space flight activities; space nuclear power to support space science and exploration; space transportation; space surveillance for debris monitoring and awareness; missile warning; Earth science and observation; environmental monitoring; satellite communications; GNSS; geospatial information products and services; disaster mitigation and relief; search and rescue; use of space for maritime domain awareness; and long-term preservation of the space environment for human activity and use.

The Secretary of State, after consultation with the heads of appropriate departments and agencies, shall carry out diplomatic and public diplomacy efforts to strengthen understanding of, and support for, U.S. national space policies and programs and to encourage the foreign use of U.S. space capabilities, systems, and services.

**Develop Transparency and Confidence-Building Measures.** The United States will pursue bilateral and multilateral transparency and confidence-building measures to encourage responsible actions in, and the peaceful use of, space. The United States will consider proposals and concepts for arms control measures if they are equitable, effectively verifiable, and enhance the national security of the United States and its allies.

### *Preserving the Space Environment and the Responsible Use of Space*

**Preserve the Space Environment.** For the purposes of minimizing debris and preserving the space environment for the responsible, peaceful, and safe use of all users, the United States shall:

- Lead the continued development and adoption of international and industry standards and policies to minimize debris, such as the United Nations Space Debris Mitigation Guidelines;
- Develop, maintain, and use space situational awareness (SSA) information from commercial, civil, and national security sources to detect, identify, and attribute actions in space that are contrary to responsible use and the long-term sustainability of the space environment;
- Continue to follow the United States Government Orbital Debris Mitigation Standard Practices, consistent with mission requirements and cost effectiveness, in the procurement and operation of spacecraft, launch services, and the conduct of tests and experiments in space;
- Pursue research and development of technologies and techniques, through the Administrator of the National Aeronautics and Space Administration (NASA) and the Secretary of Defense, to mitigate and remove on-orbit debris, reduce hazards, and increase understanding of the current and future debris environment; and

- Require the head of the sponsoring department or agency to approve exceptions to the United States Government Orbital Debris Mitigation Standard Practices and notify the Secretary of State.

**Foster the Development of Space Collision Warning Measures.** The Secretary of Defense, in consultation with the Director of National Intelligence, the Administrator of NASA, and other departments and agencies, may collaborate with industry and foreign nations to: maintain and improve space object databases; pursue common international data standards and data integrity measures; and provide services and disseminate orbital tracking information to commercial and international entities, including predictions of space object conjunction.

### *Effective Export Policies*

Consistent with the U.S. export control review, departments and agencies should seek to enhance the competitiveness of the U.S. space industrial base while also addressing national security needs.

The United States will work to stem the flow of advanced space technology to unauthorized parties. Departments and agencies are responsible for protecting against adverse technology transfer in the conduct of their programs.

The United States Government will consider the issuance of licenses for space-related exports on a case-by-case basis, pursuant to, and in accordance with, the International Traffic in Arms Regulations, the Export Administration Regulations, and other applicable laws, treaties, and regulations. Consistent with the foregoing space-related items that are determined to be generally available in the global marketplace shall be considered favorably with a view that such exports are usually in the national interests of the United States.

Sensitive or advanced spacecraft-related exports may require a government-to-government agreement or other acceptable arrangement.

### *Space Nuclear Power*

The United States shall develop and use space nuclear power systems where such systems safely enable or significantly enhance space exploration or operational capabilities.

Approval by the President or his designee shall be required to launch and use United States Government spacecraft utilizing nuclear power systems either with a potential for criticality or above a minimum threshold of radioactivity, in accordance with the existing interagency review process. To inform this decision, the Secretary of Energy shall conduct a nuclear safety analysis for evaluation by an ad hoc Interagency Nuclear Safety Review Panel that will evaluate the risks associated with launch and in-space operations.

The Secretary of Energy shall:

- Assist the Secretary of Transportation in the licensing of space transportation activities involving spacecraft with nuclear power systems;
- Provide nuclear safety monitoring to ensure that operations in space are consistent with any safety evaluations performed; and

- Maintain the capability and infrastructure to develop and furnish nuclear power systems for use in United States Government space systems.

### *Radiofrequency Spectrum and Interference Protection*

The United States Government shall:

- Seek to protect U.S. global access to, and operation in, the radiofrequency spectrum and related orbital assignments required to support the use of space by the United States Government, its allies, and U.S. commercial users;
- Explicitly address requirements for radiofrequency spectrum and orbital assignments prior to approving acquisition of space capabilities;
- Seek to ensure the necessary national and international regulatory frameworks will remain in place over the lifetime of the system;
- Identify impacts to government space systems prior to reallocating spectrum for commercial, federal, or shared use;
- Enhance capabilities and techniques, in cooperation with civil, commercial, and foreign partners, to identify, locate, and attribute sources of radio frequency interference, and take necessary measures to sustain the radiofrequency environment in which critical U.S. space systems operate; and
- Seek appropriate regulatory approval under U.S. domestic regulations for United States Government earth stations operating with commercially owned satellites, consistent with the regulatory approval granted to analogous commercial earth stations.

### *Assurance and Resilience of Mission-Essential Functions*

The United States shall:

- Assure space-enabled mission-essential functions by developing the techniques, measures, relationships, and capabilities necessary to maintain continuity of services;
  - Such efforts may include enhancing the protection and resilience of selected spacecraft and supporting infrastructure;
- Develop and exercise capabilities and plans for operating in and through a degraded, disrupted, or denied space environment for the purposes of maintaining mission-essential functions; and
- Address mission assurance requirements and space system resilience in the acquisition of future space capabilities and supporting infrastructure.

# Sector Guidelines

United States space activities are conducted in three distinct but interdependent sectors: commercial, civil, and national security.

## *Commercial Space Guidelines*

The term “commercial,” for the purposes of this policy, refers to space goods, services, or activities provided by private sector enterprises that bear a reasonable portion of the investment risk and responsibility for the activity, operate in accordance with typical market-based incentives for controlling cost and optimizing return on investment, and have the legal capacity to offer these goods or services to existing or potential nongovernmental customers. To promote a robust domestic commercial space industry, departments and agencies shall:

- Purchase and use commercial space capabilities and services to the maximum practical extent when such capabilities and services are available in the marketplace and meet United States Government requirements;
- Modify commercial space capabilities and services to meet government requirements when existing commercial capabilities and services do not fully meet these requirements and the potential modification represents a more cost-effective and timely acquisition approach for the government;
- Actively explore the use of inventive, nontraditional arrangements for acquiring commercial space goods and services to meet United States Government requirements, including measures such as public-private partnerships, hosting government capabilities on commercial spacecraft, and purchasing scientific or operational data products from commercial satellite operators in support of government missions;
- Develop governmental space systems only when it is in the national interest and there is no suitable, cost-effective U.S. commercial or, as appropriate, foreign commercial service or system that is or will be available;
- Refrain from conducting United States Government space activities that preclude, discourage, or compete with U.S. commercial space activities, unless required by national security or public safety;
- Pursue potential opportunities for transferring routine, operational space functions to the commercial space sector where beneficial and cost-effective, except where the government has legal, security, or safety needs that would preclude commercialization;
- Cultivate increased technological innovation and entrepreneurship in the commercial space sector through the use of incentives such as prizes and competitions;
- Ensure that United States Government space technology and infrastructure are made available for commercial use on a reimbursable, noninterference, and equitable basis to the maximum practical extent;

- Minimize, as much as possible, the regulatory burden for commercial space activities and ensure that the regulatory environment for licensing space activities is timely and responsive;
- Foster fair and open global trade and commerce through the promotion of suitable standards and regulations that have been developed with input from U.S. industry;
- Encourage the purchase and use of U.S. commercial space services and capabilities in international cooperative arrangements; and
- Actively promote the export of U.S. commercially developed and available space goods and services, including those developed by small- and medium-sized enterprises, for use in foreign markets, consistent with U.S. technology transfer and nonproliferation objectives.

The United States Trade Representative (USTR) has the primary responsibility in the Federal Government for international trade agreements to which the United States is a party. USTR, in consultation with other relevant departments and agencies, will lead any efforts relating to the negotiation and implementation of trade disciplines governing trade in goods and services related to space.

## *Civil Space Guidelines*

### **Space Science, Exploration, and Discovery**

The Administrator of NASA shall:

- Set far-reaching exploration milestones. By 2025, begin crewed missions beyond the moon, including sending humans to an asteroid. By the mid-2030s, send humans to orbit Mars and return them safely to Earth;
- Continue the operation of the International Space Station (ISS), in cooperation with its international partners, likely to 2020 or beyond, and expand efforts to: utilize the ISS for scientific, technological, commercial, diplomatic, and educational purposes; support activities requiring the unique attributes of humans in space; serve as a continuous human presence in Earth orbit; and support future objectives in human space exploration;
- Seek partnerships with the private sector to enable safe, reliable, and cost-effective commercial spaceflight capabilities and services for the transport of crew and cargo to and from the ISS;
- Implement a new space technology development and test program, working with industry, academia, and international partners to build, fly, and test several key technologies that can increase the capabilities, decrease the costs, and expand the opportunities for future space activities;
- Conduct research and development in support of next-generation launch systems, including new U.S. rocket engine technologies;
- Maintain a sustained robotic presence in the solar system to: conduct scientific investigations of other planetary bodies; demonstrate new technologies; and scout locations for future human missions;
- Continue a strong program of space science for observations, research, and analysis of our Sun, solar system, and universe to enhance knowledge of the cosmos, further our understanding

of fundamental natural and physical sciences, understand the conditions that may support the development of life, and search for planetary bodies and Earth-like planets in orbit around other stars; and

- Pursue capabilities, in cooperation with other departments, agencies, and commercial partners, to detect, track, catalog, and characterize near-Earth objects to reduce the risk of harm to humans from an unexpected impact on our planet and to identify potentially resource-rich planetary objects.

### **Environmental Earth Observation and Weather**

To continue and improve a broad array of programs of space-based observation, research, and analysis of the Earth's land, oceans, and atmosphere:

- The NASA Administrator, in coordination with other appropriate departments and agencies, shall conduct a program to enhance U.S. global climate change research and sustained monitoring capabilities, advance research into and scientific knowledge of the Earth by accelerating the development of new Earth observing satellites, and develop and test capabilities for use by other civil departments and agencies for operational purposes.
- The Secretary of Commerce, through the National Oceanic and Atmospheric Administration (NOAA) Administrator, and in coordination with the NASA Administrator and other appropriate departments and agencies, shall, in support of operational requirements:
  - Transition mature research and development Earth observation satellites to long-term operations;
  - Use international partnerships to help sustain and enhance weather, climate, ocean, and coastal observation from space; and
  - Be responsible for the requirements, funding, acquisition, and operation of civil operational environmental satellites in support of weather forecasting, climate monitoring, ocean and coastal observations, and space weather forecasting. NOAA will primarily utilize NASA as the acquisition agent for operational environmental satellites for these activities and programs.
- The Secretary of Commerce, through the NOAA Administrator, the Secretary of Defense, through the Secretary of the Air Force, and the NASA Administrator shall work together and with their international partners to ensure uninterrupted, operational polar-orbiting environmental satellite observations. The Secretary of Defense shall be responsible for the morning orbit, and the Secretary of Commerce shall be responsible for the afternoon orbit. The departments shall continue to partner in developing and fielding a shared ground system, with the coordinated programs operated by NOAA. Further, the departments shall ensure the continued full sharing of data from all systems.

### **Land Remote Sensing**

The Secretary of the Interior, through the Director of the United States Geological Survey (USGS), shall:

- Conduct research on natural and human-induced changes to Earth's land, land cover, and inland surface waters, and manage a global land surface data national archive and its distribution;

- Determine the operational requirements for collection, processing, archiving, and distribution of land surface data to the United States Government and other users; and
- Be responsible, in coordination with the Secretary of Defense, the Secretary of Homeland Security, and the Director of National Intelligence, for providing remote sensing information related to the environment and disasters that is acquired from national security space systems to other civil government agencies.

In support of these critical needs, the Secretary of the Interior, through the Director of the USGS, and the NASA Administrator shall work together in maintaining a program for operational land remote sensing observations.

The NASA and NOAA Administrators and the Director of the USGS shall:

- Ensure that civil space acquisition processes and capabilities are not unnecessarily duplicated; and
- Continue to develop civil applications and information tools based on data collected by Earth observation satellites. These civil capabilities will be developed, to the greatest extent possible, using known standards and open protocols, and the applications will be made available to the public.

The Secretary of Commerce, through the Administrator of NOAA, shall provide for the regulation and licensing of the operation of commercial sector remote sensing systems.

### *National Security Space Guidelines*

The Secretary of Defense and the Director of National Intelligence, in consultation with other appropriate heads of departments and agencies, shall:

- Develop, acquire, and operate space systems and supporting information systems and networks to support U.S. national security and enable defense and intelligence operations during times of peace, crisis, and conflict;
- Ensure cost-effective survivability of space capabilities, including supporting information systems and networks, commensurate with their planned use, the consequences of lost or degraded capability, the threat, and the availability of other means to perform the mission;
- Reinvigorate U.S. leadership by promoting technology development, improving industrial capacity, and maintaining a robust supplier base necessary to support our most critical national security interests;
- Develop and implement plans, procedures, techniques, and capabilities necessary to assure critical national security space-enabled missions. Options for mission assurance may include rapid restoration of space assets and leveraging allied, foreign, and/or commercial space and nonspace capabilities to help perform the mission;
- Maintain and integrate space surveillance, intelligence, and other information to develop accurate and timely SSA. SSA information shall be used to support national and homeland

security, civil space agencies, particularly human space flight activities, and commercial and foreign space operations;

- Improve, develop, and demonstrate, in cooperation with relevant departments and agencies and commercial and foreign entities, the ability to rapidly detect, warn, characterize, and attribute natural and man-made disturbances to space systems of U.S. interest; and
- Develop and apply advanced technologies and capabilities that respond to changes to the threat environment.

The Secretary of Defense shall:

- Be responsible, with support from the Director of National Intelligence, for the development, acquisition, operation, maintenance, and modernization of SSA capabilities;
- Develop capabilities, plans, and options to deter, defend against, and, if necessary, defeat efforts to interfere with or attack U.S. or allied space systems;
- Maintain the capabilities to execute the space support, force enhancement, space control, and force application missions; and
- Provide, as launch agent for both the defense and intelligence sectors, reliable, affordable, and timely space access for national security purposes.

The Director of National Intelligence shall:

- Enhance foundational intelligence collection and single- and all-source intelligence analysis;
- Develop, obtain, and operate space capabilities to support strategic goals, intelligence priorities, and assigned tasks;
- Provide robust, timely, and effective collection, processing, analysis, and dissemination of information on foreign space and supporting information system activities;
- Develop and enhance innovative analytic tools and techniques to use and share information from traditional and nontraditional sources for understanding foreign space-related activities;
- Identify and characterize current and future threats to U.S. space missions for the purposes of enabling effective protection, deterrence, and defense;
- Integrate all-source intelligence of foreign space capabilities and intentions with space surveillance information to produce enhanced intelligence products that support SSA;
- Support national defense and homeland security planning and satisfy operational requirements as a major intelligence mission;
- Support monitoring, compliance, and verification for transparency and confidence-building measures and, if applicable, arms control agreements; and
- Coordinate on any radiofrequency surveys from space conducted by United States Government departments or agencies and review, as appropriate, any radiofrequency surveys from space conducted by licensed private sector operators or by state and local governments.

## **Restructuring the National Polar-orbiting Operational Environmental Satellite System**

*February 1, 2010*

The President's FY2011 budget contains a major restructuring of the National Polar-orbiting Operational Environmental Satellite System (NPOESS) in order to put the critical program on a more sustainable pathway toward success. The satellite system is a national priority -- essential to meeting both civil and military weather-forecasting, storm-tracking, and climate-monitoring requirements. However, the program is behind schedule, over budget, and underperforming. Independent reports and an administration task force have concluded that the current program cannot be successfully executed with the current management structure, and with the current budget structure. These challenges originate in large part because of a combination of management deficiencies that result from conflicting perspectives and priorities among the three agencies who manage the program. Serious lapses in capabilities loom as a result.

### **Background**

NPOESS is a tri-agency program with the Department of Commerce (specifically the National Oceanic and Atmospheric Administration, or NOAA), the Department of Defense (DOD, specifically the Air Force), and the National Aeronautics and Space Administration (NASA) designed to merge the civil and defense weather satellite programs in order to reduce costs and to provide global weather and climate coverage with improved capabilities above the current system.

In 2002, the NPOESS program was estimated to cost approximately \$6.5B (for development and operations through FY2018) and consisted of an initial NASA satellite to test the new sensors (the NPOESS Preparatory Project – NPP - to be launched in early 2006) and six NPOESS platforms in three orbits, the first of which (C-1) was to be launched in early 2009. The program encountered numerous technical and management challenges, which led to restructuring of the NPOESS program in 2006 due to cost over-runs that triggered Congressionally-mandated recertification. The restructured program reduced the scale of the program from six main satellites (in three orbits) to four satellites (in two orbits). (The U.S. will rely on European satellites for operational weather observations from the remaining orbit.) The NPP launch has been delayed to 2011, and the launch of the first NPOESS platform (C-1) was expected to be in late 2014. (These would each be delays of five years from the original plan.) At that time the new life-cycle cost estimate (through FY2024 due to delays) was approximately \$12B for this reduced capability. The current official baseline life-cycle cost estimate is approximately \$13.9B.

### **A new direction for ensuring continuity of polar-orbiting satellite measurements:**

After reviewing options, including those suggested by an Independent Review Team (IRT) and Congressional Committees, the President's FY2011 budget takes significant new steps. Today the White House is announcing that NOAA and the Air Force would no longer continue to jointly procure the polar-orbiting satellite system called NPOESS. This decision is in the best interest of the American public to preserve critical operational weather and climate observations into the future.

- The three agencies (DOD, NOAA and NASA) have and will continue to partner to ensure a successful way forward for the respective programs, while utilizing international partnerships to sustain and enhance weather and climate observation from space.
- The major challenge of NPOESS was jointly executing the program between three agencies of different size with divergent objectives and different acquisition procedures. The new system will resolve this challenge by splitting the procurements. NOAA and NASA will take primary responsibility for the afternoon orbit, and DOD will take primary responsibility for the morning orbit. The agencies will continue to partner in those areas that have been successful in the past, such as a shared ground system. The restructured programs will also eliminate the NPOESS tri-agency structure that that has made management and oversight difficult, contributing to the poor performance of the program.

- NOAA and the Air Force have already begun to move into a transition period during which the current joint procurement will end. A detailed plan for this transition period will be available in a few weeks. The agencies will continue a successful relationship that they have developed for their polar and geostationary satellite programs to date. NOAA's portion will notionally be named the "Joint Polar Satellite System," and will consist of platforms based on the NPP satellite.
- In addition, these Agencies have a strong partnership with Europe through the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) that will continue to be a cornerstone of our polar-orbiting constellation. This partnership will remain a key part of our ability to provide continuous polar-orbiting measurements.
- These changes to the NPOESS program will better ensure continuity of crucial civil climate and weather data in the future. A main focus remains continuity of polar-orbiting satellite data. Decisions on future satellite programs will be made to ensure the best plan for continuity of data.
- While the Air Force continues to have remaining Defense Meteorological Satellite Program (DMSP) polar-orbiting satellites available for launch for the next few years, NOAA launched its final polar-orbiting satellite in February 2009. Given that weather forecasters and climate scientists rely on the data from NOAA's current on-orbit assets, efforts will focus development of the first of the Joint Polar Satellite System platforms on ensuring both short- and long-term continuity in crucial climate and weather data.
- NASA's role in the restructured program will be modeled after the procurement structure of the successful POES and GOES programs, where NASA and NOAA have a long and effective partnership. Work is proceeding rapidly with NOAA to establish a JPSS program at NASA's Goddard Space Flight Center (GSFC).
- The NASA developed and operating Earth Observing System (EOS) Aqua satellite and ground system are very similar in scope and magnitude to the proposed JPSS program.
- NOAA and NASA will strive to ensure that all current NPOESS requirements are met on the most rapid practicable schedule without reducing system capabilities.
- NASA program and project management practices have been refined over decades of experience developing and acquiring space systems and NASA anticipates applying its current practices to JPSS. NASA program and project management processes will include thorough and ongoing review and oversight of project progress. Cost-estimates will be produced at or close to the 80% confidence level.
- DOD remains committed to a partnership with NOAA in preserving the Nation's weather and climate sensing capability. For the morning orbit, the current DOD plan for deploying DMSP satellites ensures continued weather observation capability. The availability of DMSP satellites supports a short analysis (in cooperation with the partner agencies) of DOD requirements for the morning orbit and solutions with the start of a restructured program in the 4th quarter of fiscal year 2011. While this study is being conducted, DOD will fully support NOAA's needs to ensure continuity of data in the afternoon orbit by transitioning appropriate and relevant activities from the current NPOESS effort.
- We expect much of the work being conducted by Northrop-Grumman and their subcontracts will be critical to ensuring continuity of weather observation in the afternoon orbit. DOD will work closely with the civil partners to ensure the relevant efforts continue productively and efficiently, and ensure the requirements of the national weather and climate communities are taken into consideration in building the resultant program for the morning orbit.

## **Additional Points:**

- Observations of the Earth's environment, both from space and on the surface, are a priority for this Administration. Information about the planet is vital to our ability to plan, predict, respond, and protect our citizens and infrastructure. The nation's system of polar-orbiting environmental satellites is essential for supporting climate research as well as operational weather and storm forecasting for civil, military, and international partners.
- For this reason, maintaining a capable, operational environmental satellite system is vitally important, and a primary focus of this effort remains on the continuity of the polar-orbiting satellite data that system users - both civil and defense - have come to rely on.
- The NPOESS program was designed to deliver improved capabilities above the current system of civil and defense weather satellites. The U.S. leadership in this area over the last three decades will continue into the future. The partner agencies (DOD, NOAA and NASA) are committed to maintaining collaborations towards the goal of continuity of earth observations from space, and minimizing - if not eliminating - potential gaps in data.
- The NPOESS program has experienced several challenges to date, including schedule delays and cost increases. Recent reports have illustrated the difficulties the program has experienced, and the Administration has closely examined the findings in these reports.
- Since August, an Executive Office of the President (EOP) Task Force (with participation from OSTP, OMB and NSC), working in close cooperation with the partner agencies, has been investigating various options for how to go forward with the NPOESS program.
- The Task Force performed a careful and in-depth analysis of NPOESS management challenges, agency requirements, and potential options for strengthening the program. A primary goal of the interagency discussions has been to provide a more robust operational satellite system, with specific attention on the need for ensuring continuity in the environmental measurements.
- Although challenges remain, development of NPOESS assets has continued through this process. Significant progress has been made with the NPP, now with a realistic and achievable launch date of September 2011. A key instrument, the Visible Infrared Imager Radiometer Suite (VIIRS), has been tested and shipped from the developers to NPP and can now be integrated onto the spacecraft. The Ozone Mapping and Profiler Suite (OMPS) has been developed, integrated onto the NPP spacecraft, and tested for flight. The Advanced Technology Microwave Sounder (ATMS) has been integrated and fully tested for flight. NOAA and NASA have taken advantage of the NPP opportunity to add the Clouds and the Earth's Radiant Energy System (CERES) instrument to NPP. This instrument has been integrated onto the spacecraft and tested for flight, thus ensuring the continuity of this critical data set beyond the NASA EOS (Terra and Aqua) missions.
- Partnerships are the key to our ability to provide continuous polar-orbiting measurements. NOAA, NASA, and the DOD/Air Force have had a very productive relationship in polar observations; sharing data, coordinating user needs, and operating satellites. This cooperative relationship is essential and will continue for years to come. Likewise, partnerships with Europe through EUMETSAT will continue to be a strong part of our polar-orbiting constellation.

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1 AN ACT  
2 RELATING TO TORT CLAIMS; PROVIDING IMMUNITY FROM TORT  
3 LIABILITY FOR CERTAIN ENTITIES ENGAGING IN SPACE FLIGHT  
4 ACTIVITIES.

5  
6 BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF NEW MEXICO:

7 Section 1. SHORT TITLE.--This act may be cited as the  
8 "Space Flight Informed Consent Act".

9 Section 2. DEFINITIONS.--As used in the Space Flight  
10 Informed Consent Act:

11 A. "participant" means a space flight participant  
12 as that term is defined in 49 U.S.C. Section 70102;

13 B. "space flight activities" means launch services  
14 or reentry services as those terms are defined in 49 U.S.C.  
15 Section 70102; and

16 C. "space flight entity" means a public or private  
17 entity holding a United States federal aviation  
18 administration launch, reentry, operator or launch site  
19 license for space flight activities.

20 Section 3. CIVIL IMMUNITY FOR SPACE FLIGHT ENTITIES.--

21 A. Except as provided in Subsection B of this  
22 section, a space flight entity is not liable for injury to or  
23 death of a participant resulting from the inherent risks of  
24 space flight activities so long as the warning contained in  
25 Section 4 of the Space Flight Informed Consent Act is

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Page 1

1 distributed and signed as required. Except as provided in  
2 Subsection B of this section, a participant or participant's  
3 representative may not maintain an action against or recover  
4 from a space flight entity for the loss, damage or death of  
5 the participant resulting exclusively from any of the  
6 inherent risks of space flight activities.

7 B. Subsection A of this section does not prevent  
8 or limit the liability of a space flight entity if the space  
9 flight entity:

10 (1) commits an act or omission that  
11 constitutes gross negligence or willful or wanton disregard  
12 for the safety of the participant and that act or omission  
13 proximately causes injury, damage or death to the  
14 participant;

15 (2) has actual knowledge or reasonably  
16 should have known of a dangerous condition on the land or in  
17 the facilities or equipment used in the space flight  
18 activities and the danger proximately causes injury, damage  
19 or death to the participant; or

20 (3) intentionally injures the participant.

21 C. The limitation on legal liability provided to a  
22 space flight entity by the Space Flight Informed Consent Act  
23 is in addition to any other limitation of legal liability  
24 otherwise provided by law.

25 Section 4. WARNING AND ACKNOWLEDGMENT REQUIRED.--

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Page 2

1           A. A space flight entity providing space flight  
2 activities to a participant, whether the activities occur on  
3 or off the site of a facility capable of launching a  
4 suborbital flight, shall have each participant sign a warning  
5 statement. The warning statement shall contain, at a  
6 minimum, the following statement:

7                           "WARNING AND ACKNOWLEDGMENT

8           I understand and acknowledge that under New Mexico law,  
9 there is no liability for injury to or death sustained by a  
10 participant in a space flight activity provided by a space  
11 flight entity if the injury or death results from the  
12 inherent risks of the space flight activity. Injuries caused  
13 by the inherent risks of space flight activities may include,  
14 among others, death, bodily injury, emotional injury or  
15 property damage. I assume all risk of participating in this  
16 space flight activity."

17           B. Failure to provide the warning statement  
18 requirements in this section to a participant shall prevent a  
19 space flight entity from invoking the immunity provided by  
20 this section with regard to that participant.

21           Section 5. DELAYED REPEAL.--The Space Flight Informed  
22 Consent Act is repealed effective July 1, 2018. \_\_\_\_\_

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# RES COMMUNIS

A blog on the legal aspects of human activities using aerospace technologies

## Selected bills and legislation

- **H.R. 6063: National Aeronautics and Space Administration Authorization Act of 2008**
- **S. 3001: Duncan Hunter National Defense Authorization Act for Fiscal Year 2009**
- **H.R. 6984: Federal Aviation Administration Extension Act of 2008**

## Selected interviews

- **Mike Gold - Corporate Counsel, Bigelow Aerospace**
- **Tracey L. Knutson - Attorney, Knutson & Associates**
- **Glenn H. Reynolds - Professor of Law, University of Tennessee College of Law**

## Selected primary sources

- **Hearing: China's Proliferation Practices, and the Development of its Cyber and Space Warfare Capabilities**
- **Conference on Disarmament Statements**
- **Statement of Intent Regarding the International Lunar Network**

## Selected guest bloggers

- **Hiroshi Kiyohara - Chief Attorney, Musashi International Law Offices**
- **Col. M.V. "Coyote" Smith - United States Air Force**
- **Parviz Tarikhi - Department Head, Mahdasht Satellite Receiving Station**

## Selected court cases

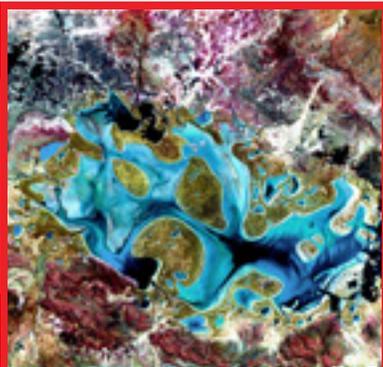
- **Enomoto v. Space Adventures**
- **Ladman Partners Inc. v, Globalstar Inc.**
- **Bowe v. Worldwide Flight Services**
- **Ary v. United States**
- **American Air Transport Association of America v. Cuomo**

For more information about the National Center for Remote Sensing, Air, and Space Law and its activities, please contact us:

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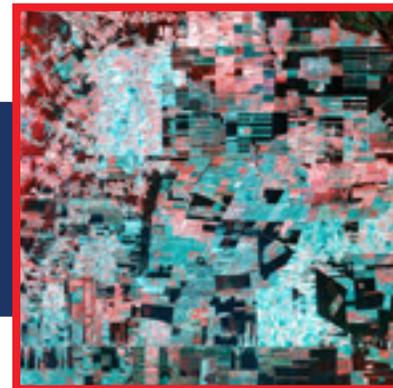
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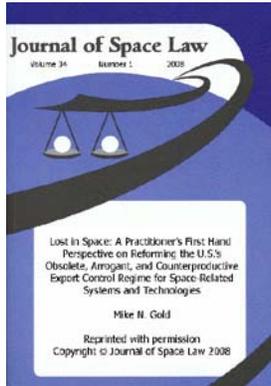
or <http://www.spacelaw.olemiss.edu>

Inquiries can be directed to [rescommunis@olemiss.edu](mailto:rescommunis@olemiss.edu)

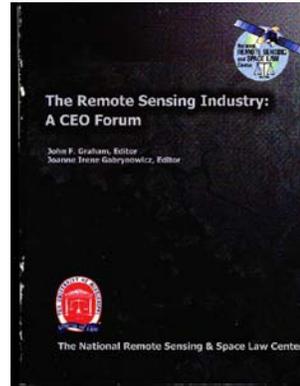
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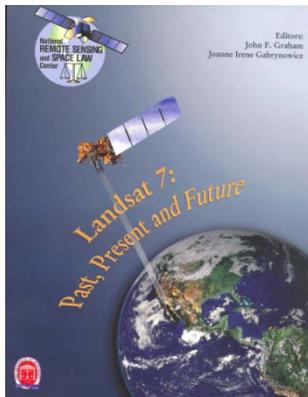
The National Center for Remote Sensing, Air, and Space Law has the following books available for purchase. For Book Descriptions and ordering information, please visit our website at: [Http://www.spacelaw.olemiss.edu/](http://www.spacelaw.olemiss.edu/).



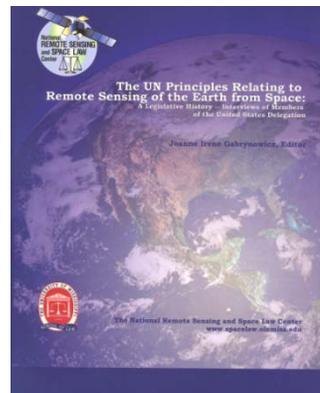
Remote Sensing, Air, and Space Law International Bibliography, 1930-2007: A Special Publication of the JOURNAL OF SPACE LAW – with CD-ROM - \$45.00



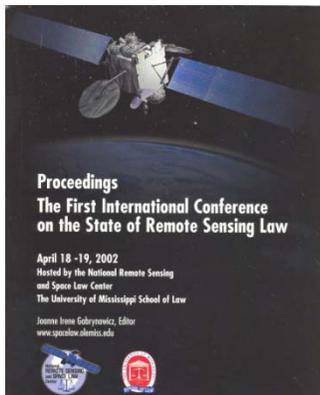
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