JPSS-2 (NOAA-21) User Readiness Survey

The purpose of this survey is to collect information on Joint Polar Satellite System (JPSS) product user readiness for JPSS-2 (NOAA-21) as the primary satellite in the JPSS constellation. The JPSS-2 launch is planned for November 1, 2022. JPSS data products contribute to weather forecasting, public safety, disaster preparedness, hazard response and recovery, transportation systems, and the protection of critical infrastructure and natural resources. For more information about JPSS-2, please visit https://www.nesdis.noaa.gov/next-generation/jpss-2-launch.

The survey will be open from October 3, 2022 until October 31, 2022.

Please answer the survey questions as soon as possible and no later than October 31, 2022. This information is requested under the terms of OMB # 0690-0030 which expires on XX/XX/XXXX.

Why are we asking these questions? To better serve your needs for satellite data and products. NOAA's National Environmental Satellite, Data, and Information Service (NESDIS) is responsible for operating the United States' weather satellites and the associated ground and support systems, product generation, and product distribution systems. NESDIS coordinates with users of Key Performance Parameter (KPP) products within NOAA and partnering organizations prior to designating a new satellite as the primary satellite in the constellation. KPPs by definition are the minimum products needed to be generated and distributed in order for the mission to be successful. NESDIS is also coordinating with the larger JPSS user community through this survey to gauge user readiness for all of the NOAA-21 products. This survey is open to the JPSS user community in order to better assess the user community's readiness for NOAA-21 as the primary JPSS mission. Thank you for participating in the survey.

Background Information:

When applied to mission operations, the primary mission is the satellite mission of most importance. The key rules that apply to the primary mission are:

- Data latency requirements apply to the primary JPSS mission. Data latency is defined in the JPSS Level 1 Requirements - J2 Follow-On Final as: "... the period from the time of observation of all requisite data by the satellite until the EDR or data product produced from those data is available to the user at the distribution system."
- Allocation of resources for data transfers is prioritized for the primary mission.
- Allocation of resources at the receptor sites is prioritized for the primary mission.

In regards to product operations, NOAA-21 will be designated the primary satellite after all of the following conditions are met:

- The KPP products listed below reach provisional maturity, are made available to users, and meet a data latency requirement of 87-minutes.
    - Advanced Technology Microwave Sounder (ATMS) Temperature Data Records (TDRs)
    - Cross-track Infrared Sounder (CrIS) Sensor Data Records (SDR)
    - For latitudes greater than 60^{o}N in the Alaskan region, Visible Infrared Imaging Radiometer Suite (VIIRS) Imagery Environmental Data Records (EDR) at 0.64µm (I1), 1.61µm (I3), 3.74µm

(I4), 11.45µm (I5), 8.55 µm (M14), 10.763 µm (M15), 12.03 µm (M16), and 0.7 µm Near Constant Contrast (NCC) EDR.

- Key stakeholders confirm that they are ready to transition.

There are several ways for a user to access JPSS series products.

- Product Distribution and Access (PDA). The Environmental Satellite Processing Center (ESPC) receives near-real-time environmental satellite data and products from Interface Data Processing Segment (IDPS), processes SDRs to generate EDRs, and makes the products available to authorized, operational real-time users through the Product Distribution and Access (PDA). Users connect to the PDA through terrestrial networks and point-to-point connections.
- GEONETCast Americas (GNC-A). GNC-A is the Western Hemisphere component of GEONETCast, a near real time, global network of satellite-based data dissemination systems designed to distribute space-based, air-borne and in-situ data, metadata and products to diverse communities.
- Websites on the Internet. NOAA, NASA, NOAA Cooperative Institutes, and Universities distribute JPSS imagery on their websites. JPSS NOAA Unique Products (NUP) are available from the NESDIS Office of Satellite and Product Operations (OSPO) product website.
- NOAA Open Data Dissemination (NODD) Program. The NOAA Open Data Dissemination (NODD) Program provides public access to NOAA's open data on commercial cloud platforms through public-private partnerships. This was formerly known as the Big Data Project (BDP).
- NWS Satellite Broadcast Network/NOAAPort (SBN/NOAAPort). Selected JPSS products are distributed on the NWS Advanced Weather Interactive Processing System (AWIPS) SBN/NOAAPort to NWS Weather Forecast Offices (WFO) and River Forecast Centers (RFC).
- JPSS Stored Mission Data (SMD) Hub (JSH). JPSS raw data (application packets) are distributed to users from the JSHs directly to Mission Partners.
- Comprehensive Large Array-data Stewardship System (CLASS). Web-based data archive and distribution system for NOAA’s environmental data. CLASS provides retrospective (non-real-time) data access and distribution services of JPSS data to all users.
- NOAA CoastWatch/OceanWatch. This program provides easy access for everyone to global and regional satellite data products for use in understanding, managing and protecting ocean and coastal resources and for assessing impacts of environmental change in ecosystems, weather, and climate.

Please note that some of the questions in the survey are about the Community Satellite Processing Package (CSPP) for Low Earth Orbit (LEO), and will not apply to all JPSS product users. The CSPP LEO software enables Direct Broadcast (DB) users to process data from the S-NPP, NOAA-20, and NOAA-21 High Rate Data (HRD) downlink, and other LEO satellites DB downlinks, and generate a subset of the baseline Level 1b (SDR) and Level 2 (EDR) products. The JPSS Ground Segment and JPSS Program Science Office fund the CSPP LEO program. NOAA's Center for Satellite Applications and Research (STAR) maintains the core science software and assists the University of Wisconsin with the implementation of the software in CSPP Geo.

Survey Questions:

1. How would you describe your service? Select all that apply.
    a. We use NOAA's JPSS products to make forecasts and/or support decision-making
    b. We use NOAA's JPSS products to generate bulletins or other documentation
    c. We distribute NOAA's JPSS products
    d. We use NOAA JPSS products to generate products with our own software
    e. We use the JPSS series High Rate Data (HRD) downlink to generate products with the CSPP LEO software
    f. We use the JPSS series HRD downlink to generate products with other software
    g. Other. Please specify: _____

2. What sector(s) does your service support? Select all that apply.
    a. US Federal Government
    b. US State, Tribal, or local (county/city) Government
    c. US Military
    d. US Academic
    e. US Commercial
    f. International Government
    g. International Military
    h. International Academic
    i. International Commercial
    j. Other. Please specify: _____

3. Please identify the application area(s) that you support using NOAA's JPSS data products. Select all that apply:
    a. Agricultural and Forestry Land Use Management and Assessment
    b. Air Quality
    c. Applied Research and Development
    d. Agricultural Industries and Markets
    e. Aviation Operations
    f. Biological and Ecological Assessment
    g. Broadcast and Print Media
    h. Commercial Value-added Products, Services or Equipment
    i. Disaster Recovery
    j. Education and Teaching
    k. Energy Industries and Markets
    l. Environmental Modeling and Assimilation
    m. Environmental Resource Management and Assessment
    n. Financial and Insurance Industry
    o. Land Transportation Operations
    p. Leisure and Travel
    q. Maritime Operations
    r. Military Operations
    s. Natural Disaster Response
    t. Operational Decision Support
    u. Operational Weather Forecasting
    v. Operations and Logistics Management; Government Civilian Facilities
    w. Operations and Logistics Management; Government Defense Facilities

x. Operations and Logistics Management; Private Sector Facilities
y. Parks, Sports and Recreation
z. Power (e.g., electrical generation and distribution)
aa. Public Safety and Emergency Response
bb. Research and Development
cc. Space Operations
dd. Space Transportation and Launch Operations
ee. Urban Management
ff. Wildfire and Smoke Management
gg. Other. Please specify: _____

4. If you distribute NOAA's products, then which products do you distribute? Select all that apply.
    a. SDR (Level 1b) JPSS data products
    b. EDR (Level 2) JPSS data products
    c. Level 3 Ocean Color Products
    d. We do not distribute products

5. Have you or do you plan to test your capability to process products with JPSS-2 test data prior to the JPSS-2 launch?
    a. Yes
    b. No

6. What was the result of that test?
    a. Successful
    b. Unsuccessful
    c. Have not yet conducted testing
    d. N/A (if you answered "no" above)

7. What is your primary source for JPSS series data products?
    a. PDA
    b. GNC-A
    c. Websites (NOAA, NASA, NOAA Cooperative Institutes, or Universities)
    d. NODD
    e. NOAAPort
    f. JSH
    g. CLASS
    h. NOAA CoastWatch/OceanWatch/PolarWatch (from any service, e.g., Central or Regional Nodes)
    i. Other. Please specify: _____

8. If you have a secondary source for JPSS series data products, then what is it?
    a. PDA
    b. GNC-A
    c. Websites (NOAA, NASA, NOAA Cooperative Institutes, or Universities)
    d. NODD
    e. NOAAPort

f. JSH
g. CLASS
h. NOAA CoastWatch/OceanWatch/PolarWatch (from any service, e.g., Central or Regional Nodes)
i. Other. Please specify: _____

9. Do you utilize Direct Broadcast?
    a. Yes, as a primary or secondary source
    b. Yes, as a contingency if both primary and secondary sources are unavailable
    c. No

10. If you use the JPSS series HRD data stream to generate products with your own software, then: Will your software be ready to generate NOAA-21 products from HRD when the NOAA-21 HRD is activated?
    a. Yes
    b. No
    c. Unknown

11. Is your organization considering assimilating NOAA-21 data products in its operational Data Assimilation (DA) system?
    a. Yes
    b. No

12. If your organization plans to assimilate JPSS data in a Data Assimilation (DA) system in support of environmental modeling (analysis and forecasts) then will your organization approve NOAA-21 data products for use in its operational DA system within 6 months after the JPSS-2 launch?
    a. Yes
    b. No
    c. N/A (if you answered “no” above)

13. If your organization plans to assimilate JPSS data in a Data Assimilation (DA) system in support of environmental modeling (analysis and forecasts) then will your organization approve NOAA-21 data products for use in its operational DA system within 9 months after the JPSS-2 launch?
    a. Yes
    b. No
    c. N/A (if you answered “no” above)

14. Does your application require consistent processing, linking to observations from other current or previous missions, including fused, super-collated or other types of blended products so that the continuity of observations for a long time series is sustained without the user needing to be concerned with satellite/sensor details of what goes into the earth observation data product? For example: do you need to know anomalies from a long-term baseline?; or do you need daily blended data products (Level-3)?; or

do you require gap-free, gridded analyses (L4)?. (Note: these are all different from a Climate Data Record.)

a. Yes
b. No
c. Not Sure
d. Please provide additional detail (voluntary): _____

15. Please select all of the NOAA-21 products that your organization plans to receive:
    a. ATMS TDR
    b. ATMS SDR
    c. CrIS SDR
    d. OMPS-N SDR
    e. OMPS-LP RDR
    f. OMPS-LP SDR
    g. VIIRS SDR
    h. VIIRS Imagery EDR
    i. Aerosol Detection EDR
    j. Active Fires EDR
    k. Aerosol Optical Depth EDR
    l. Aerosol Particle Size EDR
    m. Albedo (Surface) EDR
    n. Annual Surface Type EDR
    o. Atmospheric Vertical Moisture Profile EDR
    p. Atmospheric Vertical Temperature Profile EDR
    q. Carbon Dioxide (CO2) EDR
    r. Carbon Monoxide (CO) EDR
    s. Cloud Cover/Layers EDR
    t. Cloud Height (Top and Base) EDR
    u. Cloud Liquid Water EDR
    v. Cloud Mask EDR
    w. Cloud Optical Depth EDR
    x. Cloud Particle Size EDR
    y. Cloud Phase EDR
    z. Cloud Top Pressure EDR
    aa. Cloud Top Temperature EDR
    bb. Green Vegetation Fraction EDR
    cc. Ice Age/Thickness EDR
    dd. Ice Concentration EDR
    ee. Ice Surface Temperature EDR
    ff. Infrared Ozone Profile EDR
    gg. Land Surface Emissivity EDR
    hh. Land Surface Temperature EDR
    ii. Methane (CH4) EDR
    jj. Moisture Profile EDR
    kk. Ocean Color /Chlorophyll EDR
    ll. Outgoing Long Wave Radiation EDR
    mm. Ozone Limb Profile EDR

nn. Ozone Nadir Profile EDR
oo. Ozone Total Column EDR
pp. Polar Winds EDR
qq. Level 3 Ocean Color Products
rr. Vegetation Index
ss. Vegetation Health

16. Please assign a priority ranking to the following groups of products based on your mission needs (highest priority is 5 and lowest priority is 1)

a. KPPs _____
b. Non-KPP Imagery _____
c. Clouds _____
d. Aerosols _____
e. Volcanic Ash _____
f. Fires _____
g. Ozone _____
h. Ocean Color _____
i. SST _____
j. Ice _____
k. Snow _____
l. Land _____
m. Polar Winds _____
n. Soundings/Vertical Profiles _____
o. Microwave Integrated Retrieval System (MiRS) _____

17. For your higher priority product(s), how important is data latency (timeliness) to your organization in meeting your mission?
    a. Very Important to mission success
    b. Important to mission success
    c. Does not significantly impact mission success

18. Do you have any concerns or feedback for NESDIS regarding your readiness for NOAA-21 data products when NOAA-21 is designated the primary satellite?
    a. Yes
    b. No

19. If you answered "Yes" to the last question then please describe your concerns or feedback below:

_____
_____
_____
_____
_____
_____