

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

# **NOAA JPSS Implementation Plan**

**Version 2.0**



**October 2016**

**Approval**



Harry Cikanek  
Director, Joint Polar Satellite System

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Date



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3 November 2016

Date

## **Plan Preface**

This document is under NOAA JPSS configuration control. Once this document is approved, change requests are handled in accordance with the NJO Configuration Management Plan, and changes to this document shall be made by complete revision.

Any questions should be addressed to:

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## Change Record

VERSION	DATE	PAGES AFFECTED	DESCRIPTION
1.0	May 9, 2013	n/a	Final
2.0	October 2016	Per CCR-NJO-2015-012, Rev A, this update incorporates information about the Polar Follow On (PFO) extension of the JPSS Program, the planned transition of the ground project from NASA to NOAA, the NESDIS reorganization of 2014, and multiple administrative changes.	Update

The document version number identifies whether the document is a working copy, final, revision, or update, defined as follows:

- **Working copy or Draft:** a document not yet finalized or ready for distribution; sometimes called a draft. Use 0.1A, 0.1B, etc. for unpublished documents.
- **Preliminary:** a document which contains accurate, reviewed information but which is not yet complete or could change though is usable in its current state. Identified as Version 1.0 Preliminary.
- **Final:** the first definitive edition of the document. The final is always identified as Version 1.0.
- **Revision:** an edition with minor changes from the previous edition, defined as changes affecting less than one-third of the pages in the document. The version numbers for revisions 1.1 through 1.9, 2.1 through 2.9, and so forth. After nine revisions, any other changes to the document are considered an update. A revision in draft, i.e. before being re-baselined, should be numbered as 1.1A, 1.1B, etc.
- **Update:** an edition with major changes from the previous edition, defined as changes affecting more than one-third of the pages in the document. The version number for an update is always a whole number (Version 2.0, 3.0, 4.0, and so forth).

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## 1.0 PROGRAM OVERVIEW

### 1.1 Introduction to JPSS

The Joint Polar Satellite System (JPSS), created by the President in February 2010<sup>1</sup>, is the National Oceanic and Atmospheric Administration's (NOAA) follow-on to the Polar-orbiting Operational Environmental Satellite (POES) series of environmental satellites, providing environmental observation and data delivery services in support of weather forecasting, climate and environmental monitoring, data collection, and search and rescue. Data and imagery obtained from JPSS satellites will help increase timeliness, accuracy, and cost-effectiveness of public warnings, forecasts and analyses of climate and weather events.

NOAA's environmental satellite operations and weather forecasting, which includes JPSS, are designated *primary mission-essential functions* by the Department of Commerce (DOC), directly supporting government functions the President has deemed necessary to lead and sustain the Nation during a catastrophic emergency.

NOAA is responsible for the execution of JPSS over its full life cycle, including data exploitation and ensuring end-to-end continuity (from photon to product), from initial concept studies to maximizing the utility of the data and products by users.

JPSS includes:

- the space segment (Suomi National Polar-orbiting Partnership [S-NPP], JPSS-1, JPSS-2, and PFO/JPSS-3, JPSS-4),
- a ground segment (command, control, communications, product generation and distribution, facilities, and data storage), and
- all science-related activity, including algorithm development and maintenance, and calibration and validation.

The "JPSS Program" is defined as all the activities (people, processes, projects and systems) associated with the development, implementation, integration, testing, stakeholder engagement and operations conducted by both NOAA and National Aeronautics and Space Agency (NASA) related to JPSS.

The JPSS Program Office (referred to as the NOAA JPSS Office [NJO] in JPSS program documentation) is the organization established under Department of Commerce Organization Order (DOO) 25-5 to provide the overall direction of the program and its elements to achieve program objectives. It is responsible for the financial, programmatic, technical, and performance metrics for the program and for ensuring effective overall program level system engineering, integration and program control. "JPSS Program" may also refer to the NASA JPSS Program.

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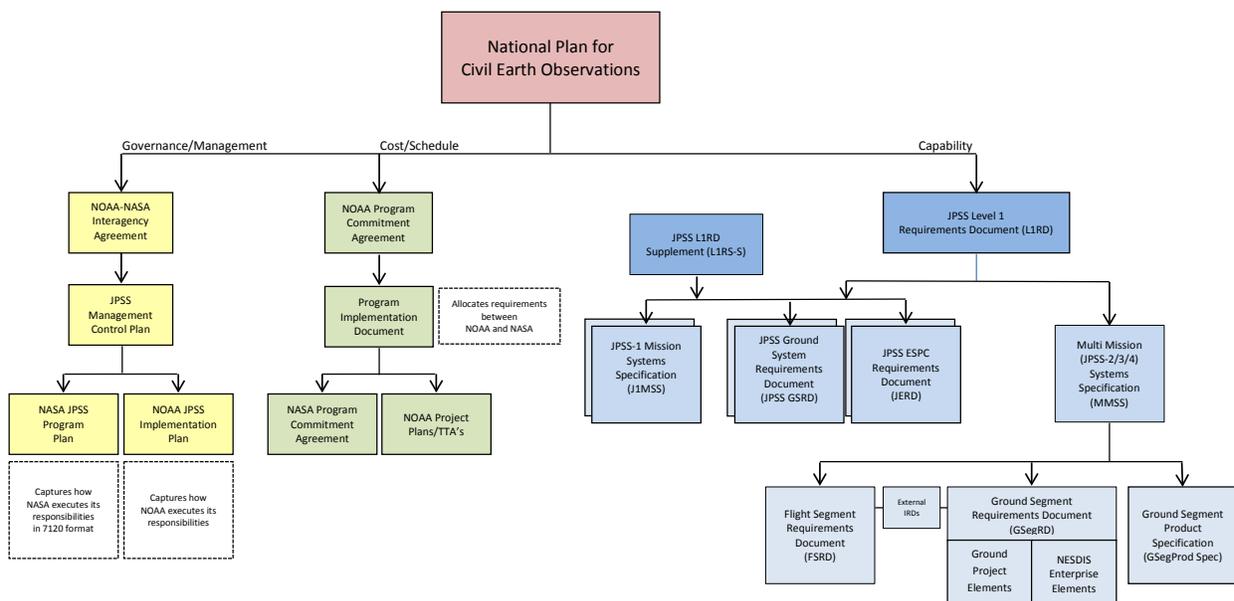
<sup>1</sup> Administration Implementation Plan for Polar-orbiting Environmental Satellites. March 12, 2010

The NJO is responsible for delivering a fully functional JPSS as detailed in the Level 1 Requirements Document (L1RD; JPSS -REQ-1001) and related documents. Many of the related acquisition and development responsibilities are delegated to NASA as the acquisition agent and systems integrator, and others are implemented and executed by NOAA/National Satellite and Information Service (NESDIS) offices (detailed throughout this document).

The NASA JPSS Program was established at the Goddard Space Flight Center (GSFC) to be the primary acquisition and system integration agent for the development of the JPSS Flight segment and the JPSS Ground System. It directs management functions and distribution of resources for subordinate projects and is responsible for executing associated contracts.

## 1.2 Scope

NOAA and NASA JPSS roles and responsibilities are documented in the NOAA/NASA JPSS Management Control Plan (MCP), which defines the governance structure, program authorities, interfaces, working relationships and management commitments in the development, implementation, operation, and sustainment of JPSS. The NOAA JPSS Implementation Plan supplements and is subsidiary to the MCP; its relationship to the MCP and other documents is depicted in Figure 1. It is parallel to the NASA JPSS Program Plan. This Implementation Plan covers the full life cycle of the program and includes all activities required for end-to-end implementation of JPSS.



**Figure 1. JPSS Program Management, Budget, and Technical Baseline Allocation**

### ***1.3 Goals and Objectives***

JPSS links to two of DOC's programmatic themes:

- *Science and Information*, supporting the DOC goals of generating and communicating new, cutting-edge scientific understanding of technical, economic, social, and environmental systems. The specific JPSS-related objectives include: enhancing scientific knowledge and providing information to stakeholders to improve innovation, technology, support economic growth and improve public safety; improve understanding of the U.S. economy, society and environment by providing timely, relevant, trusted and accurate data, standards and services enabling entities to make informed decisions; and enhancing weather, water and climate reporting and forecasting.
- *Environmental Stewardship*, supporting DOC's goal to promote economically-sound environmental stewardship and science. The specific JPSS-related objectives include: supporting climate adaptation and mitigation; developing sustainable and resilient fisheries, habitats and species; and supporting coastal communities that are environmentally and economically sustainable.

In addition, JPSS supports all four NOAA mission goals:

- Weather Ready Nation
- Climate Adaptation and Mitigation
- Healthy Oceans
- Resilient Coastal Communities and Economies

JPSS follows the Office of Management and Budget (OMB) Business Reference Model, which is one component the Federal Enterprise Architecture (FEA). The FEA consists of a set of interrelated "reference models" designed to facilitate cross-agency analysis and the identification of duplicative investments, gaps and opportunities for collaboration within and across agencies. JPSS is part of the Environmental Management category within the FEA (part of the Services for Citizens Area), which includes all functions required to monitor the environment and weather, determine proper environmental standards and ensure their compliance, and address environmental hazards and contamination. JPSS also indirectly supports Disaster Management, in particular emergency response (the immediate actions taken to respond to a disaster); Homeland Security, in particular border and transportation security; and Natural Resources, in particular conservation, marine and land management, and agricultural innovation and services.

### ***1.4 Statutory and Policy Drivers***

Mandates for JPSS vary in their specificity, from actually identifying the need for information uniquely derived from polar-orbiting environmental satellite data to setting out requirements to predict the nation's weather. General laws and policies that JPSS planning and implementation must adhere to, such as federal or agency requirements pertaining to acquisitions or requirements management, are described below but are also referenced in the relevant JPSS activity area throughout this plan.

### 1.4.1 Statutory Drivers

The following statutes are drivers for, and impose requirements on, JPSS:

- National Weather Service Organic Act (15 U.S.C. 313 et seq.) – *“The Secretary of Commerce shall have charge of the forecasting of weather, the issue of storm warnings, the display of weather and flood signals for the benefit of agriculture, commerce, and navigation, the gauging and reporting of rivers . . . and the taking of such meteorological observations as may be necessary to establish and record the climatic conditions of the United States, or as are essential for the proper execution of the foregoing duties.”*
- Global Change Research Act (15 U.S.C. 2931 et seq.) – *“The Program shall include . . . global data collection, and monitoring and analysis activities to provide reliable, useful and readily available information on a continuing basis (15 U.S.C. 2904[d][4]).”*

### 1.4.2 Policy Directive Drivers and Requirements

- National Security Presidential Directive (NSPD)-51/Homeland Security Presidential Directive (HSPD)-20, the National Continuity Policy, establishes a national policy on the continuity of Federal Government operations. NOAA is responsible for two of the Department of Commerce’s Primary Mission Essential Functions (PMEFs). PMEF DOC-2 explicitly requires NOAA to provide critical data by “operating NOAA-controlled satellites.” PMEF DOC-3 requires NOAA to provide environmental forecasts and warnings, which requires data from NOAA’s satellites to do so effectively.
- National Space Policy of the United States of America, June 28, 2010 published by the Executive Office of the President of the United States requires “[t]he Secretary of Commerce, through the NOAA Administrator, the Secretary of Defense, through the Secretary of the Air Force, and the NASA Administrator shall work together and with their international partners to ensure uninterrupted, operational polar-orbiting environmental satellite observations. The Secretary of Defense shall be responsible for the morning orbit, and the Secretary of Commerce shall be responsible for the afternoon orbit. The departments shall continue to partner in developing and fielding a shared ground system, with the coordinated programs operated by NOAA. Further, the departments shall ensure the continued full sharing of data from all systems.” And “The Secretary of Commerce, through the National Oceanic and Atmospheric Administration (NOAA) Administrator, and in coordination with the NASA Administrator and other appropriate departments and agencies, shall, in support of operational requirements:
  - Transition mature research and development Earth observation satellites to long-term operations;
  - Use international partnerships to help sustain and enhance weather, climate, ocean, and coastal observation from space; and
  - Be responsible for the requirements, funding, acquisition, and operation of civil operational environmental satellites in support of weather forecasting, climate

*monitoring, ocean and coastal observations, and space weather forecasting. NOAA will primarily utilize NASA as the acquisition agent for operational environmental satellites for these activities and programs.”*

- Administration Implementation Plan for Polar-orbiting Environmental Satellites, March 12, 2010 developed by the Executive Office of the President of the United States provides JPSS background, strategy, requirements for system and morning and afternoon orbits, management structure, ground system considerations, and funding profile. It states that *“NOAA maintains overall responsibility for developing, funding, and implementing the JPSS program. NOAA will provide the strategic guidance to NASA as it administers the JPSS Program and the JPSS Team regarding Level-1 requirements, budget and planning, constellation architecture, and launch dates. Strategic direction will be conveyed by the Annual Guidance Letter. NOAA will lead JPSS interactions and negotiations with DoD as they develop their plan for meeting the observational requirements in the early morning orbit. NOAA will lead the discussions with international partners such as EUMETSAT, JAXA, and Centre National D’Études Spatiales (CNES) on JPSS related activities.”*
- National Plan for Civil Earth Observations, July 2014, developed by the Executive Office of the President of the United States lead by the U.S Group on Earth Observations, lists the continuity of JPSS observations among those required for public services and for Earth-system research. It specifically requires *“[t]he Secretary of Commerce, through the NOAA Administrator and international partners, will provide sustained satellite observations for monitoring and predicting weather and related hazards...(and) will conduct these observations through....the JPSS program (including S-NPP and future JPSS satellites)...”*

#### **1.4.3 DOC and NOAA Agreements, Requirements, and Administrative Orders**

- Department of Commerce Organization Order 25-5 (DOO 25-5) section 10 generally sets out the responsibilities of each NESDIS office; section 10.11 requires JPSS to acquire the system with an integrated staff of NOAA and NASA personnel.
- The Commerce Policy on Acquisition Project Management prescribes the policy, procedures, and responsibilities of implementing the Commerce Scalable Acquisition Project Management Framework.
- The Joint Polar Satellite System Program Level 1 Requirements Document (L1RD; JPSS-REQ-1001) provides high-level definition and concept for JPSS, high-level performance requirements, and defines program success criteria.
- The NOAA Next Generation Strategic Plan establishes the highest-level vision, goals, and objectives for the agency. The plan describes the long-term outcomes where NOAA will contribute in each of the four goal areas (climate, weather, oceans and coasts), implemented through the enterprise-wide capabilities of science and technology, partner and customer engagement, and organization and administration.

- The *NESDIS Strategic Plan (2016)* “defines the NESDIS view of success and prioritizes the organizational features necessary to make the NESDIS vision a reality—helping NESDIS provide the greatest benefit possible to NOAA, the Nation and the world as the trusted source of environmental data and information.”
- *Department of Commerce Information Technology Security Program Policy (2014)* prescribes the DOC IT security policies consistent with current federal and DOC Directives, regulations, requirements and standards.
- NOAA Administrative Order (NAO) 216-108: Requirements Management establishes NOAA’s policy for managing mission requirements from identification and validation through solution selection and execution (including major project assessment), identifies roles and responsibilities, and authorizes the issuance of related guidance for implementation.
- NAO 212-15: Management of Environmental Data and Information provides high-level direction that guides procedures, decisions, and actions regarding environmental data and information management throughout NOAA.
- NOAA/NASA JPSS MCP serves to document the roles and responsibilities of each agency and the NOAA/NASA interface for JPSS management control. In meeting this purpose, the MCP describes the NOAA and NASA governance structure, program authorities, and management commitments in the development, implementation, and operation of the JPSS. The MCP is an agreement among the NOAA Deputy Under Secretary for Operations (DUS/O), NASA Associate Administrator (AA), NASA JPSS Program Manager, JPSS Director, NASA Goddard Space Flight Center (GSFC) Director, NOAA Assistant Administrator for Satellite and Information Services (NESDIS AA) and NASA Associate Administrator for the Science Mission Directorate (SMD AA).
- *NOAA Information Technology Security Policy (NAO 212-13)* establishes requirements, policies, responsibilities, and authorities for the development, implementation, and oversight of the NOAA Information Technology Security Program for the protection of all IT resources, including computers, networks, telecommunications systems, applications, data, and information.
- The *NOAA Business Operations Manual* describes NOAA’s organizational structure, providing information about the operating branches, corporate functions, strategic and executing organization, and Regional Collaboration effort, as well as intersections among these entities and functions. The Manual explains how NOAA functions provide products and services that fulfill its mission and how these functions relate to each other through the agency’s strategic framework and management practices. A complete list of statutory drivers is provided in the rationale document for the Level 1 Requirements.

## **2.0 MANAGEMENT AND GOVERNANCE STRUCTURE**

The DOC/NOAA responsibilities are detailed in the JPSS MCP.

### ***2.1 NJO Roles and Responsibilities***

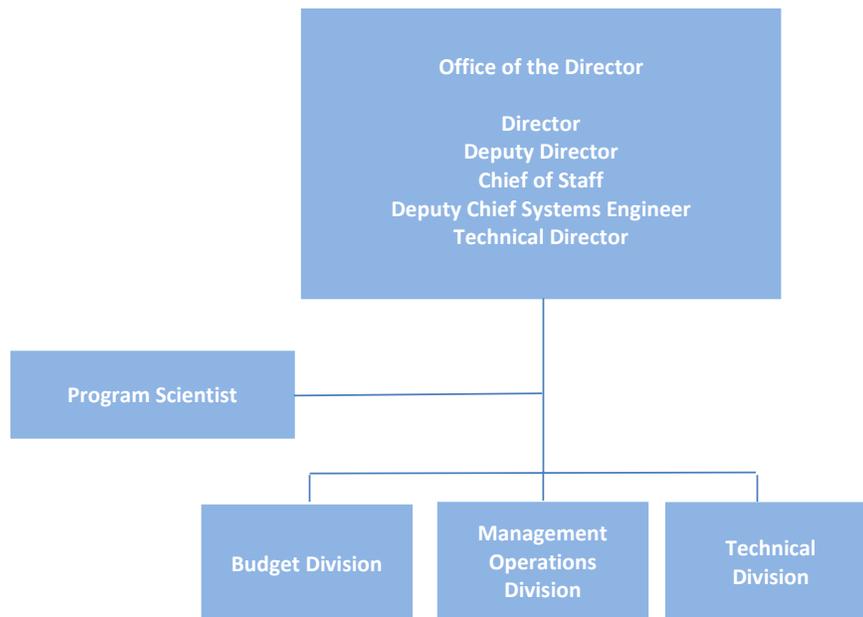
The NJO is responsible for overall management and funding of all aspects associated with development, deployment, and initial operations of flight and ground assets that meet the Nation's needs for space-based Earth observations in the afternoon polar orbit. The NJO serves as the primary NOAA interface to NASA for JPSS, negotiates and maintains the implementing agreements, and flows down requirements and budget to NASA for the reimbursable execution of their JPSS responsibilities.

NOAA is the acquisition agent for components of the ground segment and is responsible for operations, science, data exploitation, archiving, and infrastructure. The NJO negotiates agreements which flow requirements and budgets to NOAA implementing organizations for execution of their JPSS responsibilities.

NOAA's responsibility includes defining requirements, integrating user systems, integrating partner contributions, integrating NASA-developed products in the NOAA architecture, developing the science necessary to deliver measurement products, storing, delivering and archiving the satellite data, operating the space and ground segments, and representing the system to all entities internal and external to the government including international partners.

The NJO establishes and manages international and interagency partnerships, and provides user interface, external communications, and outreach. The NJO develops and negotiates all international agreements relating to the JPSS to ensure compatibility with JPSS goals and objectives.

The NJO administers requirements development and management, budget development and management, risk management, agreements, and administrative management processes to execute its programmatic responsibilities. The NJO establishes and controls system objectives, performance, engineering, cost, and interfaces.



**Figure 2. NJO Administrative Structure**

### **2.1.1 Office of the Director**

The Office of the Director manages the execution of the JPSS through the implementation of requirements, schedules, and resources consistent with U.S. Government, Department of Commerce and NOAA policies and other applicable governing agreements. Notwithstanding other authorities and duties set forth in this document, the JPSS Director has ultimate authority and responsibility for executive management of the JPSS program and directing all elements of the JPSS Program, including, but not limited to, implementation of the program within the approved scope, cost, and schedule, and management of top-level planning, acquisition, development, commissioning, and transition to operations of the program’s satellites and supporting ground systems. The JPSS Director will work with NASA’s Joint Agency Satellite Division (JASD) Director to provide strategic direction and programmatic guidance to NASA.

#### **DIRECTOR**

The JPSS Director is accountable to NOAA/NESDIS management for all components of the JPSS Program, including regulatory, financial, technical, logistical, information security, programmatic, and to ensure the delivered system meets the Level 1 Requirements, until transition to other NESDIS offices. The JPSS Director prepares, defends and executes the JPSS budget, represents JPSS to external organizations and is the focal point and principal interface with other NESDIS offices, Congress, external agencies, and mission partners.

#### DEPUTY DIRECTOR

The JPSS Deputy Director serves as the focal point for day-to-day office operations and decisions. The JPSS Deputy Director also supports addressing strategic issues, programmatic interfaces, and manages NJO in the absence of the JPSS Director.

#### TECHNICAL DIRECTOR

The JPSS Technical Director works across all the components involved in creating and implementing JPSS (NASA Headquarters, GSFC, NESDIS Offices/Centers, and the NJO) to develop plans and address issues within JPSS. The JPSS Technical Director leads and coordinates NOAA's participation in life-cycle reviews, manages the programmatic integration of the NOAA-executed elements for JPSS, and serves as the primary NJO interface to support overall mission integration.

#### DEPUTY CHIEF SYSTEMS ENGINEER

The JPSS Deputy Chief Systems Engineer serves as the deputy to the JPSS Chief System Engineer in an integrated Program System Engineering (PSE) team. The PSE team is responsible for the JPSS Level-1 requirements, and for the end-to-end integration of the JPSS. The system engineer supports the JPSS Director in developing and implementing strategic requirements and goals for NESDIS; serves as an advisor to the Director on strategic technical and programmatic matters, including costs and schedule; works with NOAA, NASA, and other stakeholders to develop strategic technical and program solutions; and, leads, participates in, or identifies trade studies, risk analyses, and reviews that the NJO will engage in.

#### CHIEF OF STAFF

The JPSS Chief of Staff supports the JPSS Program in the day-to-day office operations and management; serves as the focal point for coordinating and ensuring timely response to requests for information from outside JPSS (e.g., from NESDIS, NOAA, DOC, Executive Office of the President, and Congress); develops plans, policies or other responses to programmatic requests; serves as the lead for communicating with Government Accountability Office and Office of the Inspector General for their reviews and audits; and provides oversight of the JPSS website and external communications.

#### **2.1.2 Program Scientist**

The JPSS Program Scientist provides the principal scientific guidance, serves as the key adviser, and assists the Program in optimizing scientific performance. As an independent expert and representative of the science and user communities, the JPSS Program Scientist ensures the scientific integrity at all stages of JPSS satellite development, supports the formulation of the mission-level architecture of spacecraft and instruments to optimize scientific return, provides scientific rationales to define the instrument suites with performance requirements for measurements and derived products that satisfy user needs, evaluates and recommends approaches to science algorithm development, and evaluates and recommends improvements in the instruments, their operation and calibration, and ground processing.

The JPSS Program Scientist works with the NOAA, NESDIS and JPSS user community to define the users' needs, operational requirements, and science data product requirements, serves as the chair of the Low Earth-Orbiting Requirements Working Group (LORWG), is a technical liaison with NASA and other agencies, ensuring approved programs have the required capability to sustain NESDIS/JPSS satellite remote sensing, and communicates with interagency and international counterparts on matters of scientific coordination. The JPSS Program Scientist tracks product use and user readiness activities, leveraging the LORWG for verification of user readiness. The JPSS Program Scientist manages the JPSS proving ground and risk reduction program to improve the utilization of JPSS data in NOAA's product and services. The science communication and outreach efforts undertaken by the Program Scientist focuses on education and training needed by users, collecting feedback from users to accomplish product assessments, developing education materials to enhance classroom experience, and encouraging public participation in outreach education. Other activities include supporting NESDIS strategic communications by identifying and contributing to noteworthy articles on the impact of JPSS observations on key products and services. The JPSS Program Scientist is supervised by the NESDIS DAAS but is assigned to the NJO.

### **2.1.3 Technical Division**

The Technical Division provides engineering, technical, and project management support to the NJO as well as to the NASA JPSS Program by executing delegated engineering and project management responsibilities contributing to execution of the design, development, test, operations, cost, budget and schedule activities of JPSS, and maintaining an enterprise knowledge of polar-orbiting environmental missions. The Technical Division has insight into, reviews, and evaluates engineering changes, risks, technical and cost proposals, technical issues, plans, and performance against Level 1 program requirements, and serves as a representative of the JPSS Director as assigned, for program risk, change and performance evaluation boards. The Technical Division provides technical support to all NJO elements and Project Management support to the JPSS Technical Director in the oversight of the NOAA-funded elements, and review of the overall JPSS architecture and elements, including compatibility with NESDIS Enterprise architecture policies, and support of system-level coordination with the NASA JPSS Program and stakeholders on engineering, integration and performance issues, and leads and/or participates in system studies and analyses. The Technical Division also manages the Algorithm Management Project (AMP), which is responsible for satisfying the system-level data product science performance requirements in the Level 1 Requirements Document (L1RD) and L1RD Supplement (L1RD-S) and the future Data Product Specification (DPS). The Technical Division also has personnel matrixed ("embedded") to the NASA JPSS Program/Projects, as needed. The Division will also provide leadership and support in the planning and execution of the JPSS ground system transition to operations.

#### **EMBEDDED STAFF**

NOAA staff, administratively under NJO, OSGS, and OSPO are integrated into the NASA Ground and Flight Projects. This increases NOAA's knowledge base over the long-term, ensures effective interagency cooperation, and will facilitate a smooth transition from NASA satellite

responsibility to NOAA responsibility when the JPSS systems (satellite and ground segment) are fully operational. The NASA Ground Project manages requirements definition, system definition, engineering, design, implementation, delivery, integration and test, and operation of the JPSS Ground System until transition to Office of Satellite and Product Operations (OSPO) operations. Embedded NOAA Ground Division staff execute aspects of this work in their respective job assignments within the Project.

The following points outline the relationship between NOAA and NASA for the purposes of embedded staff.

- Embedded staff receive programmatic direction from the NASA Program.
- Embedded staff are supervised by NOAA. Performance plans are developed and evaluated by the NOAA Supervisor in close coordination with NASA.
- Embedded staff participate in NJO and NOAA activities when possible, in coordination with the duties assigned to them by NASA. The NOAA supervisor may provide applicable guidance.
- Embedded staff receive and provide status and information through established NOAA/NASA processes.
- Embedded staff support the successful integration and implementation of NOAA institutional and administrative capabilities as well as assist in ensuring that lower level requirements are understood and implemented consistent with NOAA strategic and policy guidance.

The embedded staff will also establish NOAA's core competency with the Ground System architecture.

#### **2.1.4 Budget Division**

The Budget Division is responsible for the development of policies and procedures used by the NJO to implement the budget process for DOC and gain insight into acquisition cost and schedule control in the execution of the JPSS Program by NASA. The Budget Division provides policy guidance, and oversight in the areas of budget formulation, execution, reporting and analysis and for cost and schedule analysis and reporting.

The Budget Division is responsible for all phases of the Federal budget process including strategic execution and evaluation, budget formulation, justification and presentation, budget planning and execution, and financial management, reporting and accountability for the JPSS budget. The Budget Division maintains oversight of the total JPSS budget including elements executed by NOAA and NASA organizations. The Budget Division allocates and controls the execution of all budgetary resources and ensures that resources are used consistent the JPSS mission, appropriations guidance, applicable laws and regulations, and consistent with Departmental financial management and audit requirements. The Budget Division leads the management, reconciliation and reporting of general JPSS Property, Plant, and Equipment (PP&E) in Construction Work-In-Progress (CWIP). Proper recording of CWIP is essential for accurate valuation of DOC in-process assets in its annual financial audit. The Budget Division ensures Federal, Department and NOAA policy guidance is followed and conducts detailed reporting and

analysis of JPSS costs and schedules and leads cost estimating activities, to include maintaining a current cost estimate of the entire JPSS life cycle. The Budget Division represents JPSS to the NESDIS and NOAA Chief Financial Officers for budget formulation, budget execution, accounting, and CWIP.

The Budget Division develops overall guidance, reviews proposals, prepares supporting justification and documentation and assures that budgetary and management reporting requirements are met. This includes coordinating the preparation of JPSS budget submissions to NESDIS, NOAA, DOC, OMB and the Congress, including data on budget authority, obligations, outlays, permanent positions, and full-time equivalent employment. The Budget Division also gains insight into NASA contractor cost and schedule performance through review of Earned Value Management deliverables, reviews of multiple integrated schedules of the Program's major acquisitions, and gains insight into NOAA and NASA cost and schedule performance for in-house JPSS efforts implemented in either Agency. The Budget Division maintains the capability to prepare detailed cost estimates, schedules, forecasts, and budget review and presentation materials, and provides reliable and timely information to the NOAA JPSS leadership and staff for reporting and decision making purposes. The Annual Operating Plan performance milestones, in alignment with the DOC Balanced Scorecard, are developed by the Budget Division and baselined by the JPSS Decision Board to support the fiscal year strategic planning and evaluation of JPSS annual performance.

The NJO, through the Budget Division, will establish plans with each NESDIS Office and Center for the execution of their responsibilities under current year funding, accomplish annual POE updates/revisions, and budget planning for outyears. The Budget Division works in close coordination with the NASA's Business Office to provide annual guideline funds to execute satellite acquisitions in alignment with planning targets authorized by NESDIS/NOAA. The Budget Division leads the process in coordinating the guideline letter to NASA and participates in review meetings with NASA to assess, evaluate, and agree upon the annual consolidated Program Office Estimate (POE) reflecting NASA's Performance Programming Budget Execution process and NOAA's strategic execution and evaluation planning process.

### **2.1.5 Management Operations Division**

The Management Operations Division is responsible for the development and implementation of policy and administrative guidelines involving the operations of the NOAA JPSS Office. The Management Operations Division provides policy guidance and implements services for the Program in the areas of administrative management, organizational planning, human resource management, facilities management, communications support, contractor management, information technology and records management activities for JPSS. The Management Operations Division is also responsible for the development and implementation of the JPSS Safety Program, Continuity of Operations Planning and Disaster Preparedness Planning. The Management Operations Division provides technical and program information and support to the Office. The Management Operations Division is responsible for the centralized administration of personnel activities for NOAA JPSS employees such as employment ceilings, analysis of

employment data, reports, organizational evaluations, and NOAA personnel action-tracking and coordination. The Management Operations Division supports active participation in equal employment opportunity and special programs. It oversees and coordinates training, awards, and career development within JPSS. The Management Operations Division provides travel management, oversight and guidance, manages office support contracts, and government credit card accounts. It is the focal point for safety and security matters and maintains records on accountable property.

#### ACCOUNTABLE PERSONAL PROPERTY

NOAA funds are used to purchase personal property of varying value, from cell phones and laptops to satellite sensor instruments. When purchasing larger items such as sensors, pieces can be purchased individually and then assembled to create the larger item, the larger item is tracked as one piece in NOAA's property-tracking system. Purchasing is done through two different agencies and their contractors; NOAA and NASA. NOAA requires barcode tracking for all accountable property (determined by initial cost and use) acquired using NOAA funds, which includes property purchased by NASA and its contractors. Accountable properties are assets that cost more than \$5,000, or are deemed "sensitive." A list of accountable assets can be found at <http://www.pps.noaa.gov/acctobj.htm>. NOAA's property is tracked through a web-based asset management system called the Sunflower system.

NASA has been given authorization to acquire and manage Contract Acquired Property (CAP) purchased for JPSS through their various contracts. NASA, working in conjunction with NOAA, will manage and track CAP in accordance with the NOAA policies identified above, and NASA and GSFC policies and guidelines, with the NOAA policies taking precedence. The NASA CAP assets will be transferred to NOAA after completion of the final JPSS launch, or when NOAA deems necessary per policy changes. NASA will report monthly on personal property asset purchases that are purchased using NOAA funding. Knowing that NASA and NOAA track assets on two different systems and have different regulations identifying property types and dollar values that must be tracked, NOAA will list assets and value thresholds that NASA must adhere to for compliance with DOC/NOAA policy requirements.

To ensure successful operations transition, a plan will also be developed for transition of property from NASA to NOAA, and from the NJO to OSPO and other appropriate offices.

## ***2.2 Other NESDIS Office Roles***

The function of each NESDIS office can be found in DOO 25-5. These functions will be carried out, as applicable, to the implementation of JPSS. Below are listed any activities that are specific to JPSS, in addition to those in DOO 25-5.

A Technical Task Agreement (TTA) is negotiated each year between the NJO and each office listed below. The TTA captures the JPSS-related work (individual task descriptions) that will be done during that year and the resources (cost by task, FTEs and support service contracts) required

from the JPSS budget line to undertake it, with obligation and costing details. Table 1, at the bottom of this section, provides a chart view of responsibilities for JPSS.

### **2.2.1 Office of the NESDIS Assistant Administrator**

- Evaluates and recommends requirements trades to DUS/O to ensure program stays within cost and schedule boundaries
- Assistant Chief Information Officer – Satellites (ACIO-S):
  - Authorizing Official’s Designated Representative for JPSS
  - Information Technology Security Officer for all Ground Systems
- Chief Financial Officer / Chief Administrative Officer (CFO/CAO)
- Interagency and International Affairs (IIA)
- Public Affairs Office (PAO)
  - Focal point for all media relations related to JPSS

### **2.2.2 Office of Satellite Ground Services (OSGS)**

- Manages algorithm development and maintenance for NPOESS Data Exploitation (NDE)
- Manages the development and implementation into operations of NDE and JPSS Product Distribution and Access (PDA) capabilities
- Coordinates with the JPSS Program Office and NASA to transition sustainment activity for the JPSS Ground System to NOAA
- Provides sustainment of the JPSS Ground Segment for NOAA starting at JPSS-1 launch plus one year (per the JPSS Transition Management Plan)
- Partners to plan, design, develop and recommend tailoring of IT security controls for the Environmental Satellite Processing Center (ESPC) through the OSGS IT Security Integrated Product Team (IPT) forum
- Participates in JPSS reviews, trade studies, Integrated Product Teams and Working Groups, and the JPSS Ground System Steering Group
- Leads the planning, design, development, integration, test, and transition efforts of data processing and distribution systems for JPSS
- Ensures the JPSS Global Change Observation Mission Water-1 (GCOM W1) L1 Requirements are met using legacy ESPC system

### **2.2.3 Office of Satellite and Product Operations (OSPO)**

- Operates NOAA Satellite Operations Facility (NSOF)
- Provides technical expertise for ground segment reviews for design, development, implementation, integration, testing, and transition to operations
- Supports development and review of requirements and specification documents
- Operates the functions at the Fairbanks ground acquisition site
- Manages the operations after transition
- Operates S-NPP/JPSS satellites and associated Ground Segment responsibilities
- Operates the JPSS backup facility
- Performs technical evaluation for the Ground Project Operations:
  - Standard Operations Procedures
  - Recommended Operations Procedures

- Contingency Operations Procedures
  - Post launch Test reviews
  - Sequence of Events
- Develops operations transition plans
- Supports the planning, designing, developing and tailoring information technology security controls for the JPSS Ground Segment and ESPC
- Participates in JPSS reviews, trade studies, Integrated Product Teams, and Working Groups, including the JPSS Ground Segment Steering Group
- Prepares and sustains the Comprehensive Large-Array Stewardship System (CLASS archive system for JPSS data)

#### **2.2.4 Center for Satellite Applications and Research (STAR)**

- Manages the activities of the Sensor Data Record Calibration Team, Environmental Data Record Algorithm Science and Validation Team, and Algorithm Integration Team, including developing the scope and schedule, and administering the budget, for each
- Monitors long-term instrument/sensor and product performance, and develops and maintains inter-calibration with the larger on-orbit environmental satellite constellation
- Maintains and documents scientific algorithms and associated products and procedures
- In partnership with the JPSS Program Scientist, ensures NOAA user and numerical weather prediction readiness, conducts proving ground and community outreach activities, and supports test and field campaigns
- Participates in JPSS reviews, trade studies, Integrated Product Teams and Working Groups, and the JPSS Ground Segment Steering Group

#### **2.2.5 National Center for Environmental Information (NCEI)**

- Works with JPSS to complete submission agreements for archiving JPSS data and products
- Produces Climate Data Records (CDRs) from JPSS data and products
- Provides tier 2 stewardship for PFO JPSS-3/JPSS-4 data.

#### **2.2.6 Office of System Architecture and Advanced Planning (OSAAP)**

- Leads end-to-end system architecture studies and technology assessments, including analysis of alternatives to satisfy observational and data management requirements, define top-level requirements for assessment and implementation, adjudicate conflict in requirements and implementation,
- Performs validation of top-level requirements
- Performs strategic planning and risk assessments,
- Develops and maintains systems engineering policy, and define and manage enterprise-level configuration control.
- Coordinate and communicates NESDIS enterprise solutions across NOAA and external end users of the data.

#### **2.2.7 Office of Projects, Planning & Analysis (OPPA)**

- Executes EON using the designated part of the Polar Follow On budget.

**Table 1. NESDIS Office Responsibilities for JPSS**

<b>FUNCTION</b>	<b>NESDIS HQ (incl CFO/CIO, IIA)</b>	<b>NJO</b>	<b>STAR</b>	<b>OSPO</b>	<b>OSGS</b>	<b>NCEI</b>	<b>OSAAP</b>
JPSS Management	X	X					
User Engagement		X	X	X	X		
Level 1 Requirements	X	X	X	X	X		X
Calibration and Validation		X	X	X			
Science		X	X				
Post-Transition System Operations				X			
Algorithm Development			X				
Sustainment of JPSS Ground System					X		
Direction to NASA Portfolio		X					
Data Management		X		X		X	
Agreements (International and Domestic)	X	X		X			
Maintenance of the JPSS Ground System				X			

### ***2.3 Transition Planning***

Major JPSS operations transitions are:

- SNPP operations transition from NASA JPSS Program to OSPO (completed)
- JPSS-1 operations transition from JPSS to OSPO
- Ground System operations and maintenance transition from JPSS to OSPO and Ground System sustainment transition from JPSS to OSGS, as captured within the *Framework for the Transfer of Roles, Responsibility, Accountability, and Authority (RRAA) of the JPSS Ground Project from NASA to NOAA*
- JPSS-2 operations transition from JPSS to OSPO
- JPSS data products operations to OSPO and JPSS data products sustainment to OSGS
- JPSS algorithm maintenance and long-term monitoring from JPSS to NESDIS/STAR
- JPSS-3 operations transition from JPSS to OSPO
- JPSS-4 operations transition from JPSS to OSPO

During each transition there will be handover of responsibilities between offices. When a responsibility transfers between the JPSS and other NESDIS offices, a transition plan will be developed and contain, at a minimum, the following:

- Schedule;
- Detailed identification of the roles, responsibilities, accountabilities and authorities, pre- and post-transition activities;
- Updates to operations and reporting procedures; and
- Signatures of all appropriate parties prior to the official date of the transition.

## **2.4 Stakeholders**

As the acquiring agency and owner of the requirements, NOAA manages the JPSS stakeholder relationships. The following subsections discuss the two major categories of stakeholders.

### **2.4.1 Operational Users**

This category includes entities that will use S-NPP and JPSS data for critical functions such as weather forecasting, identifying and tracking severe weather events, climate analysis, and monitoring the health of the Nation's oceans and coastal areas. Primary operational users are the NOAA National Weather Service, NOAA Research, NOAA Fisheries, NOAA Ocean Service, the Department of Defense, European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT), and Japan Aerospace Exploration Agency (JAXA). A more complete list of operational users can be found in Appendix 1.

### **2.4.2 Congress, DOC and the Executive Office of the President**

This category includes those entities that have oversight and management responsibilities for JPSS, including Congress, Executive Offices of the President (i.e., OMB, Office of Science and Technology Policy), DOC, NOAA headquarters, Office of the Inspector General, and the Government Accountability Office. The NJO leads all interactions with these external entities and regular interacts with them to provide status, planning and resource updates and to comply with required reviews and other requests for information. Quarterly Congressional Appropriations meetings are held to provide updates to appropriate House of Representatives and Senate members and staff; discussions focus on budget and technical issues. Separate meetings are held with NOAA and NASA to focus on their respective areas; NOAA attends the NASA meeting.

### **2.4.3 Partners**

This section identifies key partnerships with the JPSS program, but it does not identify all partnerships. The NJO maintains a list of all agreements.

#### **NASA**

The NOAA–NASA Joint Polar Satellite System Inter-Agency Agreement General Terms and Conditions was signed on March 15, 2012 and was amended on March 24, 2016, extending the expiration date to September 30, 2017. It updated the roles and responsibilities of the parties for implementation of the JPSS Program which were originally identified in a MOU between NOAA and NASA for JPSS Transition Planning, which was signed April 4, 2010 and amended November 3, 2011. The Agreement is also the vehicle that allows NOAA to transfer funds to NASA for the implementation of the NASA JPSS Program. Additionally, JPSS has agreements with the NASA Office of Space Communication and Navigation (SCaN). Under the February 22, 2011 *Partially Reimbursable Space Act Agreement between NOAA and NASA for McMurdo Ground System Development and Operations*, SCaN provides maintenance of JPSS assets at McMurdo and provides the EUMETSAT Metop satellites access to it McMurdo receptor. Under the April 4,

### *2014 Memorandum of Understanding between SCA<sub>N</sub> and JPSS Regarding Polar*

*Telecommunications Services*, SCA<sub>N</sub> reimburses JPSS for its share of communication bandwidth between Svalbard, Norway and the United States and between McMurdo and the United States. The most recent agreement between SCA<sub>N</sub> and JPSS is the October 9, 2014, *Memorandum of Understanding between SCA<sub>N</sub> and JPSS Concerning the Use of NASA's Space Network*. Under this Agreement, SCA<sub>N</sub> will provide JPSS access to its Tracking and Data Relay Satellite System (TDRSS) for Ka/S band services for JPSS-1. The Agreement allows the agencies to expand the cooperation to include support for the JPSS-2 and beyond satellites.

### **EUMETSAT**

NOAA and EUMETSAT signed the *Agreement Between NOAA and EUMETSAT on a Joint Polar System* on December 2, 2015. Under the Agreement, JPSS will utilize EUMETSAT ground assets at Svalbard, Norway and EUMETSAT will utilize JPSS assets at McMurdo, Antarctica for the next generation of polar-orbiting satellites. Recognizing their long-term coordination and cooperation commitments of existing agreements and their ability to plan for long-term space-based observing systems, NOAA and EUMETSAT signed the *Agreement between NOAA and EUMETSAT on Long-Term Cooperation* on August 8, 2013. NOAA and EUMETSAT signed the *Agreement for Joint Transition Activities Regarding Polar-Orbiting Operational Environmental Satellite Systems* on June 24, 2003, which was last amended on August 16, 2011. The Agreement establishes polar satellite program cooperation between the agencies during the period of the Initial Joint Polar Satellite Program and a future Joint Polar System Program. The 2011 amendment changed the NOAA contribution from the NPOESS program to the NPP satellite and JPSS-1.

### **JAXA**

Under the *Memorandum of Understanding Between National Oceanic and Atmospheric Administration (NOAA) and Japan Aerospace Exploration Agency (JAXA) in Relation to the Cooperation for the Global Change Observation Mission 1-Water*, signed on July 18, 2011 (hereinafter the "GCOM-W1 MOU") mission, NOAA is providing ground segment support for the GCOM-W1 mission in exchange for access to data from that mission's Advanced Microwave Scanning Radiometer 2 (AMSR-2). The NJO is responsible for leading the ground segment support for GCOM-W1 and for coordinating a transition team representing OSGS, OSPO, STAR, NCEI and NESDIS IIA to plan and coordinate GCOM-W1 MOU implementation responsibilities.

### **National Science Foundation**

The National Science Foundation (NSF) Office of Polar Programs administers the U.S. research facility at McMurdo Station, Antarctica. Because of McMurdo's ability to see all southern hemisphere polar passes, it is used by multiple U.S. and international space agencies to collect satellite data. NASA has had a long presence at McMurdo to support its polar satellite missions. NOAA uses NASA's McMurdo receptor to collect EUMETSAT's Metop passes. This support will continue through the life of the third Metop satellite. NOAA has two receptors at McMurdo which will support the JPSS satellites. Additionally, under the *JPS Agreement*, the JPSS receptors will also collect EUMETSAT's Metop Second Generation data, taking passes from its two satellites. The JPSS receptors are also supporting the DoD DMSP mission by taking 28 passes per

day from the two primary satellites. The ability to use the JPSS receptors at McMurdo reduces the latency for each of these missions. As a result of the bandwidth required for its JPSS mission, NOAA has led the effort to increase the McMurdo communication capabilities. NOAA has two reimbursable agreements with NSF. One agreement provides NSF maintenance and logistical support to JPSS and the second agreement provides NSF with communication bandwidth between McMurdo and the United States. Starting in the 2020 timeframe, NSF will assume responsibility for the provision of satellite communications and NOAA will then reimburse NSF for bandwidth for JPSS and EUMETSAT. EUMETSAT will reimburse JPSS for its share of the bandwidth.

### **Norwegian Space Centre**

*An Implementing Agreement between NOAA and the Norwegian Space Centre on Cooperation in Satellite Tracking and Environmental Data Acquisition and Utilization* was signed April 2, 2002 and amended November 28, 2008. The Agreement allows NOAA to utilize the Norwegian Space Centre receptors at the Svalbard Satellite Station (SvalSat) in support of its polar-orbiting satellite programs, including NPP and JPSS, and the amendment provides for the use of receptors in Antarctica as well.

## **3.0 PROGRAM BASELINE**

This section identifies the program baselines that are used to identify, describe, evaluate, and fund all aspects of JPSS. Within NOAA and NASA, the JPSS Program of Record (POR) and the Polar Follow On (PFO) will be managed as a fully integrated effort, although the POR and PFO will be budgeted within separate NOAA Program, Project, Activity (PPA) budget accounts. Expenditures for the POR and PFO missions will be separately identified and accounted for within the existing JPSS program Work Breakdown Structure.

### ***3.1 Work Breakdown Structure Baseline***

The first level integrated Work Breakdown Structure (WBS) found at JPSS is commonly used across NOAA and NASA, and includes program management, systems engineering, mission assurance, instruments, spacecraft, mission operations and sustainment, launch services, ground system, system integration and test, and education and public outreach. The NOAA-executed WBS elements are:

- 1- Program Management
- 2 - Systems Engineering
- 4 - Science and Technology
- 7 - Mission Operations and Sustainment
- 9 - Ground System
- 11 - Education and Public Outreach
- 24 – TCTE (Program of record only)
- 25 - EON (Earth Observing Nanosatellite) (Polar Follow On only)

NASA maintains the detailed WBS Dictionary that defines the content of these elements. These elements are applied to both POR and PFO.

### ***3.2 Schedule Baseline***

NOAA has delegated to NASA the development and maintenance of the JPSS Integrated Master Schedule, which includes all major program and project milestones, launch readiness dates, planned launch dates, and program reviews. Critical milestones for JPSS include mission design and readiness reviews, flight and ground project design and readiness reviews, transition readiness, and key decision points.

The JPSS launch schedule is defined in the JPSS Level 1 Requirements Document and in the Program Commitment Agreements.

### ***3.3 Resource Baseline***

The JPSS budget planning and formulation processes are executed based on guidance and direction disseminated through the NOAA Strategic Execution and Evaluation (SEE) process.

The baseline funding requirements are in the Program Implementation Document (PID).

### ***3.4 Requirements***

As a NOAA program, JPSS must be compliant with NAO 216-108 "Requirements Management." This order states NOAA's policy is to validate mission requirements and establish consistent and systematic, agency-wide reviews to ensure optimal solutions are identified for achieving desired outcomes and results. The order identifies and describes NOAA's primary steps in requirements management:

- Mission Requirement Identification
- Mission Requirements Validation
- Shortfall and Alternative Identification

The L1RD (Version 1.8) and its Supplement represents the Level 1 requirements baseline for JPSS-1. The L1RD (Version 2.0) represents the Level 1 requirements baseline for JPSS-2/3/4. JPSS-2/3/4 detailed mission requirements are captured in the Level 2 JPSS Multi Mission System Specification (MMSS).

The process for changing Level 1 requirements is documented in the NJO Configuration Management Plan (JPSS-PLN-3102).

## 4.0 JPSS CONTROL

This section describes NOAA's methods to ensure that JPSS implementation is conducted in an effective manner, beginning with and maintaining a thorough understanding of program requirements and the resources required to meet those requirements. It identifies and describes those working groups and control documents which apply only to the NJO or which the NJO is a primary participant. The NJO adheres to all DOC and NOAA requirements in all areas; however, these higher-level policies, procedures and working groups are not described in this document. Information will not overlap with what is described in the MCP and Systems Engineering Management Plan (NASA 470-00001).

### 4.1 JPSS Management Councils, Status Reviews, Boards, and Working Groups

#### 4.1.1 Councils and Boards

- **Joint Agency-Level Program Management Council (APMC)**  
The JPSS MCP documents the APMC membership, roles, and, responsibilities.
- **NESDIS/Science Mission Directorate (SMD) Program Management Council (DPMC)**  
The JPSS MCP documents the DPMC membership, roles, and responsibilities.
- **GSFC Center Management Council (CMC)**  
When NOAA Programs are involved, the CMC is co-chaired by the GSFC Director and NESDIS DAAS, with participation from NESDIS Office Directors. For further details on the CMC, see the JPSS MCP.
- **NOAA Observing Systems Council (NOSC)**  
The NOSC is the principal advisory body to the Under Secretary for Commerce for Oceans and Atmosphere in matters regarding NOAA's Integrated Earth Observation and Environmental Data Management System Architecture activities. Specific tasks include:
  - a) Coordinating Earth observing and environmental data management activities across NOAA, including with other NOAA Councils
  - b) Providing guidance in the development of the NOAA Integrated Earth Observation and Environmental Data Management System Architecture
  - c) Providing recommendations to the NOAA Executive Council (NEC) on Earth observation and environmental data management system requirements, architectures, and investments

The NOSC has representatives from every NOAA Line Office. JPSS works with its user community to manage the program's LIRD. The NOSC is an important intermediate coordination group in the approval of the JPSS LIRD. The NOSC is also a key forum for discussion of JPSS Program initiatives to determine the impact of these initiatives on user missions.

#### 4.1.2 DOC/NOAA/NESDIS Status Reviews

These are status reviews that are independent of the life cycle reviews required by DOC policy and NASA Procedural Requirement (NPR) 7120.5, NASA Space Flight Program and Project Management Requirements.

- **NESDIS Monthly Status Review (MSR)**  
The MSR is a detailed review of all NESDIS activities. Special topics can be assigned for presentation and discussion. The MSR is chaired by the NESDIS AA with all DAAs and Office Directors, or their representatives, in attendance.
- **NASA GSFC Monthly Status Review (GSFC MSR)**  
The NASA GSFC Monthly Status Review is used to highlight significant items of progress, issues, risks, metrics and trends, and identification and closure of open issues, including cost, schedule, and technical metrics. The JPSS Technical Director presents at the GSFC MSR on behalf of the NOAA executed elements.
- **Major Program Monthly Review (MPM) – Satellites**  
The MPM reviews the operational status of all NESDIS satellite programs. It is chaired by the Assistant Secretary for Environmental Observation and Prediction/Deputy Administrator. The review is attended by the NESDIS AA.
- **DOC Quarterly Review**  
The DOC Quarterly Review serves as the DOC's forum for maintaining awareness and assessing updates on high-profile programs, of which JPSS is one, and to inform DOC leadership on programmatic issues requiring corrective decisions and tied to events in budget formulation and execution. These reviews are held at the discretion of and chaired by the Deputy Secretary of Commerce.

#### 4.1.3 Working Groups and Committees

- **Low Earth-Orbiting Requirements Working Group (LORWG)**
  - Description: The LORWG is a working group of the NOSC, established to identify and represent NOAA user observational requirements, which have been allocated to low earth orbiting satellite systems (e.g., POES, Meteorological Operational satellites, JPSS, S-NPP, Earth Observing System, GCOM W-1, Jason, and Ocean Surface Topography Mission). Primary functions of the LORWG are to:
    - Serve as the primary focal point for all Low-Earth orbiting satellite operational requirements
    - Develop NOAA inputs to Low-Earth orbiting satellite systems' requirements documents and coordinate them within NOAA
    - Prepare user impact assessments responding to Low-Earth orbiting satellite technical program changes that could impact system requirement satisfaction.

- Membership: OSGS, Satellite Product Manager (Chair for non-polar satellite related items), JPSS Program Scientist (Chair for JPSS matters), and a representative from each NOAA Line Offices.
- Applies to JPSS only: No
- **Federal Committee for Meteorological Services and Supporting Research (FCMSSR)**
  - Description: The Chairperson of the FCMSSR is the Administrator of NOAA, and its members are senior policy executives from federal agencies with meteorological programs that meet to provide policy guidance and resolve agency differences. NESDIS participates in the FCMSSR subcommittees, the most relevant to JPSS include the COES (Operational Environmental Satellites), which meets quarterly to consider satellite operational status, plans and future capabilities, and the COPC (Operational Processing Centers), which establishes policies and management structure for environmental data acquisition, processing and exchange.
  - Applies to JPSS only: No

#### 4.1.4 NJO Program Control and Review Boards

- **Program Control Board**  
All authority to control the program baselines is vested in the Program Control Board (PCB). The PCB is responsible for establishing baselines; i.e., approving new baseline documents, and for evaluating and the disposition of proposed changes to baseline documents. The JPSS Director or JPSS Deputy Director serves as the PCB Chair. The PCB chair approves, disapproves, or tables each request for a new baseline document or CCR presented. The PCB meets on an as-needed basis.
- **NJO Monthly Status Review**  
The NJO Monthly Status Review assesses the progress of all NOAA managed elements of the JPSS program. The review consists of an integrated snapshot of the NJO's responsibilities followed by a status report of each project, or supporting effort, managed by an external NOAA Organization. The status of each project and supporting effort is reported, including Planned vs. Actual Obligations and Expenditures, Staffing Planned vs. Actuals with Key openings identified, Project Schedule status with the focus on upcoming key milestones and deliveries, Technical Review Product Status, and proposed Baseline Scope/Schedule/Budget changes. The NJO Monthly Status Review is chaired by the JPSS Director.
- **NJO Decision Board**  
The NJO Decision Board provides oversight of the management and operations of the NJO, including programmatic/budgetary guidance, strategic planning, management of office resources, and approval of office-wide priorities, policies, and processes. The JPSS Director serves as chair, and board members are the JPSS Deputy Director, Division Chiefs, JPSS Chief of Staff, Systems Engineer, JPSS Program Scientist, and JPSS Technical Director. The NJO Decision Board meets monthly.

- **NASA Configuration Control Boards**  
NJO personnel are review members of the NASA JPSS Program Flight, Ground and the Level-1 Executive Configuration Control Boards (CCBs). The NJO members on lower level Flight and Ground CCBs review changes, submit comments, and register their approval or rejection in the Configuration Management tool. Their approval is not required to move a change forward. At the NASA Level 2 CCB, NJO member approval is required before a change is approved. The CCBs meet monthly.
- **JPSS Integrated Program Risk Management Board**  
The JPSS Integrated Program Risk Management Board works with JPSS executing organizations to identify risks, assess the status of all active risks, and develop plans to address risks, with the goal that no risk becomes an impediment to the JPSS mission.

## 4.2 Control Plans

- **Risk Management Plan (JPSS-PLN-3101)** – The Risk Management Plan provides a clear framework for the risk management methodology including the process, risk board responsibilities, objectives and reporting process. Risk management for JPSS is being performed to maximize likelihood of success in sustaining continuity of and enhancing NOAA’s Earth observation analysis, forecasting, and climate monitoring capabilities from global polar-orbiting observations, per the JPSS Management Control Plan, and Level 1 Requirements Document. The NJO risk management process starts with the identification of risks, followed by analyzing the probability of occurrence and potential impacts, planning and implementing mitigation strategies, and monitoring the resulting performance.

NASA is an observer on the NOAA Risk Boards and information is exchanged via the respective agency Risk Leads and regular meetings.

- **Configuration Management Plan (JPSS-PLN-3102)** – The Configuration Management (CM) Plan is applicable to the NJO for the implementation of CM requirements and the conduct of CM activities as detailed in the MCP and this Plan. Specific documents must be controlled by the NJO to respond to Government regulations, DOC and NOAA direction, and program management best practices. A subset of these controlled documents defines the agreed baseline of performance expected from the NJO by NOAA from a functional, performance, cost, and schedule perspective. These documents are referred to as baseline documents. CM is applicable throughout all phases of program life cycles under the NJO configuration control authority. All NJO controlled documents are managed under this plan, including those generated by the NJO, Headquarters, the NJO Divisions, and assigned to the NJO for configuration management.
- **Management Control Plan (JPSS-PLN-3107)** – The MCP serves to document the roles and responsibilities of each agency and the NOAA/NASA interface for JPSS management

control. It describes the NOAA and NASA governance structure, program authorities, working relationship and management commitments in the development, implementation, and operation of the JPSS. This document is an agreement among the NOAA DUS/O, NASA AA, NASA JPSS Program Manager, JPSS Director, GSFC Director, NESDIS AA and NASA SMD AA.

- **NJO Standards and Procedures for Intra-Governmental Payment and Collection (IPAC) Documents (JPSS-PLY-3402)** – To address the JPSS FY 2012 Audit Finding due to deficiencies in internal controls over IPAC documents within the JPSS Program, JPSS-PLY-3402 assigns accountability of IPAC documents to the NJO Budget Division staff, requires SF-1080 forms and IPAC invoices review and certification within a specified timeframe, establishes requirements for maintaining IPAC files, and documents procedures the NJO Budget Division will execute to ensure IPAC documents comply with DOC, NOAA and NESDIS’ polices and OMB Circular A-123.
- **JPSS Acquisition Strategy (JPSS-PLN-2100)** – The overall acquisition objectives for the JPSS are to: a) acquire satellite systems to ensure continuity of critical environmental observations from polar-orbiting satellites, b) promote the use of commercial items where possible, c) balance full and open competition versus the need to ensure continuity of observations required for environmental predication, and d) ensure cost-effective solutions to meet JPSS and NOAA/NESDIS enterprise goals. NASA has responsibility for the prime contracts (e.g., for the spacecraft, instruments, and development of the ground system) and some support contracts. The acquisitions follow NASA policies and guidance and are directed by NASA Contracting Officers and Contracting Officer’s Representatives. NOAA has responsibility for NOAA support contracts, Ground Segment contracts following Ground Project transition from NASA to NOAA, as well as those necessary to carry out its science mission. These contracts are executed out of NOAA’s Acquisition and Grants Office, consistent with Department Administrative Order 208-3, “Major System Acquisitions for the Department of Commerce,” and NOAA Administrative Order 208-3, “Major Systems Acquisitions.”
- **Review Plan** – See NASA JPSS Program and Projects Review Plan.
- **JPSS Level 1 Master Schedule (JPSS-PLN-3118)** – The JPSS Level 1 Master Schedule documents the top level overarching milestones for the JPSS Program. The milestones represent the key commitments to the Administration and Congress for JPSS, including launch readiness, program baseline, key decision points, and program transition points. The JPSS Director is responsible for the management and control of the schedule. With the exception of launch dates (which are controlled by the program-level Milestone Decision Authority), changes to the Level 1 Master Schedule are presented to and approved through the PCB, and reported to the APMC.

- **Environmental Management Plan** – See NASA JPSS Program Plan.
- **JPSS System Security Plan (JPSS-PLN-4302) and GRAVITE System Security Plan** – Information assurance refers to the security, availability, and integrity of the information that is being passed within the JPSS Ground System. The NOAA Information System Security Officer (ISSO) is the lead for information assurance for the JPSS Ground System. The NOAA ISSO defines and recommends security control implementation for the NOAA 5042 JPSS Ground System. Through day to day participation with Operations and Sustainment, Systems Engineering and integration teams, and as a voting member on their respective CCBs, the ISSO has a view into all activities that have the potential to impact the JPSS Ground System and its related information. Through long-term continuous assessment of existing security control effectiveness, the NOAA ISSO is able to recommend to the system owner and authorizing official cost-effective risk mitigation activities and security control investments to better protect the information assets of the JPSS Ground System. To meet information assurance requirements, system security protection strategies are developed, and compliance and life cycle information security activities are documented and tracked over time to provide metrics for the health and performance of the JPSS Ground System. For more information related to the information assurance protection strategies see the JPSS System Security Plan (JPSS-PLN-4302), the roadmap to implementation of security controls for the JPSS Ground System. This document and its appendices provide a view to the information security risk posture for the as-built system. The document also provides a view into long-term strategy for risk management and approaches for responding to emerging threats to the information assets and their supporting technologies. The plan can be requested from the NJO ISSO and is considered to be a For Official Use Only document. (See Table 2, next page.)

**Table 2. JPSS IT Security Roles and Responsibilities**

Security Authorized Package Document	Authorizing Official (AO)	AO's Designated Representative	Information System Owner (ISO)	Information Owner (IO)	Information System Security Officer (ISSO)	Information Technology Security Officer (ITSO)	Security Control Assessor/Certifier	Risk Executive/CIO	Agency Head/CEO
<b>Security System Plan (SSP)</b>									
SSP (core document)	A	A	A		A, R	R	T	S	S
SSP Appendix A FIPS 199 Security Categorization	A		C	C	U, R	C	R	C	
SSP Appendices C and D					U		R		
SSP Appendix G, Privacy Threshold Analysis			A		U, R		R		
SSP Appendix G (if applicable), Privacy Impact Analysis			A		U, R		R		
SSP Appendix H, Continuous Monitoring Plan			A		U		R, C		
SSP Appendix I, Service Level Agreements / Interconnection Security Agreements	A		C		U, R		R		
SSP Appendix J, Contingency Plan	A	A	A		U, R	R	T		
SSP Appendix K, Contingency Plan Test Plan and Results			A		U, R	R	T		
SSP Appendix L, Risk Assessment Report					U, R		R, U	C	
SSP Appendix M, Appointment Memo - ISSO			A						
SSP Appendix M, Appointment Memo - ISO	A								
SSP Appendix M, Appointment Memo - AO									A
SSP Appendix N, FIPS 200 Security Controls Requirements Baseline	A		C		U, R	C	R	C	
SSP Section 16.2.14, CM-9, Configuration Management Plan			A		U, R	R	T		
SSP Section 16.2.32, IR-8, Incident Response Plan			A		U, R	R	T		
SSP Section 16, XX-2 Policies & Procedures (system specific)			A		U, R		R		
<b>Security Assessment Report (SAR)</b>									
Security Assessment Plan			A		C	S	U, A		
SAR			C		C	C	U, A	S	S
<b>Plan of Action and Milestones (POA&amp;M)</b>									
Creation	A		C		U, R	A (in CSAM only after AI has approved in writing)	C		
Execution/Status Update			S		U	S		S	S
Closure			A (all but high-risk POA&Ms for high-impact systems)		U	A (only high-risk POA&Ms for high-impact system)	R	S	S

**Legend for Responsibility Codes in Matrix:**  
 A -- Approve  
 C -- Concur/Advise  
 R -- Review/Evaluate for Compliance  
 S -- Status Monitoring  
 T -- Test for Compliance  
 U -- Update at least Annually/Develop for New System

- **Export Control Plan** – The NJO follows NOAA procedures for safeguarding technology subject to Export Administration Regulations (EAR) controls to prevent inappropriate release or transfer of controlled technology (actual or deemed) to foreign nationals (FN) and for FN visitors and guests who have access to NOAA facilities in accordance with NAO 207-12 "Technology Controls and Foreign National Access." In compliance with this regulation, the NJO maintains a list of FN guests and an inventory spreadsheet of EAR and International Traffic in Arms Regulations (ITAR) controlled technology. Also, an NJO Access Control Plan has been written and maintained for NOAA spaces. In addition, NOAA personnel are kept informed of when FN visitors (in NOAA facilities for less than 3 days) are in the building and reminded how to safeguard export control materials. Quarterly reports are made to NESDIS on controlled equipment and FN guests. NOAA and NASA also review JPSS documents for ITAR compliance. Guidance on marking ITAR controlled documents can be found in the JPSS Technology Transfer Control Plan (TTCP) (470-00014).

## 5.0 NOAA/NESDIS ENTERPRISE ARCHITECTURE

The Clinger-Cohen Act of 1996 requires federal agencies to develop, maintain, and facilitate implementation of sound and integrated information technology (IT) enterprise architectures. Likewise, OMB Circular A-130 requires agencies to integrate Enterprise Architecture (EA) into their strategic planning processes, and to "incorporate security into the architecture of their information systems to ensure that security supports agency business operations and that plans to fund and manage security are built into life-cycle budgets for information systems."

In response to Clinger-Cohen, NOAA developed the NOAA Observing System Architecture (NOSA). NOAA defines "observing system" as a collection of one or more sensing elements (human and/or instrument) that reside on fixed or mobile platforms; directly or indirectly measuring environmental parameters on a defined basis meeting data user objectives. JPSS is a component of NOSA, providing satellite-based observations and ground system capabilities. Consistent with NOSA, JPSS provides data and information from the observing system sensors to the data user. This includes data acquisition, data ingest, developing collections, creating products, maintaining databases, ensuring permanent, secure archival, and providing both user-friendly and machine-interoperable data access.

## APPENDIX 1. JPSS Users

### National Oceanic and Atmospheric Administration (NOAA)

- National Weather Service (NWS)
  - Weather Forecast Offices (WFO)
  - National Centers for Environmental Prediction (NCEP)
    - Environmental Modeling Center (EMC)
    - Ocean Prediction Center (OPC)
    - National Hurricane Center (NHC)
    - Aviation Weather Center (AWC)
    - Storm Prediction Center (SPC)
    - Climate Prediction Center (CPC)
    - Space Weather Prediction Center (SWPC)
- National Ice Center (NOAA, U.S. Navy, and U.S. Coast Guard operational center)
- National Ocean Service (NOS)
- National Marine Fisheries Services (NMFS)
- Office of Atmospheric Research (OAR)
- Office of Marine and Aviation Operations (OMAO)

### Department of Defense (DoD)

- Air Force Weather Agency (AFWA)
- Fleet Numerical Meteorology and Oceanography Center (FNMOC)
- Naval Oceanographic Office (NAVOCEANO)
- Naval Maritime Forecast Center/Joint Typhoon Warning Center (NMFC/JTWC)
- Naval Research Lab (NRL)
- U.S. Army Corp of Engineers

### National Aeronautics and Space Administration (NASA)

- Global Modeling and Assimilation Office (GMAO)

### Environmental Protection Agency (EPA)

### Department of the Interior

- U.S. Forest Service (USFS)
- U.S. Geologic Survey (USGS)

### U.S. Department of Agriculture (USDA)

- Agricultural Research Service (ARS) Hydrology and Remote Sensing Lab
- World Agricultural Outlook Board (WAOB)
- National Agricultural Statistics (NASS)
- Foreign Agricultural Service

### International Users

- Meteorological services of the Member States to the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT)
- European Centre for Medium-Range Weather Forecasts (ECMWF)
- Australian Government Bureau of Meteorology (AU/BOM)
- Japan Aerospace Exploration Agency (JAXA)
- Japan Meteorological Agency (JMA)
- Hydrological and Meteorological Centre of Russia (Hydrometcenter)
- Korean Meteorological Agency
- World Meteorological Organization (WMO)
- Chinese Meteorological Agency (CMA)
- International users of Direct Broadcast Services

## APPENDIX 2. Acronym List

AA – Assistant Administrator

APMC – Joint Agency-Level Program Management Council

AODR – Authorizing Official Designated Representative

CAP – Contractor Acquired Property

CCB – Configuration Control Board

CFO – Chief Financial Officer

CGS – Common Ground System

CIO – Chief Information Officer

CITRB – Commerce Information Technology Review Board

CM – Configuration Management

CMC – Center Management Council

CLASS – Comprehensive Large-Array Stewardship System

CNES – France Centre National D'Études Spatiales

CWIP – Construction Work in Progress

DAAS – Deputy Assistant Administrator for Systems

DOC – Department of Commerce

DoD – Department of Defense

DOO – Department Organization Order

DUS/O – Deputy Under Secretary for Operations

ESPC – Environmental Satellite Processing Center

ESUG – Environmental Satellite Users Group

EUMETSAT – European Organisation for the Exploitation of Meteorological Satellites

FEA – Federal Enterprise Architecture

GCOM W1 – Global Change Observation Mission Water-1

GSFC – Goddard Space Flight Center

HSPD – Homeland Security Presidential Directive

IIA – Interagency and International Affairs

IPAC – Intra-Governmental Payment and Collection

ISSO – Information System Security Officer

JASD – Joint Agency Satellite Division

JAXA – Japan Aerospace Exploration Agency

JPSS – Joint Polar Satellite System

JPSS-CG – JPSS Coordination Group

L1RD – Level 1 Requirements Document

LORWG – Low Earth-Orbiting Requirements Working Group

MCP – Management Control Plan

MetOp – Meteorological Operational satellites

MPM – Major Program Monthly Review

MSR – Monthly Status Review

MOU – Memorandum of Understanding

NAO – NOAA Administrative Order

NASA – National Aeronautics and Space Administration

NCEI – National Centers for Environmental Information (NCEI)

NDE – NPOESS Data Exploitation

NEC – NOAA Executive Council

NESDIS – NOAA Satellite and Information Service

NJO – NOAA JPSS Office

NOAA – National Oceanic and Atmospheric Administration

NOPC – National Operational Processing Centers Program Council

NOSC – NOAA Observing Systems Council

NPR – NASA Procedural Requirements

NSPD – National Security Presidential Directive

NWS – NOAA National Weather Service

OMB – Office of Management and Budget

OSAAP – Office of System Architecture and Advanced Planning

OSGS – Office of Satellite Ground Services

OPPA – Office of Projects, Planning & Analysis

OSPO – Office of Satellite and Product Operations

PAO – Public Affairs Office

PCB – Program Control Board

PDA – Product Distribution and Access

PMC – Program Management Council

PMEF – Primary Mission Essential Functions

POB – Project Oversight Board

POES – Polar-orbiting Operational Environmental Satellite

PSE – Program System Engineering

S-NPP – Suomi National Polar-orbiting Partnership

SEE – Strategic Execution and Evaluation

SMD – Science Mission Directorate

SRB – Standing Review Board

STAR – Center for Satellite Applications and Research

TBD – To Be Determined

TTA – Technical Task Agreement

WBS – Work Breakdown Structure