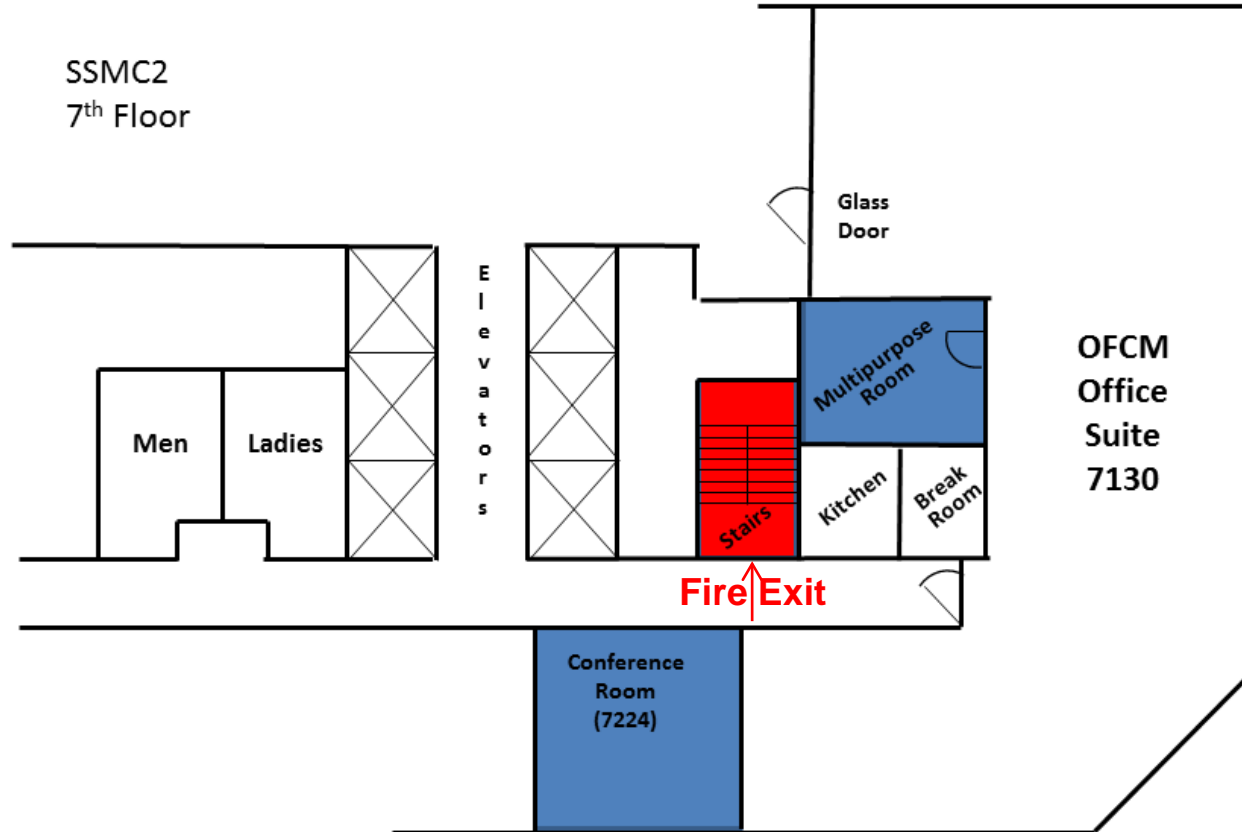

Committee on Operational Environmental Satellites

Meeting 2018-3

Sep 21, 2018

***Office of the Federal Coordinator for
Meteorological Services and Supporting
Research (OFCM)***

OFCM Floor Plan



Opening Remarks

COES Co-Chairs:

Mr. David McCarren (DOD-USN)

Mr. Ajay Mehta (NOAA-NWS)

COES Executive Secretary:

Mr. Michael F. Bonadonna (OFCM)

**Meeting is being recorded to help produce an
accurate Record of Action (ROA)**

Agenda

- Opening Remarks:COES Cochairs
 - Action Item Review:Executive Secretary
 - Terms of Reference Update:Executive Secretary
 - Satellite Needs Working Group (SNWG):Dr. Shaima L. Nasiri (DOE)
 - Update On Commercial Weather Data Pilot Programs:
Lt Col Chris Hollinger (USAF) and Ms. Kate Becker (NOAA-NESDIS)
 - DOD Space-based Environmental Monitoring (SBEM) Program:
Major Chris Dempsey (HQ USAF SAF-AQS)
 - Open Discussion:All
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-

Action Item Review

AI #	Text	OPR	Comment	Status	Due Date
2018-1.1	Review and provide COES a brief summary of analyses and mitigation planning for RFI on passive sensing bands used by current and future environmental satellites.	NEDSIS, NASA, USAF	A3W working with SMC. NESDIS looking into it. NASA ESD looking into it.	Open	05/30/18
2018-2.2	Update the COES ToR to have COES gather and provide NESDIS-IA, DoD input for the annual CGMS meeting and have NOAA report back to COES following the meeting.	ExecSec, DoD COES members, NOAA CGMS participants	ToR Update in progress. To be discussed 9/21/18	Open	10/31/18
2018-2.5	Provide a summary of your organization's expectations and needs from "partner missions" including NASA research missions and foreign environmental satellite missions.	DoD, USAF, USN, USA, USMC	To be discussed 9/21/18 as part of SNWG Briefing	Open	09/07/18
2018-2.6	Discuss satellite ground systems for "partner missions" including data latency needs and DoD expectations at the next COES meeting.	NESDIS, NASA, USAF, USN	To be discussed 9/21/18 as part of SNWG Briefing	Open	09/21/18
2018-2.7	Report status of commercial weather data project from each agency every COES meeting. Develop/Update a table of CWDP status for the ICMSSR.	NOAA-NESDIS, USAF, NASA-ESD, ExecSec	Being added to the ToR as a permanent, recurring agenda item	Open	07/31/18

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COES ToR Revision

- **Scope:** added: While Agencies may share general needs as they see fit, the COES is not a body for vetting requirements. Clarification of the COES scope.
 - **Responsibilities:**
 - a. Enable interagency review and coordination of environmental satellite plans and programs and share relevant information among members.
 - e. Collect interagency input for the U.S. delegation attending the annual international Coordinating Group for Meteorological Satellites (CGMS) meeting and request feedback afterwards.
-

COES ToR Revision

- Membership:
 - The following additional organizations are invited to participate in the COES as members, technical advisors, or observers:
 - USDA, DOE,
 - DoD: US Army Corps of Engineers
 - DHS: FEMA, USCG
 - DOI: BLM, USGS
 - DOT: FAA, FHWA
 - NASA: SMD
 - NSF, Atmospheric and Geospace Sciences Division
 - Other Federal organizations may request to participate in the committee through the OFCM. The ExecSec will seek COES consensus on changes to the Committee membership.
-

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US Group on Earth Observations Satellite Needs Working Group

Shaima Nasiri / DOE / SNWG Co-Chair

Glenn Bethel / USDA / SNWG Co-Chair

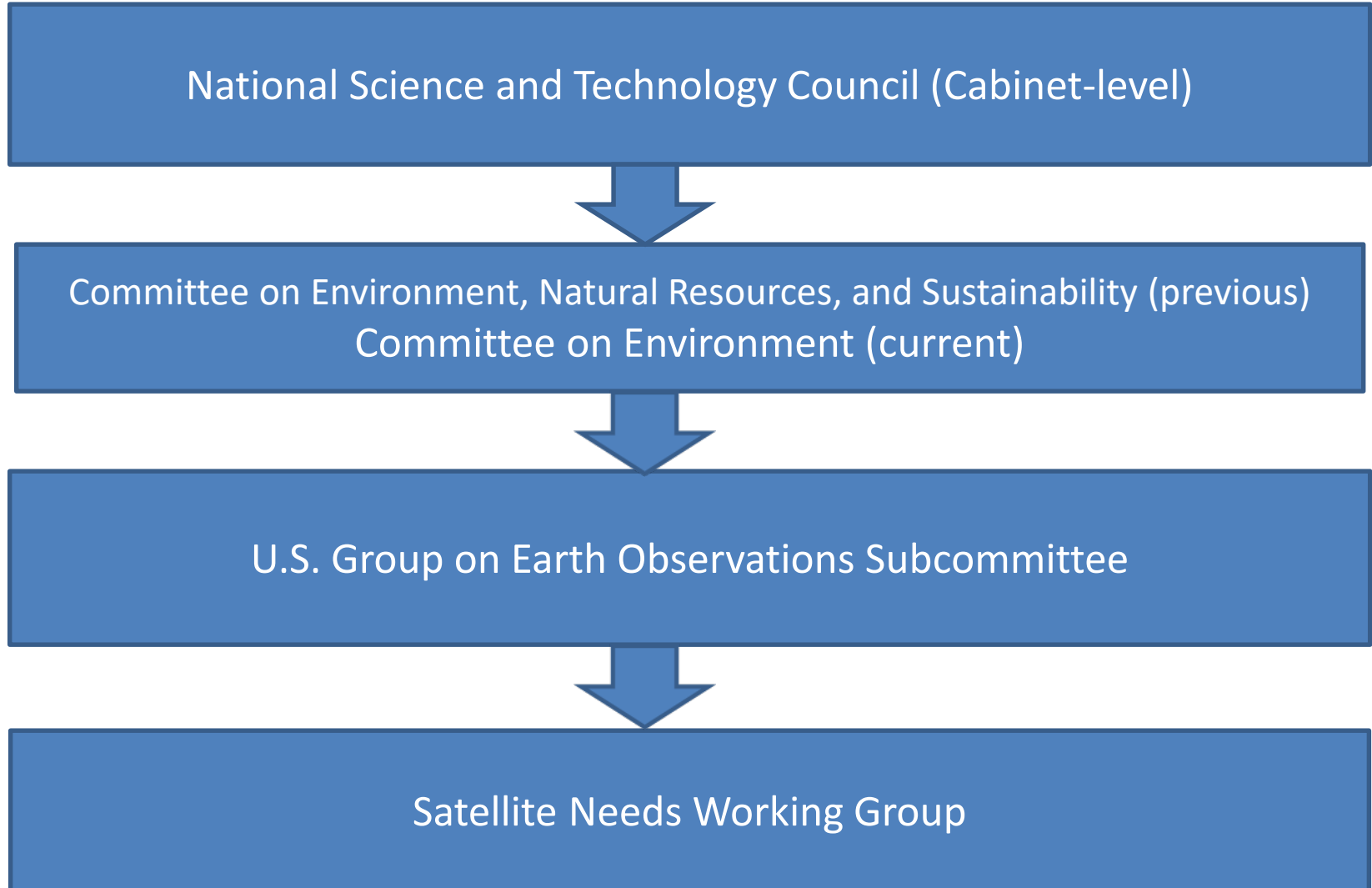
COES briefing – 21 September 2018

Outline

- Who is the SNWG?
- What does the SNWG do?
- What has the SNWG accomplished?

- Instructions from Mike Bonadonna

SNWG Context and Reporting



SNWG Member Agencies and Representatives Second Round (2018-2019)

- DHS – David Alexander and Adrian Gardner (FEMA)
- DOC - Jason Taylor (NOAA) and Marilyn Murphy (NOAA)
- DOE – Shaima Nasiri (*co-chair*)
- DOI – Greg Snyder (USGS) and Zhuoting Wu (USGS)
- EPA – Terry Keating and Jim Szykman
- NSF (currently no point of contact)
- USAID – Michael Crino and Kevin Horn
- USDA – Glenn Bethel (*co-chair*) and Jim Hipple
- State – Fernando Echavarria
- NASA – Sandra Cauffman, Jeffrey Stehr, and Maudood Khan
- DOD* - Wayne Estabrooks (Navy) and David Colbert (Navy)



*Defense agencies are not yet contributing to the formal needs process

SNWG Member Agencies and Representatives

First Round (2016-2017)

- DHS – David Alexander and Adrian Gardner (FEMA)
- DOC – Jason Taylor (NOAA) and Marilyn Murphy (NOAA)
- DOE – Shaima Nasiri
- DOI – Greg Snyder (USGS)
- EPA – Terry Keating and Jim Szykman
- NSF – Patrick Harr (*co-chair*)
- USAID – Michael Crino
- USDA – Glenn Bethel (*co-chair*) and James Hipple (RMA)
- State – Fernando Echavarria
- NASA – Sandra Cauffman, Jeffrey Stehr, Steve Neeck
- DOD* - David Colbert (Navy)



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Motivation for SNWG's Task

- In FY16, NASA became responsible for the acquisition of the space segment for all U.S. Government-owned civilian Earth-observing satellites except National Oceanic and Atmospheric Administration (NOAA) weather and space weather satellites.
- This motivated the need for providing to NASA information on agency needs that depend on continuity of existing missions, improvement of continuity missions, and needs that are not currently being met.

SNWG Task:

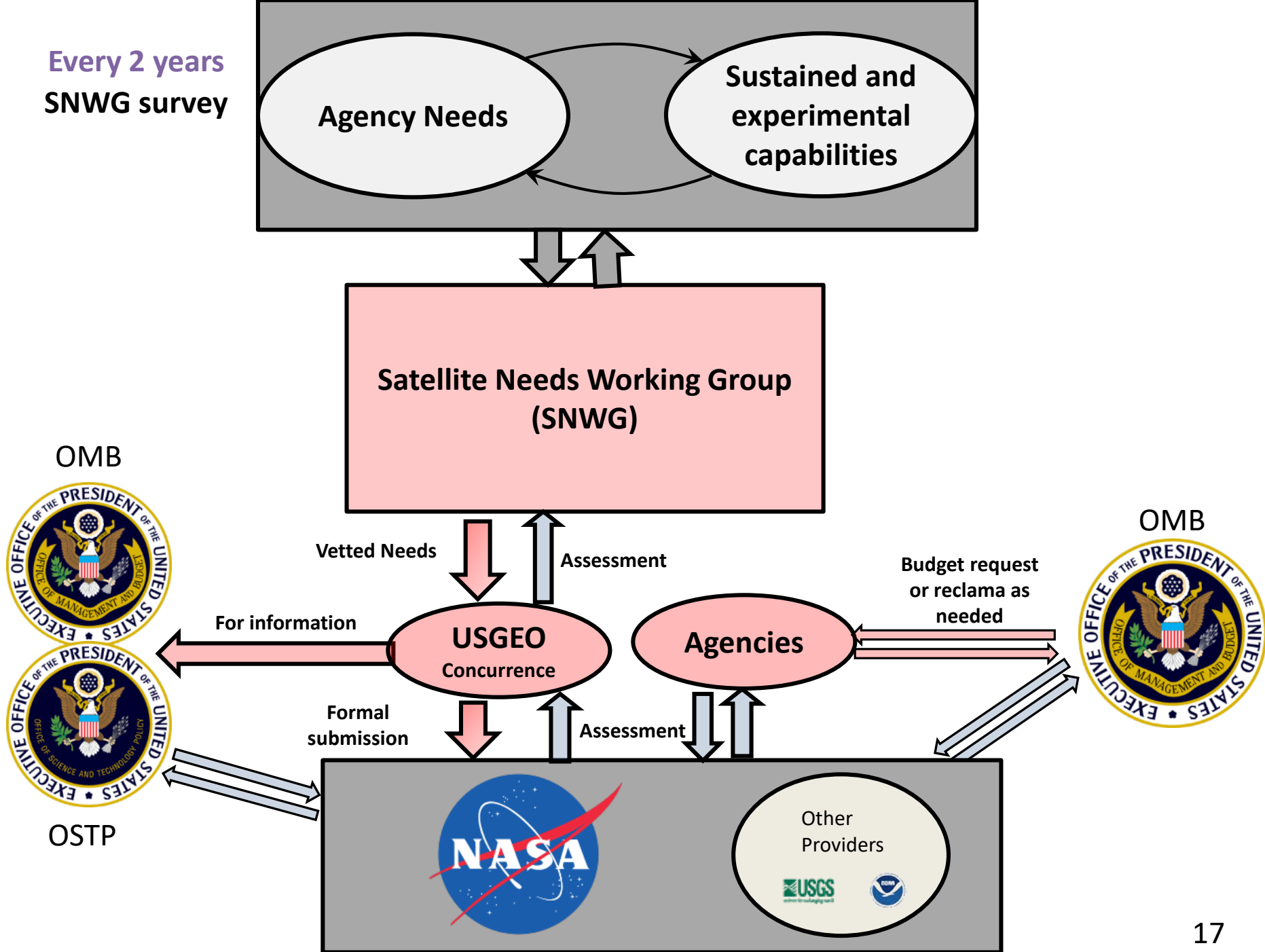
Survey Satellite Needs of Civil Agencies

- ★ This process allows **Federal departments and agencies** to communicate their Earth observation **satellite*** measurement or product needs to NASA.
- ★ Information gathered during this process will be used to influence NASA's* decisions on future sensors placed into orbit.

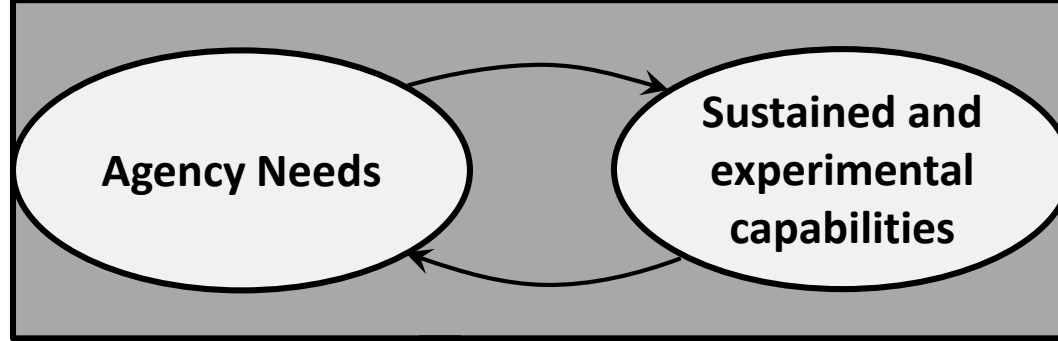
* NOAA weather satellites are not explicitly included in this process



Every 2 years
SNWG survey



Every 2 years
SNWG survey



Satellite Needs Working Group (SNWG)

2. SNWG members reach out to their agencies and acquire responses

1. SNWG develops a survey

3. Vetted responses are sent to USGEO

Vetted Needs

Assessment

6. NASA responds to the agencies request or reclama as needed

For information

USGEO
Concurrence

Agencies

Formal submission

Assessment

5. NASA evaluates the surveys and formulates responses


6. NASA works with OMB

OSTP

4. USGEO sends surveys to NASA



2018 – 2019 Needs Timeline

June 2018	Start of 2018 Survey (see kickoff meeting slides)
June to Sept	SME interactions with NASA and SNWG as needed
Sept 4, 2018	Cut off for submitting needs. SNWG reps begin reviewing and finalizing internal submissions 
Sept 28, 2018	SNWG representatives finalize internal submissions
Oct 1, 2018	OSTP sends out submissions to agency leadership for final approval, due back on October 22
Nov 9, 2018	SNWG provides consolidated Needs to USGEO and NASA
Nov 10, 2018	NASA starts assessment of needs
June 3, 2019	NASA submits final responses to Agencies, SNWG, EOP, and USGEO

U.S. Group on Earth Observations (USGEO) Satellite Needs Working Group (SNWG)

SNWG 2018 Survey (Final Draft)

Federal High-Priority Satellite Needs

Background

In 2016 Federal agencies identified high-priority needs for both sustained and unmet satellite Earth observation measurement or product needs. Input from the agencies helped NASA focus various satellite measurements and data products. This includes the collection of precipitation relevant measurements (GPM/IMERG), the harmonization of data sets (Landsat/Sentinel 2, SMAP/GEOSS, SMAP/NISAR, CloudSat/Calipso, Landsat/Sentinel), enhanced spatial resolution products from Landsat 8/Sentinel 2 using spectrally limited commercial imagery.

To help NASA and other satellite data providers gain a better understanding of agency satellite measurement and data product needs, the SNWG asks that department/agencies complete the form and indicate each high priority need. All submissions will undergo Senior Agency Review before submittal to USGEO. USGEO will then submit the compiled inputs to OMB, OSTP, and NASA. We greatly appreciate your participation in this survey.

Instructions for completing form:

You can download a copy of the form at the following URL:

https://docs.google.com/document/d/1UA59A_pdiutdrCMnl3gtSx4AdeblmnrWw9eB6AdNmYA

You may wish to print this form as a reference when completing it. You can download a copy of the instructions at the following URL:

https://docs.google.com/document/d/1r7ir_0HOkBcAkMShM8IE8E6M_3xBYk4x7HEocpSDuR4

You can download agency representatives' contact information at the following URL:

https://docs.google.com/document/d/1JSpqfINy2PX_DzR5521hIKs3CwiZISE77M9yRz8Tmbg

An example of a completed survey can be downloaded at the following URL:

<https://drive.google.com/file/d/1d9FZp0BLEOth3uTseq8ifOqRUGkH9Uw/view?usp=sharing>

The 2018-2019 Survey

landing page provides:

- Background
- Instructions
- Sample survey
- SNWG contacts

2018 Survey Outline

Section 1	Federal Department/Agency Information
Section 2	Context for Satellite Measurement or Product Need
Section 3	Specific Satellite Measurement or Product Need and Critical attributes
Section 4	Processing for Satellite Measurement or Product Need
Section 5	Additional Comments

★ Many fields are required. No edit checks. You can type something in a required field and come back later. However, you must complete the last question in order to save the survey for later editing.

NASA Needs Assessment Process



Satellite Needs Assessment Process

- The SNWG will communicate its Earth observation satellite measurement or product needs to NASA in the November 2018 timeframe.
- We anticipate that the ability to completely understand some of the needs will be labor intensive, requiring extensive interaction with the agency making the request.
 - Some of the questions in the survey have been adjusted and new questions added to provide better explanations of the needs.
- Agency needs will be tracked and assessed to determine the extent to which NASA can meet the needs.

Assessment Team

- NASA will establish assessment teams composed of individuals from NASA Headquarters and centers, as appropriate.
- NASA will perform a preliminary review of the needs to consolidate similar needs (by technology, science, requirements, etc.) from the many different agency needs, and then form the assessment teams. For example, in the last round, we formed these teams:
 - Land: the majority of the needs.
 - Water: probably the hardest needs to address.
 - DOE: needs with many variables.
 - Animal tracking.
 - Air Pollution (*Note: this was called "EPA"*).
 - Disaster Response.

Process

- The needs will be divided according to expertise and common features, and then the assessment teams will perform two passes and a final review.
- First Pass
 - The teams will work with the requesting agency to understand the need fully.
 - Identify the low-hanging fruit: needs that could be addressed with existing measurements, products, etc.
 - Identify high-priority needs that should move forward for detailed cost analysis.
 - Identify partial solutions and the cost of a full solution, if possible.
- Second Pass
 - Identify problematic solutions, missing data, potential issues, etc.
 - By the end of this pass, we will have a full set of draft responses, complete with partial solutions, full solutions, cost estimates, and all the information needed to address the needs.
 - Cost estimates will be developed for additional products and approaches that can meet the needs partially or fully, as appropriate.
- ★ Final Review
 - Leadership will decide how to address each need.
 - Leadership may request additional information as needed.

NASA Assessment Timeline

Assessment timeline will be better defined after receipt of needs.

- **November 2018**
 - Assessment kickoff.
- **December 2018**
 - Identify low-hanging fruit and high-priority needs.
- **January-April 2019**
 - Perform detailed assessment of needs.
- **April-May 2019**
 - ESD leadership reviews inputs and provides feedback.
- **By end of May 2019**
 - ESD leadership writes/assembles the final report for SNWG/OMB.
- **June 2019**
 - Provide response to user agencies, SNWG, and OMB.

Satellite Product Requests Submitted by Agency and Department during first round of the process (2016-2017)

Agency		Count
Agriculture Research Service	USDA	2
Bureau of Land Management	DOI	3
Bureau of Reclamation	DOI	1
Environmental Protection Agency		5
Farm Service Agency	USDA	1
Federal Emergency Management Agency	DHS	1
Foreign Agricultural Service	USDA	3
Forest Service	USDA	3
National Agriculture Statistics Service	USDA	1
National Oceanic and Atmospheric Administration	DOC	8
National Science Foundation		1
Natural Resources Conservation Service	USDA	2
Department of Energy	DOE	13
Risk Management Agency	USDA	2
U.S. Agency for International Development		9
U.S. Fish and Wildlife Service	DOI	5
U.S. Geological Survey	DOI	17
Grand Total		77

DHS 1

DOC 8

DOE 13

DOI 26

EPA 5

NSF 1

USAID 9

USDA 14



NASA Funded Activities Resulting from the 2016 SNWG Cycle

- The ESD budget for FY19-FY24 supports the following activities requested by the SNWG other-agency process:
 - Archive and distribution of **historical Airborne Data** products.
 - Archive/maintenance/distribution of **Landsat and Sentinel 2** harmonized products; the Earth Science Research activity funds harmonized data algorithms and production.
 - Support to the **user community for NGA products**, including the user services (i.e. vetting users to ensure they meet the NGA EULA) and distributing products.
- ★ **NISAR's Quad Pol 40 MHz mode to manage downlink to any added stations that may be necessary.**
- SNWG support to other agencies in accessing the requested data.

2016 Survey ≠ 2018 Survey

- The 2016 survey asked users to differentiate between data continuity, data continuity with improvements, and unmet needs for each attribute. These categories did not work as well as envisioned.
- Since continuity of some current missions is not guaranteed, it is important to know necessary attributes of existing products even if needs are currently being met fully
- Importance of being able to quantitatively assess how well needs are being met was a take-home message from 2016 survey
- Agency requests for processed data and value-added products led to survey section focused on data processing
- OMB requested addition of questions about available agency resources

Performance / Satisfaction Scale is used throughout Section in the 2018 survey

Performance / Satisfaction Scale		
100	Ideal	Meets all requirements and exceeds some
90	Fully Satisfied	Meets all requirements
80	Good	Meets all major requirements with minor limitations
70		
60	Fair	Meets most major requirements, with significant limitations
50		
40	Poor	Fails to meet many major requirements, but provides some value
30		
20	Very Poor	Fails to meet most major requirements, but provides minor value
10		
1	No Capability	Provides no value

Rate your satisfaction of existing products/measurements and attributes of measurements (e.g. spatial resolution).

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Action Item Review / Next Meeting

- The Executive Secretary will document any action items taken during the meeting
- The Executive Secretary will coordinate with the cochairs and schedule the next meeting.

On / about Dec 17, 2018

- Our goal is to conduct 4 meetings in 2019
 - 22 March
 - 21 June
 - 20 September
 - 13 December
-

BACK-UP
