

OFFICE OF SCIENCE AND TECHNOLOGY POLICY

ACTION: Notice of Request for Information (RFI).

SUMMARY: The purpose of this Request for Information (RFI) is to solicit input from all interested parties regarding recommendations for the development of a National Plan for Civil Earth Observations (“National Plan”). The public input provided in response to this Notice will inform the Office of Science and Technology Policy (OSTP) as it works with Federal agencies and other stakeholders to develop this Plan.

DATES: Responses must be received by December 6, 2013 to be considered.

SUBMISSION: You may submit comments by any of the following methods.

- **Downloadable form:** To aid in information collection and analysis, OSTP encourages responses to be provided using this form. Please enter your responses in the fillable fields that follow the questions below.
- **Email:** OSTP encourages respondents to email the completed form, as an attachment, to earthobsplan@ostp.gov. Please include “National Plan for Civil Earth Observations” in the subject line of the message.
- **Fax:** (202) 456-6071.
- **Mail:** Office of Science and Technology Policy, 1650 Pennsylvania Avenue, NW, Washington, DC, 20504. Information submitted by postal mail should allow ample time for processing by security.

Response to this RFI is voluntary. Respondents need not reply to all questions listed. Each individual or institution is requested to only submit one response. Responses to this RFI, including the names of the authors and their institutional affiliations, if provided, may be posted on line. OSTP therefore requests that no business proprietary information, copyrighted information, or personally-identifiable information be submitted in response to this RFI. Given the public and governmental nature of the National Plan, OSTP deems it unnecessary to receive or to use business proprietary information in its development. Please note that the U.S. Government will not pay for response preparation, or for the use of any information contained in the response.

FOR FURTHER INFORMATION CONTACT:

Timothy Stryker, 202-419-3471, tstryker@ostp.eop.gov, OSTP.

SUPPLEMENTARY INFORMATION:

Background

The U.S. Government is the world's largest single provider of civil environmental and Earth-system data. These data are derived from Earth observations collected by numerous Federal agencies and partners in support of their missions and are critical to the protection of human life and property; economic growth; national and homeland security; and scientific research. Because they are provided through public funding, these data are made freely accessible to the greatest extent possible to all users to advance human knowledge, to enable industry to provide value-added services, and for general public use.

Federal investments in Earth observation activities ensure that decision makers, businesses, first responders, farmers, and a wide array of other stakeholders have the information they need about climate and weather; natural hazards; land-use change; ecosystem health; water; natural resources; and other characteristics of the Earth system. Taken together, Earth observations provide the indispensable foundation for meeting the Federal Government's long-term sustainability objectives and advancing the Nation's societal, environmental, and economic well-being.

As the Nation's capacity to observe Earth systems has grown, however, so has the complexity of sustaining and coordinating civil Earth observation research, operations, and related activities. In October 2010, Congress charged the Director of OSTP to address this challenge by producing and routinely updating a strategic plan for civil Earth observations (see *National Aeronautics and Space Administration Authorization Act of 2010, Public Law 111-267, Section 702*).

Responding to Congress, in April 2013, OSTP released a [National Strategy for Civil Earth Observations](#) ("the National Strategy").

In April 2013, OSTP also re-chartered the U.S. Group on Earth Observations (USGEO) Subcommittee of the National Science and Technology Council's Committee on Environment, Natural Resources, and Sustainability. USGEO will carry out the National Strategy and support the formulation of the National Plan.

As requested by Congress, the National Plan is being developed by USGEO to advise Federal agencies on the Strategy's implementation through their investments in and operation of civil Earth observation systems. The Plan will provide a routine process, on a three-year cycle, for assessing the Nation's Earth observation investments; improving data management activities; and enhancing related interagency and international coordination. Through this approach, the Plan will seek to facilitate stable, continuous, and coordinated Earth observation capabilities for the benefit of society.

Congress also requested that development of the National Plan include a process for collecting external independent advisory input. OSTP is seeking such public advisory input through this RFI. The public input provided in response to this Notice will inform OSTP and USGEO as they work with Federal agencies and other stakeholders to develop the Plan.

Definitions and Descriptions

The term “**Earth observation**” refers to data and information products from Earth-observing systems and surveys.

“**Observing systems**” refers to one or more sensing elements that directly or indirectly collect observations of the Earth, measure environmental parameters, or survey biological or other Earth resources (land surface, biosphere, solid Earth, atmosphere, and oceans).

“**Sensing elements**” may be deployed as individual sensors or in constellations or networks, and may include instrumentation or human elements.

“**Observing system platforms**” may be mobile or fixed and are space-based, airborne, terrestrial, freshwater, or marine-based. Observing systems increasingly consist of integrated platforms that support remotely sensed, *in-situ*, and human observations.

Assessing the Benefits of U.S. Civil Earth Observation Systems

To assist decision-makers at all levels of society, the U.S. Government intends to routinely assess its wide range of civil Earth observation systems according to the ability of those systems to provide relevant data and information about the following Societal Benefit Areas (SBAs):

1. Agriculture and Forestry
2. Biodiversity
3. Climate
4. Disasters
5. Ecosystems (Terrestrial and Freshwater)
6. Energy and Mineral Resources
7. Human Health
8. Ocean and Coastal Resources and Ecosystems
9. Space Weather
10. Transportation
11. Water Resources
12. Weather

The U.S. Government also intends to consider how current and future reference measurements (*e.g.*, bathymetry, geodesy, geolocation, topography) can enable improved observations and information delivery.

To address measurement needs in the SBAs, the U.S. Government operates a wide range of atmospheric, oceanic, and terrestrial observing systems. These systems are designed to provide: (a) sustained observations supporting the delivery of services, (b) sustained observations for research, or (c) experimental observations to address specific scientific questions, further technological innovation, or improve services.

Questions to Inform Development of the National Plan

Name (optional): Rob Fulton

Position (optional): VP, Business Development, Science & Environmental Programs

Institution (optional): Orbital Sciences Corporation

Through this RFI, OSTP seeks responses to the following questions:

1. Are the 12 SBAs listed above sufficiently comprehensive?

[Click here to enter text.](#)

- a. Should additional SBAs be considered?

[Click here to enter text.](#)

- b. Should any SBA be eliminated?

[Click here to enter text.](#)

2. Are there alternative methods for categorizing Earth observations that would help the U.S. Government routinely evaluate the sufficiency of Earth observation systems?

[Click here to enter text.](#)

3. What management, procurement, development, and operational approaches should the U.S. Government employ to adequately support sustained observations for services, sustained observations for research, and experimental observations? What is the best ratio of support among these three areas?

Operational space systems, which must provide reliable long-life, high availability, and continual observations, will always consume the largest share of financial resources. Research and experimental systems play an important role, providing the seed corn for new observational instruments and techniques and advancing our fundamental understanding of phenomena. Current space-based research programs supporting Earth observations include the NASA Earth Venture (EV) and Heliophysics Explorer programs and the NSF CubeSat program. These programs provide opportunities for scientists to develop investigations; however, the cadence of the investigation opportunities is less than optimum. For instance the Explorer program will launch two experiments in a decade. Since the demise of the New Millennium program, technology demonstration missions programs supporting Earth Observations have been sporadic. Demonstration mission can be invaluable. For instance the New Millennium EO-1 program flew a prototype of the Landsat 8 Operational Land Imager. The technology risk reduction EO-1 provided enabled Landsat 8's on schedule delivery avoiding a gap in the Landsat data record. In short, a

dedicated flight technology demonstration program is an essential element in a successful, sustainable observational strategy.

4. How should the U.S. Government ensure the continuity of key Earth observations, and for which data streams (*e.g.*, weather forecasting, land surface change analysis, sea level monitoring, climate-change research)?

Space-based systems provide invaluable global measurements and provide essential data for applications such as weather forecasting. GOES, POES/JPSS, and Landsat are the primary US civil operational systems providing this data. Of these GOES is the most robust system, exhibiting the lowest likelihood of a near term data gap. Both POES/JPSS and Landsat are fragile. The recent IRT report “the Young report” details the situation of the JPSS and suggests possible solutions. As a separate attachment, we include a copy of our recent submission to the NASA Sustainable Land Imaging RFI offering a solution to improve the sustainability of the Landsat program within program fiscal constraints. In general, block-buys, development of next generation sensors off the main program path, and disaggregation best support space-system sustainability. Block-buys of operational systems provide both economies of scale and system robustness through the availability of spares. Developing the next-generation sensors before incorporation into the system reduces schedule risk. Disaggregated systems have proven to be less prone to schedule slips and are not beholden to the longest lead sensor for deployment of partial capacity.

5. Are there scientific and technological advances that the U.S. Government should consider integrating into its portfolio of systems that will make Earth observations more efficient, accurate, or economical? If so, please elaborate.

[Click here to enter text.](#)

6. How can the U.S. Government improve the spatial and temporal resolution, sample density, and geographic coverage of its Earth observation networks with cost-effective, innovative new approaches?

[Click here to enter text.](#)

7. Are there management or organizational improvements that the U.S. Government should consider that will make Earth observation more efficient or economical?

[Click here to enter text.](#)

8. Can advances in information and data management technologies enable coordinated observing and the integration of observations from multiple U.S. Government Earth observation platforms?

[Click here to enter text.](#)

9. What policies and procedures should the U.S. Government consider to ensure that its Earth observation data and information products are fully discoverable, accessible, and useable?

[Click here to enter text.](#)

10. Are there policies or technological advances that the U.S. Government should consider to enhance access to Earth observation data while also reducing management redundancies across Federal agencies?

[Click here to enter text.](#)

11. What types of public-private partnerships should the U.S. Government consider to address current gaps in Earth observation data coverage and enhance the full and open exchange of Earth observation data for national and global applications?

[Click here to enter text.](#)

12. What types of interagency and international agreements can and should be pursued for these same purposes?

[Click here to enter text.](#)