



UNITED STATES DEPARTMENT OF COMMERCE
Chief Financial Officer and
Assistant Secretary for Administration
Washington, D.C. 20230

AUG 6 2013

The Honorable Barbara A. Mikulski
Chairwoman
Committee on Appropriations
United States Senate
Washington, DC 20510

Dear Madam Chairwoman:

Enclosed is the National Oceanic and Atmospheric Administration (NOAA) *Framework for a compensation policy for NOAA to be reimbursed for specialized data products derived from NOAA satellite imagery and data*. Pursuant to the Senate Report (P.L. 112-78) adopted by reference within the Conference Report that accompanies the Consolidated and Further Continuing Appropriations Act, 2012 (P.L. 112-55). The relevant Congressional Direction follows:

Senate report (P.L. 112-78): “...*Third, ... NOAA shall establish a compensation policy that requires the agency to be fully reimbursed by appropriate Federal agencies or scientific institutions for the use of JPSS data, information and products...*”

Conference Report (P.L. 112-55): “...*the conferees direct NOAA to outline a framework for compensation policy that would enable NOAA to be reimbursed as appropriate for the use of specialized data products derived from NOAA satellite imagery and data...*”

Please contact me at (202) 482-6269, should you have questions. Thank you for the continued support of the Department of Commerce and its programs.

Sincerely,

A handwritten signature in black ink that reads "Ellen Herbst".

Ellen Herbst
Senior Advisor to the Deputy Secretary
performing the non-exclusive duties of the Chief Financial Officer
and Assistant Secretary for Administration

Enclosure

June 2013



**A REPORT TO CONGRESS:
FRAMEWORK FOR A COMPENSATION POLICY FOR NOAA TO BE
REIMBURSED FOR SPECIALIZED DATA PRODUCTS DERIVED FROM NOAA
SATELLITE IMAGERY AND DATA**

**U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Environmental Satellite, Data, and Information Service
2013**

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1 | Congressional Direction

The Conference report which accompanied H.R. 2112, Public Law 112-55, contained the following language *“Further, the conferees direct NOAA to outline a framework for developing a compensation policy that would enable NOAA to be reimbursed as appropriate for the use of specialized data products derived from NOAA satellite imagery and data.”* The Conference report also incorporated direction given by the United States Senate in Senate Report 112-78 that *“NOAA shall be reimbursed for any special products, services, data transfers, or any activities conducted in collaboration with any other Federal agency or non-Federal entity per section 112 of this title.”*

2 | Executive Overview

The National Oceanic and Atmospheric Administration (NOAA) provides the majority of its data and products derived from NOAA Earth observation satellites on a full and open basis. NOAA Administrative Order (NAO) 212-15¹ establishes environmental data management policy for NOAA and provides high-level guidance for procedures, decisions and actions regarding environmental data management. Consistent with Federal policy directives, NOAA does not directly assess user fees on operational satellite data, products and services.

NOAA also receives requests for specialized products or services. Requests that can be fulfilled by NOAA National Data Centers (NNDC) are governed by specific policy documents. Requests for specialized satellite-derived data and products do not have an analogous policy document.

Accordingly, NOAA is developing a guidance document that will consolidate direction for NOAA decision-makers when reviewing and considering any new requests for specialized satellite data, products, and services. This guidance document is planned to be completed in 2013, and will be maintained under the auspices of the NAO 212-15. Implementation of the guidance document will be pursuant to NOAA’s already-existing legal authorities to charge user fees or recoup expenses incurred to develop these specialized data, products and services.

This guidance document is planned to be completed in 2013, and will be reviewed, along with its component policies, on a regular basis as necessary.

¹ http://www.corporateservices.noaa.gov/ames/administrative_orders/chapter_212/212-15.html

3 | Report Scope and Approach

Based on the direction given by Congress, the scope of this report includes NOAA satellite data, products, or specialized access services that are requested by an external (non-NOAA) customer, and are not currently produced. This report is divided into three sections:

1. NOAA's existing authorities to assess user fees;
2. Current NOAA compensation policies and practices regarding charging for specialized satellite products, services, access and data; and
3. NOAA's planned way forward.

3.1 | NOAA's Existing Authorities to Assess User Fees

The following Federal statutes and policies provide the authorization for NESDIS to assess user fees. The text of each statute and policy are not repeated in their entirety but may be accessed at the cited links.

1. 15 U.S.C. § 1525, Special Studies; Special Compilations, Lists, Bulletins, or Reports. *The Secretary of Commerce is authorized, upon the request of any person, firm, organization, or others, public or private, to make special studies, reports, etc. on matters within the authority of the Department upon the payment of the actual or estimated cost of such special product or service. The Secretary is authorized by 15 U.S.C. § 1526 to retain such payments to cover the cost of providing specialized products or services.*
<http://www4.law.cornell.edu/uscode/15/1525.html>
2. 44 U.S.C. § 3506 (d) (4) (D), Paperwork Reduction Act. *With respect to information dissemination, each agency shall not, except where specifically authorized by statute, establish user fees for public information that exceed the cost of dissemination.*
[http://www.law.cornell.edu/uscode/44/3506%20\(d\).html](http://www.law.cornell.edu/uscode/44/3506%20(d).html)
3. 31 U.S.C. § 1535, The Economy Act. *This Act provides general authority for agencies to obtain goods and services from other government agencies on a cost reimbursable basis.*
<http://www.casu.gov/authority/usc1535.html>
4. 15 U.S.C. § 1534, Assessment of Fees for Access to Environmental Data. *NESDIS is authorized to assess fees, based on Fair Market Value (FMV) (up to FMV as clarified by NOAA's Office of General Counsel) for access to environmental data and information and products derived from, collected, and/or archived by NOAA. NESDIS shall provide this data, information, and products to Federal, State, and local government agencies, to universities, and to other nonprofit institutions at the cost of reproduction and transmission, if such data, information, and products are to be used for research and not for commercial purposes. NESDIS is required to waive the assessment of fees as necessary to provide data, information or products to foreign governments and international organizations as part of ongoing data exchange activities and to continue to provide weather warnings, watches and similar products and services.* <http://www.law.cornell.edu/uscode/15/1534.html>

5. OMB Circular A-130, Management of Federal Information Resources. *Agencies will set user charges for information dissemination products at a level sufficient to recover the cost of dissemination but no higher.*
<http://www.whitehouse.gov/omb/circulars/a130/a130trans4.pdf>

3.2| Current NOAA Compensation Policies and Practices

NOAA satellite data and products are collected initially in near-real-time, and then are sent for archiving at NOAA National Data Centers (NNDC). The process and costs associated with accessing and developing specialized data and products is different depending on where the data are located. Therefore, near-real-time (also called “operational”) data access and archival data access are treated separately in NOAA policy, as discussed below.

NOAA National Data Centers

The NOAA National Data Centers, which are comprised of the National Climatic Data Center (NCDC), the National Geophysical Data Center (NGDC), and the National Oceanographic Data Center (NODC), provide access to NOAA’s archived data. At present, the application of user fees for NOAA satellite data and satellite products at these Centers is based on the 2008 NESDIS User Fee Policy and Procedures Document (summary in Appendix A). The National Data Centers implement this policy by charging fees for specialized products and services. NCDC and, to a lesser extent, NGDC provide NOAA satellite image products and archived offline satellite digital data.

In FY 2011, 75 percent of NCDC's paying customers were consulting meteorologists and other private consultants in fields other than meteorology, such as those working in engineering firms or those employed by attorneys. Consulting meteorologists order customized satellite imagery requiring specialized imaging software. In most cases, these images are certified with the Department of Commerce seal for use in legal cases involving weather-related accidents and insurance claims. The remaining 25 percent typically included commercial entities involved with renewable energy projects where large amounts of raw satellite data (generally over a Terabyte) are extracted and delivered onto file transfer protocol (ftp) servers or onto external disks or tapes for shipment.

Total revenue earned by the NNDCs from user fees in FY 2011 and FY 2012 is displayed in Appendix B. A breakdown of overall revenue totals for NCDC in FY 2011 and FY 2012, along with data for NGDC and NODC are also available in Appendix B.

Operational satellite products and services

NOAA satellite mission operations and supporting application development are carried out by the NESDIS Office of Satellite and Product Operations (OSPO), and the Center for Satellite Applications and Research (STAR). Data and products from these offices are made available free

of charge through the NOAA infrastructure, which includes domestic and international partnerships, and multiple satellite data flows. This environment is broadly described in Appendix C and the benefit of this data access mode is illustrated in Appendix F.

However, in some cases, NOAA may still receive external requests for specialized satellite data, products or services. For such situations, the NESDIS Assistant Administrator issued a "Policy on Access and Distribution of Environmental Satellite Data and Products."² This policy provides guidance and standards for setting priorities and managing user access to NESDIS operational environmental satellite data and products. Decisions concerning current or potential specialized data products or services are informed through a variety of methods, including:

1. the NESDIS Satellite Products and Services Review Board (SPSRB);
2. the development of Interagency Economy Act Agreements; and
3. the pursuit of Interagency and International Memorandums of Understanding (MOUs).

The NESDIS **Satellite Products and Services Review Board (SPSRB)**³ is responsible for the oversight and guidance necessary to effectively manage the life cycle process of NESDIS products from NOAA satellite systems (product development, transition into operations, enhancements, and retirement). The SPSRB assessment of user requests for new operational products includes multiple steps: initial assessment, analysis of alternatives, initial project team and plan formation, operational decision, and product divestiture or retirement.

The SPSRB draws information from: a) Resource Identification and Product Development/Reporting, b) the Consolidated Observational Requirements List (CORL) and Mission Observational Requirements List (MORL) databases, and c) the NOAA Observational System Architecture (NOSA) database.

The SPSRB also establishes software, systems, and documentation standards for operational products. The SPSRB process helps to ensure that available resources within NESDIS are focused on the highest priority and most productive product and service activities to meet NOAA's mission. While the SPSRB is primarily a mechanism for NESDIS internal planning and coordination, the tools and expertise that inform this process may be helpful when evaluating the feasibility of supporting external requests for specialized data, products and services.

Interagency Economy Act Agreements and Interagency and International Memorandums of Understanding (MOUs) govern data and product exchanges between NOAA and other Federal agencies and other governments. The Economy Act (31 U.S.C. 1535) provides general authority for agencies to obtain goods and services from other government agencies on a cost reimbursable basis. Memorandums of Understanding provide formal frameworks for NOAA to engage in cooperation with other agencies and international governments or organizations,

² <http://goo.gl/v8hJp>

³ <http://projects.osd.noaa.gov/spsrb/>

usually through cost-sharing or ‘in kind’ contribution arrangements. In most cases, a data exchange agreement has been established so that any one agency or country does not unnecessarily develop, build and launch satellite systems that provide duplicative services. In exchange for providing data, imagery, and products from NOAA's geostationary and polar-orbiting satellites, NOAA currently acquires data from the non-NOAA satellite systems listed in Appendix D. Details on these satellites are available on the internet from the homepages of the host agencies.

Other NOAA Data Usage Fee Policies

The NOAA Policy on Partnerships in the Provision of Environmental Information (NOAA Administrative Order 216-112) acknowledges the importance of NOAA to the private sector, and likewise the importance and suitability of the private sector to provide services to the public in areas related to NOAA's mission. It directs that *“NOAA has a responsibility to foster the growth of [the weather] enterprise as a whole to serve the public interest and the Nation's economy. The Nation benefits from government information disseminated both by federal agencies and by diverse nonfederal parties, including commercial and not-for-profit entities. This policy commits NOAA to give due consideration to these abilities, and to consider the effects of its decisions on the activities of these entities in accordance with applicable law and government-wide policy. NOAA will not haphazardly institute significant changes in existing information dissemination activities, or introduce new services, without first carefully considering the full range of views and capabilities of all parties as well as the public's interest in the environmental information enterprise.”*

In addition, there is a significant policy framework in the United States, as reaffirmed by recent guidance from the Office of Science and Technology Policy, the 2010 National Space Policy, the 2013 National Strategy for Civil Earth Observations, and consistent with many years' practice, that supports full and open access to environmental data (Appendices E and F).

Accurate, timely, and comprehensive Earth observations support government and private-sector decisions and policies; scientific research; and the economic, environmental, and public health of the United States. Making Earth observations easily accessible enables users to evaluate, understand, and utilize data in novel ways. In addition, access to data managed or paid for using Federal funds should be open to the public as soon as possible after collection. Just as importantly, working collaboratively on the global stage to promote full and open sharing of environmental data has been a great source of U.S. diplomacy, advancing the international understanding of U.S. values and ways of doing business, while at the same time creating added value to U.S. investments in Earth observations.

3.3 | NOAA's Planned Way Forward

While NOAA already has several policies and methods in place concerning the collection of fees for specialized satellite data, products, and services, it would be useful to have an agency-wide

guidance document for use when external requests are received. In addition, while the provision of satellite data and services is a primary responsibility of NOAA/NESDIS, other NOAA components are users of satellite data. Therefore, a guidance document could be of use outside of NESDIS, should other units receive external requests for specialized satellite data, products or services.

Accordingly, NOAA will develop a guidance document that will provide support for NOAA decision-makers and transparency to external users when reviewing and considering new requests for specialized NOAA satellite data, products and services from NOAA. This document will identify and describe relevant authorities and policies in order to provide guidance for all of NOAA in this area. This guidance document is planned to be completed in 2013, and will be maintained under the auspices of the NAO 212-15 which establishes environmental data management policy for NOAA.

4 | Conclusion

NOAA acknowledges that a guidance document would provide transparency on the policies that NOAA would use to determine whether to charge for support provided to fulfill a request for specialized data, products or services. While these requests are rare, such guidance would be beneficial for all users. This guidance document is planned to be completed in 2013, and implementation of the guidance document will be pursuant to NOAA's already-existing legal authorities to charge user fees or recoup expenses incurred to develop these specialized data, products and services.

Appendix A: Summary Description of the 2008 NESDIS User Fee Policy and Procedures Document

The NESDIS User Fee Policy and Procedures Document assigns responsibilities and provides guidance to the NOAA Data Centers about obtaining approval for product or service costs. In summary, the Director of each NOAA data center may choose to assess fees based on the marginal cost of dissemination, full market value, or full cost recovery according to the guidelines below.

Marginal Cost of Dissemination: A data center may charge up to the marginal cost of dissemination for a data product in accordance with 44 U.S.C. 3506 (d) and OMB Circular A-130. Costs associated with the marginal cost of dissemination may include, but are not limited to, reproduction, infrastructure, shipping, handling, and consultation costs.

Fair Market Value (FMV): A data center may charge FMV for a data product or service if that center determines the product is unique or requires special handling or processing. To obtain approval to use FMV, the Data Center must include a written justification with the Cost Computation Form. This justification must document the rationale behind the decision to charge FMV and demonstrate and document how the FMV was determined.

Full Cost Recovery: When a data center prepares special studies from its records for unique compilations, lists, bulletins, or reports that are authorized by 15 U.S.C. 1525, the user charge should be sufficient to recover both the indirect and direct costs to the center of providing the service, resource, or good.

For more information, please see the full report, which is available at:

<http://www.corporateservices.noaa.gov/finance/docs/NESDIS%20User%20Fee%20Policy%20and%20Procedures%20Rev.pdf>

Appendix B: Revenue Recently Earned from NOAA Data Fees

Table 1: NOAA Data Center Revenue from Fees for NOAA Satellite-Derived Data and Products⁴

Revenue		FY 2011	FY 2012
NCDC	Total for All Products and Services	\$1,068,027	\$587,373
	Total for Satellite-Derived Data and Products	\$45,063	\$10,652
	Satellite-Derived Data and Products as Percentage of All Products and Services	4.2 percent	1.8 percent
NGDC	Total for All Products and Services	\$103,928	\$99,467
	Total for Satellite-Derived Data and Products	\$0	\$0
NODC	Total for All Products and Services	\$371	\$394
	Total for Satellite-Derived Data and Products	\$0	\$0

⁴ NCDC primarily provides NOAA satellite-derived data and products for fees.

Appendix C: Description of Operational Satellite Data Flows

As illustrated in Figure 1 below, NOAA satellites broadcast raw, unprocessed satellite data to both NOAA processing centers and other Federal and non-Federal users and organizations (left column). At the NESDIS level, satellite data inputs from other Federal agencies such as the Department of Defense and NASA, along with international organizations such as the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) and the Japan Meteorological Administration (JMA), contribute to an interconnected system of full and open data exchange (middle column). This information is then processed into satellite data products that inform NWS weather models along with non-satellite data such as radar and buoys (right column). This weather information is again shared among agencies and international partners, and also developed into weather forecasts for emergency managers and the public.

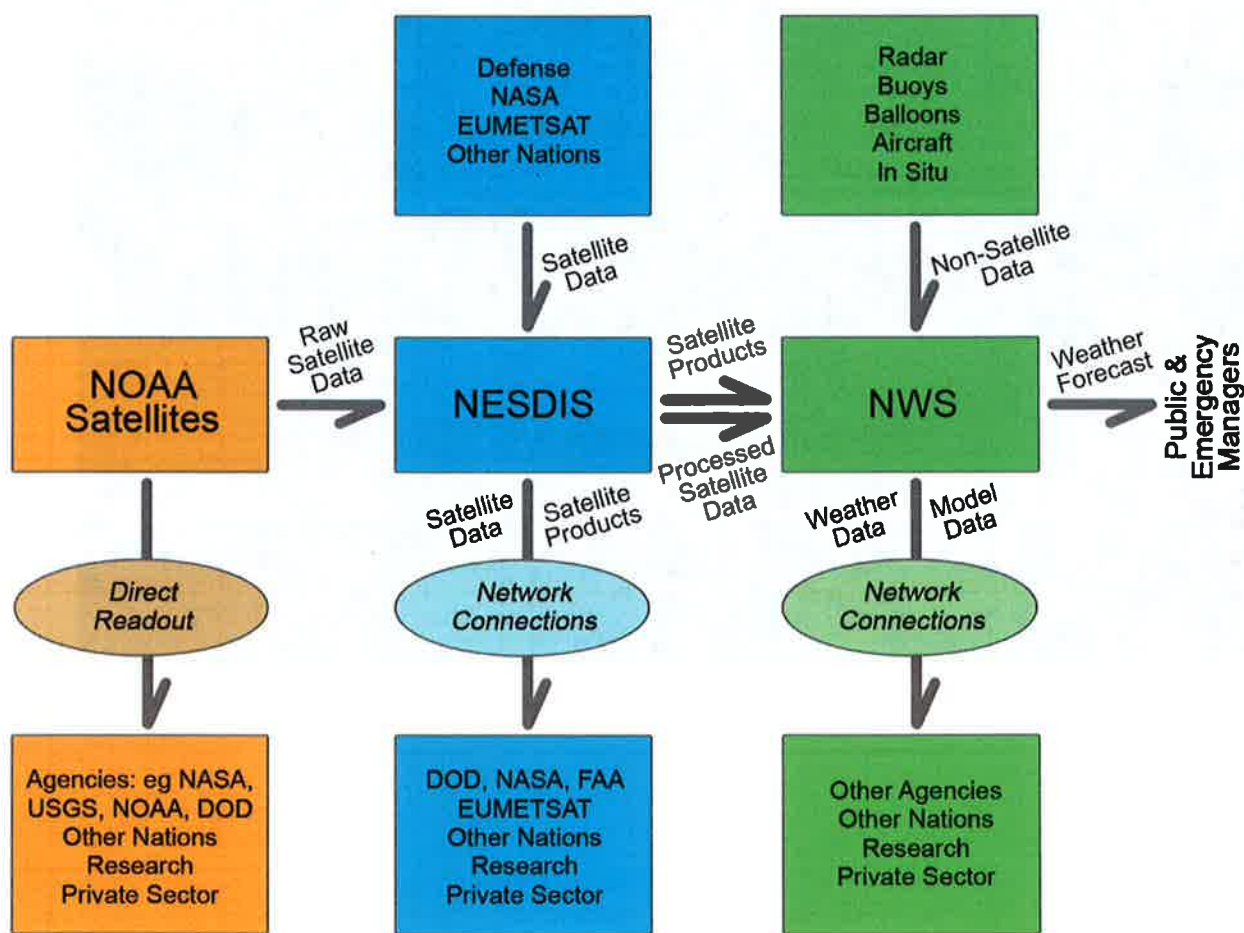


Figure 1 Current satellite data flow.

Appendix D: Satellite Systems Providing Data to NOAA

The systems in Tables A and B are leveraged through agreements which require no direct exchange of funds between NOAA and the inter-agency or international partner, except where noted.

Table A: Satellite Systems from Other Federal Agencies	
Earth Observing System (EOS) Aqua	NASA
EOS Terra	NASA
EOS Aura	NASA
Tropical Rainfall Measuring Mission (TRMM)	NASA
Defense Meteorological Satellite Program	Department of Defense (DOD)
Windsat/Coriolis	DOD, Naval Research Laboratory
Landsat	USGS

Table B: Satellite Systems from International Agencies	
Meteosat-7	European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT)
Meteosat-8	EUMETSAT
Meteosat-9	EUMETSAT
Metop	EUMETSAT
MTSAT-2	Japan Meteorological Agency (JMA)
Jason-2	Joint NOAA-CNES (French Space Agency)
COSMIC	National Space Organization (NSPO) Taiwan
Oceansat	Indian Space Research Organization (ISRO)
Radarsat-2 ⁵	Canadian Space Agency (CSA)

Table C: NOAA Operational Environmental Satellites	
NOAA-15	Early morning polar secondary
NOAA-16	Afternoon polar secondary
NOAA-18	Afternoon polar secondary
NOAA-19	Afternoon polar operational
Suomi NPP	Not yet operational; will replace NOAA-19 in afternoon polar orbit
GOES-12	60°W (South America coverage)
GOES-13	75°W
GOES-14	105°W (on-orbit storage)
GOES-15	135°W

⁵ Radarsat-2 is a Canadian public-private venture. NOAA pays for or leverages other Federal agency acquisitions of data from this system.

Appendix E: Policy Framework in the U.S. and Abroad for Full and Open Access to Environmental Data

There is a significant policy framework in the United States for providing free access to environmental data:

- **The Paperwork Reduction Act (44 U.S.C . Chap 35)** has as one of its key purposes to “ensure the greatest possible public benefit from and maximize the utility of information created, collected, maintained, used, shared and disseminated by or for the federal government.”
- **The Office of Management and Budget (OMB) Circular A-130** specifies that the “open and efficient exchange of scientific and technical government information ... fosters excellence in scientific research and effective use of federal research and development funds.”
- **The Freedom of Information Act (FOIA; 5 U.S.C. § 552)** provides for public access to the records of the federal government.
- **Copyright law (17 USC 105)** provides that “copyright protection under this title is not available for any work of the United States Government.” NOAA would not be able to limit redistribution once its information is sold, or charge less for some uses of its data, such as research and non-commercial, than it could for other uses.
- **The National Space Policy for the United States of America (2010)** calls for increased data sharing among nations and adopting policies internationally that facilitate full, open, and timely access to government environmental data.
- **Data.gov**, the central repository for data created by U.S. agencies, aims to provide public access to high-value, machine readable datasets. Data.gov increases the ability of the public to easily find, download, and use datasets that are generated and held by the Federal government.
- **National Strategy for Civil Earth Observations (2013)**, issued by the National Science and Technology Council, was developed in response to congressional direction and is designed to maximize interagency coordination, increase efficiency and efficacy of future Earth observation efforts, and promote environmental and economic sustainability.
- **Executive Order 13642 and The Office of Management and Budget (OMB) Memorandum M-13-13** makes open and machine readable the new default for government information and establishes a framework to institutionalize principles of effective information management at each stage of the information’s life cycle to promote interoperability and openness.

Internationally, the United States has campaigned over the last 30 years to encourage the full and open sharing of environmental data. Some key agreements include:

- **World Meteorological Organization (WMO) Resolution 40**, negotiated as part of the WMO 2012-2015 Strategic Plan in 2011, states that WMO “members shall provide on a free and unrestricted basis essential data and products which are necessary for the provision of services in support of the protection of life and property and the well-being of all nations.” Its Annex 1 continues, stating that “data and products are to be exchanged without charge and with no conditions on use...[including] those data and products from operational meteorological satellites that are agreed between WMO and satellite operators.” The goal of this sharing of data is in part, as described in Annex 3, to encourage National Meteorological Services to “collaborate with their countries’ commercial sector and their professional societies to maximize the use of meteorological information within their country.”
- **International Oceanographic Commission (IOC) Oceanographic Data Exchange Policy**, reiterates that the timely, free and unrestricted international exchange of oceanographic data is essential for the efficient acquisition, integration and use of ocean observations gathered by the countries of the world for a wide variety of purposes including the prediction of weather and climate, the operational forecasting of the marine environment, the preservation of life, the mitigation of human-induced changes in the marine and coastal environment, as well as for the advancement of scientific understanding that makes this possible.
- **Group on Earth Observations (GEO) Data Sharing Principles**, which since GEO’s 2010 Plenary have been a foundation of its Strategic Plan. These Principles state that “there will be full and open exchange of data, metadata and products shared within GEOSS [Global Earth Observation System of Systems], recognizing relevant international instruments and national policies and legislation; all shared data, metadata and products will be made available with minimum time delay and at minimum cost; and all shared data, metadata and products being free of charge or no more than cost of reproduction will be encouraged for research and education.”

Appendix F: Case Study on the Relevance of the Landsat Commercialization Experience

The Landsat program began in 1972 when the United States launched the first Earth Resources Technology Satellite (ERTS) satellite with a mission to acquire land imagery of Earth from space. Including that initial satellite, the U.S. has launched a total of eight Landsat satellites, the most recent of which launched in February 2013. Its instruments are primarily used for land-based studies and analysis.

Per 51 U.S.C. Title VI § 601, legal prohibition to commercialize weather satellites is linked to previous Landsat commercialization attempts. It should be noted that this prohibition is not directly applicable to the matter of specialized satellite data, products or services because it applies to weather satellite systems and not data access and dissemination. However, it should also be noted that the various U.S. Government approaches to commercialize Landsat as a means of providing a sustainable land imaging program have not been successful.

In the 1980s, an attempt to commercialize the Landsat system by covering operating costs and eventually satellite development costs made data prices prohibitive and data access and sales declined significantly as did development of new data applications.

In the 1990s, NOAA attempted to recover its operating costs for Landsat by charging data access fees, however this also failed. NOAA was not able to ensure adequate receipts to cover its projected operations costs and withdrew from the Landsat Program. Afterward, NASA retained responsibility for acquiring the Landsat satellite and instruments while U.S. Geological Survey (USGS) became responsible for Landsat operations. In 1999, USGS priced Landsat-7 digital scenes at cost of filling user request.

In 2008, the USGS decided to open the Landsat archive over the Internet at no charge. Free data resulted in explosive growth in data distribution: the average daily number of scenes downloaded went from 53 per day to 5,776 per day. NOAA and other federal agency use of data greatly increased. Commercial data use has also greatly increased. The Landsat program data access is now managed similarly to the NOAA weather satellite program, i.e., data are fully and freely available to any user.