Non-Reimbursable Agreement
Between
the National Oceanic and Atmospheric Administration

and

the National Aeronautics and Space Administration

for Cooperation Relating to

the Ozone Mapping and Profiler Suite – Limb Sensor Accommodation on Joint Polar Satellite System -3 & -4

U.S. Department of Commerce (DOC)
National Oceanic and Atmospheric Administration (NOAA)
National Environmental Satellite, Data, and Information Service (NESDIS)

National Aeronautics and Space Administration (NASA)

ARTICLE 1. AUTHORITY AND PARTIES

The National Aeronautics and Space Administration (NASA), located at 300 E Street SW, Washington, DC 20546, enters into this Interagency Agreement (IAA) in accordance with the National Aeronautics and Space Act (51 U.S.C. § 20113 (e)). The National Oceanic and Atmospheric Administration (NOAA), National Environmental Satellite, Data, and Information Service (NESDIS), located at 1335 East-West Highway, Silver Spring, MD 20910, enters into this IAA in accordance with its programmatic authorities, 15 U.S.C. § 313 and 49 U.S.C. § 44720. NASA or NOAA may hereinafter be individually referred to as a "Party" and collectively referred to as the "Parties."

ARTICLE 2. PURPOSE

This IAA encapsulates and defines the roles and responsibilities for the NASA Science Mission Directorate (SMD) and NOAA NESDIS associated with the procurement and development of the Ozone Mapping and Profiler Suite (OMPS) – Limb (L) sensor, its integration into the OMPS Integrated Sensor Suite (ISS), accommodation of the OMPS ISS on the Joint Polar Satellite System (JPSS)-3, and -4 satellites, as well as associated instrument operation and data generation.

JPSS, a collaborative program between NOAA and NASA, is providing the nation with next-generation polar-orbiting weather prediction, and climate and environmental monitoring capabilities. JPSS is critical to providing uninterrupted climate data continuity for climate modeling and forecasting studies. The JPSS-2,-3, and -4 satellites will each include an OMPS ISS, including OMPS-L and OMPS – Nadir (N) sensors, designed to track the health of the ozone layer and measure the concentration of ozone in the Earth’s atmosphere.

ARTICLE 3. RESPONSIBILITIES

NASA will use reasonable efforts to:

- Issue the Level 1 Requirement Document (L1RD) for the OMPS-L sensor;
- Fund the management, procurement, and development of the OMPS-L sensor and its integration and test in the OMPS ISS;
- Ensure delivery of the OMPS-L sensor in accordance with the NOAA JPSS-3 and -4 mission schedules;
- Fund post-delivery support for the OMPS-L sensor, including satellite integration and test, launch and early orbit checkout, and in-orbit operations;
- Fund efforts required to limit the functionality of the OMPS-L sensor (i.e. fly it inert) or to remove the OMPS-L sensor from the OMPS ISS, if necessary, as risk mitigation to protect JPSS schedules;
- Notify NOAA within 30 days if problems occur in the OMPS-L sensor development that are projected to impact the planned delivery schedule for its integration into the OMPS ISS, and subsequently onto the JPSS-3 or -4 spacecraft;
- Fund the OMPS-L sensor operations team and OMPS-L data processing facility at NASA Goddard Space Flight Center (GSFC);

- Send commands and loads to the JPSS Mission Operations team at the NOAA Satellite Operations Facility (NSOF) for operation of the OMPS-L sensor;
- Develop the OMPS-L sensor operational activity schedules, and conduct long-term monitoring of sensor operation;
- Perform the OMPS-L sensor data product calibration and validation; and,
- Produce, archive, and distribute the OMPS-L sensor data products.

NOAA will use reasonable efforts to:

- Provide detailed technical and programmatic interface requirements to NASA for the OMPS ISS;
- Ensure that the N sensor is built to the baselined interface requirements (e.g., mass, power, thermal, data volume) as specified in the OMPS Interface Control Document (ICD);
- Accommodate the OMPS ISS on the JPSS-3 and -4 satellites, consistent with the NASA-provided L1RD for OMPS-L and consistent with NOAA technical and programmatic interface requirements;
- Integrate the OMPS ISS on the JPSS-3 and -4 satellites;
- Provide the OMPS instrument management team in order to coordinate OMPS instrument-specific support in the areas of systems engineering, safety and mission assurance, and other aspects of execution necessary for programmatic and technical integration;
- Coordinate the OMPS-L sensor milestone and contract performance reviews with NASA and provide review presentation materials to NASA for further distribution to support service contractors or consultants, as consistent with Federal and Agency policy and guidance;
- Provide NASA regular status updates on overall JPSS mission acquisition and development efforts in monthly project review materials, and make available all current management information and documentation associated with schedules, risks, issues, technical performance measures, anomalies/problem reports, including performance reviews, earned value management reports, risk management reports, and risk registry, to ensure that NASA understands the OMPS-L sensor status;
- Conduct a thorough program to verify the OMPS ISS meets all accommodation requirements as designed and built, with integrity demonstrated, to ensure the OMPS-L sensor does not pose a threat to the JPSS missions regardless of whether it is flown fully functional, impaired, or inert;
- Notify NASA, consistent with NOAA- and NASA-defined protocols, of any event, anomaly, failure, or finding on the JPSS satellites that would normally trigger special reporting to NOAA NESDIS or an operating center;
- Operate the OMPS ISS, including providing Command, Control, and Communications services for the OMPS-L sensor operations based upon commands received from NASA through the NASA GSFC-to-NSOF interface;
- Provide the appropriate OMPS-L and spacecraft mission data to NASA for its product generation activities, including delivering Level-0 Data consistent with NOAA - NASA data exchange agreements;

- Provide, through the JPSS-to-Science Data Segment (SDS) interface, the OMPS-L sensor application packet and raw data records, other instrument science data, and other ancillary data required for NASA data processing;
- Work with NASA GSFC, NOAA National Centers for Environmental Information, and the National Weather Service (NWS) to identify opportunities for NASA GSFC to support and collaborate with NWS and the National Climatic Data Center on the use and application of OMPS-L sensor data to further mutual goals; and,
- Coordinate with NASA on financial status and cost accounting information to support NASA budgeting and financial execution of this agreement, and common reporting of OMPS-L to both Agencies.

ARTICLE 4. SCHEDULE AND MILESTONES

The OMPS-L sensors shall be delivered on a timeline that is tied to the OMPS ISS milestones, which are tied to the JPSS-3, and -4 mission milestones as documented in the JPSS Program Integrated Master Schedule (IMS). The JPSS Program IMS evolves over time, and the OMPS-L sensors shall be delivered in a manner that does not interfere with or add consequential risk to the overall mission development and timely launch.

OMPS-L sensor considerations shall not drive any JPSS planning or baselined schedules other than to allow for nominal integration to the spacecraft. If the OMPS-L sensor cannot meet the JPSS schedules, NOAA, in consultation with NASA, may choose to launch without it or with it in an inert state or ‘as is’ condition.The NOAA Administrator shall be the sole decision authority for OMPS-L accommodation on JPSS. In the event that the OMPS-L sensor misses its milestones for delivery and integration into the OMPS ISS and accommodation onto the JPSS spacecraft, or the JPSS mission is reprioritized to an accelerated launch date, NOAA and NASA shall assess the implications of corrective actions to address these changes and make recommendations to the NOAA Administrator.

Planned major milestones for the activities defined in the "Responsibilities" clause will be defined in the JPSS Program IMS. The dates below for deliveries and Life Cycle Reviews are drawn from the Ball Aerospace & Technologies Corporation (BATC) OMPS and Flight Project Integrated Master Schedules from May 2020.

JPSS-3

JPSS-3 OMPS procurement, development and review schedule:

Request for proposal (RFP) released:	April 2015 [Complete]
Authorization to Proceed (ATP):	March 2016 [Complete]
Proposals received:	July 2015 [Complete]
Contract definitized:	April 2016 [Complete]
Instrument Heritage Review (IHR)	September 2016 [Complete]
Instrument Technical Review (ITR)	January 2018 [Complete]
Pre-Environmental Review (PER)	May 2021
Pre-Ship Review (PSR)	October 2021

Delivery	October 2021

JPSS-3 Flight Project schedule milestones:

JPSS-2/3/4 Critical Design Review (CDR)	October 2017 [Complete]
JPSS-3 Integration Readiness Review (IRR)	December 2021 (TBR)

JPSS-4

JPSS-4 OMPS procurement, development and review schedule:

ATP: March 2016 [Complete]	
Proposals received:	July 2015 [Complete]
Contract definitized:	April 2016 [Complete]
IHR	September 2016 [Complete]
ITR	March 2020
PER	August 2022
PSR	February 2023
Delivery	March 2023

JPSS-4 Flight Project schedule milestones:

JPSS-2/3/4 CDR	October 2017 [Complete]
JPSS-4 IRR	December 2023 (TBR)

The OMPS-L sensor shall be covered as part of the overall OMPS scheduled milestones and reviews.

BATC successfully built the OMPS-L sensor for the Suomi National Polar-Orbiting Partnership mission. Therefore, a Preliminary Design Review is not necessary. A specific OMPS instrument Delta CDR may be conducted, however, to ensure the maturity of any updated designs or other changes.

As development of the JPSS missions progress, the milestones above will be updated, as required, and additional integration and test milestones will be defined. These integration and test milestones will serve as trigger points to review OMPS ISS and JPSS statuses, and the basis upon any recommendation to reconsider the decision to integrate the OMPS-L sensor into the OMPS ISS and accommodate it on the JPSS spacecraft.

The OMPS-L sensor will not be allowed to be the critical path for this mission. If any of the trigger points or milestones that were developed after the JPSS spacecraft contract is awarded are breached, the NOAA JPSS Director will call for an assessment, in consultation with the NASA Earth Science Division Director, to determine whether to 1) prevent the OMPS-L sensor from being integrated in the OMPS ISS, 2) remove the OMPS-L sensor from the OMPS ISS, or 3) fly it in an inert state. NASA shall provide a recommended course of action to the NOAA JPSS Director. NOAA and NASA will make assessments on risk mitigation options and impact to OMPS-L and JPSS Level-1 Requirements, evaluate the likelihood and consequences of the risk, utilize JPSS risk management criteria and processes to quantify the threat, and report a

recommendation to the NOAA Administrator up through the NESDIS Deputy Assistant Administrator for Systems, the NASA Joint Agency Satellite Division Director, the NOAAA Assistant Administrator for Satellite and Information Services, and the NASA Associate Administrator for Science. Existing JPSS management decision-making processes and boards will be utilized to vet the OMPS/JPSS risk assessment and recommendation with the NOAA Administrator. NASA will be represented in these processes, and if consensus is not reached, dissenting opinions will be carried forward through the boards to the decision authority.

Once the OMPS-L sensor is integrated into the OMPS ISS and integrated to the JPSS spacecrafts, any threats to the JPSS mission will likely require resolution on an urgent basis. If so, special board meetings will be called, and, where possible, such boards will be combined, to ensure rapid decision-making. Once launch preparations have begun, decision-making will follow launch campaign decision-making processes.

ARTICLE 5. FINANCIAL OBLIGATIONS

There will be no exchange of funds between NASA and NOAA with respect to this IAA. Each Agency will fund its own participation as described herein. All activities under or pursuant to this Agreement are subject to the availability of funds, and no provision of this Agreement shall be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act, (31 U.S.C. § 1341).

ARTICLE 6. PRIORITY OF USE

Any schedule or milestone in this IAA is estimated based upon the Parties' current understanding of the projected availability of its respective goods, services, facilities, or equipment. In the event that either Party's projected availability changes, NASA or NOAA, respectively, shall be given reasonable notice of that change, so that the schedule and milestones may be adjusted accordingly. The Parties agree that NASA's and NOAA's use of its own goods, services, facilities, or equipment shall have priority over the use planned in this IAA.

ARTICLE 7. LIABILITY AND RISK OF LOSS

The Code of Federal Regulations (14 C.F.R. § 1266.104) establishes a cross-waiver of liability between the parties to agreements for science or space exploration activities unrelated to the International Space Station which involve a launch, and requires that such cross-waiver be flowed down to the parties' related entities. In furtherance of this requirement, the Parties agree to ensure that their respective applicable Related Entities are subject to the cross-waiver as set forth in 14 C.F.R. § 1266.104.

ARTICLE 8. INTELLECTUAL PROPERTY RIGHTS - DATA RIGHTS

NASA and NOAA agree that the information and data exchanged in furtherance of the activities under this IAA will be exchanged without use and disclosure restrictions unless required by national security regulations (e.g., classified information) or as otherwise provided in this IAA or agreed to by NASA and NOAA for specifically identified information or data (e.g., information or data specifically marked with a restrictive notice).

ARTICLE 9. INTELLECTUAL PROPERTY RIGHTS - INVENTION AND PATENT RIGHTS

Unless otherwise agreed upon by NASA and NOAA, custody and administration of inventions made (conceived or first actually reduced to practice) under this IAA will remain with the respective inventing Party.

In the event an invention is made jointly by employees of the Parties (including by employees of a Party's contractors or subcontractors for which the U.S. Government has ownership), the Parties will consult and agree as to future actions toward establishment of patent protection for the invention.

ARTICLE 10. RELEASE OF GENERAL INFORMATION TO THE PUBLIC AND MEDIA

NASA or NOAA may, consistent with Federal law and this Agreement, release general information regarding its own participation in this IAA as desired. Insofar as participation of the other Party in this IAA is included in a public release, NASA and NOAA will seek to consult with each other prior to any such release, consistent with the Parties' respective policies.

Pursuant to Section 841(d) of the NASA Transition Authorization Act of 2017, Public Law 115-10 (the "NTAA"), NASA is obligated to publicly disclose copies of all agreements conducted pursuant to NASA's 51 U.S.C. §20113(e) authority in a searchable format on the NASA website within 60 days after the agreement is signed by the Parties. The Parties acknowledge that, if this IAA is entered into pursuant to NASA's 51 U.S.C. §20113(e) authority, this IAA will be disclosed, without redaction, in accordance with the NTAA.

ARTICLE 11. TERM OF AGREEMENT

This IAA becomes effective upon the date of the last signature below ("Effective Date") and shall remain in effect for 5 years from the effective date, or until completion of all obligations of both parties hereto, whichever comes first.

ARTICLE 12. RIGHT TO TERMINATE

Either Party may unilaterally terminate this Agreement by providing one hundred eighty (180) calendar days written notice to the other Party.

ARTICLE 13. CONTINUING OBLIGATIONS

The rights and obligations of the Parties that, by their nature, would continue beyond the expiration or termination of this Agreement, e.g., "Liability and Risk of Loss" and "Intellectual Property Rights" shall survive such expiration or termination of this Agreement.

ARTICLE 14. POINTS OF CONTACT

The following personnel are designated as the Points of Contact between the Parties in the performance of this Agreement.

Management Points of Contact:

National Aeronautics
and Space Administration

John Lee, Director
Joint Agency Satellite Division
300 E Street SW
Washington, DC 20546
202-358-4731
john.lee@nasa.gov

National Oceanic
and Atmospheric Administration

Gregory A. Mandt, Director
Joint Polar Satellite System Program
7700 Hubble Drive
Lanham, MD 20706
301-713-4782
greg.mandt@noaa.gov

Karen M. St. Germain
Director, Earth Science Division
300 E Street SW
Washington, DC 20546
202-358-3759
karen.m.stgermain@nasa.gov

ARTICLE 15. DISPUTE RESOLUTION

All disputes concerning questions of fact or law arising under this IAA shall be referred by the claimant in writing to the appropriate person identified in this IAA as the Points of Contact. The persons identified as the Points of Contact for NASA and NOAA will consult and attempt to resolve all issues arising from the implementation of this IAA. If they are unable to come to agreement on any issue, the dispute will be referred to the signatories to this IAA, or their designees, for joint resolution after the Parties have separately documented in writing clear reasons for the dispute. The NOAA Administrator shall be the sole decision authority for OMPS-L accommodation on JPSS.

ARTICLE 16. INVESTIGATIONS OF MISHAPS AND CLOSE CALLS

In the case of a close call, mishap or mission failure, the Parties agree to provide assistance to each other in the conduct of any investigation. For all NASA mishaps or close calls, Partner agrees to comply with NPR 8621.1, "NASA Procedural Requirements for Mishap and Close Call Reporting, Investigating, and Recordkeeping".

ARTICLE 17. MODIFICATIONS

Any modification to this IAA shall be executed, in writing, and signed by an authorized representative of NASA and NOAA.

ARTICLE 18. APPLICABLE LAW

U.S. Federal law governs this IAA for all purposes, including, but not limited to, determining the validity of the IAA, the meaning of its provisions, and the rights, obligations and remedies of the Parties.

Article 19: SIGNATORY AUTHORITY

Approved and Authorized on Behalf of Each Party by:

National Aeronautics and Space Administration

By: Thomas Zurbuchen Digitally signed by Thomas Zurbuchen Date: 2020.08.14 09:10:57 -04'00'

Thomas H. Zurbuchen, Ph.D.
Associate Administrator,
Science Mission Directorate

National Oceanic and Atmospheric Administration

By: VOLZ.STEPHEN.MICHAEL.1504223694 Digitally signed by VOLZ.STEPHEN.MICHAEL.1504223694 Date: 2020.11.08 20:11:16 -05'00'

Stephen M. Volz, PhD
Assistant Administrator
for Satellite and Information Services