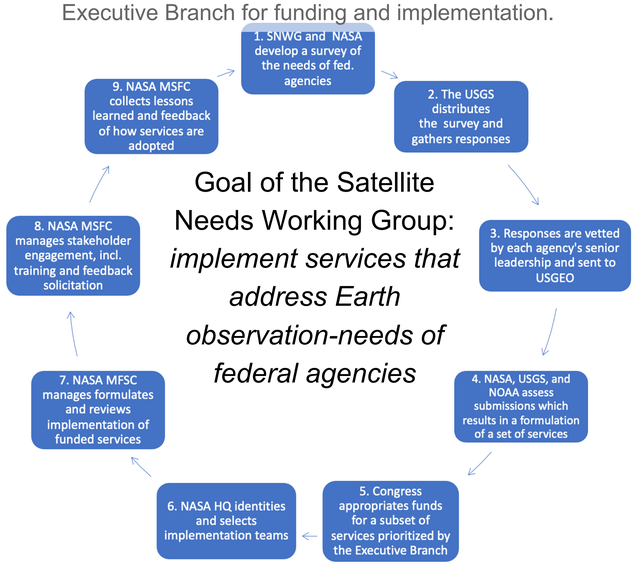
Leveraging Satellite Assets for Better Decision-Making: the *Satellite Needs Working Group*

IMPACT
Interagency Implementation and Advanced Concepts Team

Overview

- The services provided by US federal agencies require Earth observations.
- We are witnessing a revolution in remote sensing technology; dramatic increase of the number and types of Earth observations; free-data policies; access to computing power => satellite remote sensing more relevant than ever.
- This development presents new opportunities for using Earth observations but navigating the myriad of missions and observations is complicated. NASA, as a main satellite data provider, is in a unique position to assist with such navigation.
- With the Satellite Needs Working Group (SNWG), NASA, with USGS and NOAA, tries to identify, communicate, and address Earth observation needs of federal agencies. The SNWG surveys federal agencies every two years to identify what Earth observation data they need to fulfill their mission. Survey responses are assessed and solutions that meet the needs are formulated. Solutions estimated to significantly increase the level of satisfaction of agencies are selected by the Executive Branch for funding and implementation.



SNWG Solution Highlights

From the 2016 cycle

The Harmonized Landsat Sentinel-2 (HLS) surface reflectance data set – global production at a temporal resolution of two days and spatial resolution of 30 m

From the 2018 cycle

The Observational Products for End-Users from Remote Sensing Analysis:

- A global surface water extent product
- A global land surface disturbance/change product
- A North American land surface deformation product

From the 2020 cycle

- Near real-time TEMPO atmospheric composition products
- Planetary Boundary Layer product merging sounder/GNSS-RO data
- HLS-derived vegetation indices including NDVI, EVI, SAVI, etc.
- Expand Pandora air quality network & provide point forecasts

From the 2022 cycle – assessment is currently underway

Stakeholder Engagement

- The SNWG Management Office at NASA Marshall Space Flight Center is in charge of stakeholder engagement for each solution from all future cycles starting with the 2020 cycle (the NASA Jet Propulsion Lab is in charge of the stakeholder engagement for the OPERA solution from the 2018 cycle).
- The aim is to enhance community engagement with the data products and technologies generated in response to the Earth observations needs identified in the SNWG process.
- Engagement involves tailoring solutions to stakeholders' needs, training around usage of solutions, and keeping stakeholders informed about solution development.
- For example, in October 2022, stakeholders were polled for the HLS Vegetation Indices solution from the 2020 cycle to gain an understanding of their training needs; many stakeholders expressed that their greatest training need is processing in cloud computing platforms, and that NDWI would be useful to their work – as a result, NDWI is being added to the suite of VIs.

Open Source Science

It is imperative to the whole SNWG apparatus that solution implementations adhere to NASA's Open-Source Science Initiative. In short, this means

- that data, meetings, and publications are "as open as possible, as closed as required, and always secure"
- that code is open and accessible throughout implementation by hosting it on NASA GitHub (or similar approved hosting services)
- that any data products must be shared via NASA DAACs
- that any documentation pertaining to the implementation is published in the open
- that meetings are conducted and outcomes published in the open

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