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Joint Polar Satellite System (JPSS) Program Lexicon

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Goddard Space Flight Center
Greenbelt, Maryland

Joint Polar Satellite System (JPSS) Program Lexicon Review/Signature/Approval Page

Prepared By:
Gary Mineart, Document Manager, JPSS Program Systems Engineering

Approved By:
Greg Mandt, JPSS Program Director

(Electronic Approvals available online at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm)

Preface

This document is under JPSS Program configuration control. Once this document is approved, JPSS approved changes are handled in accordance with Class I and Class II change control requirements as described in the JPSS Configuration Management Procedures and changes to this document shall be made by complete revision.

Any questions should be addressed to:

JPSS Program Configuration Management Office
NASA/GSFC
Code 470
Greenbelt, MD 20771

Change History Log

Revision	Effective Date	Description of Change (Reference the CCR & CCB/ERB Approve Date)
Rev. -	July 11, 2013	This version was approved by the JPSS Program CCB via 470-CCR-13-0043 on the effective date shown. This version was baselined in conjunction with the transfer of the document from Ground SEIT (formerly 474-00175 Rev B of 05/09/2013) to Program control. This version includes additions and clean-up changes to provide consistency with the JPSS Program Level 1 and Level 2 requirements.
Rev. A	February 10, 2014	This version was approved by the JPSS Program CCB via 470-CCR-14-0063 on the effective date shown. Revised in conjunction with the regular, semiannual review cycle ending 12/31/2013. Includes additions, deletions, and clean-up changes to provide consistency with evolving JPSS Program documentation.
Rev. B	November 6, 2014	This version was approved by the JPSS Program CCB via 470-CCR-14-0085 on the effective date shown. Revised in conjunction with the planned, regular review cycle. Includes additions, deletions, and clean-up changes to provide consistency with evolving JPSS Program documentation.
Rev. C	January 21, 2016	This version was approved by the JPSS Program CCB via 470-CCR-15-0131 on the effective date shown. Revised in conjunction with the planned, regular review cycle. Includes additions, deletions, and clean-up changes to provide consistency with evolving JPSS Program documentation.
Rev. D	May 16, 2019	This version was approved by the JPSS Program ERB on March 14, 2019 and the JPSS CCB via 470-CCR-19-0271 on the effective date shown. Revised in conjunction with the regular review cycle. Includes additions, deletions, and clean-up changes to provide consistency with evolving JPSS Program documentation. Consolidates acronyms previously carried in a separate, non-baselined Program reference document.

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1. INTRODUCTION

This document is a Joint Polar Satellite System (JPSS) Program Systems Engineering-created document and JPSS Program-controlled document. Routine reviews and updates to any associated, supporting Dynamic Object-Oriented Requirements System database will be synchronized and performed at least annually, or as needed, as necessary to meet the Integrated Data Dictionary (IDD) needs of the JPSS Program.

1.1 Scope

The scope of the JPSS Program Lexicon includes all the developmental and operational activities associated with the S-NPP and JPSS multi-mission system, comprised of the space, launch and ground segments supporting the mission system. For acronyms specific to the National Oceanic and Atmospheric Administration (NOAA) and European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) Joint Polar System (JPS) refer to the Joint Polar System Glossary of Acronyms (Joint Reference Document 6 (JRD 6)).

1.2 Purpose

The purpose of the JPSS Program Lexicon is to provide the authoritative source for the definition of terms and acronyms that have applicability across the Program in order to maintain consistency of their interpretation and use across the Program. Definitions and acronyms that are specifically and exclusively applicable to and within a particular subsystem or unit may be defined and used within the subsystem/unit documentation and do not necessarily need to be defined within this document.

1.3 Organization

Section 1 provides the document scope, purpose, and organization.

Section 2 provides the Program Lexicon parent and applicable documentation.

Section 3 includes the primary content of the Program Lexicon, listed in alphabetical order by Lexicon term.

Section 4 provides the Program Acronym List, in alphabetical order by acronym.

2. RELATED DOCUMENTATION

The latest versions of all documents below should be used. The latest JPSS documents can be obtained from URL: https://jpssmis.gsfc.nasa.gov/documentation/docsearch_frm.cfm . JPSS documents have a document number starting with 470, 472 or 474.

2.1 Parent Documents

The following documents are the Parent Documents from which this document has been derived. Any modification to a Parent Document will be reviewed to identify the potential impact on this document. In the event of conflict between a Parent Document and the contents of this document, the JPSS Program Configuration Control Board has the final authority for conflict resolution.

Document Number	Document Title
470-00029	JPSS System Architecture and Concept of Operations (SACO)
JPSS-REQ-1001/470-00217-NJO	JPSS Level 1 Requirements Document (L1RD) for JPSS-2/3/4
470-REF-00102	JPSS Program Implementation Document (PID), JPSS-PLN-3109

2.2 Applicable Documents

Glossary data contained in lower-level JPSS Program configuration managed document baseline may contain definitions and acronym lists appropriate for the specific component or element of interest. The Program Lexicon provides the authoritative source for definitions and acronyms with applicability across the JPSS Program and does not necessarily include those primarily or exclusively applicable at the subsystem, component, unit, and element levels. Most of the acronyms listed in Applicable Documents are not repeated in the Program Lexicon with the exception of the subset commonly used in the JPSS Program and Project vernacular.

Document Number	Document Title
JRD 6	Joint Polar System Glossary of Acronyms
NIST SP-330	The International System of Units (SI)
NASA SP-2016-6105 Rev2	NASA Systems Engineering Handbook (Appendix B)

3. PROGRAM LEXICON (Sorted Alphabetically)

557th Weather Wing: A special mission wing aligned under the 12th Air Force and Air Combat Command, formerly known as the Air Force Weather Agency (AFWA). A data consumer of the JPSS Ground Segment and a data processing center that uses JPSS xDRs (Raw Data Records (RDRs), Sensor DRs (SDRs), Temperature DRs (TDRs), Environmental DRs (EDRs) and Intermediate Products (IPs)) and other data to produce environmental products for their customers, retaining responsibility for the processing, archiving and dissemination of these derived environmental products.

A-Basis Allowable Material: An allowable material is defined as having an established attribute value where some percentage (i.e., 99%) of a population of values is expected to equal or exceed the allowable, within some confidence or better (i.e., 95%).

A-Side: The name of a set of hardware components that can comprise a particular function or set of functions. It is fully redundant with another set of hardware known as the B-Side. When the A-Side is in use, it is referenced as part of the primary environment, while the B-Side is part of the secondary (or redundant) environment. For the ground system when A-side is the secondary, it may be used for Installation Test and Checkout (ITCO) of hardware and software upgrades. Each side may have internally redundant components. Switching from A-side to B-side or from B-side to A-side can be for performance or failure reasons. Although A-side may be performing as the primary without fault, it may be switched to secondary when the transition of upgrades loaded and checked out on the B-side is accepted by operations. A-side is always A-side; the name does not change.

A-String: Similar to A-Side in some conceptual respects, but a smaller scope because it is focused on a physical and/or logical "string" of equipment used for a specific purpose (ops, sustainment, integration, testing, reliability and/or redundancy) and possibly easily manipulated to make its use more accessible and flexible than perhaps an entire A-Side might otherwise and usually be.

Abnormal Operation: Encompasses unforeseen circumstances that are not handled via established contingency plans and operational states such as anomalous conditions or failures.

Absolute Humidity (Abs Hum): The mass of water vapor per unit volume of moist air expressed in grams per cubic centimeter.

Absolute Time (Abs Tm): Time specified as Universal Time Coordinated (UTC) [a.k.a. Greenwich Mean Time (GMT), or Zulu time] (Ex: 2230Z) independent of local time zone, including leap seconds.

Absolute Time Command: A command contained in the Absolute Time Sequence (ATS) stored command table. Each command in the sequence is timestamped indicating the absolute time when the command is to be executed. See also Relative Time Command.

Absolute Time Command Buffer: An allocated memory area used to store the absolute time commands.

Absolute Time Sequence: Sequence of commands executed at the absolute time tag associated with each command in the sequence.

Acceptance Test: A test to demonstrate that each deliverable item meets all of the specified requirements allocated to it. These are performed at all levels where requirements are allocated, including unit level, subsystem level, segment level, and integrated system level. May be referred to as a Workmanship Test when it serves as a quality control screen to detect deficiencies and provide the basis for delivery of an item under terms of a contract.

Accepted Risk: A risk (an unplanned event) that is understood and agreed to by the Program, organization partners, sponsors, stakeholders, and customer(s) sufficient to achieve the defined success criteria within the approved level of resources. A risk is accepted when its impact is deemed "acceptable" (does not drive a change to the baseline), and/or no additional resources are expended to mitigate the risk. See also Residual Risk.

Accuracy: See Measurement Accuracy.

Acquisition of Signal (AoS): The time at which a receiver locks onto the radio frequency (RF) carrier signal and begins receiving RF signals from the spacecraft.

Activation and Characterization Test: The Activation and Characterization Test period is the phase of post-launch test consisting of functional verification of spacecraft and instrument operation.

Active Fires: (1) Surface-based, detectable fire of natural or anthropogenic origin. (2) The JPSS Environmental Data Record (EDR) that provides detection and analysis of the radiative signature of natural or anthropogenic surface fires as received by the VIIRS sensor. The product includes the geolocation and Fire Radiative Power (FRP) of pixels for which fires are detected, and a full mask consisting of a two-dimensional array of values representing the fire and other relevant thematic classes (e.g., cloud) of each pixel in a swath data granule. Also referred to as Active Fire.

Activity: For Common Ground System (CGS), a scheduled task on the Mission Schedule associated with a system resource. Initially, tasks are matched against all available, valid resources and available times (opportunity generation). When the tasks are allocated to their specific resources and opportunities, they become "activities."

Activity Alert: Mechanisms for the Mission Planner to notify JPSS operators and data consumers of upcoming events of which they should be aware (e.g. outages, orbital events, maneuvers, launches). Commonly referred to as Mission Notices (activity alerts are a subcategory) also.

Activity Schedule: A timeline schedule of tasks that form a set of commands for time-ordered execution as laid out in the Mission Schedule. It is the source of the Command Load Generator-produced load (Command Load File) to spacecraft stored command memory locations. The Detailed Activity Schedule (DAS) contains commands to the spacecraft subsystems and sensors to execute the planned commanding on board the spacecraft.

Ad Hoc Order: A one-time user request for data, or a subscription order with a very short subscription period.

Ad Hoc Query: A one-time query requested by an authorized operator or external user (as opposed to a periodically repeating standing request).

Ad Hoc Report: A one-time report requested by an authorized operator or external user (as opposed to a periodically repeating standing report).

Ad Hoc Request: A one-time request for data products, requested by an authorized operator or external user (as opposed to a periodically repeating standing request).

Ad Hoc Task: A previously undefined task that is created and nominated in response to some situation. Their scheduling must occur in less than the typical 30-day requirement for nominated new tasks. Accordingly, their approval must be expedited. Ad hoc tasks can be created to support Data Acquisition and Routing (DAcqR), Data Processing (DP), and Full Service (FS) Missions. Ad hoc tasks consist of unplanned contingency tasks and short notice tasks.

Advanced Microwave Scanning Radiometer (AMSR): An instrument onboard the Global Change Observation Mission (GCOM) - Water (W) 1 (GCOM-W1) satellite that is a conical scanning remote sensing instrument for measuring microwave emission from the surface and the atmosphere of the Earth. From about 700 km above the Earth, the AMSR2 instrument on GCOM-W1 provides highly accurate measurements of the intensity of microwave emission and scattering.

Advanced Microwave Scanning Radiometer 2 (AMSR2) Application Process Identifier (APID) Sorted Data (ASD): Consultative Committee for Space Data Systems (CCDDS) packet-synchronized AMSR2 mission (i.e., raw) data that are transmitted by the GCOM mission satellites. Files containing the ASD include the AMSR2 instrument science data associated with Packet ID 1576. The ASD files are sent from Svalbard to the JPSS Data Processing Node (DPN) where they are converted by the DPN and made available to the NOAA Data Exploitation (NDE) system. The data are used by the GCOM Processing and Distribution System higher-level data product processing and delivery. The DPN output files include full orbit AMSR2 science data and are classified as RDRs but do not have all of the metadata or other characteristics associated with other instrument RDRs. These data files are treated similarly to an ancillary file with minimal metadata included in the DPN Hierarchal Data Format-5 (HDF5) wrapper.

Advanced Orbiting System (AOS): Defines standard data units for exchanging commands and telemetry between the ground and advanced space systems [like the International Space Station (ISS)]. AOS data frames are defined in the Consultative Committee for Space Data Systems (CCSDS) 732.0-B-2.

Advanced Technology Microwave Sounder (ATMS): A cross-track scanner with 22 channels that provides sounding observations needed to retrieve profiles of atmospheric temperature and moisture, for civilian operational weather forecasting, as well as continuity of these measurements for climate monitoring purposes.

Advanced Technology Microwave Sounder Instrument Support Node (ATMS ISN): This is a support system for the JPSS Ground System (GS) used by the Instrument Science Team to

ensure the proper operation and calibration of the Advanced Technology Microwave Sounder (ATMS) instrument. This also includes the ATMS Instrument Vendor and the JPSS Flight Project Instrument Manager and Instrument Science Lead.

Aerosol: Are suspensions of liquid droplets or solid particles in the atmosphere. Aerosols include, but are not limited to, smoke, dust, sand, volcanic ash, sea spray, polar stratospheric clouds, and smog.

Aerosol Optical Depth (AOD): The extinction (scattering + absorption), integrated over the vertical column above a horizontal cell on Earth's surface, in a narrow spectral band about the specified wavelength. Optical depth (tau) is related to the direct beam vertical transmittance (t) by t = exp (-tau). The term Aerosol Optical Thickness is often used synonymously.

Aerosol Optical Thickness (AOT): See Aerosol Optical Depth.

Aerosol Particle Size (APS): See Aerosol Particle Size Parameter.

Aerosol Particle Size Parameter (APSP): The Angström Exponent of the thickness of an atmospheric aerosol particle. The Angström exponent characterizes the dependency of AOD on wavelength and is related to the average size of the particles in the aerosol (the larger the exponent, the smaller the particles). The JPSS Environmental Data Record delivering this aerosol deliverable is labeled as Aerosol Particle Size (APS).

Aerosol Refractive Index: The measurement of the real part of the refractive index m and the single-scattering albedo of each mode of the bimodal aerosol size distribution at multiple wavelengths within the 0.4 – 2.4-micrometer spectral range, and the determination whether aerosol particles are spherical or non-spherical. Non-sphericity is detected when the value S = [(Lmax/Lmin) – 1] > 0.3, where Lmax is the maximum length of the particle and Lmin is the minimum length of the particle. The value of S can be inferred from multi-angular measurements of the departure of scattered radiation from that expected from spherical aerosol particles.

Aerospace Ground Equipment (AGE): Ground support equipment at the launch site, or elsewhere, which provides hard-wired communications between the Suomi National Polar-orbiting Partnership (S-NPP)/JPSS spacecraft and the Common Ground System (CGS) equipment at the launch site.

Air Force Satellite Control Network (AFSCN): A global system of ground stations for satellite command and control operated by the U.S. Air Force. The AFSCN "system of systems" is composed of three inter-related segments: Command and Control, Range, and Communications.

Air Force Weather Agency (AFWA): Legacy nomenclature for the 557th Weather Wing. See 557th Weather Wing.

Airborne Support Equipment: Equipment installed in a launch vehicle to provide support functions and interfaces for space or upper-stage vehicle during launch and orbital operations. This includes the hardware and software that provides the structural, electrical, electronic, and mechanical interfaces with the launch vehicle.

Airglow: A natural electromagnetic radiation arising from chemical reactions of upper atmospheric constituents. Airglow occurs as emission continua, atomic lines, and molecular bands, with the brightest contributions arising from atomic oxygen and OH. Airglow, extending from the ultraviolet, through visible, to the Short Wave Infrared Radiometer (SWIR) spectrum, occurs in the 70-300 km altitude range, and is both temporally and spatially variable.

Alarm: A message displayed to an operator indicating a system event or condition, which poses a direct threat to system operations or data, or a/an non/off-nominal condition. The operator needs to take action to resolve this message type.

Alarms, Warnings and Events (AWE): Acronym only - see definition for each term individually.

Albedo: The fraction of solar energy (shortwave radiation) reflected from the Earth back into space. For JPSS, the Albedo (Surface) is the total amount of solar radiation in the 0.4 to 4.0 micron band reflected by the Earth's surface into an upward hemisphere (sky dome), including both diffuse and direct components, divided by the total amount incident from this hemisphere, including both direct and diffuse components.

Algorithm (Algrthm/Alg): A step-by-step procedure for calculations. Algorithms are used for calculation, data processing, and automated reasoning. Algorithm is the mathematical relation between an observed quantity and a variable used in a step-by-step mathematical process to calculate a quantity. In the context of remote sensing, algorithms generally specify how to determine higher-level data products from lower-level source data. For example, algorithms prescribe how atmospheric temperature and moisture profiles are determined from a set of radiation observations originally sensed by satellite sounding instruments.

Algorithm and Calibration/Validation Science Teams: The Algorithm and Calibration/Validation (Cal/Val) Science Teams are groups of scientists under the auspices of the NESDIS Center for Satellite Applications and Research who maintain, calibrate, develop, and validate algorithms in support of the JPSS weather operations and climate research missions. The teams are aligned along instruments for the Sensor Data Records (SDRs) and along science areas of interest (e.g., Imagery, Clouds, Land, etc.) for the Environmental Data Records (EDRs).

Algorithm Development and Maintenance (ADM): The name given to the JPSS Algorithm Development and Maintenance (ADM) Concept of Operations (ConOps). JPSS Ground System (GS) operations to support continued algorithm development, maintenance and deployment, including developing new algorithms and/or modify baseline algorithms in an offline environment; performing offline testing and/or execution of new/modified algorithms; evaluation of new/modified algorithms before moving to the production system; delivery, management and configuration management of product algorithms; independent Science Facility data delivery and algorithm support interactions; and analyzing and comparing the test results of the new/modified algorithms by performing parallel processing in the Integration & Test (I&T) and Ops domains.

Algorithm Development Area (ADA): A software development and testing domain on the Interface Data Processing (IDP) Integration & Test (I&T) string that provides an environment for local modification and prototyping of data product algorithms. Each Processing Center manages the algorithms and data within its co-located Algorithm Development Area (ADA) domain.

Algorithm Development Library (ADL): A software library and toolkit that enables developers and maintainers of Interface Data Processing Segment (IDPS) algorithm code to develop, define, analyze, modify, compile and execute IDPS algorithm code without having the full IDPS environment. An Algorithm Development Library (ADL) release comes with a defined release of the IDPS algorithm code. ADL is developed and maintained by the Common Ground System (CGS) contractor as IDPS support software.

Algorithm Engineering Review Board (AERB): The Ground Segment Project Algorithm Engineering Review Board (AERB) approves changes to the science algorithms for the JPSS data processing resident in the Interface Data Processing (IDP) architecture.

Algorithm Support Area (ASA): The location at each Interface Data Processing (IDP) Processing Center facility where scientists/algorithm developers [Algorithm Support Capability (ASC) users] have workstations that provide access to the Algorithm Development Area (ADA) to develop and test algorithms.

Algorithm Support Capability (ASC): The capability provided to certified users at each Interface Data Processing (IDP) Processing Center location to evolve science algorithms. The ASC will be used to develop prototype algorithms, as well as analyze, test, and verify algorithm code modifications.

Algorithm Support Function (ASF): An off-line production function required to support on-line science algorithm operation. Algorithm Support Functions include off-line production, update and tuning of artifacts that are used in on-line production such as Processing Coefficient Tables (PCTs), Look-Up Tables (LUTs), and Auxiliary Data. As a Concept of Operations (ConOps), ASF is a subset of the Mission Support ConOps.

Algorithm Theoretical Basis Document (ATBD): A document delivered for each product generation algorithm that describes the supporting scientific rationale for the algorithm's performance such that it can be implemented and tested in the Ground Segment. JPSS ATBDs are developed and maintained by the NESDIS Center for Satellite Applications and Research (STAR).

All Views (AV): Architecture term.

All Weather: A requirement on Environmental Data Records (EDRs) that includes all cloud conditions and rainfall rates less than 2 mm/hour per square kilometer unless otherwise specified in individual EDRs. See also Clear/Cloudy.

Allocation: The share or portion of the total resource available, allocated to a specific designate.

Along-Track Separation: The distance between two satellites or debris objects measured along the reference satellite's orbital path; the distance along the orbital path of the reference satellite or object to the projection of the second satellite or object's orbital position into the reference along-track orbital path.

Alternate: Defines secondary, tertiary (behind primary) or next available redundancy (physical/logical or both) capability of any element/node within the JPSS Ground System (GS). This is the secondary, tertiary, or next available; albeit less optimal choice, element/node

operationally ready to meet the need of a desired capability. Another means to meet mission needs that may or may not have some minor or significant negative impacts and risks associated with it.

Alternate Common Ground System (ACGS): The Joint Polar Satellite System (JPSS) Alternate Common Ground System (ACGS) portion of the JPSS Ground System (GS) [not necessarily just a facility or several facilities] is the ground segments Continuity of Operations (COOP) capabilities [physical, logical or both - actual or virtual] residing at one or more geographically separated location(s). The ACGS COOP capabilities will be leveraged to meet mission support and operations requirements whenever the NSOF becomes unavailable for some reason to support operations. It performs the functions of four of the major JPSS GS nodes: Space/Ground Communications Node (S/G CN), Ground Network Node (GNN), Management & Operations Node (MON), and Data Processing Node (DPN). This functionality encompasses the control of JPSS-managed satellites, collection of data from satellites, transport of data to the data processing facilities, data processing, and distribution of data products to the science users. These nodes were formerly described as the Ground Station (GStn), Ground Network (GNet), Mission Management Center (MMC), and Interface Data Processing Segment (IDPS); but have been renamed for better clarity and to be more consistent across the Integrated Technical Baseline (ITB): concepts of operations, architecture, requirements and interfaces. The ground system encompasses more functionality because it also includes other functionality and nodes external to the Common Ground System (CGS). The JPSS GS includes: CGS, Flight Vehicle Test Suite (FVTS), Field Terminal Support Node (FTSN), Government Resources for Algorithm Verification Independent Testing and Evaluation (GRAVITE), Calibration/Validation (Cal/Val) Node segments, systems, subsystems, components and interfaces to support the latest generation of U.S. polar-orbiting environmental satellites; and other agreed upon weather satellite platforms and interfaces.

Alternate Common Ground System Command, Control and Communication (ACGS C3): Backup Command, Control and Communications (C3) Management and Operations Node (MON).

Alternate Dynamic Ancillary Data (ADAD): External data that is selected as a subsequent choice and less optimal source (usually only if the first choice and best source of data is either unavailable or unreliable), but still used by the Suomi National Polar-orbiting Partnership (S-NPP)/JPSS Ground System (GS) in the performance of its mission.

Alternate Interface Data Processing Node (AIDPN): This is the NOAA National Environmental Satellite, Data and Information System (NESDIS) data processing node for the Consolidated Backup (CBU) at Fairmont, WV. This ingests raw sensor data and produces data products for NESDIS users in case of a failure of the Interface Data Processing Segment (IDPS) at the NOAA Satellite Operations Facility (NSOF). This system is planned for instantiation in Block 2.0.

Alternate Interface Data Processing Node Operator (AIDPN Op): Alternate Interface Data Processing (AIDP) Operators are located with the Alternate Common Ground System (ACGS) location and responsible for all the Interface Data Processing (IDP) resources and their proper operation. This is a 24/7 position that ensures all ACGS IDP resources are available when required, troubleshoots any issues, and assists the Enterprise Manager (EMgr) and Mission

Planner to ensure optimum use of the AIDP to meet all requirements. The AIDP Operator has a human-machine interface to the Interface Data Processing Segment (IDPS) infrastructure and a view of overall ACGS IDP and system level activity. The AIDP Operator may communicate with the EMgr to provide Enterprise Management (EM) configuration, status, availability, and performance backup info for the ACGS IDP. The primary EM interface between ACGS IDP and ACGS Command, Control and Communications (C3) is machine-based.

Alternate Mission Management Center (AMMC): This is the backup ground system control center for the JPSS Ground System (GS). In Block 1.2, a Stop-Gap Mission Management Center (SGMMC) has been established in Aurora, CO. By Block 2.0, the Common Ground System (CGS) Alternate MMC (AMMC) will be located at the NOAA National Environmental Satellite, Data and Information Service (NESDIS) Consolidated Backup (CBU) site in Fairmont, WV. By default, anytime the AMMC acronym is used post-Block 2.0 this means Alternate MMC, not SGMMC, and any further reference to the SGMMC should only be abbreviated as such post Block 2.0.

Altitude: The height above mean sea level.

Ambient Environment: The ambient environment for a ground test is defined as the normal room conditions with temperatures of 23 + 10°C (73+ 18°F), atmospheric pressure of 101 + 2/-23 kilopascals (29.9 + 0.6/-6.8 inch Hg), and relative humidity of 50 + 30 percent.

Analysis: A verification method that utilizes analytical techniques and/or tools to show theoretical compliance with requirements. Analysis includes the detailed review/study of engineering documentation; the performance of modeling and simulation; and the performance of calculations, interpolations, extrapolations, statistics and/or comparisons of analytical or empirical data. This method also applies to requirements to perform an analysis, or that specify how an analysis is to be performed.

Ancillary and Auxiliary Orderable Products (Anc & Aux OP): Refers to the orderable products consisting of Official Dynamic Ancillary Data (ODAD)/ Substitute Dynamic Ancillary Data (SDAD) / Contingency Dynamic Ancillary Data (CoDAD), Earth Orientation data used in production generation, Two-Line Element Sets (TLEs), Mission Schedules, and Mission Notices.

Ancillary Data (Anc/ANC): Any external data not produced by the Suomi National Polar-orbiting Partnership (S-NPP)/JPSS System, acquired and/or required from external providers; but used by the JPSS Ground System (GS) in the performance of the mission; including the production of S-NPP/JPSS data products. Some of the ancillary data is fairly static and is updated infrequently, while the other data is dynamic and is updated in hours. Examples of ancillary data include Earth orientation data, Global Forecast System (GFS) from National Center for Environmental Prediction (NCEP); Navy Global Environmental Model (NAVGEM) and Navy Aerosol Analysis and Prediction System (NAAPS) from Fleet Numerical Meteorology and Oceanography Center (FNMOC); correlative data from various sources, etc.

Ancillary Data Relay System (ADRS): A system that collects and provides to the GS the ancillary data in order to produce many of the Geostationary Operational Environmental Satellite (GOES)-R Level 2+ products based on requirements defined by the AWG Applications Teams.

GSP is providing a centralized enterprise ancillary data server to service both GOES-R and legacy National Environmental Satellite, Data and Information Service (NESDIS) systems.

Annotated Virtual Channel Data Unit (aVCDU): A term unique to the JPSS Common Ground System, it describes the downlinked VCDU after it is stamped by the Preprocess Downlink Data activity with the Earth receive time and the Ground Station Identifier.

Annual Surface Type (AST): The predominant type of one of the seventeen International Geosphere Biosphere Program (IGBP) classes in any area of global land surface. This product is an annual composite of observations and is an input to numerical weather, climate, hydrological, and agricultural models. It is an off-line Intermediate Product (IP) required for generating the Surface Reflectance EDR.

Anomaly: A deviation from normal, common order, form or rule. It includes any system issue, problem or trouble that is determined to be serious enough to warrant more attention and resources against it to correct because of its current or potential significant impact on system performance and/or long term stability. These anomalies can be against any system, segment, subsystem and/or interface. Issues, anomalies, deficiency reports and/or trouble tickets are all terms that people often used interchangeably in verbal communication; but in reality all of them have important and subtle differences.

Anomaly Support Data: Data that facilitates and supports effective, efficient and timely anomaly resolution activities.

Antecedent Precipitation Index (API): An estimate of surface moisture based on rainfall history. API includes both surface water and soil moisture. Soil moisture (columnar %) may be computed from API by dividing API by the depth of the soil (in mm), to yield the equivalent vertical mm of water per unit vertical mm depth of soil. Soil moisture (% by weight) may be computed from API by dividing API by the soil bulk density (requires knowledge of soil type).

Applicable Document: A type of reference in an acquisition planning, requirements, control, or contractual document that contains detailed specifications, requirements, and interface information that are necessary for the successful interpretation and execution of the parent document.

Application Packet (AP): The unit of data created by a spacecraft or spacecraft sensor according to Consultative Committee for Space Data Systems (CCSDS) standards. An AP contains a primary header, and an optional secondary header, as well as a section for user data. Referred to as a Space Packet in current CCSDS guidance, and often called a CCSDS Packet.

Application Process Identifier (APID): See Packet Identifier.

Approved Schedule: Any type of schedule that has been suggested and/or recommended, and fully vetted, coordinated, validated and/or approved at one or more levels for integration and/or deconfliction against shared and/or competing resources with any and/or all higher level and/or an integrated master schedule(s) either by mission, across an entire project/program, and/or even an entire scheduling enterprise [i.e., similar to the Air Force Satellite Control Network, Space Network, Tracking and Data Relay Satellite System (TDRSS)]. This schedule is validated and approved for execution at one and/or more levels. Proposal and coordination of schedules occurs

at lower operational and system levels until it is adequately integrated and deconflicted against shared and/or competing resources, and ready for operational management and authoritative responsible validation and approval officials. Validation occurs at the operational management level. Approval occurs at the authoritative and responsible level.

Approved Task: A time ordered sequence of ground and spacecraft commands to perform a specific function or set of functions. Only approved tasks can be scheduled.

Aqua: Part of the Earth Observing System (EOS) afternoon (PM) NASA Earth Science satellite missions. It is named for the large amount of information that the mission is collecting about the Earth's water cycle, including evaporation from the oceans, water vapor in the atmosphere, clouds, precipitation, soil moisture, sea ice, land ice, and snow cover on the land and ice. Additional variables also being measured by Aqua include radiative energy fluxes, aerosols, vegetation cover on the land, phytoplankton and dissolved organic matter in the oceans; and air, land, and water temperatures. Aqua is a major international Earth Science satellite mission centered at NASA. Launched on May 4, 2002, the satellite has six different Earth-observing instruments on board and is named for the large amount of information it collects about water in the Earth system. Aqua gathers this information from its stream of approximately 89 GigaBytes of data per day. The water variables being measured include almost all elements of the water cycle and involve water in its liquid, solid, and vapor forms.

Architecture Description Document (ADD): This document covers the architectural products developed during the requirements development phase of the JPSS Ground Segment Project. The products were developed following the Department of Defense Architecture Framework (DoDAF) version 2.0, tailored to support the development of the JPSS Ground System (GS) Concept of Operations and the Level 2 and 3 requirements. The JPSS GS Architecture Description Document (ADD) is based on the JPSS Program Level 1 Requirement Document (L1RD) and JPSS GS ConOps. The scope of the JPSS Ground System (GS) Architecture Description Document (ADD) includes all DoDAF 2.0 views necessary to support the missions as required by the L1RD, as well as the interfaces with external entities that directly provide information to, or receive information from, the ground system. Furthermore, the ADD presents design and operational approaches to meeting key system performance requirements.

Archive: Often an off-line and/or partially on-line data storage, which includes information such as system log files, configuration, raw data, data products and reports.

Argos: A satellite-based location and data collection system dedicated to monitoring the environment.

Arity: In software programming, the number of arguments a function or operator takes. In some languages functions may have variable arity, which means their last or only argument is actually a list of arguments.

Assumption: An expected condition or reality taken for granted or accepted as true without proof; a supposition. ConOps threads (for a given level) describe what the system (or segment) does and how it interacts with external entities. If it relies on an external entity to perform certain functions, or to have certain capabilities, those functions and capabilities are classified as Assumptions.

Asynchronous Quadrature Pseudo-random Noise (AQPN): Asynchronous Quadrature Phase Shift Key (QPSK) modulation with only one channel spread using the NASA Space Network (SN) Pseudo-random Binary Sequence (PRBS).

Atmospheric Science Data Center (ASDC): The Atmospheric Science Data Center (ASDC) is a NASA support system for the JPSS Ground Segment Project located at NASA's Langley Research Center. They are responsible for processing, archiving, and distribution of NASA Earth science data in the areas of radiation budget, clouds, aerosols, and tropospheric chemistry. The ASDC specializes in atmospheric data important to understanding the causes and processes of global climate change and the consequences of human activities on the climate. The ASDC provides all CERES sensor processing for all SDRs, EDRs and CDRs. It is considered part of the Earth Radiation Budget Climate Analysis Research System (ERBCARS) of the NASA Science Data Segment (SDS) and the Langley Research Center's Distributed Active Archive Center (DAAC). This group has been processing CERES data since its origination on the TRMM mission and maintains the Earth Radiation Budget science products across all CERES missions.

Atmospheric Vertical Moisture Profile (AVMP): A set of estimates of the mixing ratio at specified points along a local vertical. The mixing ratio of a sample of air is the ratio of the mass of water vapor in the sample to the mass of dry air in the sample. Note that specific humidity is the ratio of the mass of water vapor to the total mass of the system (dry air plus water vapor). If w = mixing ratio, then specific humidity = w/ (1+w), and for most practical cases, specific humidity ≈ w.

Atmospheric Vertical Pressure Profile (AVPP): A sampling of pressure estimates at specified points along a local vertical through the atmosphere.

Atmospheric Vertical Temperature Profile (AVTP): A sampling of temperatures at specified points along a local vertical through the atmosphere.

Attitude Determination (AD/Atitd Determ): Computation of satellite attitude angles using on-board sensor data.

Attitude Determination System (ADS): Off-line configuration of Multi-mission Three-Axis Stabilized Spacecraft (MTASS) providing attitude estimates based on batch processing of attitude telemetry.

Attitude Event Prediction: Prediction of satellite attitude angles using on-board sensor data to determine occurrence of significant events, such as windows of communications visibility and ground station visibility.

Attitude Ground Support (AGSupt): The name given to the JPSS Attitude Ground Support (AGS) Concept of Operations (ConOps). JPSS Ground System (GS) operations for monitoring and maintaining the performance of JPSS satellite's onboard attitude determination and control systems, including routine ground assessment of on-board systems; attitude maneuver planning and verification; calibration coefficient generation & evaluation; performance trending; and anomaly resolution.

Attitude Ground System (AGS/AGSys): The support system for the JPSS Ground System (GS) that provides analytical and software support for spacecraft attitude control. This includes ground-based attitude application maintenance for the Multi-mission Three-axis-stabilized-spacecraft Attitude ground Support System (MTASS). AGS also provides engineering support and analysis for attitude operations such as attitude anomaly investigation, attitude sensor calibration, etc.

Attitude Ground System Configuration Data (AGS Cfg Data): Each instance of an Attitude Ground System (AGS) executable supported by a set of configuration files. These files define the operational environment for the instance. The AGS Team (AGST) provides a set of configuration data associated with each release or patch of the system. These files may be modified during the integration and test of each instance. The data is delivered to the Common Ground System (CGS) for archive.

Attitude Ground System Software (AGS SW): This includes data used install and/or maintain the Attitude Ground System (AGS) application executable in both forms: Real-Time Attitude Determination System (RT ADS) and Attitude Determination System (ADS). The data is delivered to the Common Ground System (CGS) for archive.

Attitude Ground System Team (AGST): This team provides software support for the system and engineering support for attitude analysis. Code 591 of the Goddard Space Flight Center provides this support.

Attitude Report: Reports on satellite attitude state of health produced by the Attitude Determination System (ADS). This includes reports such as, but not limited to Attitude Validation Report (routine), Attitude Trending Report (periodic), Sensor Interference Report, attitude sensor Calibration Reports (optional), Attitude Anomaly Report, and Attitude Engineering Report.

Attitude Support File: Data files that model the spacecraft and space environment. This set of files may include, but is not limited to, Sun Lunar Planetary Ephemeris, Magnet Field Model, etc. These files are delivered / maintained as needed and used by the Attitude Ground System (AGS).

Audit: A functional or physical review of documentation, software, or hardware to verify it complies with applicable requirements.

Auroral Energy Deposition: The energy flux into the ionosphere from precipitating auroral particles. This data is used to estimate the total auroral heat input into each hemisphere. The hemispheric power input can be determined from direct auroral particle measurements or auroral imagery. In-situ measurements of precipitating ion and electron fluxes may be combined with statistical models of auroral activity to provide an estimate of the hemispheric power input. The total heat input can also be derived from ultraviolet (UV) and/or X-ray auroral imagery.

Authorization: The process by which a person, process, or task is granted the privilege to perform a specified action within the JPSS system, or to receive specified information from the system.

Authorizing Official (AO): A senior (federal) official or executive with the authority to formally assume responsibility for operating an information system at an acceptable level of risk to organizational operations (including mission, functions, image, or reputation), organizational assets, individuals, other organizations, and the Nation.

Automated Command Block Memory (ACBM): Similar to Command Block Memory (CBM), but event-triggered by onboard Telemetry Monitor (TMON) for out-of-limit conditions.

Autonomous Operations: Actions, which occur automatically by the JPSS system without human intervention.

Auxiliary Data (Aux/AUX): Any data, other than data included in the sensor application packets, which is produced internally by the JPSS system.

Availability: The measure of the probability that a system is operationally capable (ready for tasking) of performing an assigned mission (e.g., delivering a KPP) at any given time. (See Operational Availability; Data Availability).

B-Basis Allowable Material: An allowable material defined as having an attribute value where some percentage (i.e., 90%) of a population of values is expected to equal or exceed the allowable, within some confidence level (i.e., 95%).

B-Side: The name of a set of hardware components that can comprise a particular function or set of functions. It is fully redundant with another set of hardware known as the A-Side. When the B-Side is in use, it is referenced as part of the primary environment, while the A-Side is part of the secondary (or redundant) environment. As part of the ground system when B-side is the secondary, it may be used for installation Test and Checkout (ITCO) of hardware and software upgrades. Each side may have internally redundant components. Switching from B-side to A-side or from A-side to B-side can be for performance or failure reasons. Although B-side may be performing as the primary without fault, it may be switched to secondary when the transition of upgrades loaded and checked out on the A-side is accepted by operations. B-side is always B-side; the name does not change.

B-String: Similar to B-Side in some conceptual respects, but a smaller scope because it is focused on a physical and/or logical "string" of equipment used for a specific purpose (ops, sustainment, integration, testing, reliability and/or redundancy) and possibly easily manipulated to make its use more accessible and flexible than perhaps an entire B-Side might otherwise and usually be.

Backup (BU|B/U): Refers to failover functionality within any element/node in the JPSS Ground System (GS). Another means to meet mission needs that may or may not have some minor or significant negative impacts and risks associated with it.

Backup Environment: The equipment and software used to back up data from servers and workstations, as well as the Data Handling Network (DHN) and Data Monitoring & Retrieval (DMR) Global Storage Environment at each Processing Center.

Backup Operations (Backup Ops): An operational status allowing the environment to take over operations from the environment performing primary operations quickly upon a failure or when

directed. An environment performing this activity is called the backup operating environment or secondary operating environment. In this activity, the environment ingests the same TLM and mission data as the operational environment does, performs the same processing, and produces the same products. The main differences are that the commanding is disabled and the product distribution disabled.

Backward Compatible: Hardware or software that is compatible with previous versions of the same item is backward compatible. A backward-compatible version of software is able to coexist with older versions that may have been installed on the machine previously, and is able to read files of the older version. Backward Compatible is also called downward compatible.

Ball Aerospace:: The JPSS Flight Project contractor supporting the design, development, integration, testing, and post-delivery support of the S-NPP and JPSS-1 spacecraft and the Ozone Mapping and Profiling Suite (OMPS). Formerly known as Ball Aerospace and Technologies Corporation (BATC).

Band-to-Band Registration (B2B Registration): See Co-Registration of Spectral Bands.

Baseline (BL|B/L): An approved configuration item, state of entity or entities captured at a moment in time whereby subsequent changes are permitted only upon formal approval.

Baseline Configuration: A documented set of specifications for an information system, or a configuration item within a system, that has been formally reviewed and agreed on at a given point in time, which can be changed only through change control procedures. The baseline configuration is used as a basis for future builds, releases, and/or changes.

Basic Reliability: The duration or probability of failure-free performance under stated conditions. (Compare with Logistics Reliability and Mission Reliability)

Beginning of Life (BOL): The beginning time of the acceptable period of use in service (i.e., the "service life") of a component of the system. It is the start time of the period when a manufactured item is expected to be serviceable and supported by its provider. The performance of mission critical components is usually calculated for the End of Life (EOL), with the components exceeding their specification at BOL. For example, the capacity for the spacecraft to generate electricity will degrade throughout the mission but must still meet a specific requirement at EOL in order to fulfill the mission requirements. Also referred to as Beginning of Operational Life. See End of Life.

Beneficial Occupancy: Occupancy of an uncompleted building, structure, or facility for its intended purpose under circumstances which are advantageous to the occupant and which produce relatively little interference with the builder in completing construction. Prior to occupancy by the using service, a written agreement among the contractor, construction agency, and the using service is provided listing deficiencies, remaining work and other conditions of occupancy that must be consummated. Beneficial Occupancy may be a contract requirement.

Beneficial Occupancy Date (BOD): The date on which beneficial occupancy is granted to the agency requiring use of the facility following construction. By mutual agreement the occupying agency will allow the construction agency access as required to complete remaining items of construction pursuant to the construction contract.

Bias: The error in the expected value of a statistical parameter over a specified time period.

Biennial: Completed every two (2) years.

Bit: (1) A single digit in base 2 having only two possible values, either zero or one. (2) The smallest unit of storage in digital processing systems. Derived from the descriptive term "binary-digit."

Bit Energy-to-Noise Density Ratio (Eb/No): Signal-to-noise in an information-bit-rate bandwidth.

Bit Rate: The number of bits that are conveyed or processed per unit of time.

Blended Product: A data product that is dependent on direct measurements from sensors manifested on more than one satellite.

Blind Acquisition: Establishment of the spacecraft downlink for initial station telemetry acquisition via ground command (i.e., blind command).

Blind Commanding: Uplink of spacecraft commands without the benefit of downlink telemetry to support verification of the command activity.

Block (Blk): A significant release of software/hardware to either support new missions in JPSS or deliver full technology refreshes. Blocks may be sub-divided into smaller bodies of work (i.e., a Build). See Build.

Block 0: Missions: Coriolis/WindSat, Polar-orbiting Operational Environmental Satellite (POES) and Satellite Communications and Navigation (SCaN). Transition to Ops (TTO) Date: Ongoing. Contents: Coriolis/WindSat, POES and SCaN supported missions from Svalbard.

Block 1.0: Mission: Meteorological Operational Satellite (Metop). Transition to Ops (TTO) Date: Ongoing. Contents: Suomi National Polar-orbiting Partnership (S-NPP) support.

Block 2.0: Mission: JPSS-1. Transition to Ops (TTO) Date: 2017 [Supporting JPSS-1 Integration & Test (I&T), launch, and early orbit operations]. Contents: JPSS Ground System technical re-baseline and technical refresh, and JPSS-1 support; full security requirements compliance, Hardware (HW) and Commercial Off-the-Shelf (COTS) upgrades, software fixes, separate operation configurations, situational awareness, Alternate Common Ground System (ACGS), Global Change Observation Mission (GCOM)-Water 1 (W1) Final Operational Capability (FOC) capability, and JPSS-1 support, and extended polar station operations.

Block Evolution: The sequential strategy used by the JPSS Ground Segment Project to evolve JPSS Ground Segment capabilities, security enhancements, technology refreshes, and reliability improvements. The JPSS Ground Segment is required to support JPSS missions through FY2028. Over this long time span, the system supports the current missions as well as prepares to support future missions the definitions and requirements of which are still evolving. It is essential that the JPSS Ground Segment be flexible and adaptable to evolve along with advancing technologies and future missions.

Bright Target: An area of uniform specified radiance (excluding fires) which is 12 milliradians in-track x 12 milliradians cross-track in extent ("bright target") located anywhere within a scene of uniform typical radiance.

Build: A body of Ground System software work, smaller than a Block that contains software and/or hardware enhancements, updates, and/or fixes that can be delivered independent from subsequent Builds. Subsequent Builds may depend on the work delivered in a previous Build. This allows changes to be delivered more quickly and reduces the time to deliver releases to Operations.

Build 1.1: Mission: Meteorological Operational Satellite (Metop) & Defense Meteorological Satellite Program (DMSP). Transition to Ops (TTO) Date: 04/2011 Metop 02/2012 DMSP. Contents: Metop-A support from McMurdo. Satellite Communications and Navigation (SCaN) support from Svalbard. Block 1.1 provides DMSP support from McMurdo.

Build 1.2: Mission: Suomi National Polar-orbiting Partnership (S-NPP) & Global Change Observation Mission (GCOM) - Water (W) Block 1 (GCOM-W1). Transition to Ops (TTO) Date: Completion Date of 12/2012. Contents: System patches, upgrades and enhancement. Build 1.2 provides Stop-Gap Mission Management Center (SGMMC) capability and GCOM-W1 Full Operational Capability (FOC)-A capability.

Build 2.1: Mission: JPSS-1 enhancements. Transition to Ops (TTO) Date: 2019. Contents: Fleet Ground Management, IDPS modularity and XML management, multi-mission contact scheduling, situational awareness, CrIS variable length commanding, retransmit and primary/non-primary product request capability, automated data quality monitoring, consolidation, roll-up of interface status information, and services and data delivery to NAVOCEANO and FNMOC.

Build 2.2: Mission: JPSS-2. Transition to Ops (TTO) Date: 2019 [In time to support JPSS-2 Observatory Integration & Test (I&T)]. Contents: JPSS-2 support, technical refresh, enhanced security requirements compliance, three-mission command and control, and expanded ground stations.

Build 2.2+: Mission JPSS-2, JPSS-3, JPSS-4. Transition to Ops (TTO) Date: TBA [In time to support JPSS-2 early orbit operations]. Contents: JPSS-2 Ground System support, EUMETSAT Polar System – Second Generation (EPS-SG), convergence on Mission Unique Data Products.

Byte: A unit of computer information or data-storage capacity that consists of a group of eight bits, commonly used to represent an alphanumeric character.

Calibration (Cal): The process of quantitatively defining the system or any component response to known controlled signal inputs. Calibration is a comparison of a measurement standard, instrument, or item with a standard or instrument of higher or known accuracy to detect and quantify inaccuracies and to report or eliminate those inaccuracies by adjustments.

Calibration and Characterization Uncertainty: Figures of merit that apply to sensor parameters that are measured in the course of sensor test or characterization. These uncertainties quantify how close the measured value of a sensor parameter is believed to be to the true value, based on estimation techniques. Calibration and Characterization uncertainty as defined herein

provide appropriate figures of merit for sensor parameters that are not defined in terms of true value, but in terms of evaluation techniques and analyses commonly used in the sensor community, and in the case of calibration uncertainty, are standardized by National Institute of Standards and Technology (NIST) guidelines.

Calibration Maneuver: A temporary spacecraft attitude adjustment made to view a sensor calibration target (i.e., deep space, moon). For the JPSS missions, calibration maneuvers are conducted upon ground command, without imposing unrecoverable impacts on the spacecraft or sensors, maintaining command and telemetry links throughout each maneuver, and returning to nominal satellite Earth-pointing orientation upon completion. Also referred to as a Calibration Attitude Maneuver.

Calibration Table: Used to update the satellites onboard payload (instrument/sensors) configuration parameters to improve performance and products. This occurs once the calibration tables are provided by the instrument Subject Matter Experts (SMEs) and uploaded to the satellite by the Common Ground System (CGS).

Calibration Validation Subsystem Calibration Table (CVS Cal Tbl): Collectively describes the three types of Calibration Validation Subsystem (CVS) table data that exist for each sensor and is managed within Interface Data Processing Segment (IDPS): Processing Coefficient Tables, Look Up Tables, and Data Quality Threshold Tables.

Calibration and Validation (Cal/Val): Refer to individual Calibration and Validation definitions. Also written as Calibration/Validation.

Calibration/Validation Node (CVN): The JPSS Ground System (GS) Calibration/Validation Node (CVN) is the Ground system node to support the Calibration/Validation of Data Products. The CVN relies on the GRAVITE system for the JPSS GS-embedded computing resources, and also on external Local Computing Facilities (LCF) to support the science maintenance role.

Calibration/Validation of Data Products: The concept of operations for, and the conduct of, the Calibration/Validation (Cal/Val) of JPSS data products. Concepts of performing initial and ongoing Cal/Val of data products by establishing and maintaining stable and consistent environmental data products that meet the product quality specifications. The main activities involve continuous monitoring of product quality and early problem detection, periodic in-depth analysis of certain parameters and products, defining solutions for quality deficiencies, and archiving of the Cal/Val data products. Such solutions may include updates to processing coefficients, updates to the processing lookup tables, algorithm calibrations, and algorithm modifications. The thread starts after instrument activation/initialization and lasts through the entire operational life span of the JPSS satellites.

Capability (Cap): Provides operational performance attributes, including supportability, for the acquisition community to design the proposed system. This includes Key Performance Parameters (KPP) and other Technical Performance Measurements (TPMs) that guide the development, demonstration, and testing of the current increment. This outlines the overall strategy for developing initial and full capability.

Capability Development Document (CDD): A high-level development document that describes operational performance attributes, including supportability, for the acquisition

community to design the proposed system. This includes Key Performance Parameters (KPPs) and other Technical Performance Measurements (TPMs) that guide the development, demonstration, and testing of the current increment. Outlines the overall strategy for developing initial, phases and full capability (usually above or below in the traditional document hierarchy compared to a high-level Concept of Operations or a lower-level Operations Concept in a specification tree).

Central: See Processing Center.

Central Processing Unit (CPU): The part of a computer (a microprocessor chip) that does most of the data processing; the CPU and the memory form the central part of a computer to which the peripherals are attached. Encompasses a computer's Random Access Memory (RAM), processing, and control circuitry, including the arithmetic-logic (ALU) unit. Both the ALU and the control units are wholly contained on the micro-processing chip, whereas the primary storage is on the motherboard or the expansion bus.

Central Processing Unit Utilization (CPU Util): The percentage of the maximum available CPU that is currently being used by a given piece of computer hardware.

Centre National d'Etudes Spatiales (CNES): The French government space agency (administratively, a "public administration with industrial and commercial purpose"). Its headquarters are located in central Paris under the supervision of the French Ministries of Defence and Research. It operates out of the Toulouse Space Center and Guiana Space Centre, but also has payloads launched from space centers operated by other countries.

Channel Access Data Unit (CADU): A protocol data unit within the Virtual Channel Access sub layer of the Space Link Subnet. A CADU consists of a Virtual Channel Data Unit (VCDU) or a Coded VCDU (CVCDU) that has been prefixed and delimited by a Synchronization Marker.

Charge Transfer Efficiency (CTE): The fraction of the charge that is actually moved by each transfer cycle in a Charge-coupled Device (CCD) operated to transfer a packet of electrical charge from one location to an adjacent or overlapping location. In a CCD using 2 or 3 phase clocks, 2 or 3 transfer cycles respectively are required to move the charge packet a distance equal to the size of the area in which the packet is nominally constrained. Thus the number of transfer cycles that take place in operating a CCD is generally 2 or 3 times the number of pixel positions in the charge transfer path. In this case, charge transfer efficiency refers to the efficiency of each single transfer and not to the resulting efficiency of moving the charge an entire pixel.

Checksum: Additional data added to a transmitted buffer or other data word containing information to verify that the data was received completely and correctly.

Clear: (1) In meteorological terms, clear is the condition when less than three-eighths of the sky is covered by clouds. (2) JPSS data products are required to be delivered under all weather conditions. However, EDR accuracy, precision and uncertainty (APU) threshold requirements must be met only under clear conditions unless otherwise specified. EDR threshold requirement attributes are broken into three cases: a) cloudy [a pixel with a Cloud Optical Depth (COD) > 0.3; b) clear [a pixel with a COD $\leq$ 0.3 or no clouds present], and c) All Weather (all cloud conditions and rainfall rates less than 2 mm hr-1 km-2 unless otherwise specified in individual EDRs. These cases indicate NOAA recognition that different technologies may be required to

provide accurate measurements under these three different atmospheric conditions. Threshold value differences among cloudy, clear, and all weather cases demonstrate how the most stringent of the three is required when obtainable, and will add important information in the ultimate operational application of the data.

Clear Mode: A spacecraft receiver mode on JPSS-1 and S-NPP that accepts unencrypted commands. This mode is not used on JPSS-2/3/4.

Closed Risk: A risk item either fully mitigated or otherwise retired.

Closest Point to Shore: Distance from a coastline with smooth topography along a perpendicularly intersecting ground track.

Cloud: An aggregate of minute non-precipitating water and/or ice particles in the atmosphere above the earth's surface. For JPSS data products "Cloud" is always interpreted to mean "Detectable Cloud" as defined in this glossary.

Cloud Base Height (CBH): The lowest altitude of the visible portion of a detectable cloud, given in height above mean sea level. For multi-layered clouds, the reported Cloud Base Height is applicable to the highest cloud layer in the observation.

Cloud Cover: (1) The fraction of a given area overlaid in the local normal direction by clouds. It is the portion of the earth's horizontal surface masked by the vertical projection of clouds. (2) For the Visible Infrared Imaging Radiometer Suite (VIIRS), Cloud Cover is defined as the fraction of a given area (i.e., of a horizontal cell) on the Earth's surface for which a locally normal line segment, extending between two given altitudes, intersects a detectable cloud as defined herein. For manual analyses, cloud cover is estimated for a single atmospheric layer. Specifically, the minimum and maximum altitudes of this layer are defined to be the surface of the Earth and the altitude where the pressure is 0.1 millibars (mb). Haze, smoke, dust, and rain are not to be considered clouds.

Cloud Particle Size Distribution (CPSD): A representation of the cloud particle size distribution. The effective particle size or effective particle radius is defined as the ratio of the third moment of the drop size distribution to the second moment, averaged over a layer of air within a cloud. Cloud optical depth and other cloud radiative properties vary substantially with CPSD.

Cloud False Alarm Rate: In the Visible Infrared Imaging Radiometer Suite (VIIRS) Cloud Mask (VCM), a "false alarm" is applied to pixels classified as Confidently Cloudy when the pixels are actually cloud-free. Consequently, for the VCM the probability of correct typing (PCT), leakage, and false alarm rates will sum to 100% only when there are no pixels classified as Probably Cloudy or Probably Clear.

Cloud Ice Water Path: The equivalent amount of water in the form of cloud ice particles in a specified segment of a vertical column of the atmosphere. For an Environmental Data Record (EDR), vertical cell size is the vertical height of the total atmospheric column specified and the horizontal reporting interval specifies the locations of the column segment bottoms for which cloud ice water path must be reported.

Cloud Leakage Rate: Cloud "leakage" occurs in the Visible Infrared Imaging Radiometer Suite (VIIRS) Cloud Mask (VCM) when a pixel classified with a cloud confidence level of Confidently Clear actually contains cloud. Consequently, for the VCM the probability of correct typing (PCT), leakage, and false alarm rates will sum to 100% only when there are no pixels classified as Probably Cloudy or Probably Clear.

Cloud Liquid Water (CLW): The equivalent amount of water within cloud particles in a specified segment of a vertical column of the atmosphere. For an Environmental Data Record (EDR), vertical cell size is the vertical height of the total atmospheric column specified and the horizontal reporting interval specifies the locations of the column bottoms for which Cloud Liquid Water (CLW) must be reported.

Cloud Mask: A data product depicting an area of the Earth's horizontal surface that is masked by applying the vertical projection of detectable clouds.

Cloud Optical Depth (COD): The optical depth of the atmosphere due to cloud droplets, per unit cross section, integrated over every distinguishable cloud layer and all distinguishable cloud layers in aggregate, in a vertical column above a horizontal cell on the Earth's surface. The term "Cloud Optical Thickness" is often used synonymously.

Cloud Optical Thickness (COT): See Cloud Optical Depth.

Cloud Top Height (CTH): The highest altitude of the visible portion of a detectable cloud, given in height above mean sea level.

Cloud Phase: The detectable physical composition of a cloud. The JPSS data product of this name describes the cloud-top composition in terms of four phase categories - liquid water cloud top with temperatures warmer than 273 K, liquid cloud top with temperatures colder than 273 K (i.e., supercooled), mixed-phase (liquid water and ice) clouds, and glaciated (ice) clouds.

Cloud Top Pressure (CTP): The atmospheric pressure at the top of a detectable cloud or cloud layer overlying an Earth location.

Cloud Top Temperature (CTT): The temperature at the top of a detectable cloud or cloud layer overlying an Earth location.

Cloud Type: The classification of a cloud based on the types specified in the Federal Meteorological Handbook 1b.

Clouds and the Earth's Radiant Energy System (CERES): A three-channel radiometer instrument that measures both solar-reflected and Earth-emitted radiation from the top of the atmosphere to the surface. It also determines cloud properties, including the amount, height, thickness, particle size, and phase of clouds using simultaneous measurements by other instruments. These measurements are critical for understanding cloud-radiation climate change and improving the prediction of global warming using climate models. CERES instruments also fly on the Tropical Rainfall Measuring Mission (TRMM), Terra, and Aqua satellites. CERES is included in the S-NPP and JPSS-1 Mission Instrument Suites.

Clouds and the Earth's Radiant Energy System Instrument Support Node (CERES ISN): The CERES Instrument Support Node is a support system for the JPSS Ground System (GS) used by the Instrument Science Team to ensure the proper operation and calibration of the Clouds and the Earth's Radiant Energy System (CERES) instrument. This group is run out of the NASA Langley Research Center (LaRC).

Cloudy: (1) Sky coverage by a detectable cloud or clouds. (2) In meteorological terms, the condition when seven-eighths or more of the sky is covered by clouds. (3) In the context of the atmospheric sounding methodology used by the NOAA-Unique CrIS/ATMS Processing System (NUCAPS), cloudy refers to conditions where only the microwave retrievals are used, typically representing scenes with greater than 50 percent cloudiness. See Clear for a description of sky cover cases applicable to JPSS EDRs.

Co-Registration of Spectral Bands: Measured by the displacement of corresponding pixels in two different bands from their ideal relative location. Two pixels are "corresponding" if their footprints should ideally coincide or if the footprint of one should ideally lie within a specific region of the footprint of the other. If co-registration is specified by a single value, this value is the upper bound on the magnitude of the displacement of the locations of corresponding pixels in any direction. Also commonly referred to as Band-to-Band Registration.

Coastal Coverage: The areal extent consistent with the US Exclusive Economic Zones (EEZs), which extend 370 km [200 Nautical Miles (NMI)] from shore. Coastal coverage shall entail roughly 556 km (300 NMI) swath coverage, but pertains to all coasts worldwide to support civil and military observations.

Cold Start: A reboot of hardware or software to start normal operations from scratch.

Cold Turn-On Test: A test designed to check for potential failures when a unit is turned on at the coldest expected "off" temperature. A typical sequence of test procedures is as follows: the component is cooled to the cold operating acceptance or prototype-qualification temperature as appropriate, turned off, and stabilized for some time (e.g. 30 minutes in JPSS). The unit is then turned on and stabilized at the minimum (acceptance or prototype-qualification) operating temperature, after which a comprehensive performance test is performed.

Collision Avoidance (CA): The process by which the risk associated with a conjunction event is mitigated - by a maneuver or other action preventing a spacecraft from colliding with any other vehicle or object.

Collision on Launch Assessment (COLA): Only applies to powered flight assessments.

Command (CMD): Information uplinked to the Satellite in binary that contains instructions for executing a specific action by the spacecraft or the instruments.

Command and Data Acquisition (CDA): See CDAS.

Command and Data Acquisition Station (CDAS): There are several CDA stations (Fairbanks, AK and Wallops, VA). The Office of Satellite and Product Operations (OSPO) direct and manage the operation of NOAA's satellites and the acquisition of remotely sensed data. The Office has operational responsibility for the Satellite Operations Control Center (SOCC) at

Suitland, MD and Command and Data Acquisition (CDA) facilities at Wallops, VA and Fairbanks, AK to command and control the satellites, to track the satellites, and to acquire their data. The Office supports the launch, activation, and evaluation of new satellites and the in-depth assessment of satellite and ground systems anomalies. It prepares plans and procedures for responding to satellite and ground anomalies, and establishes and coordinates the schedules for satellite operation and data acquisition to meet users' needs. The Office also evaluates the technical performance of the satellites and maintains current information and future prediction on satellite orbits and attitudes. It evaluates the effectiveness of the operational facilities and procedures in terms of the quality, quantity, coverage, and timeliness of the data acquired. The acronym CDA is often used as a reference for CDAS or those set of functions performed.

Command and Telemetry Database (CTDB): A database by which: (1)commands are converted from ground mnemonics and parameters (command example: "High Gain Antenna Transmitter ON") to binary [hexadecimal (hex) example: 3AD433] for uplink and ingest by the spacecraft; and (2) telemetry is converted from binary to hex coming from the spacecraft (e.g., 45D333) and then to human readable data on a display (e.g. VIIRS Computer Voltage: 5.0005 Volts).

Command Authentication: The verification of the authenticity of the data, which the data originated from the appropriate source, and has not been tampered with during transit.

Command Authorization Meeting (CAM): Authorizing special command to the satellites.

Command Block Memory (CBM): Allows spacecraft or instrument command sequences to be executed in time order relative to each previous command in the sequence.

Command Encryption Key (CEK): A parameter used in conjunction with a cryptographic algorithm that transforms plaintext satellite command and control data into cipher text data and back into plaintext data. The hardware Command Encryption Keys (CEK) for each spacecraft and simulator are maintained in the Mission Management Center (MMC) and other key locations under security control as described in the System Key Management Plan (SKMP).

Command Link Transmission Unit (CLTU): The data structure that carries the Telecommand (TC) data as a continuous series of encoded TC code blocks across the Channel Service. It consists of the Command Link Transmission Unit (CLTU) Start Sequence, Encoded TC Data and CLTU Tail Sequence. CLTU is defined in the Consultative Committee for Space Data Systems (CCSDS) standard 231.0-B-2.

Command Load File (CLF): File used to generate a sequence of time-phased commands to control spacecraft (S/C) and/or instruments.

Command Storage Memory (CSM): Allows any spacecraft or instrument command to be executed at an absolute time.

Command Table (Cmd Tbl): Command Storage Memory Table (CSM Tbl) and Command Block Memory Table (CBM Tbl).

Command, Control and Communications Segment (C3S): The Suomi National Polar-orbiting Partnership (S-NPP)/JPSS segment responsible for Command, Control, and

Communications for the JPSS and S-NPP satellites, as well as communications and data distribution between the ground segments of the JPSS system, system interfaces and enterprise management to maintain the JPSS system and achieve mission objectives.

Commerce Interim Technical Requirement (CITR): A fundamental component of the Department of Commerce (DoC) Info Tech (IT) Security Program Policy (ITSPP) [DoC ITSPP]. CITRs are released as new threats arise or federal mandates are introduced that require the implementation of additional IT security measures. CITRs are real-time updates that append or supersede the current version of the DoC ITSPP. Like the ITSPP, CITRs shall be reviewed by the DoC Offices and Chief Information Officer (CIO) Counsel, as necessary, and approved by the DoC CIO. CITRs carry authority equal to the DoC ITSPP. The DoC IT Security Program Minimum Implementation Standards are documented in the latest DoC ITSPP and the Commerce Interim Technical Requirements (CITRs). The DoC ITSPP is available to DoC staff and contractors through the DoC Intranet. More information concerning the DoC ITSPP can be found on the Office of the Chief Information Officer (OCIO) Intranet page under the Office of IT Security, Infrastructure and Technology (OITSIT) section.

Commercial Off-the-Shelf (COTS): A Federal Acquisition Regulation (FAR) term defining a non-developmental item (NDI) of supply that is both commercial and sold in substantial quantities in the commercial marketplace, and that can be procured or utilized under government contract in the same precise form as available to the general public. For example, technology related items, such as computer software, hardware systems or free software with commercial support, and construction materials qualify, but bulk cargo, such as agricultural or petroleum products, do not. COTS purchases are alternatives to in-house developments or one-off government-funded developments. COTS typically requires configuration that is tailored for specific uses. The use of COTS has been mandated across many government and business programs; as such products may offer significant savings in procurement, development, and maintenance.

Commissioning: For a JPSS mission, the acknowledgement of a predetermined level of post-launch mission success that is sufficient for, and associated with, the formal transfer of responsibility for that mission from NASA (the acquisition agency) to NOAA, nominally 90 days after launch.

Committee on Earth Observation Satellites (CEOS): Established in 1984, the Committee on Earth Observation Satellites (CEOS) coordinates civil space-borne observations of the Earth. Participating agencies strive to enhance international coordination and data exchange and to optimize societal benefit. Currently, 52 members and associate members made up of space agencies, national, and international organizations participate in CEOS planning and activities.

Common Data Format Control Book (CDFCB): The Data Format Control Book (DFCB) for External Interfaces.

Common Data Format Database (CDFDB): A database developed initially using XML that drives standards, compliance and commonality across the JPSS architecture, infrastructure and interfaces (space, ground & interfaces). The CDFDB functionally replaces the Suomi National Polar-orbiting Partnership (S-NPP)/JPSS Common Data Format Control Books and S-NPP

Mission Data Format Control Books. Selected other Data Format Control Books may be incorporated as applicable or as needed."

Common Format Control Repository (CFCR): Provides configuration management of Command and Telemetry (C&T) database, memory architecture database and data product generation database.

Common Ground System (CGS): The Ground Segment Project portion and ground segment part of the Joint Polar Satellite System (JPSS). It performs the functions of four of the major JPSS Ground System (GS) nodes: Space/Ground Communications Node, Ground Network Node, Management & Operations Node, and Data Processing Node (DPN). This functionality encompasses the control of JPSS-managed satellites, collection of data from satellites, transport of data to the data processing facilities, data processing, and distribution of data products to the science users. These nodes were formerly described as the Ground Station (GStn), Ground Network (GNet), Mission Management Center (MMC), and Interface Data Processing Segment (IDPS); but have been renamed for better clarity and to be more consistent across the integrated technical baseline: concepts of operations, architecture, requirements and interfaces. The JPSS GS encompasses more functionality because it also includes other functionality and nodes external to the Common Ground System (CGS). The JPSS GS includes: CGS, Flight Vehicle Test Suite (FVTS), Field Terminal Support Node (FTSN), Government Resources for Algorithm Verification Independent Testing and Evaluation (GRAVITE), Calibration/Validation (Cal/Val) Node segments, systems, subsystems, components and interfaces to support the latest generation of U.S. polar-orbiting environmental satellites; and other agreed upon weather satellite platforms and interfaces.

Common Ground System Ground Station (CGS GStn/CGS Grnd Stn/CGS GrndStn): Includes all the JPSS receive-only antennas and associated equipment that are capable of receiving downlinked Stored Mission Data (SMD) and Playback Telemetry (PB-TLM). The Ground Stations (GStn) also include uplink and downlink capabilities for Real-Time Telemetry (RT-TLM) and commanding. This also includes the KSAT Svalsat location in Svalbard, Norway; the NOAA Fairbanks Command and Data Acquisition Station (CDAS) in Fairbanks, Alaska; the McMurdo Communications System, in McMurdo, Antarctica; White Sands Complex (WSC) in Las Cruces, NM; and Trollsat also in Antarctica. The Svalsat location includes capabilities for broadcast link monitoring from on-orbit satellites.

Common Ground System Mission Management Center (CGS MMC): The ground system control center for the JPSS Ground System (GS). Currently located at the NOAA Satellite Operations Facility (NSOF) in Suitland, MD.

Common Ground System White Sands Complex (CGS WSC): The collection of Common Ground System (CGS) equipment needed to interface the NASA Space Network (SN) WSC to the JPSS Ground System (GS). The SN WSC will be used for spacecraft communications during Suomi National Polar-orbiting Partnership (S-NPP)/JPSS-n/DoD Weather Satellite Follow-On (WSF)-n satellite launches and anomalies. Through SN's White Sand Complex (WSC) and TDRSS satellites, JPSS mission control will transmit commands to and receive Real-Time Telemetry (RT-TLM) from its satellites via S-band. The CGS WSC also has the capability of receiving SMD if needed.

Common Support Equipment (CSE): Support equipment capable of common use by various systems throughout DoD, NOAA, and NASA, as applicable.

Communication Security (COMSEC): Measures and controls taken to deny unauthorized persons information derived from telecommunications and ensure the authenticity of such telecommunications. NOTE: COMSEC includes crypto-security, transmission security, emission security, and physical security of COMSEC material.

Community Satellite Processing Package (CSPP): A demonstration software capability sponsored by the JPSS Program and developed and distributed by the Cooperative Institute for Meteorological Satellite Studies (CIMSS), Space Science and Engineering Center (SSEC), University of Wisconsin. CSPP supports the direct broadcast meteorological and environmental satellite community through the packaging and distribution of open source science software. CSPP supports direct broadcast users of both polar-orbiting and geostationary satellite data and regional real-time applications through distribution of free open source software, and through training in local product applications.

Compensating Features: Special inspections, tests, controls, instructions, drawing notes or other provisions applied to a single point failure mode item to improve reliability and lessen chances of failure.

Compensating Provisions: These provisions are the probability of an event, given that another event is known to have occurred.

Comprehensive Large Array-data Stewardship System (CLASS): An information technology system that supports the NOAA Data Center's mission to archive data and other artifacts from its polar and geostationary satellites and from in situ sources.

Compression Ratio: The ratio of uncompressed Bytes to compressed Bytes for stored data, which has been processed using a compression algorithm. The compression ratio may be expressed as "CR n:1", where n is the number of uncompressed Bytes divided by the number of compressed Bytes.

Computer Security (COMPUSEC): The measures and controls that ensure confidentiality, integrity, and availability of the information processed and stored by a computer.

Computer Software Configuration Item (CSCI): A group of software treated as a single entity by a configuration management system. Also annotated as SWCI (Software Configuration Item).

Concept of Operations (ConOps/CONOPS): Abbreviated CONOPS or ConOps at various levels, a document describing the characteristics of a proposed system from the viewpoint of someone who will use the system. It is used to communicate the quantitative and qualitative system characteristics to all stakeholders. They are widely used in the military or in government services, as well as other fields. It evolves from a concept and is a description of how a set of capabilities may be employed to achieve desired objectives or a particular end state for a specific scenario.

Concept of Operations, Architecture, Preliminary Requirements and Interface Working Group (CAPRI WG): Systems Engineering Integration & Test (SEI&T) working group initially established to develop the JPSS Block 2.0 Integrated Technical Baseline (ITB) to be developed, tested, and transitioned to operations in support of Suomi National Polar-orbiting Partnership (S-NPP), JPSS and other services (Command & Control, Data Acquisition, Processing, Routing, etc.) provided by the JPSS Ground System (GS)/Common Ground System (CGS).

Concept of Operations, Architecture, Preliminary Requirements and Interfaces (CAPRI): The integrated JPSS Ground Segment Project technical baseline development team. Also referred to as the Synchronization-Grinder (Synchro-Grinder).

Condition: Any system state or occurrence that can be detected automatically by hardware or software, or manually by an operator.

Conditional Probability: This is the probability of an event, given that another event is known to have occurred.

Configurable Software Parameter: Those configurable parameters found within software which, based on the software design, may change values without a recompilation of software code.

Configuration (CONFIG/Config/Cfg): A particular type and setup for a specific spacecraft, satellite, ground system, aircraft, rocket, etc., which differs from others of the same model by virtue of the arrangement of its components; or by the addition or omission of auxiliary equipment; such as long-range, cargo, tactical fighter or strategic bomber configuration. The functional and physical characteristics of the segment and all its integral parts, assemblies and systems that are capable of fulfilling the fit, form, functional requirements defined by performance specifications. In the case of software this refers to a set of functional code, with all its modules, diagrams, and documentation, for performing operations as defined by a set of requirements. It includes all of the characteristics of the system that must be controlled: its content, the content of documents that describe it, the versions of the system, system modification documents, data needed for operation of the system, and any other essential elements of characteristics that comprise the system to include the security configuration.

Configuration (Eclipse™): For Eclipse™, a set of Real-Time Telemetry (RT-TLM) and Control Computer Software Components (CSC) on a layered architecture, which work together to support a single entity, such as a satellite, ground system, or contact.

Configuration Audit: The process of verifying that required Configuration Items (CIs) were produced, current versions of the CIs agree with specified requirements, technical documentation completely and accurately describes the CIs, and all approved change requests were implemented or otherwise resolved. It also includes procedural audits to ensure proper and accepted configuration management procedures are followed.

Configuration Baseline: Configuration of a product or service, formally established at a specific point in time, which serves as a reference for further activities.

Configuration Control: The systematic evaluation, coordination, approval or disapproval, and implementation of all proposed changes to a system configuration after formal establishment of its baseline(s).

Configuration Control Board (CCB): A management review board made up of stakeholder members who are responsible for reviewing, controlling and approving system configuration changes on behalf of the established community of users.

Configuration Change Request (CCR): A formally documented request to issue, revise, or delete a controlled item.

Configuration Data (Config Data/Cfg Data): This includes Static Ancillary Data for Interface Data Processing Segment (IDPS).

Configuration Item (CI): Refers to the fundamental structural unit of a configuration management system. Examples of CIs include individual requirements documents, software, models, and plans. The Configuration management system oversees the life of the CIs through a combination of process and tools by implementing and enabling the fundamental elements of identification, change management, status accounting, and audits. The objective of this system is to avoid the introduction of errors related to lack of testing as well as incompatibilities with other CIs. The term configuration item can be applied to anything designated for the application of the elements of configuration management and treated as a single entity in the configuration management system. The entity must be uniquely identified so that it can be distinguished from all other configuration items. From the perspective of the implementer of a change, the CI is the "what" of the change. Altering a specific baseline version of a configuration item creates a new version of the same configuration item, itself a baseline. A complex hardware configuration item may have many levels of configuration items beneath its top level; each configuration item level must meet the same fundamental elements of the configuration management system. In addition to its purpose in the implementation and management of a change, each configuration item's listing and definition should act as a common vocabulary across all groups connected to the product. It should be defined at a level such that an individual involved with product marketing and an individual at the coalface of implementation can agree to a common definition when they use the name of the configuration item. Selection and identification of configuration items for a particular project can be seen as the first step in developing an overall architecture of the product from the top down. Configuration items, their versions, and their changes form the basis of any configuration audit: Physical/Functional Configuration Audit (PCA/FCA).

Configuration Management (CM): Management discipline applied over the product's life cycle to provide visibility into and to control changes to performance and functional and physical characteristics.

Configuration Management System (CMS): A set of tools and databases that are used to manage an IT Service Provider's Configuration data. The CMS also includes information about Incidents, Problems, Known Errors, Changes and Releases; and may contain data about employees, Suppliers, locations, Business Units, Customers and Users. The CMS includes tools for collecting, storing, managing, updating, and presenting data about all Configuration Items and their Relationships. The CMS is maintained by Configuration Management and is used by all IT Service Management Processes.

Configuration Status: Status relating to current hardware or software settings or states. In the Enterprise Management (EM) subsystem of Common Ground System (CGS), configuration status is high-level software status that each subsystem creates relating to internal processes, which is collected by Enterprise Management.

Configuration Status Accounting: The recording and reporting of current configuration information, including Controlled Document Lists, status of proposed changes, and implementation status of approved changes.

Confirmed Schedule: Any type of schedule that has been suggested and/or recommended, and fully vetted, coordinated, validated and/or approved at one or more levels for integration and/or deconfliction against shared and/or competing resources with any and/or all higher level and/or an integrated master schedule(s) either by mission, across an entire project/program, and/or even an entire scheduling enterprise [i.e., similar to the Air Force Satellite Control Network, Space Network, Tracking and Data Relay Satellite System (TDRSS)]. This schedule is validated and approved for execution at one and/or more levels. Proposal and coordination of schedules occurs at lower operational and system levels until it is adequately integrated and/or deconfliction against shared and/or competing resources, and ready for operational management and authoritative responsible validation and approval officials. Validation occurs at the operational management level. Approval occurs at the authoritative and responsible level.

Conflicting Ground Station Contact: This occurs when two or more satellites are simultaneously within the field of view of one ground station or field terminal.

Conjunction: A local minimum in the difference between position components of two trajectories.

Conjunction Assessment (CA): The process of predicting the conjunction event, also called "screening".

Conjunction Assessment Risk Analysis (CARA): A support system for the JPSS Ground Segment that monitors the process of analyzing the conjunction events to determine the associated threat to the assets. Collision avoidance operations will use GSFC Space Systems Protection Mission Support Office (NASA) Conjunction Assessment Risk Analysis (CARA). Operational collision risk assessment will be performed for the JPSS satellite by CARA during the day-to-day operations of the JPSS satellite. The Joint Space Operations Center (JSpOC) will generate the daily close approach predictions. The CARA teams will process the Conjunction Assessment (CA) data and perform probabilistic risk assessment analysis based on the data provided. CARA will qualify the collision risk and work with the JSpOC to ensure that the tracking data collection levels are sufficient. During high-risk events, the Mission Operations Team (MOT) will work with CARA to develop a Risk Mitigation Maneuver (RMM) plan. Once the maneuver plan is complete, the CARA Teams will evaluate this maneuver plan to ensure no other post-maneuver conjunction events pose a collision threat. The NASA GSFC CARA group provides conjunction assessment for NASA/GSFC missions.

Console Mode (Eclipse™): For Eclipse™, a mode of operation for the software that allows command line statements to be entered one at a time by the operator.

Consolidated Backup (CBU): This facility currently houses the Primary Mission Essential Function (PMEF) backups and is located in the NOAA-leased space within the Vertex Center in Fairmount, WV. It will be able to perform all of the critical functions required in support of JPSS as part of NOAA Satellite Operations Facility (NSOF) and Wallops Command Data Acquisition Station (WCDAS) through the production distribution of life and property products. The Consolidated Backup (CBU) will provide product generation for all Key Performance Parameters (KPPs). The CBU will also serve as a backup during system/equipment testing or maintenance. This is a secondary (or tertiary) backup facility [previously referred to as Wallops Backup (WBU) facility] that is not exclusively used for JPSS, but also includes backup systems for other NOAA supported programs (i.e., GOES-R).

Consolidated Backup Beneficial Occupancy Date (CBU BOD): The date on which beneficial occupancy is granted for use of the Consolidated Backup (CBU) facility following construction. See Beneficial Occupancy Date (BOD).

Consolidated Data Delivery Report (CDDR): Summary report sent to one or more independent locations, other than where the related products are sent, for situational awareness and management purposes.

Constellation: Homogeneous or similar satellites flown in a synchronized manner in a very similar orbit and managed pursuant to a multi-mission architecture and Concept of Operations. A fleet of satellites varies slightly from a constellation primarily because in a fleet of satellites, heterogeneous or dissimilar satellites may be grouped together for various command, control, communications or data processing reasons. This is the case for JPSS since there are multiple distinct ground system service levels supporting various homogeneous and heterogeneous satellites.

Constraint: (1) A technique for setting limitations on a system. ConOps threads (for a given level) tell what the system (or segment) does or cannot do, and how it interacts, or doesn't, with external entities. If limitations are imposed because of missing interface capabilities this is often a constraint. If it relies on an external entity to perform certain functions, or have certain capabilities, those are classified as Assumptions. Constraints (or Assumptions) also help clarify what the system does not do (does) for the user. It may be that the system has the capability to perform a function but that function is not part of the current, contractually obligated baseline capability. (2) a generic term pertaining to the impacts to the spacecraft upon violation of a given constraint, with ‘constraint’ as the most critical and ‘alert’ as the least. The JPSS Spacecraft has different operating modes that define the configurations for different mission phases and mission operations. The configurations contain operational constraints, restrictions, limitations and alerts on the use of the JPSS spacecraft. These limitations are imposed by the hardware and software of the JPSS spacecraft or by program mission requirements and objectives. Violation of these constraints has a range of effects and the criticality ratings are as follows:

C - Constraint - permanent damage or loss of a subsystem

R - Restriction - reduced system or subsystem capability

L - Limitation - loss of mission data

A - Alert - procedural note (no significant consequence if violated)

Consultative Committee for Space Data Systems (CCSDS): Formed in 1982 by the major space agencies of the world, the CCSDS provides a forum for discussion of common problems in the development and operation of space data systems and the development of data and information systems standards to promote interoperability and cross support among cooperating space agencies, to enable multi-agency spaceflight collaboration (both planned and contingency) and new capabilities for future missions. The committee is currently composed of eleven member agencies, twenty-eight observer agencies and over 140 industrial associates. CCSDS recommended standards define specific interfaces, technical capabilities or protocols, or provide prescriptive and/or normative definitions of interfaces, protocols, or other controlling standards such as encoding approaches.

Consultative Committee for Space Data Systems Packet (CCSDS Packet): See Application Packet.

Contact Identity: Unique numerical identifier for a given Stored Mission Data (SMD) transmission from the satellite to Svalbard or a Ground Station (GStn) Receptor for use in Ground Segment communications and processing.

Contact Plan: A set of expected start and stop times of satellite passes over the receptor sites and/or ground stations. It is used to ensure successful contact.

Contact Schedule Execution Status: A high-level status point reported by Common Ground System (CGS) Ground Operations that indicates whether the ground configurations for given satellite passes were performed successfully.

Contamination: The presence of materials of molecular or particulate nature, which impair or degrade the performance of hardware.

Continental United States (CONUS): United States territory, including the adjacent territorial waters, located within North America between Canada and Mexico.

Contingency: An emergency situation or a planned emergency response.

Contingency Dynamic Ancillary Data (CDAD/CoDAD): Ancillary data that is dynamically acquired during an emergency situation or a planned emergency response.

Continuity of Operations (COOP): Capabilities put in place to ensure continuity of operations and no interruption of minimum essential services. The name given to the JPSS Continuity of Operations (COOP) Concept of Operations (ConOps). Ground System operations to support an Alternate Common Ground System (ACGS) so that the critical mission control and data processing functions can continue in an emergency in which the Common Ground System (CGS) at NOAA Satellite Operations Facility (NSOF) becomes inoperable or incommunicable. The thread consists of three parts: the synchronization between the CGS and ACGS during nominal operations; the transition of operations from the CGS to ACGS in case of a contingency; and the transition of operations back to the CGS once the working conditions are restored at the NSOF. The thread also discusses using the Fairbanks Command & Data Acquisition Station (FCDAS) as a backup to support mission operations.

Contract Data Requirements List (CDRL): The basic contractual document that governs data required by and for a Delivery Order.

Control Request: A message from a client process requesting a configuration action in a server process or hardware process.

Controlled Documents List (CDL): An index of baseline documents that describe each system configuration.

COOP Data Processing Node (COOP DPN): The alternate site for data processing of the JPSS system (flight and ground) located at the Consolidated Backup (CBU) in Fairmont, WV designed to meet Continuity of Operations (COOP) requirements. This is one part of the total alternate Common Ground System (CGS) capability.

COOP Management and Operations Node (COOP MON): The alternate site for operations and management of the JPSS system (flight and ground) located in Fairmont WV designed to meet Continuity of Operations (COOP) requirements. This is one part of the total alternate Common Ground System (CGS) capability.

Coordinated Universal Time (UTC): A time scale that couples Greenwich Mean Time (GMT), which is based solely on the Earth's inconsistent rotation rate, with highly accurate atomic time. UTC is defined by International Telecommunications Union Recommendation (ITU-R TF.460-6) and is based on International Atomic Time (TAI) with leap seconds added at irregular intervals to compensate for the slowing of Earth's rotation. UTC was devised on January 1, 1972 and is coordinated in Paris by the International Bureau of Weights and Measures. The abbreviation UTC arose from a desire by the International Telecommunication Union and the International Astronomical Union to use the same abbreviation in all languages.

Coordination Message: A generic term for ground messages used to coordinate the integrated system to perform required operations or maintenance.

Coriolis: The Coriolis mission was launched on a Titan II vehicle from Vandenberg Air Force Base on 6 January 2003. The planned three-year mission was jointly sponsored by the DoD Space Test Program and the U.S. Navy Space and Naval Warfare Systems Command. The spacecraft, built by Spectrum-Astro, is three-axis stabilized, nadir-pointing, and in an 830 km sun synchronous polar orbit with an inclination of 98.7 degrees. The Windsat instrument is the primary payload on the Coriolis mission. Windsat was designed to demonstrate the capability of fully polarimetric microwave radiometry to measure the ocean surface wind vector from space. A secondary payload, the Solar Mass Ejection Imager, tracks coronal mass ejections from the Sun as they propagate through the interplanetary medium, providing advance warning of geomagnetic disturbances.

Coriolis Operations (Coriolis Ops): Provides mission operations functions for the Coriolis mission. Previously, the Air Force Research Laboratory's (AFRL) Research, Development, Test & Evaluation (RDT&E) Support Center (RSC) managed the T&C for Coriolis. The Coriolis Ops center is now located at the Naval Research Laboratory (NRL) Blossom Point facility.

Correction: The process of creating a product of a desired processing level by compensating for calibration coefficients, radiometric and geometric characteristics.

Corrective Action: An identification of actions, automatic or manual, which can be taken to circumvent a failure. Also, a documented design, process, procedure, or materials change implemented and validated to correct the cause of failure or design deficiency.

Correlated or Sympathetic Failure: The inability of two or more items to perform their function as the result of some single event, thus possibly negating redundancy and acting as a single point failure mode.

Correlative Data (Corr Data): Any data used in the calibration and validation of data products that may show a mutual relationship to the data under investigation. Correlative data may show consistency observed either as a direct comparison or as an inferred relationship. Correlative data for spaceborne remote sensing instrument data includes data from many sources such as other spaceborne instruments, buoys, ground-based instruments, airborne instruments, model data, etc.

Correlative Truth Data: See Correlative Data

Corrupted Data: Data that has been degraded during generation or transmission. Reed-Solomon decoding in the C3S detects corrupted data during transmission from the satellite to the ground. Data corrupted by the sensor is detected in the Interface Data Processing Segment (IDPS) Processing and/or Calibration/Validation Node when it fails to fall within an expected range of values.

Critical: Description of a condition that may impact the ability of the JPSS Program to fulfill its minimum mission system success criteria, risk the health and safety of the flight system, cause severe injury or occupational illness, or major property damage to facilities, systems, or flight hardware.

Critical Alarm: A notice related to an event, state or occurrence requiring immediate action, be it autonomous or manual. The notice is often triggered by an out-of-limit or other anomalous condition of the JPSS system.

Critical Command: A command issued by the ground to the satellite producing changes in operational parameters that have the potential to adversely affect the health and safety of the satellite or result in irreversible changes to the operational state of the satellite.

Critical Discrepancy Report: Priority 1 Discrepancy Reports (DRs): launch and/or operationally critical; jeopardizes the health and safety of the satellite, ground system segment/element, personnel, or risks the complete loss of science data. No workaround exists. Examples: Spacecraft: Telemetry indicates dangerous condition mandating safe-mode (automatically or commanded from ground). Ground: Loss of capability to command spacecraft or loss of ability to generate loads or loss of ability to receive and process mission data at all sites for an extended period (> 24 hours).

Critical Dynamic Ancillary Data (CrDAD): Dynamic ancillary data needed by the Suomi National Polar-orbiting Partnership (S-NPP)/JPSS system to meet specified System Specification (SY15-0007) Appendix G Low Data Rate Performance attributes.

Critical Failure: Any fault, failure or malfunction that results in the loss of the System's ability to meet the requirements of any key attribute of a key EDR or other key performance parameter (e.g., data access, latency, quality).

Critical Problem Change Request: Priority 1 Problem Change Requests (PCRs): all test or operations at complete halt. Example: a defect that completely disables the ability to send commands to the spacecraft.

Critical Telemetry: Telemetry points that are required to monitor an instrument in a powered-off state. Critical telemetry is limited to an instrument. There is critical telemetry for the spacecraft as needed to monitor health and safety during a fault condition or safe mode.

Critical Unit: Any unit whose failure can affect the system operation sufficiently to cause the loss of the stated vehicle objectives, a partial loss of the mission, or is a unit whose proper performance is essential from a range safety standpoint.

Critical Work Request: Priority 1 Work Requests (WRs): mission critical, jeopardizes the health and safety of the spacecraft, personnel, or risks the complete loss of science data. Examples: Spacecraft: Telemetry indicates dangerous condition mandating safe-mode (automatically or commanded from ground). Ground: Loss of capability to command spacecraft or loss of ability to generate loads or loss of ability to receive and process mission data at all sites for an extended period (> 24 hours).

Criticality: A relative measure that combines both the consequences (i.e., severity) of a particular failure mode and its frequency of occurrence.

Criticality Analysis: A procedure by which each potential failure mode is ranked according to the combined influence of severity and probability of occurrence.

Criticality Matrix: A graphical representation of the failure mode and effects, usually graphed as probability of occurrence vs. severity level.

Cross-track Infrared and Microwave Sounding Suite (CrIMSS): The legacy NPOESS processing approach for producing vertical profiles of temperature, moisture, and pressure. For the JPSS, the NOAA-Unique CrIS-ATMS Processing System hosted by the NOAA Data Exploitation system has replaced CrIMSS. The CrIMSS processing leveraged the CrIS and ATMS sensors as a suite operating in combination with a constrained non-linear least squares inversion algorithm methodology to produce the desired vertical profile products.

Cross-track Infrared Sounder (CrIS): A Fourier transform spectrometer with 1305 spectral channels will produce high-resolution, three-dimensional temperature, pressure, and moisture profiles. These profiles will be used to enhance weather forecasting models, and they will facilitate both short- and long-term weather forecasting. Over longer timescales, they will help improve understanding of climate phenomena such as El Niño and La Niña.

Cross-track Infrared Sounder Instrument Support Node (CrIS ISN): This is a support system for the JPSS Ground System (GS) used by the Instrument Science Team (IST) to ensure the proper operation and calibration of the CrIS instrument. This also includes the CrIS

Instrument Vendors, the JPSS Flight Project (FP) Instrument Manager and Instrument Science Lead.

Culling: Reducing the data set by any of several conditions such as every n'th sample or meeting a Boolean condition.

Current Best Estimate (CBE): A resource estimate that evolves as the design matures.

Custom Report: Reports generated by the Common Ground System (CGS) subsystem (i.e., C3S STA), requested on an ad hoc basis by the operator. They are not part of the pre-defined set of report templates.

Customer: The JPSS Program sponsoring and stakeholder Government agencies whose operational requirements are drivers of the system architecture and design.

Daemon: A software process that runs in the background and performs a specified operation at predefined times or in response to certain events. This is associated with UNIX-based systems, synonymous with a Windows "service".

Dark Current: The relatively small electric current that flows through photosensitive devices such as a photomultiplier tube, photodiode, or charge-coupled device even when no photons are entering the device. For high sensitivity instruments like the Ozone Mapping and Profiling Suite (OMPS), dark current may appear in the data as noise and must be mitigated during calibration.

Dark Pixels: Non-snow and non-wetland land pixels that exhibit reflectance in the 2.25 μm Visible Infrared Imaging Radiometer Suite (VIIRS) band between 0.015 and 0.300 units of reflectance.

Data: A discrete set of logical records containing information in a digital format that includes, but is not limited to, raw, sensor, environmental, and higher level products created by operational systems, subsets and aggregates of operational products, as well as ancillary data, instrument calibration data and spacecraft navigation data.

Data Accountability: A general term used to describe the process by which the JPSS collects and analyzes data concerning system performance in the generation and delivery of data products. This process helps to ensure that JPSS meets its data availability and data latency requirements.

Data Accounting and Recovery (DAccR): The name given to the JPSS Data Accounting and Recovery (DAccR) Concept of Operations (ConOps). Ground System operations to monitor Stored Mission Data flow; measure the data availability and data latency; and when a data gap is detected, retransmit the missing data from one of the upstream data stores, including from the spacecraft.

Data Acquisition: The space/ground communications and associated processes for acquiring satellite mission data.

Data Acquisition and Routing (DAcqR): The name given to the JPSS Data Acquisition and Routing (DAcqR) Concept of Operations (ConOps). It represents the concept of services for acquiring and/or routing the mission data from the receiving sites to the mission's data centers.

Data Aggregation: (1) Any process in which information is gathered and expressed in a summary or combined form. (2) The stitching together of data granules into a single file.

Data Availability (A_D): (1) The ratio of data of interest available to a desired destination compared to the total collected at the originating point. (2) The percentage of data collected by operational sensors on each JPSS satellite that are made available to the JPSS Data Processing Node. Data Availability requirements compliance is calculated over any 30-day period, and the requirements cannot be applied during on-orbit anomalies, failures, and recoveries when there are no mission data generated or stored in the spacecraft's mass memory.

Data Catalog: See Data Inventory.

Data Delivery Automatic Notification (DDAN): An automatically system generated notice for a particular location used to provide situational awareness and for management purposes.

Data Delivery Report (DDR): A summary report for a particular location used to provide situational awareness and for management purposes.

Data Delivery Subsystem (DDS): A term used to describe one of the five primary Interface Data Processing Segment (IDPS) subsystems (subsys): Processing (PRO) subsys, Infrastructure (INF) subsys, Data Delivery Subsys (DDS), Ingest (ING) subsys, and Data Management Subsys (DMS).

Data Denial: A general term used to describe the process by which the JPSS system is capable of withholding access to JPSS data.

Data Format Control Book (DFCB): This control book describes the data formats and contents of the Suomi National Polar-orbiting Partnership (S-NPP)/Joint Polar Satellite System (JPSS) satellite mission data and is intended for use by external entities with the need to process S-NPP/JPSS data.

Data Format Interface Control Document (DFICD): Defines the Radio Frequency (RF) data format used as interface standards or for compliance purposes.

Data Identifier (DID): A nametag associated with each Raw Data Record (RDR), Sensor Data Record (SDR), Environmental Data Record (EDR), or other data product that allows the JPSS system to readily specify, request, or select that data product.

Data Integrity: The protection of information from revision, to ensure that the information is not compromised through corruption. A measure of data received against the data that was stored and delivered. Good data integrity ensures that no software, hardware, network problem or human intervention compromised the data.

Data Inventory: A listing of all data items and any associated attributes, in the system at any given time. Also referred to as Data Catalog.

Data Item: An instance of data that is independently managed (described, inventoried, and retrieved).

Data Latency (L_D): The period of time between the time of observation of all requisite data by a JPSS satellite and the time when those data or the data product(s) produced from those data are available to the user at the JPSS/User interface. Data latency requirements cannot be applied during on-orbit anomalies, failures, and recoveries when there are no mission data generated or stored in the spacecraft's mass memory. Data latency requirements are not verified or validated during spacecraft maneuvers, instrument calibration activities, and table uploads. Data Latency compliance is measured against the percentage of data/data products made available to a given user within the specified data latency threshold, calculated over any 30-day period. Product Data Latency (L_{PD}) metrics are referenced to JPSS data granules; the latency times to generate regional, orbital and global products will be longer.* L_{PD} requirements are not applicable to Intermediate Products, Mission Support Data, or the retrieval of data products from CLASS. ESPC Generation latency is defined as the period of time starting when the ESPC receives requisite input data from the JPSS Ground System and ending with the data product(s) produced from those data being made available for delivery across the user interface, including the ESPC processing time and reformatting time if necessary.

*Note that AMSR2 Application Process Identifier Sorted Data (ASD) and Raw Data Records (RDRs) are processed as full orbit (vice granule-based) files in the Ground Segment 2.0+ implementation and, as such, the Level 1 granule-based Data Latency definition that defines the reporting start time stamp as the time of receipt of "...all requisite data..." cannot be directly applied. The L1RD granule-based definition assumes the timespan of each granule is a small contributor to Data Latency, an assumption that does not apply to AMSR2 full-orbit data. In the special case of AMSR2 ASD and RDRs, JPSS System Technical Performance Measurements (TPM) granule-based measurement and reporting does not reflect the nominal AMSR2 on-board observation aging of 5 to 105 minutes for a full orbit of first-copy data. For a sample ground data transmission and processing delay of 12 minutes when the RDR is delivered to ESPC, Ground System TPM reporting will, by Level 1 definition, show the data latency for this RDR as 17 (5+12) minutes, not 117 (105+12) minutes. Analyses and conclusions drawn from Ground AMSR2 Data Latency reporting need to recognize and include the time associated with the on-board aging of AMSR2 data.

Data Link Management (DLM): The name given to the JPSS Data Link Management (DLM) Concept of Operations (ConOps). The Concepts of Ground System operation is to manage the on-board CCSDS Application Processes to Virtual Channel mapping. The thread focuses on coordination between flight and ground to synchronize the mapping table changes.

Data Management Subsystem (DMS): A term used to describe one of the five primary Interface Data Processing Segment (IDPS) subsystems (subsys): Processing (PRO) subsys, Infrastructure (INF) subsys, Data Delivery Subsys (DDS), Ingest (ING) subsys, and Data Management Subsys (DMS).

Data Model: Both a database and its database management system conform to the principles of a particular data model. Data models include the hierarchical data model, the network data model, the relational data model and the object-oriented data model. In software engineering it is an abstract model that describes how data is represented and accessed. Data models formally define data elements and relationships among data elements for a domain of interest. A data model is a way-finding tool for both business and IT professionals, which uses a set of symbols and text to precisely explain a subset of real information to improve communication within the

organization and thereby lead to a more flexible and stable application environment. A data model explicitly determines the structure of data or structured data. Typical applications of data models include database models, design of information systems, and enabling exchange of data. Usually data models are specified in a data modeling language. Communication and precision are the two key benefits that make a data model important to applications that use and exchange data. A data model is the medium which project team members from different backgrounds and with different levels of experience can communicate with one another. Precision means that the terms and rules on a data model can be interpreted only one way and are not ambiguous. A data model can be sometimes referred to as a data structure, especially in the context of programming languages. Function models, especially in the context of enterprise models, often complement data models.

Data Monitor and Recovery (DMR): The Common Ground System (CGS) Data Monitor and Recovery (DMR) Resource Manager and associated DMR Agents [operating at the Ground Station (GStn) locations and the Processing Centers] collect Stored Mission Data (SMD) tracking and delivery statistics, as well as coordinate recovery processes.

Data Monitor and Recovery Agent: The Common Ground System (CGS) Data Monitor and Recovery (DMR) Agents' are client processes to the DMR Resource Manager. DMR Agents are operating at the Ground Station (GStn) locations and the Processing Centers to collect Stored Mission Data (SMD) tracking and delivery statistics, as well as coordinating recovery processes.

Data Monitor and Recovery Delivery Report: Files generated by the Common Ground System (CGS) Data Routing and Retrieval (DRR)/Data Monitor and Recovery (DMR) Agents (DMRA) that contain Extended Application Packet (EAP) Creation Statistics.

Data Monitor and Recovery Resource Manager: A server process operating at the Mission Management Center (MMC), communicating with clients (Agents) at the Ground Station (GStn) locations and the Processing Centers. The Data Monitor and Recovery (DMR) Resource Manager (RM) [DMRRM] stores all SMD Tracking and Delivery statistics, coordinates SMD recoveries, and generates reports.

Data Processing Guide: A means for storage and retrieval of information related to control of processing. Provides all aspects of data necessary to determine what processing needs to be performed and what preconditions are required prior to tasking processes.

Data Processing Node (DPN): The Ground System node that processes mission data into raw, sensor and environmental data products. Currently NOAA has a JPSS-provided Data Processing Node (DPN) implementation to minimize Wide Area Network (WAN) communications utilization. The primary DPN is located in Suitland, MD at the NOAA Satellite Operations Facility (NSOF). The primary DPN is responsible for data products and data flows to Comprehensive Large Array-data Stewardship System (CLASS), and Government Resource for Algorithm Verification, Independent Testing, and Evaluation (GRAVITE); as well as the Environmental Satellite Processing Center (ESPC). The alternate DPN is located at the NOAA Fairmont, WV Consolidated Backup (CBU) facility. The alternate DPN is only responsible for data flows to ESPC and CLASS.

Data Processing Element: The software element of the Interface Data Processing (IDP) and Field Terminal Support (FTS) responsible for performing all data processing required to generate and deliver Environmental Data Records (EDRs) and other Suomi National Polar-orbiting Partnership (S-NPP)/JPSS data products at the Processing Center IDPS and the Field Terminals (FT).

Data Product: An abstract complex data type comprised of parameters, quality flags and metadata. A particular instance of a data product is a granule, while the complete set of granules of a particular version of the data product is a collection. The data product may be the packaged observation whose production is the purpose of the observatory or it may be an intermediate, supplementary or secondary result or production.

Data Product Calibration and Validation: See Calibration/Validation of Data Products

Data Product Generation: Provides the processing of mission data to generate and distribute raw, sensor, environmental, and ancillary data products.

Data Production Report: This is a report provided by the Data Processing Node (DPN). It includes a summary of science data records produced by the DPN including Raw Data Records (RDRs), Sensor DRs (SDRs), Temperature DRs (TDRs), and Environmental DRs (EDRs). This report will also include any expected "science" data records that were not produced either based on external factors to the Common Ground System (CGS), or internal factors within the CGS. Finally, this report will provide information about any science data records that have been delayed beyond the data latency requirements.

Data Provenance: The process of tracing and recording the origins of data and its movement between databases. It contains the derivation history of data, beginning with its original sources. It includes elements such as who or what created the data, where it came from, how it was transformed, the assumptions made in generating it, and the processes used to modify it.

Data Quality: The accuracy and correctness of the content and meaning of the data.

Data Quality Engineer (DQE): JPSS Ground System support staff who provide near real-time monitoring of data formatting and algorithm operation during day-to-day operations, interacting with data users, and elevating science quality issues to the JPSS Calibration/Validation (Cal/Val) teams.

Data Quality Monitoring (DQM): The name given to the JPSS Data Quality Monitoring (DQM) Concept of Operations (ConOps). Describe operations to monitor the quality of environmental data products in a data processing environment and update tables used in product quality management. Describe the generation and dissemination of data quality notifications based on quality monitoring results.

Data Quality Notification (DQN): Notice in response to a Data Quality threshold test performed by a processing subsystem.

Data Quality Support Node (DQSN): The name given to the DQM Concept of Operations (ConOps).

Data Quality Support Team (DQST): The staff that provides mid-term monitoring of data quality and investigates data quality issues related to implementation of the science algorithms in IDPS. The group includes the DQE and supports the MST with more involved investigation capabilities as well as performing data quality trending. The DQST is the point of escalation of product issues from operations to the ACVST. The DQST also supports the ACVST providing implementation expertise to the science investigations.

Data Quality Threshold Table: Provides the threshold values that determine when Data Quality Notifications are generated for use within IDPS. An official, baseline version exists for all JPSS Official Data Products. A local version, Local Data Quality Threshold Tables, may also exist at each IDP. They are populated by local data quality monitoring personnel for additional monitoring of JPSS Data Products of particular local interest.

Data Receipt: Receipt of the last bit of incoming data at a system or subsystem receiving point. For data that arrives directly at the PDA from a source outside of ESPC security boundaries, it implies that a virus scan has also been completed.

Data Record (DR/Data Rec): Several types of Data Records (DRs) and prototype product types often still considered data records (xDRs) exist within Suomi National Polar-orbiting Partnership (S-NPP)/JPSS: Raw Data Records (RDR), Sensor DRs (SDR), Temperature DRs (TDR), Environmental DRs (EDR) and Intermediate Products (IPs). Other prototype product types like Retained Intermediate Products (RIPs) are a subcategory of IPs, therefore are also included indirectly.

Data Routing: Provides routing of telemetry, mission and/or operations data through JPSS' global data network.

Data Routing and Retrieval (DRR): The Common Ground System (CGS) service that provides reliable and secure data delivery, including local network infrastructure at each site and wide-area network for Svalbard and White Sands Complex (WSC); data handling and front-end processing of Stored Mission Data (SMD) at each Processing Center with Interface Data Processing (IDP); front-end telemetry and command encryption processing at Mission Management Center (MMC); and recovery of Consultative Committee for Space Data Systems (CCSDS) Application Packets (APs) in preparation for IDP Segment (IDPS) ingest.

Data Server: The physical or logical source of data that is to be distributed.

Data Set: (1) A logically meaningful grouping or collection of similar or related data. A "data set" refers to the set of data and metadata that comprise a single unit of inventoried data. (2) A logical grouping of data sharing a common attribute, such as data source or data type.

Data Set Documentation: Information describing the characteristics of a data set and its component granules, including format, source instrumentation, calibration, processing, algorithms, or metadata.

Data Type: A specific category of data with common characteristics.

Database: Generically a logical relation of records, objects with associated metadata, attributes, parameters used to relate data to create information. In the specific case of the Ground System

Requirements Document (GSRD) and Common Ground System Requirements Document (CGS RD) it refers to the Command and Telemetry (C&T) database, memory structure/table format database, data product generation database and data format control book database.

Day/Night Terminator: The locus of points on the earth where the local apparent solar zenith angle is 90 degrees.

Daytime Cloud Optical and Microphysical Properties (DCOMP): The Daytime Cloud Optical and Microphysical Properties (DCOMP) science algorithm is used to retrieve daytime water and ice cloud optical depth, particle size and liquid or ice water path from imagery taken by the Visible Infrared Imaging Radiometer Suite (VIIRS) aboard JPSS. The algorithm is based primarily on the Solar Infrared Technique from NASA Langley Research Center, but has been adapted to utilize upstream JPSS products and to function in the JPSS framework. This approach is identical to that used for processing Advanced Baseline Imager data from GOES-R.

Decimal GigaByte: Data volume measured as 1,000,000,000 (10^9)Bytes.

Decimal KiloByte: Data volume measured as 1,000 (10^3)Bytes.

Decimal MegaByte: Data volume measured as 1,000,000 (10^6)Bytes.

Decommissioning (DEC): This is the name given to the JPSS Decommissioning (DEC) Concept of Operations (ConOps). Ground System operation for the planning and execution of de-orbiting and disposal of JPSS-operated satellites as the satellite reaches the end of its mission life.

Deconflict: An engineering term that refers to the process of avoiding mutual interference, or outright hazards, among systems under the control of one's own interests or multiple sides of things in a vacuum. The risks are usually directly related to integration, interface complexities, and operations involved with systems of systems and families of systems. In the context used within JPSS it has broader implications related to space systems integration, multi-mission planning, operations, space-ground communications and scheduling.

Defense Information Systems Agency Wide Area Network (DISA WAN): The unclassified Department of Defense networks used by the JPSS program to support its mission needs. This includes Domestic Satellite (DOMSAT) and DISA Asynchronous Transfer Mode (ATM) Service Unclassified (DATMS-U)/Optical Transport Networks (OTN).

Defense Meteorological Satellite Program (DMSP): An environmental satellite program managed by the Air Force Space and Missile Systems Center, Los Angeles Air Force Base. A joint-operational team at the NOAA Satellite Operations Facility (NSOF) in Suitland, MD provides command and control. The DMSP mission is to generate terrestrial and space weather data for operational forces worldwide. The Air Force is the Department of Defense's executive agent for this program. The data from this program is also furnished to the civilian community through the Department of Commerce. The DMSP satellites are designed to meet unique military requirements for worldwide space and terrestrial weather information. Through these satellites, military weather forecasters can detect developing patterns of weather, track existing weather systems over remote areas, and alert the civil and military communities of anticipated hazards in space to satellites and personnel.

Defense Meteorological Satellite Program Backup Operations (DMSP BU Ops|DMSP B/U Ops): Provides a backup location for the mission operations functions for the DMSP missions. The DMSP B/U Ops is run by the Air Force Reserve Command's 310th Space Wing/6th Space Operations Squadron. The DMSP Operations center is located at Schriever Air Force Base in Colorado Springs, CO.

Defense Meteorological Satellite Program Data Processing (DMSP DP): This is a data consumer of the JPSS Ground System (GS) that receives raw DMSP data for subsequent processing into environmental and climate weather products. The DMSP Data Processing is performed by the 557th Weather Wing in Omaha, NE. While FNMOC in Monterey, CA also performs some DMSP data processing, the 557th Weather Wing forwards JPSS-provided DMSP frames to other Processing Centers.

Defense Meteorological Satellite Program Operations at Office of Satellite and Product Operations (DMSP Ops @ OSPO): The Defense Meteorological Satellite Program (DMSP) Ops system provides mission operations functions for the DMSP missions. The DMSP Ops center is located in NOAA Satellite Operations Facility in Suitland, MD.

Defense Weather Satellite System (DWSS): The conceptual, next generation of DoD weather satellites that were to be designed to meet specific high priority and potentially unique DoD military requirements. The program was terminated in 2012.

Definitive Ephemeris: This is an accurate filtered ephemeris within the arc of observation data.

Degradation Condition: A retrieved value within a data product that has some utility, but may be degraded in performance or falls outside of the required coverage or measurement range.

Deliver: To push data or material, either physically or electronically, to a specified end point.

Deliverable Product Categories: Types of JPSS data products that are required to be delivered to authorized JPSS users. The deliverable product categories include Application Packet (AP), RDR, SDR, TDR, EDR, IP, and Mission Support Data (MSD).

Delivery Report (DR / Del Rpt): The Delivery Reports document which data products have been delivered by the Interface Data Processing Segment (IDPS). This element includes the current Data Delivery Report (DDR), Consolidated Data Delivery Report (CDDR), and Cyclic Redundancy Check (CRC) files.

Delivery Timeliness: A threshold of time specified within a subscription that defines how recently the data needs to have been created in order to be delivered to the user. Delivery Timeliness is meant to prevent the transfer of data that is not useful to a user due to the age of the data.

Demarcation (Demarc): This is the boundary of a specific area [i.e., JPSS Ground System (GS), Common Ground System (CGS), Flight Vehicle Test Suite (FVTS), etc.] articulated conceptually, virtually and/or physically to separate or distinguish borders and/or roles and responsibilities for life cycle operations and sustainment. Establishing demarcations is the act of marking, ascertaining and setting a limit, separation and distinction between systems and design entities.

Demonstration (Demo): A verification method by which an item is exhibited under intended service/use to show functional compliance with requirements. Sufficient data for requirements verification can be obtained by observing and assessing functional operation of the system, or a part of the system, without the use of instrumentation or special test equipment beyond that inherently provided in the system being verified. The main objective is to demonstrate the functionality of an item.

Department of Commerce (DoC/DOC): The United States federal department that promotes and administers domestic and foreign trade (including management of the census and the patent office); created in 1913. This Cabinet department is concerned with promoting economic growth. The mission of the department is to "promote job creation and improved living standards for all Americans by creating an infrastructure that promotes economic growth, technological competitiveness, and sustainable development". Among its tasks are gathering economic and demographic data for business and government decision-making, issuing patents and trademarks, and helping to set industrial standards. The Department of Commerce headquarters is in Washington, D.C.

Derating: The reduction of the applied load (or rating) of a device to improve reliability or to permit operation at less extreme conditions.

Derived Last Recorded Value: A LRV whose current value is calculated (in near real-time) according to a pre-defined algorithm. The Derived LRV algorithm may take the values of other LRVs as inputs. See also Last Recorded Value.

Derived Product: A JPSS data product generated by applying an algorithm to an existing JPSS data product or products. Unlike Blended Products, which use data from multiple sensors on multiple satellites, Derived Products only use JPSS data as input. The criteria governing the identification and approval of JPSS Derived Products is contained in the JPSS Derived Products Control Plan (JPSS-PLN-2105).

Design Life: The minimum period of time during which the applicable segment or component of the system must be capable of performing all mission operational requirements to within a previously prescribed probability of success.

Designated Approval Authority (DAA): The official with the authority to formally assume responsibility for operating a system at an acceptable level of risk. This term is synonymous with Authorizing Official, Designated Accrediting Authority, Designated Authority, and Delegated Accrediting Authority.

Detectable Cloud: An aqueous aerosol having a vertical extinction optical depth (COD) exceeding 0.3 in the visible (0.64 µm region).

Development: The creation of a new system, or the system modifications necessary to add completely new functionality to an existing baseline system to comply with mission requirements. It includes the testing, fielding, and verification of the new capabilities.

Direct Broadcast: Real-time transmission of mission data from a satellite for local receipt by appropriately equipped field terminal and direct readout users. For the JPSS series of satellites, direct broadcast is accomplished via X-Band, line-of-sight communications.

Direct Broadcast Quality Monitoring (DBQM): This is the name given to the JPSS Direct Broadcast Quality Monitoring (DBQM) Concept of Operations (ConOps). Description of Ground System operations to monitor the quality of direct broadcasting High Rate Data (HRD) from JPSS-operated satellites, including Suomi National Polar-orbiting Partnership (S-NPP) and JPSS-1.

Direct Readout (DR/Dir Rdo/DirRdo): See Field Terminal Support Node.

Direct Readout Algorithm (DRA/Dir Rdo Alg/DirRdo Alg): Field Terminal Support (FTS)-adapted algorithms used to produce products. This is provided by the GSFC Direct Readout Laboratory and the Cooperative Institute of Meteorological Satellite Studies (CIMSS) at the University of Wisconsin.

Direct Readout Laboratory (DRL): The NASA/GSFC entity providing support to Field Terminal (FT) customers consisting of processing software and Field Terminal Segment-enabled algorithms.

Direct Readout Software (DR SW/Dir Rdo SW): Direct Readout Laboratory (DRL)-produced software/algorithm package that runs on Field Terminals (FT) used to produce products.

Direct Readout Station (DR Stn/Dir Rdo Stn): See Field Terminal.

Directive: An order to comply with some policy, procedure or process.

Discrepancy: See Nonconformance.

Discrepancy Report (DR/Disc Rpt): The generic term used to record, submit and transmit deficiency data which may include, but is not limited to a deficiency report involving quality, materiel, software, warranty or informational deficiency data submitted using some automated, or manual method.

Distribute: To push data or material, either physically or electronically, to one or more specified end points. See Route Data; see Make Available.

Distributed Receptor Network (DRN): A set of operational receive-only ground stations that collect a satellite's stored mission data.

Downing Event: The criteria of a downing event will generally include any occurrence resulting in a time during which the system cannot be used for a specified purpose.

Dynamic: Changing as needed, unsteady, not constant, unstable, variable or not uniform.

Dynamic Ancillary Data (DAD): External data used in Suomi National Polar-orbiting Partnership (S-NPP)/JPSS Ground System (GS) that changes as needed when it becomes available on a relatively frequent, periodic or aperiodic basis (updated in hours or days, rather than over the course of months or quarterly). Dynamic Ancillary Data (DAD) is not produced by the JPSS GS; but is acquired from external providers, required and used by the ground system in the performance of its mission. This mission includes, but is not limited to, the producing of S-NPP/JPSS data products.

Dynamic Object-Oriented Requirements System (DOORS): A management and tracking software tool for handling requirements and documentation as modules containing trees of text objects, qualified by an arbitrary number of user-defined attributes, and cross-linked by directional links.

Earth Observing System (EOS): A coordinated series of polar-orbiting and low inclination satellites for long-term global observations of the land surface, biosphere, solid Earth, atmosphere, and oceans. EOS is a major component of the Earth Science Division of NASA's Science Mission Directorate.

Earth Observing System/NASA Satellites (EOS NASA Sat): Earth Observing Satellites (EOS)/NASA Satellites represent existing EOS missions and future NASA missions which may utilize JPSS networks and/or ground stations to support their mission needs on a secondary basis to the JPSS missions.

Earth Observing System Data and Information System (EOSDIS): This is an ancillary data provider to JPSS and the data repository for the NASA EOS missions. The Land Atmosphere Near Real-Time (NRT) Capability for EOS (LANCE) service provides access to NRT data products from the MODIS (Terra and Aqua), AMSR-E (Aqua), AIRS (Aqua), MLS (Aura), and OMI (Aura) instruments in less than 3 hours of the observation time. Imagery is also available through the Rapid Response system and fire alerts, data, and a web mapping application are available through the Fire Information for Resource Management System (FIRMS). LANCE supports a wide variety of applications users who are interested in monitoring natural and man-made hazards. Science quality products, that are generally available within 24 - 48 hours of observation, are available from other data centers to support science analysis. LANCE products are freely available but registration is required.

Earth Orientation Data (EOD): Source: Earth Orientations file contains final (definitive) values for (UT1 – UTC), predicted values for (UT1 – UTC) and values for polar wander. These data are used to convert between ECI coordinates and ECR coordinates.

Effectivity (Eff): A term used to categorize the applicability of requirements (functional, performance, interface, or sensor) specific to mission capability phases: Suomi National Polar-orbiting Partnership (S-NPP), specific to JPSS only, or to both S-NPP & JPSS, and others missions: JPS-1 (J1)/JPS-2 (J2) [associated JPSS baseline v1.2, v2.0], Global Change Observation Mission (GCOM)-Water (W1)/-Climate (C1), Defense Meteorological Satellite Program (DMSP), Meteorological Operational Satellite (Metop), etc.

Electromagnetic Compatibility (EMC): The condition of various electronic devices performing their functions according to design in a common electromagnetic environment.

Electromagnetic Interference (EMI): Electromagnetic energy that interrupts, obstructs, or otherwise degrades or limits the effective performance of electrical equipment.

Electromagnetic Susceptibility: The potential for an undesired response by a component, subsystem, or system to conducted or radiated electromagnetic emissions.

Element (Ele): Grouping of items satisfying a logical set of functions within a particular segment of a system. A segment is comprised of elements. Elements are one level below the

segments in the Suomi National Polar-orbiting Partnership (S-NPP) system hierarchy (legacy term).

Emissivity: The relative ability of its surface to emit energy by radiation. It is the ratio of energy radiated by a particular material to energy radiated by a black body at the same temperature.

Enclave: An information security construct where the systems within an overall security boundary are isolated into smaller groupings of similar capabilities and/or security needs within the same facility, where interfaces between enclaves are controlled and monitored. Firewalls are usually used to control communications between enclaves.

End of Life (EOL): The end time of the period when a manufactured item is expected to be serviceable. The performance of mission critical components is usually calculated for EOL, with the components exceeding their specification at their Beginning of Life (BOL). For example, the capacity for the spacecraft to generate electricity will degrade throughout the mission but must still meet a specific requirement at EOL in order to fulfill the mission requirements. Depending on the vendor and component, EOL may differ from the end of service life, which represents when a vendor will no longer provide maintenance or sustainment support. Also referred to as End of Operational Life. See Beginning of Life.

End-to-End (E2E) Test: A test performed on the integrated ground and flight system, including all elements of the payload, its control, stimulation, communications, and data processing to meet specified Mission Assurance requirements.

Engineering Development Unit (EDU): A test unit used to perform development and engineering on a prototype item. The observatory simulator includes spacecraft simulator and instrument simulators all in the EDU class.

Enhancement Problem Change Request: Priority 5 Problem Change Requests (PCRs): nice to have. Also, used for new scope resulting from an Engineering Change Request (ECR) and is not necessarily just a "nice-to-have."

Enterprise Data Product: A data product produced by the NOAA NESDIS Enterprise Ground System that uses algorithms, ancillary data, and other data whose performance is independent of the performance of lower-level mission unique data products available from NOAA satellite systems. Enterprise data product algorithms are managed by the NESDIS Office of Satellite Ground Services (OSGS) and support the implementation of scalable, efficient, multi-sensor algorithm and processing approaches across multiple platforms. The development, production, and sustainment of enterprise data products do not compromise the processing or performance of mission unique data products with Key Performance Parameters (KPPs). Enterprise data products may be sustained during a Continuity of Operations (COOP) contingency if dictated by established user priorities.

Enterprise Management (EM/EMgmt): Manages assets for the JPSS space and ground system. Enterprise status is collected from all resources, either directly, or via other software subsystems, routed as necessary, and processed to provide enterprise-wide visibility into mission operations. The mission operations team monitors these tasks to ensure timely compilation, and distribution of both near real-time status, and required reports.

Enterprise Management and Ground Operations: Provides mission management, mission operations, ground operations, contingency management and system sustainment.

Enterprise Manager (EMgr): The Enterprise Manager (EMgr) is responsible for monitoring all of the JPSS ground and space resources that are required to receive and process JPSS mission and satellite data. The EMgr collects and validates status from the distributed System Status, Space Operations, Ground Operations (GO) and Fleet/Ground Management functions and directs system reconfiguration using those ConOps as needed. The EMgr coordinates deviations from planned operations as well as anomaly responses or diagnostic mode activities, Writes, tracks and reports on Work Requests, authorizes manual and critical commands in accordance with approved and controlled Standard Operating Procedures (SOPs), maintains and validate shift logs and coordinates shift handovers, and coordinates routine and ad hoc maintenance activities at all operational sites. On-shift, the EMgr is the senior position, gives direction to the SATCON, and is the operational position for Ground Operations, and the Mission Management Center (MMC) GO and FGM operations. The EMgr is the operational interface to the Ground Network Operator (GNO), the IDP Operator, with the SATCON for satellite computer resource status and utilization, and to the SATCON for ground requests for satellite Solid-State Recorder (SSR) playbacks, for Ground Station (GStn) equipment configuration and status, for network operations status, and for ground processing configuration and status. The EMgr is the operations point-of-contact (POC) for initiating maintenance and support activities on ground equipment and networks, including call-in of related field support, and for network providers who are not the Common Ground System (CGS)-vendors primary subcontractor. The EMgr generates daily, monthly, and annual system configuration, status, availability, and performance summary reports for the system-wide enterprise and GO domain. The CGS vendor refers to this position as the EMgmt Operations Controller (EMOC).

Environment: (1) The complex of physical, chemical, and biotic factors that act upon a system, organism, or ecological community. (2) A set of equipment and software needed to accomplish a role, such as operations, test, or training; this set may be a set of equipment designated as a single string or it can be a combination of equipment from multiple strings that can be configured to act functionally as a string. See String (2).

Environmental Ancillary Data (Env Anc Data): Describes both the static and dynamic types of Ancillary (ANC) Data generated and shared by several sources as needed. Static ancillary data is external data used in the production of Suomi National Polar-orbiting Partnership (S-NPP)/JPSS Data Products, which are infrequently updated, approximately six months or longer, over the life of the mission. Examples of Static Ancillary Data include all of the following: Climatology and Space Environment, Moderate Resolution Imaging Spectroradiometer (MODIS) Land-Water Mask, National Imagery and Mapping Agency (NIMA) Vector Map Level 0, Ultraviolet (UV) Surface Reflectivity, Nitrate Depletion Temperature Database, Planetary Ephemeris, Earth Gravitational Model 1996 (EGM96) Geoid Model, Earth Resources and Digital Elevation Maps. Official Dynamic Ancillary Data (ODAD) is external data used in the production of S-NPP/JPSS Data Products, which are more frequently updated over the life of the mission, as compared to Static Ancillary Data. Examples of Official Dynamic Ancillary Data include all of the following: National Centers for Environmental Prediction (NCEP) Global Positioning System (GPS) 3-Hour Interval Forecast, Fleet Numerical Meteorology and Oceanography Center (FNMOC) Navy Global Environmental Model (NAVGEM) 3-Hour

Interval Forecast, Navy Aerosol Analysis and Prediction System (NAAPS) 3-Hour Interval Forecast, Earth Orientation Bulletin A, Near Real-Time Ice and Snow Extent (NISE).

Environmental Data: Environmental data as used in this document is also termed mission data and refers to all data (atmospheric, oceanographic, terrestrial, space environmental and climatic) being sensed and collected by the spacecraft.

Environmental Data Record (EDR): (1) Data record produced when an algorithm is used to convert Sensor or Temperature Data Records (SDRs, TDRs) to geolocated geophysical parameters (including ancillary parameters, e.g., cloud cleared radiation, etc.). (2) A NASA Committee on Earth Observation Satellites (CEOS) Level 2 Product, the EDR is derived geophysical parameters (e.g. sea surface temperature, leaf area index) at the same resolution and location as the SDR (Level 1B) source data. Data is expressed in geophysical units (e.q. meters, kelvin, watts, cloud fraction, etc.).

Environmental Satellite Processing Center (ESPC): A data center that processes both geostationary and polar-orbiting data, from Polar-orbiting Operational Environmental Satellites (POES) and Geostationary Operational Environmental Satellites (GOES), supported by the Office of Satellite and Product Operations (OSPO) LAN and WAN. These network systems are operated and maintained by ESPC systems that ingest environmental data from NOAA's polar and geostationary spacecraft, and produce environmental products and parameters. ESPC is NOAA's primary data-processing system and is managed within the DoC/NOAA/National Environmental Satellite, Data and Information Service (NESDIS)/OSPO located in Suitland, Maryland. ESPC includes the operational satellite data distribution network which provides NESDIS' customers access to real-time or near real-time environmental data and information on a continuous (24/7) basis. The primary uses for NESDIS polar-orbiting satellite products are as inputs to NWS forecasts and warnings, data also support other uses by Federal agencies, state governments, and the public and private sector. ESPC includes the NOAA Data Exploitation (NDE), Product Distribution & Access (PDA), and Ancillary Data Relay System (ADRS) capabilities.

European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT): The main purpose of the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) is to deliver weather and climate-related satellite data, images and products 24 hours a day, 365 days a year. This information is supplied to the National Meteorological Services of the Organisation's Member and Cooperating States in Europe, as well as other users worldwide. EUMETSAT is an international Organisation founded in 1986.

European Organisation for the Exploitation of Meteorological Satellites Alternate Mission Control Centre (EUMETSAT AMCC): The European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) Alternate Mission Control Centre (AMCC) provides backup mission operations functions for the Meteorological Operational Satellite (Metop) missions. The EUMETSAT AMCC is located near Madrid, Spain.

European Organisation for the Exploitation of Meteorological Satellites Data Processing (EUMETSAT DP): This is a data consumer of the JPSS Ground System (GS) that receives raw Meteorological Operational Satellite (Metop) data for subsequent processing into environmental and climate weather products. The EUMETSAT Central Application Facility (CAF) in

Darmstadt, Germany performs the EUMETSAT Data Processing. The generated Metop products are stored in the EUMETSAT Data Centre for access worldwide.

European Organisation for the Exploitation of Meteorological Satellites Operations (EUMETSAT Ops): The European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) Ops system is more formally called the EUMETSAT Mission Control Centre (MCC). This provides mission operations functions for the Meteorological Operational Satellite (Metop) missions. The EUMETSAT Ops center is located in Darmstadt, Germany.

European Organisation for the Exploitation of Meteorological Satellites Polar System (EPS): The EUMETSAT Polar System (EPS) is Europe's first polar-orbiting operational meteorological satellite system and it is the European contribution to the initial Joint Polar Satellite System (JPSS). Meteorological Operational Satellite (Metop) is Europe's first polar-orbiting satellite dedicated to operational meteorology. It represents the European contribution to a new co-operative venture with the United States, providing data to monitor climate and improve weather forecasting.

European Organisation for the Exploitation of Meteorological Satellites Polar System – Second Generation (EPS-SG): EPS-SG represents Europe's contribution to the future Joint Polar System (JPS), which will be established together with the National Oceanic and Atmospheric Administration (NOAA) following on from the Initial Joint Polar System (IJPS). The EPS-SG Programme is expected to be an important source of satellite observations for European and U.S. numerical weather prediction in the 2021–2040 time frame.

Event: Real world occurrences or constraints that are fixed at specific times or occur dynamically and potentially impact specific resources (e.g. outages, access times, eclipses, and nodal events). Events are independent of a particular plan or schedule, and may be driven by dynamic unscheduled changes or responses to priorities, occurrences and constraints.

Exclusion Condition: In the context of JPSS data processing, the condition when a retrieved value or values within a data product may be so degraded as to have reduced utility, measurement by the system may not be possible (e.g., due to a failed detector), or a supporting algorithm may fail to converge. Estimates of performance under an Exclusion Condition are not required.

Extended Application Packet (EAP; eAP): A term unique to the JPSS Common Ground System (CGS), it describes an Application Packet (AP) with prepended extended header information generated by the CGS Command, Control, and Communications (C3) system.

Extended Stored State of Health (ESSOH): Highly filtered stored state of health data that provide at least 48 hours of data for coarse anomaly evaluation. These data are stored on the IEM SPAM Card Stored Telemetry Partition 2.

Extended Virtual Channel Data Unit (EVCDU; eVCDU): A term unique to the JPSS Common Ground System (CGS), it is a Consultative Committee for Space Data System (CCSDS) formatted Virtual Channel Data Unit (VCDU) with prepended extended header information, added by the CGS Command, Control, and Communication (C3) system.

Extended Virtual Channel Data Unit File Forwarding Schedule: This is an internal queue unique to the Common Ground System (CGS) Data Handling Node (DHN) that represents the ordered and prioritized EVCDUs available for Extended Application Packet (EAP) creation.

External (Ext): Generic term used to describe something outside a certain physical, logical or control boundary and/or scope.

External Interface: Interfaces between JPSS controlled entities and other organizations (not JPSS controlled).

External Source: External sources are data providers outside of the JPSS system.

External Truth Data: External data acquired by Suomi National Polar-orbiting Partnership (S-NPP)/JPSS, which is used for long term monitoring, as well as other calibration and validation activities. See Correlative Data.

Failure: See Nonconformance.

Failure Mode and Effects Analysis (FMEA): A rigorous procedure by which each credible failure mode of each item from a low indenture level to the highest is analyzed to determine the effects on the system and to classify each potential failure mode in accordance with the severity of its effect.

Fairbanks Command and Data Acquisition Station (FCDAS): The division under The Office of Satellite and Product Operations (OSPO) that performs Command and Data Acquisition (CDA) at the Fairbanks, Alaska ground station. Also used to refer to the physical facilities at the Fairbanks ground station. The FCDAS acquires satellite data from a variety of legacy environmental satellite missions for multiple U.S. and international entities.

Fairbanks Command and Data Acquisition Station Operations Center (FCDAS Ops Ctr): The Fairbanks Command and Data Acquisition Station (FCDAS) Operations Center is the local planning, maintenance and execution capability at the NOAA Fairbanks, AK station.

Fairbanks Ground Station (FB GStn/FB Grnd Stn/FBGStn): The Alternate Ground Station (GStn) is used for continuity of operations in the case the nominal ground station is not available or unreachable. In the Block 2.0 timeframe, the Fairbanks Command & Data Acquisition Station (FCDAS) is an alternate ground station for Svalsat for the JPSS Ground System (GS).

False Alarm Rate: The fraction of nonevents that are incorrectly classified as events. See Cloud False Alarm Rate.

Fault Management: Process of detecting and reacting to the occurrence of a fault or anomaly, whether in hardware or software.

Fault Tolerance: Built-in capability of a system to perform as intended in the presence of specified hardware or software failures.

Federal Information Processing Standard (FIPS): Under the Information Technology Management Reform Act (Public Law 104-106), the Secretary of Commerce approves standards and guidelines that are developed by the National Institute of Standards and Technology (NIST)

for Federal computer systems. These standards and guidelines are issued by NIST as Federal Information Processing Standards (FIPS) for use government-wide. NIST develops FIPS when there are compelling Federal government requirements, such as for security and interoperability, and there are no acceptable industry standards or solutions. FIPS are only required when there are no existing voluntary standards to address Federal requirements for the interoperability of different systems, for the portability of data and software, and for computer security.

Federal Information Security Management Act (FISMA): A United States federal law enacted in 2002 as Title III of the E-Government Act of 2002 (Pub.L. 107-347, 116 Stat. 2899). The act (FISMA 44 U.S.C. & 3541, et seq.) recognized the importance of information security to the economic and national security interests of the United States. The act requires each federal agency to develop, document, and implement an agency-wide program to provide information security for the information and information systems that support the operations and assets of the agency, including those provided or managed by another agency, contractor, or other source.

Field Terminal (FT): External systems to the JPSS Ground System (GS) that receive and process real-time weather satellite data at deployed locations.

Field Terminal Support (FTS/FTSupt): The JPSS Program effort that supports the Field Terminal (FT) user community. The FT user community refers to users who use their own equipment, including FT, to acquire and to process space-borne real-time data over its Field Of View (FOV) for immediate generation of products to support regional operations. This community includes diversified entities such as NOAA, Air Force, Army, Navy, Marine Corps, civilian, national and international governments, as well as commercial and private organizations. Their applications may be either operational or long-term science research. The JPSS Program supports the Field Terminal user community by broadcasting sensor data continuously in real-time from JPSS-managed satellites such as Suomi National Polar-orbiting Partnership (S-NPP) and the JPSS series of missions. Furthermore, the JPSS Ground System (GS) will provide JPSS data processing software and hardware documentation to enable field terminal customers to use their own hardware to receive JPSS High Rate Data (HRD) and to produce data products. The JPSS GS will also provide Mission Support Data (MSD) to field terminal customers in order for them to acquire satellite signals and generate high quality products.

Field Terminal Support Node (FTSN/FT Supt Nd/FTSuptNd): The Field Terminal Support Node (FTSN) provides operational support to Field Terminal (FT) customers by making available ancillary and auxiliary data needed for processing the broadcasts, as well as orbital data to assist in locating the satellites of interest. This is the ground system node that supports field terminal requirements. Support for FT stations is provided as a prototype capability by the NASA Direct Readout Laboratory (DRL) before JPSS-1, after which it is an operational capability provided by the JPSS Ground System (GS) FTSN. The SvalSat location provides monitoring capability for the HRD Direct Broadcast capabilities of the Suomi National Polar-orbiting Partnership (S-NPP) satellite and future JPSS missions.

Field Terminal Customer: Civilian and/or Military field terminal users.

Field Terminal User Support (FT US/FT Usr Supt/FT UsrSupt): The name given to the JPSS Field Terminal (FT) User Support Concept of Operations (ConOps). Description of

operational support provided by the JPSS Ground System (GS) necessary for direct broadcast data acquisition and processing.

Final Acceptance: The formal change of ownership from one organization to another.

Firmware (FW): Is critical software tightly bound to the hardware configuration that may directly or indirectly impact integration capabilities. For example, on cryptographic equipment the FW version may drive security and integration limitations, constraints and risks, especially when integrating with other Commercial Off-The-Shelf (COTS) applications, and old or very new hardware (HW) too.

Fleet and Ground Management (FGM): The functionality that monitors and configures JPSS system resources, including space and ground assets, and monitors and configures Ground System Equipment in support of missions, in accordance with JPSS Program policies. This is the name given to the JPSS Fleet and Ground Management (FGM) Concept of Operations (ConOps). JPSS mission system management that oversees the operations of a fleet of heterogeneous spacecraft and their remote sensing payloads, and the JPSS Ground System (GS) to achieve overall program objectives across all missions, including interfacing with external stakeholders, conducting fleet level long-term planning, making management decisions that guide space and ground operations, maintaining situational awareness of the JPSS system by analyzing and reporting system operation statistics, and coordinating contingency operations.

Fleet Numerical Meteorology and Oceanography Center (FNMOC): This is an ancillary data provider and data consumer that provides worldwide meteorology and oceanography support to U.S. and coalition forces from its Operations Center in Monterey, California. The US Navy Fleet Numerical Meteorological and Oceanography Center (FNMOC) is a data processing center that uses JPSS xDRs (RDRs, SDRs, TDRs, and EDRs) and other data to produce environmental products for their customers and retains responsibility for the processing, archiving and dissemination of these data products. In Block 2.0 and later, FNMOC is slated to receive JPSS application packets and software support to enable local processing of their own products. FNMOC also provides JPSS with the Navy Aerosol Analysis and Prediction System (NAAPS) Total Optical Depth (TOD) official dynamic ancillary data product and the Navy Global Environmental Model (NAVGEM) contingency dynamic ancillary data products.

Fleet Planner: The Fleet Planner is responsible for planning all of the missions for the JPSS Ground System (GS). The Fleet Planner ensures the requested tasks that are approved are defined and scheduled, and that events are mapped to each mission timeline. The Fleet Planner receives Event and Ephemeris Products from Orbit Operations and coordinates with spacecraft and sensor engineers. The Fleet Planner is responsible for generation of the Pass Plan (PP), Ground Contact Schedule (GCS), and Detailed Activity Schedule (DAS) for each JPSS mission, and rolling that up into a Master Schedule (MS). The Fleet Planner is responsible for dissemination of the schedule information to the various users in the ground system. The Fleet Planner assesses the Mission schedule performance with a weekly scheduling evaluation. The Fleet Planner is responsible for scheduling SN contact times, as needed to support operations. The Fleet Planner generates Mission Notices for system activities to notify users of the JPSS GS of events of interest to JPSS users.

Flight Dynamics Facility (FDF): A NASA Goddard Space Flight Center (GSFC) group that provides multi-mission operations support for orbit planning, orbit determination and tracking data analysis.

Flight Dynamics Facility Systems (FDFS/FDF Sys): Provides orbit analysis support for the JPSS Ground System (GS). The FDF provides post-launch and contingency definitive orbits for JPSS orbit operations. FDFS also provides routine support for mission analysis and delivery of orbit related products.

Flight Dynamics Systems (FDS): A NASA Goddard Space Flight Center (GSFC) group that provides Flight Dynamics Facility Systems (FDFS: orbit) and Attitude Ground System (AGS: attitude) services to JPSS and the multi-mission community.

Flight Segment: The system components within the boundary of the JPSS architecture encompassing the Flight System, including the spacecraft, instruments, launch vehicle support services, and interfaces necessary for achieving the JPSS mission.

Flight Hardware: Hardware used, or to be used, operationally in space.

Flight Operations: Provides launch support and early orbit operations, telemetry and commanding, orbital operations, mission data playback, payload support, flight software upgrade, flight vehicle simulation and disposal at the end of mission life.

Flight Project (FP / Flt Proj): The NASA GSFC Code 472 organization that manages the development, testing, launch and early orbit checkout of the JPSS satellites . The space segment project [i.e., spacecraft (S/C) bus and payload] and all support interfaces (space-ground, space-launch vehicle, space-space, etc.) for the latest generation of U.S. polar-orbiting environmental satellites; the supporting Ground Segment Project (GP)/Ground System (GS) Common Ground System (CGS); and all required interfaces to declare the system has reached Initial Operational Capability (IOC), and eventually Full Operational Capability (FOC).

Flight Project Configuration Control Board (FP CCB/Flt CCB): The Flight Project (FP) Configuration Control Board (CCB) manages the technical baseline and configuration of the spacecraft during development, integration, test and launch and early orbit operations.

Flight Software (FSW): Satellite bus, payload and instrument related software.

Flight Software Change Request (FSW CR): A request received with appropriate rationale and justification that is to be considered by flight software subject matter experts and/or engineers/managers to add new or modify existing flight software.

Flight Software Upgrade (FSU): This is the name given to the JPSS Flight Software (SW) Upgrade (FSU) Concept of Operations (ConOps). This includes operations to change flight software (FSW) onboard. The flow begins with the approval of change requests and covers from change development, testing and verification, to the version control at the Mission Management Center (MMC). The flow ends with the upload of the changed FSW and successful confirmation of the uploaded FSW.

Flight Vehicle Simulation (FVS/FVSimltn): This is the name given to the JPSS Flight Vehicle Simulation (FVS) Concept of Operations (ConOps). Concept of simulation operations to be performed by a suite of Flight Vehicle Simulators and test tools in support of mission operations. The simulations include spacecraft buses, instruments, as well as ground links at varying levels of fidelity.

Flight Vehicle Simulator (FVS/FV Simltr): Suomi National Polar-orbiting Partnership (S-NPP) era engineering model that provides a high-fidelity simulation of the on-orbit satellite bus and its sensors. Flight Vehicle Simulator (FVS) is the Engineering Data Unit (EDU) version for S-NPP.

Flight Vehicle Test Suite (FVTS): Consists of a Spacecraft Simulator (SC Sim) and JPSS instrument simulators. The Flight Vehicle Test Suite (FVTS) is used to verify and validate flight products, as well as support anomaly investigation by providing simulators for the spacecraft in orbit. It is also utilized to provide a scenario based testing and anomaly investigation capability, training spacecraft operators in the execution of nominal/non-nominal procedures, and flight and ground software test and certification. FVTS is comprised of high-fidelity Engineering Data Unit (EDU) and software-based Operations (Ops) version simulators for JPSS era and later missions.

For Official Use Only (FOUO): For Official Use Only (FOUO) is primarily a DoD used term and acronym used by many government agencies and military departments. FOUO is used to identify unclassified information of a sensitive nature, not otherwise categorized by statute or regulation, the unauthorized disclosure of which could adversely impact a person's privacy or welfare, the conduct of Federal programs, or other programs or operations essential to the national interest. FOUO is used for documents or products that contain material which is exempt from release under the Freedom of Information Act (FOIA). It is treated as confidential, which means it cannot be discarded in the open trash, made available to the general public, or posted on an uncontrolled website. It can, however, be shared with individuals with a need to know the content, while still under the control of the individual possessing the document or product. Information impacting the National Security of the United States and classified Confidential, Secret or Top Secret under Executive Order 12958, "Classified National Security Information", as amended, or its predecessor or successor orders, is not to be considered FOUO. FOUO is not to be considered classified information. Within NASA, government agencies, military departments and the executive branch FOUO is often referred to as Sensitive But Unclassified (SBU).

Formal Qualification Test (FQT): A formal testing process that provides for the determination of whether or not a configuration item complies with the allocated baseline for that item.

Full Command Encryption Mode: Describes the command link mode of operations on JPSS satellites beginning with the JPSS-2 mission. The JPSS command link is always encrypted using Advanced Encryption Standard (AES) encryption to maintain command authority and command integrity and is consistent with space asset protection needs.

Full Mission Capability (FMC): This exists when: a full (i.e., two) satellite constellation is operational; sufficient Command, Control, and Communication (C3) systems, and mission data recovery resources are available; sufficient crews are trained; sufficient logistics resources are in

place to support C3, data recovery, and the Interface Data Processing (IDP) systems; and approval to operate at the secondary Space Operations Center (SOC) received.

Full Operational Capability (FOC): This is met when: a full JPSS satellite constellation meeting all contractual system requirements is operational; sufficient Command, Control, and Communication (C3) systems, and mission data recovery resources are available; sufficient crews are trained; sufficient logistics resources are in place to support C3 systems, data recovery, and Interface Data Processing (IDP) system operations; and approval to operate at the secondary Space Operations Center (SOC) is received.

Full Operational Capability - Phase A (FOC-A): A term used to depict a capability set when a specific system and supporting activities reach Full Operational Capability (FOC) or maturity as defined in requirement, specification and interface requirement documents. FOC-A Initial Operational Capability (IOC) is an "A" cycle or block of the FOC as determined and defined in program requirement, specification and interface requirement documents (i.e., GCOM IOC or GCOM FOC-A vs. GCOM FOC-B).

Full Operational Capability - Phase B (FOC-B): Acquisition term used to depict when a specific system and supporting activities reach Full Operational Capability (FOC) or maturity as defined in requirement, specification and interface requirement documents. FOC-B Initial Operational Capability (IOC) is a "B" cycle or block of the FOC as determined and defined in program requirement, specification and interface requirement documents (i.e., GCOM IOC vs. GCOM FOC-B FOC).

Full Stored State of Health (FSSOH): Unfiltered data stored on the Payload Interface Electronics (PIE) Flash Memory Card (FMC) SSOH partition. These are the same data stored with the Stored Mission Data (SMD). The FSSOH generally provides information for anomaly investigation.

Function (Fnx): A task, action, or activity performed to achieve a desired outcome.

Generic Schedule Request (GSR): This is a resource-scheduling template that defines resource allocations and their characteristics, such as frequency, duration and minimum/maximum cumulative allocation over a time period.

Geolocation: The process supporting the assignment of an Earth geographic location (e.g., latitude/longitude) to instrument science data in a satellite retrieval. The geographic location of JPSS data are referenced to the World Geodetic System 1984 (WGS84) ellipsoid; these data may be further corrected to the local topography using a terrain model.

Geolocation Accuracy: The magnitude of the mean error in the geographic location of the instrument data, typically specified as a 3-sigma value.

Geolocation Uncertainty: The root-mean-square (RMS) of the geographic location errors associated with the instrument data. It includes the combined effects of all systematic and random errors.

Geostationary Operational Environmental Satellite (GOES): Currently, the GOES system consists of GOES-13 operating as GOES-East in the eastern part of the constellation at 75° west

longitude, and GOES-15 operating as GOES-West at 135° west longitude. These spacecraft help meteorologists observe and predict local weather events, including thunderstorms, tornadoes, fog, flash floods, and other severe weather. In addition, GOES observations have proven helpful in monitoring dust storms, volcanic eruptions, and forest fires. The huge advantage of being at this elevation is the satellites can constantly monitor with each update the same area of the earth. The GOES-13 monitors the eastern U.S. and adjacent areas and the GOES-15 monitors the western U.S. and adjacent areas. There is also a backup in case one of the GOES fails. Usually the backup is kept in the eastern position since this position is critical for monitoring hurricanes approaching the U.S. and monitoring the densely populated east coast. GOES-14 is an on-orbit spare.

Geostationary Operational Environmental Satellite-N Series (GOES-N): GOES - N/O/P is the current series of GOES satellites. The multi-mission GOES series N - P is a vital contributor to weather, solar, and space operations and science. The NASA and the NOAA are actively engaged in a cooperative program to expand the existing GOES system with the launch of the GOES N-P satellites.

Geostationary Operational Environmental Satellite-R Series (GOES-R): Newer R series of GOES satellites and systems. Currently the GOES system consists of GOES-13 operating as GOES-East in the eastern part of the constellation at 75° west longitude, and GOES-15 operating as GOES-West at 135° west longitude. These spacecraft help meteorologists observe and predict local weather events, including thunderstorms, tornadoes, fog, flash floods, and other severe weather. In addition, GOES observations have proven helpful in monitoring dust storms, volcanic eruptions, and forest fires. The huge advantage of being at this elevation is the satellites can constantly monitor with each update the same area of the earth. The GOES-13 monitors the eastern U.S. and adjacent areas and the GOES-15 monitors the western U.S. and adjacent areas. There is also a backup in case one of the GOES fails. Usually the backup is kept in the eastern position since this position is critical for monitoring hurricanes approaching the U.S. and monitoring the densely populated east coast. GOES-14 is an on-orbit spare.

Gigabit per second (Gbps): A bit rate of 1,000,000,000 or 1E+09 bits per second.

GigaByte per second (GBps): A Byte rate of 1,000,000,000 or 1E+09 Bytes per second.

Global Change Observation Mission (GCOM): The Japanese Aerospace Exploration Agency (JAXA) planned series of low earth-orbiting spacecraft for Earth and climate observations.

Global Change Observation Mission-Climate (GC/GCOM-C): The Japanese Aerospace Exploration Agency (JAXA) plans to launch a series of low earth-orbiting spacecraft called the Global Change Observation Mission (GCOM). The GCOM-Climate (GCOM-C) series is planned to host the Second Generation Global Imager (SGLI) instrument.

Global Change Observation Mission-Climate 1 (GC1/GCOM-C1): First climate satellite in the series. The Japanese Aerospace Exploration Agency (JAXA) plans to launch a series of low earth-orbiting spacecraft called the Global Change Observation Mission (GCOM). The GCOM-Climate (GCOM-C) series is planned to host the Second Generation Global Imager (SGLI) instrument.

Global Change Observation Mission-Water (GW/GCOM-W): The Japanese Aerospace Exploration Agency (JAXA) plans to launch a series of low earth-orbiting spacecraft called the Global Change Observation Mission (GCOM). Plans call for a series of two satellites called GCOM-Water (GCOM-W) that will carry the Advanced Microwave Scanning Radiometer (AMSR) sensor on both GCOM-W1 (currently on orbit and operational) and GCOM-W2.

Global Change Observation Mission-Water 1 (GW1/GCOM-W1): First water satellite in the series. The Japanese Aerospace Exploration Agency (JAXA) successfully launched the GCOM-W1 mission on May 18, 2012. It carries the Advanced Microwave Scanning Radiometer (AMSR) sensor.

Global Change Observation Mission-Water 2 (GW2/GCOM-W2): Second water satellite in the series. The Japanese Aerospace Exploration Agency (JAXA) plans to launch a series of low earth-orbiting spacecraft called the Global Change Observation Mission (GCOM). Plans call for a series of two satellites called GCOM-Water (GCOM-W) that will carry the Advanced Microwave Scanning Radiometer (AMSR) sensor on both GCOM-W1 and GCOM-W2.

Global Coverage: Global coverage denotes the observation of all points on the Earth or its atmosphere at least once per given time period (consistent with observational requirements).

Global Positioning System (GPS): A constellation of satellites broadcasting position, navigation and time reference information. GPS is a USAF system.

Goddard Space Flight Center (GSFC): A NASA field center where many of NASA's Earth observation, astronomy and space physics missions are managed. The main campus is located in Greenbelt, MD. GSFC is the host organization for the NASA JPSS Program Office.

Government Resource for Algorithm Verification, Independent Testing, and Evaluation (GRAVITE): This part of the JPSS Ground System (GS) is an off-line resource that performs as the Cal/Val Node (CVN); the Data Quality Support Node (DQSN); and as a key resource for the Algorithm Development and Maintenance (ADM) ConOps. GRAVITE is comprised of a production subsystem for Algorithm Support Functions and Cal/Val correlative processing called the Investigator Processing System (G-IPS); an instance of the IDP used for off-line alternate data processing and algorithm change unit test called the Algorithm Development Area (G-ADA), and a general computing facility to support Cal/Val investigation known as the Investigator Computing Facility (G-ICF) as well as supporting ingest, inventory and distribution infrastructure. GRAVITE is located within the NSOF at Suitland, MD. This segment receives processed data from the Common Ground System (CGS) and external sources and distributes data to authorized investigators.

Graceful Degradation: Provides a protocol that allows for Environmental Data Record (EDR) information to be produced when primary data sets are unavailable, insufficient for use and alternate input data sets have been defined. When graceful degradation has occurred, the resulting EDR may be degraded with respect to algorithm performance, but some requirements (i.e., Data Latency) are still applicable.

Green Vegetation Fraction (GVF): The fraction of a vertically viewed scene that is covered by active green vegetation. The real-time weekly GVF provides an excellent characterization of the surface in the NOAA land-surface model (LSM). The LSM is a component of all operational

numerical weather prediction models and GVF helps improve near-surface winds, temperature and humidity forecasts.

Ground Contact Schedule (GCS/Grnd Cont Sched/GrndContSched): A planned contact schedule containing Ground Station (GStn) and/or Tracking and Data Relay Satellite (TDRS) contact times for a given satellite or constellation; and the required commands to configure the ground system to facilitate the contacts.

Ground Control (GC/GCtrl/Grnd Ctrl/GrndCtrl): Remotely controlled access to selected ground system hardware control points, to configure hardware as necessary for system operations.

Ground Control Request (GCR/Grnd Ctrl Req/GrndCtrlReq): Software-generated request for control of ground system hardware control points.

Ground Equipment Status (GES/Grnd Equip Stat/GrndEquipStat): This is the status information on the state of a remote hardware device.

Ground Integrated Support Facility (GISF): See GISF-Dev and GISF-Ops.

Ground Integrated Support Facility - Development (GISF-Dev): The Ground Integrated Support Facility (GISF) - Dev is the development and test facility for the Common Ground System for JPSS, located in Aurora, CO, Colorado Springs, CO and Omaha, NE. This includes the Common Ground System (CGS) Factory capabilities. This system is outside the NOAA 5042 boundary. This includes the Common Configuration Management (CM) capability utilized by GRAVITE and the algorithm maintenance function. The Common CM function utilizes the ClearCASE system used by the development groups to enable access to the source code and development status for PCRs to the science teams.

Ground Integrated Support Facility - Operations (GISF-Ops): The Ground Integrated Support Facility is part of the Common Ground System (CGS) that provides sustainment and anomaly investigation support for the CGS. The facility is located in Aurora, CO. The OPS portion of the GISF is part of the NOAA 5042 system.

Ground Network (GNet/Grnd Net/GrndNet): This is the international Wide Area Network providing communications amongst the various locations utilized by the JPSS Ground System (GS). The Block 1 implementation is an MPLS core network provided by AT&T for the Common Ground System (CGS) provider. Communications from McMurdo is provided by the Black Island microwave system to the Black Island ground earth station which communications with an OPTUS communications satellite to Belrose and Lockridge, Australia whereupon the AT&T WAN is accessed.

Ground Network Node (GNN/Grnd Net Nd/GrndNetNd): The JPSS Ground Network Node (GNN) is used to support communications among all ground system entities, including the Space/Ground Communications Node, the Management and Operations Node and the Data Processing Node. It consists of distributed Local Area Networks (LANs) connected together via the AT&T Multiprotocol Label Switching (MPLS) Wide-Area Network (WAN). For some missions; such as Defense Meteorological Satellite Program (DMSP), Meteorological Operational Satellite (Metop), Earth Observing System (EOS), and Coriolis/WindSat; the

Ground Network Node provides data routing from the Space/Ground Communications Node to the non-JPSS Data Processing Node at their respective mission destinations. The Ground Network Node acquires, manages and distributes the Stored Mission Data (SMD) and the Mission Support Data (MSD) for the Ground System. The SMD service includes Consultative Committee for Space Data Systems (CCSDS) processing and guaranteed delivery to support data availability. The MSD service includes acquisition of ancillary data used for data processing and orbit operations, as well as distributing ancillary and auxiliary data to authorized users throughout the Ground System and external-interfacing partners.

Ground Operations (GO/Grnd Ops/GrndOps): The name given to the JPSS Ground Operations (GO) Concept of Operations (ConOps). The functionality that aggregates status from System Status (Sys) and forwards it to Fleet Ground Management (FGM); sends configuration commands to configure the Ground Elements/Ground Nodes as directed by Mission Planning and Scheduling (MPS); and coordinates Ground Ops (GO) level anomalies in accordance with authority dispensed by FGM and JPSS Program policy. Describes the execution of JPSS mission operations based on the mission schedules and plans. This includes creating, validating, and executing ground system commands derived from the mission schedules. The ground commands are for space/ground communications, SMD, telemetry, command data routing and data processing. The primary functions of GO include operating the JPSS Ground System (GS); working with the System Fault Detection & Recovery and System Maintenance & Upgrade functions to restore ground operations when problems occur; and supporting mission upgrades as required.

Ground Receptor (GRcptr/Grnd Rcptr/GrndRcptr): An antenna and associated equipment that is capable of receiving Stored Mission Data (SMD) from the JPSS satellites only.

Ground Receptor Site (GRS/Grnd Rcptr Site/GrndRcptr Site): The location of facilities, an antenna and other associated equipment that is capable of receiving Stored Mission Data (SMD) from the "Suomi National Polar-orbiting Partnership (S-NPP)/JPSS satellites only". This includes all the S-NPP/JPSS receive-only antennas and associated equipment that are capable of receiving downlinked SMD. S-NPP/JPSS facilities, hardware, and software located at the Mission Management Center (MMC), Alternate MMC (AMMC), Processing Centers, Receptors, Svalbard site, Field Terminals (FT), White Sands, and Launch & Integration support are all considered "ground sites" in the broader definition of the term.

Ground Resource (Grnd Resrc/GrndResrc): All resources allocated to the ground system, including hardware and software. All task ready and capable resources needed to complete mission objectives, which are not associated with the satellite are considered ground resource.

Ground Segment (GSeg/Grnd Seg/GrndSeg): The system components within the boundary of the JPSS architecture encompassing the Ground System, plus the NOAA entities, such as the Environmental Satellite Processing Center (ESPC) that are necessary to achieve the JPSS mission. The GSegincludes the facilities and resources necessary to support the mission operations and data product generation. The Ground Segment provides the full suite of services to each JPSS mission from its development to its disposal. This encompasses all aspects of operations necessary to support satellite I&T, pre-launch checkout, and launch and early orbit operations, to support instrument activation and commissioning, to keep the spacecraft and

payload safe, healthy and functional; and to maintain smooth ground operations to acquire, route, process mission data for JPSS data product generation and delivery within specifications.

Ground Segment Project / Ground Project (GP): Describes the Joint Polar Satellite System (JPSS) operation and system resources, processes, interfaces and technology used within the NOAA- and NASA-managed ground segment to support acquisition and operation of the JPSS system and other agreed-upon weather satellite platforms and interfaces. The JPSS Common Ground System (CGS) provides equipment needed for the Office of Satellite and Product Operations (OSPO) operators to fly the JPSS satellites and process the scientific data from JPSS. The NESDIS Environmental Satellite Processing Center (ESPC) ingests environmental data from all polar and geostationary spacecraft (including JPSS) and produces value-added environmental products and parameters.

Ground Segment Project Configuration Control Board (GP CCB/Grnd CCB): The Ground Project Configuration Control Board (CCB) manages the technical baseline and configuration of the ground system during development, integration, test and launch and early orbit operations. The Ground Project CCB manages the spacecraft configuration until the spacecraft is transitioned to NOAA Office of Satellite and Product Operations (OSPO) control.

Ground Segment Project Field Terminal Support (GP FTS/Grnd Proj FTS/Grnd Proj FT Seg/GrndProjFTSeg): An organization within the Ground Project (GP) that is responsible for providing support for field terminals.

Ground Site (GSite/Grnd Site/GrndSite): This includes all the JPSS receive-only antennas and associated equipment that are capable of receiving downlinked SMD. JPSS facilities, hardware, and software at the Mission Management Center (MMC), Alternate MMC (AMMC), Processing Centers, Receptors, Svalbard site, Field Terminals (FT), White Sands, Launch and Integration support are also considered ground sites.

Ground Site Operation (GSite Op/Grnd Site Op/GrndSiteOp): This includes ground station hardware control and monitoring, Stored Mission Data (SMD) data retransmission, and hardware deactivation/activation.

Ground Storage Location: JPSS Common Ground System (CGS) locations storing processed Stored Mission Data (SMD) for a specified amount of time. This stored SMD is available for recovery by the Data Monitor & Recovery (DMR) subsystem. Ground Storage Locations include the Ground Station (GStn) Pre-Processor (GSPP) and the Data Handling Node (DHN).

Ground Support Node (GSN/Grnd Supt Nd/GrndSuptNd): These locations support the Ground Integrated Support Facility (ISF: Aurora, CO) in the performance of its tasks. These support nodes have specialized expertise required for program support. Ground Support Nodes provide changes/fixes/upgrades to the Ground ISF, which the ISF integrates for official delivery to operational sites. An example would be the support facility located in Indianapolis, IN.

Ground System (GS/GSys/Grnd Sys/GrndSys): The JPSS Ground System (GS) is composed of seven functional nodes: the Space/Ground Communications Node (S/G CN), the Ground Network Node (GNN), the Management and Operations Node (MON), the Data Processing Node (DPN), the Simulation Node (SimN), the Calibration/Validation (C/V) Node (CVN), and the Field Terminal Support Node (FTSN). JPSS GS is the Common Ground System (CGS),

Flight Vehicle Test Suite (FVTS), Field Terminal Support (FTS), Government Resources for Algorithm Verification Independent Testing and Evaluation (GRAVITE), and CVN segments, systems, subsystems, components and interfaces to support the latest generation of U.S. polar-orbiting environmental satellites; and other agreed upon weather satellite platforms and interfaces. JPSS will provide the global environmental data used in numerical weather prediction models for forecasts, and scientific data used for climate monitoring. JPSS will aid in fulfilling the mission of the U.S. National Oceanic and Atmospheric Administration (NOAA), an agency of the Department of Commerce (DoC). Data and imagery obtained from the JPSS will increase timeliness and accuracy of public warnings and forecasts of climate and weather events, thus reducing the potential loss of human life and property and advancing the national economy. The National Aeronautics and Space Administration (NASA) developed the JPSS for the NOAA, who are responsible for operation of JPSS. Two satellites are planned for the JPSS constellation of satellites. The JPSS CGS provides equipment needed for the Office of Satellite and Product Operations (OSPO) operators to fly the JPSS satellites and process the scientific data from JPSS.

Ground System Concept of Operations (GS ConOps): Ground System (GSys) Concept of Operations (ConOps): Each thread begins with a general description of the thread, providing a context and background information for the operations to be described. Through an Interface Diagram and associated descriptive tables, the thread identifies primary interfaces and actors, both internal and external, which are significant to the operations. Assumptions and pre-conditions to the operational flow are provided in order to understand the dependencies and entry points. The operational flows are illustrated in standard DoDAF OV-5b views, the details of which are described in text tables with sequenced actions performed by a set of activities at various system nodes. These activities and actions form a basis on which system architecture and requirements are derived and synchronized. Besides main threads, alternate threads may be included to describe alternative paths or non-nominal conditions. Expected states after the thread execution are described as post conditions. For references, a list of related threads is included at the end of each thread. The operational threads are developed to cover both Ground System (level 2) and Common Ground System (level 3) level of details. Some lower level details are included in the notes to capture specific project needs and to provide guidance for the development. In the scheme of an integrated system design, these threads serve as parents to the lower level operations concept threads. This follow-down traceability is documented in a list of child threads included in each thread. The multi-mission support capabilities of JPSS Ground System (GS) will be phased in over time. As such, it is envisioned that this document will evolve with each development/deployment phase. While the initial version is focused on establishing the JPSS GS technical baseline based on the Suomi National Polar-orbiting Partnership (S-NPP) and GCOM-W1 missions, more details on multi-mission operations will be added in future revisions, starting with JPSS-1 in Block 2, as more mission information become available. The JPSS GS provides varying level of services to a variety of missions.

Ground System Handover: The process by which the operational and engineering authority for the JPSS ground system is passed from JPSS to the Office of Satellite and Product Operations (OSPO). A supporting JPSS Program Transition, Handover, and System Acceptance Plan provides the operational transition plan, handover criteria, the schedule of handover events, lines of authority in the acceptance of Ground deliveries, and dependencies required at each step leading towards transfer of ownership (i.e., acceptance). For the ground system operation, the

supporting Ground System Handover Review milestone is conducted following the completion of the Intensive Calibration and Validations campaign and nominally occurs 360 days following launch of a JPSS mission.

Ground Truth Data: Correlative data, particularly those data from a ground or sea-based source.

Guidance, Navigation, and Control (GN&C): Comprises the disciplines of attitude determination and control, orbit determination, propulsion, and flight dynamics.

Harris: The JPSS Flight Project contractor supporting the design, development, integration, testing, and post-delivery support of the Cross-track Infrared Sounder (CrIS). A forthcoming name change to L3 Harris Technologies, Inc. is anticipated.

Heritage: Refers to hardware, software or documentation of the same general design as that which was used on a predecessor mission having similar orbit characteristics and comparable mission objectives.

High Rate Data (HRD): Consists of mission data downlinked in real-time from the satellite, including sensor data, telemetry data, and the subset of the ancillary and auxiliary data required by the Field Terminals (FT) to create the environmental data products. Any public or private field terminal system with compatible reception and processing software is able to exploit the unencrypted mission data contained in the HRD.

High Rate Data Link: Real-time only downlinks from the satellite. Their contents are programmable and include mission data for the region in which the field terminal is located and engineering telemetry. These links may also contain any direct mode data messages (DMDM), critical dynamic ancillary data, and calibration tables that are uploaded from the ground.

High Rate Data Monitoring Site: A receive-only ground site, including an antenna string for monitoring the downlink, as well as equipment and software for testing and quality evaluation of the High Rate Data (HRD) signals and data.

Horizontal Cell Size (HCS): See Horizontal Spatial Resolution.

Horizontal Sampling Interval (HSI): The distance, as measured on the Earth's surface, between adjacent samples reported by an instrument.

Horizontal Spatial Resolution (HSR): (1) For a scanning imager on a space-based platform, a specified band, and a specified nadir angle, one half of the wavelength corresponding to the earth surface spatial frequency at which the end-to-end system Modulation Transfer Function (MTF) equals 0.5 in the in-scan or cross-scan direction. (2) For a parameter which is an estimate of the uniform spatial average of an environmental parameter over a square region of the earth's surface or within a square layer of the atmosphere, the side length of this square region or layer. (For a parameter that is an estimate of an environmental parameter at a point, the horizontal cell size is defined to be zero.) For a reported parameter not of this type but which is defined for a square region of the earth's surface or a square layer of the atmosphere (e.g., cloud cover, ice concentration, etc.), the side length of this square region. (3) For a conical scanning microwave radiometer, the diameter of a circle on a spherical Earth's surface (or in the Earth's atmosphere)

containing the equivalent area inside the boundary over which a uniform spatial average of the truth value of a given data product is derived. The shape of the boundary of the horizontal cell used may be any regular shape that is not concave (circle, square, ellipse, rectangle, etc.)

Housekeeping (HK): Functions such as orbit and attitude maintenance, navigation, power, command, telemetry and data handling, heater power, temperature measurements, etc.

Ice Age: The time that has passed since the formation of the surface layer of an ice covered region of the ocean, reported as the type of sea ice in an area formed as a function of its age.

Ice Concentration: The area of sea ice relative to the total at a given point in the ocean. It is typically reported as a percentage (0 to 100 percent ice), a fraction from 0 to 1, or sometimes in tenths (0/10 to 10/10).

Ice Thickness: The vertical extent of sea ice measured from the surface to the keel.

Imagery: (1) Pictures of the Earth's land, ocean, and cryosphere surfaces and atmospheric and oceanic constituents that are produced using radiometers that measure the amount of electromagnetic energy received within the Field of View and over a specified range of wavelengths. (2) A two-dimensional array of values, in digital format, each representing the amount of energy received (i.e., "brightness" or "brightness temperature") associated with the elemental area corresponding to that value.

Implementation Plan: Describes the practical means for accomplishing something and any supporting details required to meet operational goals. Implementation plans are the realization of an application; or execution of a schedule, plan, idea, model, design, specification, standard, algorithm or policy.

Information Assurance (IA): Information operations that protect and defend information and information systems by ensuring their availability, integrity, authentication, confidentiality, and non-repudiation. This includes providing for restoration of information systems by incorporating protection, detection, and reaction capabilities.

Information Exchange Requirement (IER): Identify the elements of operations, systems and user information used in support of a particular activity and between any two activities.

Information Rate (Rb): The rate of information, in bits per second, associated with the Bit Energy-to-Noise Density Ratio (Eb/No) and takes account of both the redundancy, or overhead, associated with coding and the number of bits comprising a modulation symbol.

Information Security (Info Sec): The protection of information and information systems against unauthorized access or modification of information, whether in storage, processing, or transit, and against denial of service to authorized users. Information security includes those measures necessary to detect, document, and counter such threats. Information security is composed of computer security, communications, and network security.

Information System Security Officer (ISSO): A federal employee or contractor who is appointed in writing by a system owner to ensure implementation of system-level security controls and to maintain system documentation. This checklist provides ISSOs with a self-

assessment tool, and their supervisors or Contracting Officer's Technical Representatives with a performance evaluation tool, to evaluate the level of compliance with ISSO duties as established by the Department of Commerce (DoC) Information Technology (IT) Security Program Policy and Minimum Implementation Standards (ITSPP), Section 2.1.10, as well as the additional sections of the ITSPP cited in the second column of the checklist. For JPSS, this position is a DoC National Oceanic and Atmospheric Administration (NOAA) employee.

Infrastructure Subsystem (INF): A term used to describe one of the five primary Interface Data Processing Segment (IDPS) subsystems (subsys): Processing (PRO) subsys, Infrastructure (INF) subsys, Data Delivery Subsys (DDS), Ingest (ING) subsys, and Data Management Subsys (DMS).

Infrared Ozone Profile: A JPSS data product that provides a measurement of the Ozone vertical profile derived primarily from the CrIS instrument.

Ingest History: A record of data received by the system.

Ingest Subsystem (ING): A term used to describe one of the five primary Interface Data Processing System / Segment (IDPSys/IDPSeg) subsystems (subsys): Processing (PRO) subsys, Infrastructure (INF) subsys, Data Delivery Subsys (DDS), Ingest (ING) subsys, and Data Management Subsys (DMS).

Initial Operational Capability (IOC): The state achieved when a capability is available in its minimum usefully deployable form. The term is often used in government or military procurement.

Inspection: A verification method that consists of an observation or examination of the item that does not require the item to be powered or operating. This includes: (1) certain requirements verified by simple mechanical measurements that do not require the item to be powered or operated; (2) hardware implementation constraints (such as required or prohibited materials or processes); (3) software implementation constraints (such as coding standards) verified by examination of source code; and (4) requirements for documentation and other requirements that are verified by the examination of documentation. The documentation must be configuration controlled at time of inspection.

Instrument: A space-based sensor suite carried as payload on satellites [i.e., Suomi National Polar-orbiting Partnership (S-NPP), JPSS, etc.] and used for remote sensing of geophysical measurements. Among the various JPSS satellite instruments are the Visible Infrared Imaging Radiometer Suite (VIIRS), Cross-track Infrared Sounder (CrIS), Advanced Technology Microwave Sounder (ATMS), Ozone Mapping and Profiler Suite (OMPS), and the Cloud and Earth Radiant Energy System (CERES).

Instrument Characterization Data: Data required and used to facilitate and support science and instrument related use case scenarios. Same as Science Scenario Data except it is from Instrument Support Node (ISN) to GRAVITE.

Instrument Data: Data specifically associated with a particular instrument, either because they were generated by the instrument or because they are included in data packets identified with

that instrument. These data consist of instrument science and engineering data, and may also include auxiliary data.

Instrument of Opportunity: NOAA may have "instrument of opportunity" space for a 5th instrument on its JPSS-3 and/or JPSS-4 spacecraft for experimental payloads that are related to the JPSS overall mission objectives or have general applicability to NOAA's future LEO spacecraft operations. In general, NOAA would require any potential payload not add significant risk to the operational JPSS mission and be delivered for integration within a specified timeframe.

Instrument Science Team (IST): Science subject matter experts associated with the specification, characterization and calibration of an instrument and its sensors.

Instrument Support Node (ISN): JPSS Flight Project support infrastructure responsible for the maintenance, calibration and functional operation of the five instruments - Advanced Technology Microwave Sounder (ATMS), Cross-track Infrared Sounder (CrIS), Ozone Mapping and Profiler Suite (OMPS), Visible Infrared Imaging Radiometer Suite (VIIRS), and Clouds and the Earth's Radiant Energy System (CERES). The Instrument Support Node (ISN) is under the oversight of the JPSS Flight Project. The JPSS Flight Project Instrument Manager(s) manage all activities with the Instrument Vendor(s), and the Science and Discipline engineers. The Instrument Managers also collaborate with the Instrument Science Lead who, in turn, manages the Instrument Science Teams for all instrument operations and maintenance. The ISN includes the Instrument Vendor, Instrument Science Team and Flight Project oversight for the above. There are separate nodes for each instrument in operation. The JPSS Flight Project manages the ISN. This is a support system for the JPSS Ground System (GS).

Instrument Test Data: Data produced in the conduct of test activities in the course of instrument manufacture, characterization and calibration and spacecraft integration. The instrument manufacturer and spacecraft integrator perform a series of tests on individual components, on sensors, on completed instruments and so forth up through integration of the instruments with the spacecraft. These tests characterize the instrument's optical, mechanical, thermal, and electromagnetic properties and verify the system works as specified. Radiometric, spectral, and geometric calibration parameters are derived from this instrument test data. Examples of these parameters include radiometric linearity, internal blackbody emissivity, instrument self-emission, instrument spectral line shape, location of field of view centroid, instrument spatial line shape, etc. In addition to instrument-produced telemetry data, the description of test configurations, test procedures, and measurements made by the test equipment are integral parts of the test dataset.

Integrated Data Dictionary (IDD): JPSS Program Lexicon

Integrated Master Schedule (IMS): Aggregates Ground Contact Schedules (GCS) of all missions into an overall highly coordinated, de-conflicted and "integrated" master schedule (IMS) for the JPSS Enterprise, Program, Project, Ground, Flight & Launch Systems; including its antenna, network, and data processing resources; and all internal and/or external interfaces too. The IMS illustrates from an enterprise, all the way down to an individual resource (e.g. SG-4 antenna at Svalbard) perspective all activities from all missions that will bear on the resources over the scheduled period. This is a time-ordered timeline of events and activities for all JPSS

supported missions. Various operational products are derived from the IMS and distributed. These are known as the implementation plans that include the IMS which is the report of Events and Activities for a single mission, the Mission Planner works in an IMS covering the planning period (months), and generates Master and/or Msn Sched over a shorter scheduling period (days) defined by Operations documentation.

Integrated Support Facility (ISF): Either of two defined JPSS facility locations connected to the JPSS network that can provide immediate technical support to the JPSS mission operation in any of the following five areas of expertise and assistance: 1) Nominal Operations; 2) Anomaly Resolution; 3) Launch, Early Orbit, and Activation (LEO&A); 4) JPSS System Modification; 5) Intensive Calibration and Validation. There are two ISF's currently defined for the JPSS Program: Ground ISF in Aurora, CO and Space ISF in Redondo Beach, CA.

Integrated Sustainment (InS): This is the name given to the JPSS Integrated Sustainment (InS) Concept of Operations (ConOps). This is the JPSS sustainment strategy and operations for both satellites and ground systems. Defines common Configuration Management (CM) and Discrepancy Report (DR) systems used by JPSS Flight Project and JPSS Ground Segment Project. The integrated sustainment thread describes the lifecycle of DRs and feeds System Maintenance and Upgrade, Flight Software Upgrade, and Algorithm Development and Maintenance for system upgrades throughout the JPSS Flight Project and JPSS Ground Segment Project.

Integration & Test (I&T): Refers to integration and test aspects of system development.

Interdependency Report (IR): The Environmental Data Record (EDR) Interdependency Report (IR) is a Block 1.x document that describes data product processing dependencies within the Interface Data Processing (IDP). The JPSS Algorithm Specification Volume I: Software Requirements Specification (SRS) series supersedes the EDR IR for Block 2.0.

Interface (INTF | I/F): All internal, external and outside interfaces that provide the intra and interdependencies between operation and system nodes through needlines, information and data exchanges. These interfaces facilitate the interactions needed to support the latest generation of U.S. polar-orbiting environmental satellites; the supporting Ground Segment Project (GP)/Ground System (GS) Common Ground System (CGS); and all required "interfaces" to declare the system has reached Initial Operational Capability (IOC), and eventually Full Operational Capability (FOC). There are three types of interface identified in current JPSS GP/GS/CGS ConOps: internal, external & outside interfaces. Each will be defined in more detail individually within the JPSS Program Lexicon. JPSS will provide the global environmental data used in numerical weather prediction models for forecasts, and scientific data used for climate monitoring. JPSS will aid in fulfilling the mission of the U.S. National Oceanic and Atmospheric Administration (NOAA), an agency of the Department of Commerce. Data and imagery obtained from the JPSS will increase timeliness and accuracy of public warnings and forecasts of climate and weather events, thus reducing the potential loss of human life and property and advancing the national economy. The National Aeronautics and Space Administration (NASA) developed the JPSS for the National Oceanic and Atmospheric Administration (NOAA), who are responsible for operating JPSS. Two satellites are planned for the JPSS constellation of satellites. The JPSS CGS provides equipment needed for the Office of

Satellite and Product Operations (OSPO) operators to fly the JPSS satellites and process the scientific data from JPSS.

Interface Control Document (ICD): Defines major internal and external interface control specifications and authorities between two or more entities.

Interface Data Processing Segment (IDPS/IDPSeg): The Suomi National Polar-orbiting Partnership (S-NPP)/JPSS segment responsible for providing the ground data processing capability to create mission unique S-NPP and JPSS data products from raw sensor data. The IDPS is co-located with the NESDIS Processing Center at the NOAA Satellite Operations Facility in Suitland, MD. The IDPS receives Application Packets (APs) from the Command, Control & Communications (C3) Segment (C3S), generates and stores Raw Data Records (RDRs) and converts RDRs into Sensor DRs (SDRs) and selected Environmental Data Records (EDR).

Interface Data Processing Segment Data Set: An individual item of data stored in the Interface Data Processing Segment (IDPS) internal archive [in the Data Management Subsystem (DMS)]. A data set consists of one or more files and their associated metadata. Data Sets in DMS storage may contain files in IDPS internal format or external formats.

Interface Data Processing Operator (IDP Op): Interface Data Processing (IDP) Operators are located at each Processing Center and responsible for all the IDP resources and their proper operation. This is a 24/7 position that ensures all Common Ground System (CGS) IDP resources are available when required, troubleshoots any issues, and assists the Enterprise Manager and Mission Planner to ensure optimum use of the IDP to meet all requirements. The IDP Operator will have a human-machine interface to the IDPS infrastructure and a view of overall CGS IDP and system level activity:

- The IDP Operator may communicate with the Enterprise Manager to provide EM configuration, status, availability, and performance backup info for the CGS IDP.
- The primary EM interface between CGS IDP and CGS C3 is machine-based.

Interface Description Document (IDD): Unilateral document controlled by the organization responsible for an interface that provides details necessary for users to utilize the interface(s) or service(s) provided.

Interface Requirements Document (IRD): Defines major internal and external interface requirements between two or more entities. System (JPSS), Families of Systems [FoS: Environment/Position Navigation Timing (PNT)/Satellite Communications (SATCOM)], Systems of Systems [SoS: Weather (WX)/Military SATCOM (MILSATCOM)/Global Positioning System (GPS)/JPSS Ground Segment Project (GP)], segments [Ground Segment Project (GP)/Flight Project (FP)], major subsystems, and both internal & external interfaces [Global Change Observation Mission (GCOM)/Government Resources for Algorithm Verification Independent Testing and Evaluation (GRAVITE)/Calibration/Validation (Cal/Val) Support (Supt)/Field Terminal Support (FTS)/Flight Vehicle Test Suite (FVTS)/etc.].

Intermediate Product (IP): A product generated at a specific point in the Data Procession Node processing stream, stored for a finite period of time and used internally as an input to other

Interface Data Processing Segment (IDPS) processing applications. [See also Retained Intermediate Product (RIP)].

Internal: Generic term used to describe something inside a certain physical, logical or control boundary and/or scope.

Internal Interface: Interfaces internal to our ground systems, segments, subsystems and components within JPSS direct control and influence.

International Celestial Reference Frame (ICRF): The International Astronomical Union (IAU) has charged the International Earth Rotation and Reference Systems Service (IERS) with the responsibility of monitoring the International Celestial Reference System (ICRS) and maintaining its current realization, the International Celestial Reference Frame (ICRF). Starting in 2001, these activities are run jointly by the IERS ICRS Product Center (collaboration between the l'Observatoire de Paris and the U.S. Naval Observatory) of the IERS and the International VLBI Service for Geodesy and Astrometry (IVS), in coordination with the IAU Working Group on Reference Systems.

International Earth Rotation and Reference System Provider (IERS): International Earth Rotation and Reference Systems (IERS) Services provides earth orientation data used for orbit operations and data geolocation. IERS is an ancillary data provider to JPSS.

International Telecommunications Union - Radiocommunication Sector (ITU-R): An international collaboration of member states that effects the allocation of bands of the radiofrequency spectrum, the allotment of radio frequencies and the registration of radio frequency assignments and of any associated orbital position in the geostationary satellite orbit in order to avoid harmful interference between radio stations of different countries; and coordinates efforts to eliminate harmful interference between radio stations of different countries and to improve the use made of radio-frequencies and of the geostationary-satellite orbit for radiocommunication services.

International Terrestrial Reference Frame (ITRF): The Earth is constantly changing shape. To be understood in context, when the motion of the Earth's crust is observed, it must be referenced. A Terrestrial Reference frame provides a set of coordinates of some points located on the Earth's surface. It can be used to measure plate tectonics, regional subsidence or loading [1] and/or used to represent the Earth when measuring its rotation in space. This rotation is measured with respect to a frame tied to stellar objects, called a celestial reference frame. The International Earth Rotation and Reference Systems Service (IERS) created in 1988 was organized to establish and maintain a Celestial Reference Frame (CRF), the International CRF (ICRF), a Terrestrial Reference Frame (TRF), and the International TRF (ITRF). The Earth Orientation Parameters (EOPs) connect these two frames together. These frames provide a common reference to compare observations and results from different locations [1]. Four main geodetic techniques are used to compute accurate coordinates: the GPS, VLBI, SLR, and DORIS. Since the tracking network equipped with the instruments of those techniques is evolving and the period of data available increases with time, the ITRF is constantly being updated. 11 realizations of the ITRS were set up from 1988. The latest is the ITRF2005. All these realizations include station positions and velocities. They model secular Earth’s crust change that’s why they can be used to compare observations from different epochs. All the

higher frequencies of the station displacements can be accessed with the IERS conventions, chapter 7 [2]. Continuity between the realizations has been ensured as much as possible when adopting conventions for ITRF definitions. The relationship linking all these solutions is of utmost importance. They are supplied here by the transformation parameters. The International Terrestrial Reference System (ITRS) is a world spatial reference system co-rotating with the Earth in its diurnal motion in space. The IERS, in charge of providing global references to the astronomical, geodetic and geophysical communities, supervises the realization of the ITRS. The IERS ITRS Product Center (ITRS-PC) under the name International Terrestrial Reference Frames (ITRF) produces realizations of the ITRS. ITRF coordinates were obtained by combination of individual TRF solutions computed by IERS analysis centers using the observations of Space Geodesy techniques: GPS, VLBI, SLR, LLR and DORIS. They all use networks of stations located on sites covering the whole Earth. Source: http://itrf.ensg.ign.fr/general.php

International Traffic in Arms Regulation (ITAR): Regulations that dictate the information and material pertaining to defense and military related technologies (for items listed on the U.S. Munitions List) that may only be shared with U.S. Persons unless authorization from the Department of State is received, or a special exemption is used.

Internet Protocol (IP): The principal communications protocol used for relaying datagrams (also known as network packets) across an internetwork using the Internet Protocol Suite. Responsible for routing packets across network boundaries, it is the primary protocol that establishes the Internet. IP is the primary protocol in the Internet Layer of the Internet Protocol Suite and has the task of delivering datagrams from the source host to the destination host solely based on the addresses. For this purpose, IP defines datagram structures that encapsulate the data to be delivered. It also defines addressing methods that are used to label the datagram source and destination.

Internet Protocol Suite (IP Ste): The set of communications protocols used for the Internet and other similar networks. It is commonly known as TCP/IP, because of its most important protocols: Transmission Control Protocol (TCP) and Internet Protocol (IP), which were the first networking protocols defined in this standard. Modern IP networking represents a synthesis of several developments that began to evolve in the 1960s and 1970s, namely the precursors of the Internet and Local Area Networks (LANs), which emerged during the 1980s, together with the advent of the World Wide Web (www) in the early 1990s. The Internet protocol suite has four abstraction layers, each with its own protocols. From lowest to highest, the layers are: 1. The link layer contains communication technologies for a local network. 2. The Internet layer connects local networks, thus establishing the Internet. 3. The transport layer handles host-to-host communication. 4. The application layer contains all protocols defined specifically for the functioning of the vast array of data communications services. This layer handles application-based interaction on a process-to-process level between communicating Internet hosts.

Internet Protocol Version 4 (IPv4): The previous IP standard many currently fielded and most modernized and future developed systems must be backward compatible and in compliance with. The JPSS Common Ground System (CGS) can meet IPv4 standards (previous widely accepted and implemented IP standard), but is capable of meeting IPv6 standards by interfacing with the NOAA Trusted Internet Connection Access Providers (TICAP) proxy servers.

Internet Protocol Version 6 (IPv6): A new IP standard all modernized or currently fielded and future developed systems must be compatible and in compliance with. The JPSS Common Ground System (CGS) can meet IPv4 standards (previous widely accepted and implemented IP standard), but is capable of meeting IPv6 standards by interfacing with the NOAA Trusted Internet Connection Access Providers (TICAP) proxy servers.

Interoperability (Interop): The condition among communications-electronics systems or items of communications electronics when information or services can be exchanged directly and satisfactorily between them and/or their users. The ability of systems, units, or forces to provide services to and accept services from other systems, units or forces, and to use the services so exchanged to enable them to operate effectively together (Joint Chiefs of Staff Publication 1-02).

Investigator Computer Facility (ICF): A computing facility in a distributed network architecture that can discover, query, and request copies of data and information stored, backed up, or archived elsewhere as required across distributed operational and system nodes.

Investigator Findings Container (IFC): Also referred to as Validation Finding Containers in some Cal/Val Documentation.

Issue: In the context of JPSS Program execution, any problem that occurs within, directly or indirectly impacts, or has a significant influence on (i.e., internal/external interfaces) the JPSS Ground System (GS) or JPSS-managed observatories. If an issue delays data by more than one orbit or causes data to be lost or corrupted then that "issue" shall be reclassified as an "anomaly". These issues can be against any system, segment, subsystem and/or interface. Issues that are not resolved using Standard Operating Procedures (SOPs) will be formally tracked as a Discrepancy Report (DR). Issues, anomalies, discrepancy reports and/or trouble tickets are all terms that people often used interchangeably in verbal communication; but in reality all of them have important and subtle differences.

Japanese Aerospace Exploration Agency (JAXA): Japan's equivalent and similar organization to NASA. Japan is determined to actively use aerospace technology to build a safe and prosperous society. JAXA is responsible for research, technology development and the launch of satellites into orbit, and is involved in many more advanced missions, such as asteroid exploration and possible manned exploration of the Moon.

Japanese Aerospace Exploration Agency Operations (JAXA Ops): The Japanese Aerospace Exploration Agency (JAXA) Ops is the operations center for the GCOM missions. JAXA is Japan's equivalent and similar organization to NASA. The facility is located at the JAXA Tsukuba Space Center (TKSC) in Tsukuba Science City, Japan.

Joint Polar Satellite - Block 1 (J1/JPS-1): The first of two JPSS satellite blocks currently planned for future development and launch, after the recently launched Suomi National Polar-orbiting Partnership (S-NPP) satellite, commonly referred to as J1.

Joint Polar Satellite - Block 2 (J2/JPS-2): The second of two JPSS satellite blocks currently planned for future development and launch, after the recently launched Suomi National Polar-orbiting Partnership (S-NPP) satellite, commonly referred to as J2.

Joint Polar Satellite System (JPSS): Identifies the program, systems engineering, projects, systems, segments, and Integrated Technical Baselines (ITB) of the latest generation of U.S. polar-orbiting environmental satellites; the supporting Ground Segment Project (GP)/Ground System (GS) Common Ground System (CGS); and all required interfaces to declare the system has reached Initial Operational Capability (IOC), and eventually Full Operational Capability (FOC). JPSS will provide the global environmental data used in numerical weather prediction models for forecasts, and scientific data used for climate monitoring. JPSS will aid in fulfilling the mission of the U.S. National Oceanic and Atmospheric Administration (NOAA), an agency of the Department of Commerce. Data and imagery obtained from the JPSS will increase timeliness and accuracy of public warnings and forecasts of climate and weather events, thus reducing the potential loss of human life and property and advancing the national economy. The National Aeronautics and Space Administration (NASA) developed the JPSS for the National Oceanic and Atmospheric Administration (NOAA), who are responsible for operating JPSS. Two satellites are planned for the JPSS constellation of satellites. The JPSS CGS provides equipment needed for the Office of Satellite and Product Operations (OSPO) operators to fly the JPSS satellites and process the scientific data from JPSS.

Joint Polar Satellite System Ground Segment (JPSS Ground Segment): See Ground Segment.

Joint Polar Satellite System Ground System (JPSS Ground System): See Ground System.

Joint Polar Satellite System Interface (JPSS Interface): Internal, external and outside interfaces supporting JPSS mission services that provide the intra- and interdependencies between operation and system nodes through needlines, information and data exchanges. These interfaces facilitate the interactions needed to support the latest generation of U.S. polar-orbiting environmental satellites; the supporting Ground Segment Project (GP)/Ground System (GS) Common Ground System (CGS); and all required "interfaces" to declare the system has reached Initial Operational Capability (IOC), and eventually Full Operational Capability (FOC). There are three types of interfaces identified in current JPSS GP/GS/CGS ConOps: internal, external & outside interfaces.

Joint Polar Satellite System (JPSS) Orbit: See Nominal Orbit.

Joint Polar Satellite System Program (JPSS Program): The leadership, program management, systems engineering, integration, test and interface support provided for the latest generation of U.S. polar-orbiting environmental satellites; the supporting Ground Segment Project (GP)/Ground System (GS) Common Ground System (CGS); and all required interfaces to declare the system has reached Initial Operational Capability (IOC), and eventually Full Operational Capability (FOC). JPSS will provide the global environmental data used in numerical weather prediction models for forecasts, and scientific data used for climate monitoring. JPSS will aid in fulfilling the mission of the U.S. National Oceanic and Atmospheric Administration (NOAA), an agency of the Department of Commerce. Data and imagery obtained from the JPSS will increase timeliness and accuracy of public warnings and forecasts of climate and weather events, thus reducing the potential loss of human life and property and advancing the national economy. The National Aeronautics and Space Administration (NASA) developed the JPSS for the National Oceanic and Atmospheric Administration (NOAA), who are responsible for operating JPSS. The JPSS CGS provides

equipment needed for the Office of Satellite and Product Operations (OSPO) operators to fly the JPSS satellites and process the scientific data from JPSS.

Joint Polar Satellite System Polar Follow-On (JPSS PFO): The JPSS acquisition program designed to provide continuity of polar satellite observations after the existing JPSS Program of Record. The PFO includes plans for the JPSS-3 and JPSS-4 missions under an updated, multi-mission requirements baseline.

Joint Polar Satellite System Program of Record (JPSS POR): The JPSS Program was established in February 2010 when the Executive Office of the President provided direction for the restructure of the National Polar-orbiting Operational Environmental Satellite System (NPOESS) Program. The administrative direction gave NOAA responsibility for the afternoon orbit satellites now referred to as JPSS. JPSS is a NOAA sponsored, reimbursable program with NASA Goddard Space Flight Center as its acquisition agent. The JPSS program was formulated under authority of the JPSS Program Formulation Authorization Document (FAD), Revision 1, approved on June 22, 2012 and baselined as the program of record (POR) in July 2013 consisting of three satellites – Suomi National Polar-orbiting Partnership (S-NPP), JPSS-1, and JPSS-2.

Joint Polar Satellite System-1 (JPSS-1): The first mission in the JPSS Program of Record. JPSS provides the global environmental data used in numerical weather prediction models for forecasts, and scientific data used for climate monitoring and aids in fulfilling the mission of the U.S. National Oceanic and Atmospheric Administration (NOAA), an agency of the Department of Commerce. Data and imagery obtained from the JPSS increases timeliness and accuracy of public warnings and forecasts of climate and weather events, thus reducing the potential loss of human life and property and advancing the national economy. The National Aeronautics and Space Administration (NASA) developed the JPSS for the National Oceanic and Atmospheric Administration (NOAA), with the latter agency responsible for operating JPSS. The JPSS-1 manifest includes the Advanced Technology Microwave Sounder (ATMS), the Clouds and the Earth's Radiant Energy System (CERES), the Cross-track Infrared Sounder (CrIS), the Ozone Mapping and Profiling Suite (OMPS) Nadir Mapper and Nadir Profiler, and the Visible Infrared Imaging Radiometer Suite (VIIRS). As with S-NPP, the spacecraft bus was acquired and integrated by Ball Aerospace and represents the final spacecraft on its procurement contract.

Joint Polar Satellite System-2 (JPSS-2): The second and final mission in the JPSS Program of Record and the first JPSS mission to be acquired under the JPSS multi-mission requirements baseline. JPSS-2 is the first mission with its spacecraft bus acquired and integrated by Northrop Grumman Innovation Systems (NGIS). The JPSS-2 manifest includes the Advanced Technology Microwave Sounder (ATMS), the Cross-track Infrared Sounder (CrIS), the Ozone Mapping and Profiling Suite (OMPS) Nadir Mapper, Nadir Profiler, and Limb Profiler; and the Visible Infrared Imaging Radiometer Suite (VIIRS), with spacecraft capability for a fifth instrument of opportunity.

Joint Polar Satellite System-3 (JPSS-3): The third JPSS mission and the first under the JPSS Polar Follow-On procurement, with an instrument manifest identical to the predecessor JPSS-2 mission.

Joint Polar Satellite System-4 (JPSS-4): The fourth and final JPSS mission and the second under the JPSS Polar Follow-On procurement, with an instrument manifest identical to the predecessor JPSS-3 mission.

Joint Polar System (JPS): The Joint Polar System is composed of the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) Polar System – Second Generation (EPS-SG), the NOAA Joint Polar Satellite System (JPSS), and shared ground systems and services. The JPS continues the cooperative efforts of the Initial Joint Polar System (IJPS). Joint operations will include cross support for data acquisition and spacecraft monitoring through European and US ground stations located in Svalbard, Norway and McMurdo, Antarctica. The EPS-SG and JPSS satellites will continue to respectively cover the mid-morning and the afternoon orbits to provide more frequent global coverage for a broader range of observations of weather, atmospheric composition, ocean, and land surfaces. The JPS Agreement was signed by both agencies at the 84th session of the Council of EUMETSAT on December 2, 2015.

Joint Space Operations Center Space Situational Awareness Operations Team (JSpOC SSA Ops Team): The Joint Space Operations Center (JSpOC) Space Situational Awareness (SSA) Operations Team tracks orbital objects and provides conjunction assessment assistance for government systems. The JSpOC protection mission consists of conducting laser clearing procedures, analyzing intentional threat, and collision avoidance. The JSpOC compiles information on hostile events that could directly or indirectly threaten U.S. or allied space assets. This information is analyzed to determine potential impacts on assets so that timely warnings and recommendations for suitable countermeasures can be made. This is a once-removed support system for JPSS, as it provides tracking data and expertise to the NASA Conjunction Assessment Risk Analysis (CARA) and NOAA Collision Risk Assessment Team (CRAT) groups.

Joint Spacecraft Operations Center (JSOC): Houses the satellite data capture equipment at McMurdo Ground Station (MG1), Ross Island, and Antarctica.

JPSS Database Management (JDM/JPSS DBM): The JPSS Database Management group manages the Command & Telemetry (C&T) databases for the JPSS missions. This group is part of the software management group of the JPSS Ground Segment Project.

JPSS Ground Station (JPSS GStn/JPSS Grnd Stn/JPSS GrndStn): JPSS-NOAA 4-meter receptors located at McMurdo T-site and Fines-site providing Ka- and S-band downlink-only capability (S-Band downlink in support of the Defense Meteorological Satellite Program (DMSP)).

JPSS Stored Mission Data Hub (JSH): JPSS Stored Mission Data (SMD) Hub (JSH) is a node used for storing SMD for system, data and product reliability and recovery purposes.

Ka-Band: The Ka-band covers the 26.5–40 GHz range of frequencies allocated across the band for specific Radio Frequency (RF) communications use. The JPSS architecture uses a portion of this band for space-to-ground Stored Mission Data communications.

Key Attribute: This is an Environmental Data Record (EDR) attribute that is directly tied to a key performance parameter of the system, as defined in the JPSS Level 1 Requirements Document. See also Key Performance Parameter.

Key Environmental Data Record: This is an Environmental Data Record (EDR) that has a key attribute (i.e., directly tied to a key performance parameter of the system), as defined in JPSS Level 1 Requirements Document. See Key Performance Parameter.

Key Management (KM): This is the name given to the JPSS Key Management (KM) Concept of Operations (ConOps). Ground System operations to manage the encryption keys used for the satellite command uplink, telemetry downlink, and high resolution GPS navigation.

Key Mission Sensor: A Primary Mission Sensor that provides data to meet stated JPSS mission success criteria, e.g., ATMS, CrIS or VIIRS.

Key Performance Parameter (KPP): A parameter so significant to the user community that all designated requirements must be met to achieve minimum multi-mission system success as defined in JPSS system-level requirements.

Kilobit per second (kbps): A bit rate of 1,000 bits per second.

KiloByte per second (kBps): A Byte rate of 1,000 Bytes per second.

Kongsberg Satellite Services (KSAT): The data acquisition service provider that operates SvalSat, a major ground station facility located in Svalbard, to communicate with the S-NPP and JPSS satellites.

Kongsberg Satellite Services Svalbard Satellite (KSAT SvalSat): The ground station site managed and operated by the Kongsberg Satellite Service (KSAT). This system is the elements of KSAT outside the Common Ground System (CGS) that provide non-JPSS functions such as the GCOM-W reception and front-end processing.

Kongsberg Satellite Services Troll Satellite (KSAT TrollSat): KSAT SvalSat is the TrollSat, Antarctica ground station site managed and operated by the Kongsberg Satellite Service (KSAT).

Kongsberg Satellite Services Tromsø Network Operations Centre (KSAT TNOC): This is a support system for the JPSS Ground System (GS) and the KSAT Tromsø Network Operations Centre (TNOC) is the Kongsberg (KSAT) TNOC that manages and operates the KSAT ground station assets out of Tromsø, Norway.

Land Surface Emissivity: The emissivity of the Earth's land surface.

Land Surface Temperature (LST): The skin temperature of the uppermost layer of the land surface. It includes the aggregate temperature of objects comprising the land surface, including any open water, in the cell. Surface temperature information is needed for numerical weather prediction and hydrological modeling, automated cloud analysis, and for general operations (i.e., wind chill temperatures and heat stress factors).

Last Reported Value (LRV): The current value of a set system mnemonic. An LRV is a defined measurand for which the current value and historical values are maintained by the ground command and control system on a real-time or near real-time basis. There are a number of different types of LRVs, including LRVs that record the current values for satellite telemetry measurands, ground hardware telemetry measurands, software status measurands, operator input measurands, and derived LRVs calculated from the current values of other LRVs.

Latency: See Data Latency.

Launch and Early Orbit (L&EO): The JPSS Launch and Early Orbit (LEO) Concept of Operations (ConOps) and a description of Ground System operations during the satellite launch phase and early orbit phase.

Launch, Early Orbit, and Activation (LEO&A): Describes the Flight and Ground Segment Project operations during the launch, early orbit, and activation phases of the mission. The launch phase begins with the final countdown; goes through the liftoff, ascent, separation from the Launch Vehicle (LV); and finishes with the satellite being placed in the designated orbit and in the sun-pointing survival mode. The operations then transition into the early orbit phase as the spacecraft stabilizes in its designated orbit and establishes reliable communication with the Mission Management Center (MMC). The early orbit phase completes when the spacecraft and instruments have been successfully activated, deployed and checked out as functional. The operations during the launch phase include tracking, telemetry monitoring, predicted acquisition vector updates, and mission planning updates if necessary. During the early orbit phase, the operations center around the activation, initialization and checkout of the spacecraft bus system and subsystems. They will also cover activation and initialization of instruments in preparation for their Intensive Calibration and Validation (ICV) operations.

Launch Segment: Those assets and services associated with the launch vehicle (LV) and the payload integration necessary to place a satellite into the mission orbit. Included along with the LV are all ground support equipment, property, and facilities to integrate the satellite with the LV, verify their integration, and conduct pre-launch testing with the ground system. The JPSS satellite is designed to be accommodated by either an Evolved Expendable Launch Vehicle (EELV)-class or Delta II launch vehicle, which will provide launch from the Western Range at the Vandenberg Air Force Base (VAFB). Launch support segment activities are considered complete when the satellite separates from the LV.

Leap Seconds (LpSec): Source: Data file used between convert Interface Data Processing Segment Epoch Time (IET) and Coordinated Universal Time (UTC). Next leap second announced at: ftp://hpiers.obspm.fr/iers/bul/bulc/bulletinc.dat with the updates announced at least 6 months in advance.

Data for all Leap seconds at: http://maia.usno.navy.mil/ser7/leapsec.dat.

Level (Lvl): Used to describe top-down and bottom-up hierarchical relationships between technical baseline artifacts either currently in existence, being updated or under development: architectures, concepts of operations, operations concepts, requirements, interfaces, specifications, controls, configuration and security documents, models and associated metadata. The JPSS system under NOAA sponsorship and accountability exists at Level 1. The JPSS missions under the cognizance of the JPSS Program are at Level 2, and the JPSS Flight and Ground Segment Projects contributing to those missions are at Level 3. Vendor ownership and accountability to the Government exists at Level 4 and below except for deliverables that are inherently Governmental (e.g., ground science algorithms under the cognizance of the NESDIS Center for Satellite Applications and Research).

Life Test: Testing conducted on limited life items to simulate exposure, and operation if applicable, in a representative operational environment to demonstrate performance requirements for mission duration and predict their End-of-Life (EOL) performance.

Limited Life Item: A component having a usefulness that is limited to a specified time or number of cycles, inherent to the performance of its function. Some examples include mechanical items that move or rotate repetitively and electrical items, such as motors, batteries, solar arrays, and lamps.

Line of Sight (LoS): Direct path electro-magnetic radiation or acoustic wave propagation. Electromagnetic transmission travels nominally in a straight line. The rays or waves may be diffracted, refracted, reflected, or absorbed by atmosphere and obstructions.

Line Replaceable Unit (LRU): This is a configuration item that can be replaced "in line" (in the operational configuration) without impacting the performance of the mission. This is normally the lowest level of maintenance at the operating location (i.e., unit can be replaced on site and dispositioned for repair/replacement by operators/maintainers or vendors on the spot).

Local Area Network (LAN): A local computer network for communication between computers; especially a network connecting computers and word processors and other electronic office equipment to create a communication system between offices.

Local Area Network Operator (LAN Op): The LAN Operator is responsible for managing the Local Area Networks (LAN) within their facility, including all equipment [hardware and software], documentation, facilities, and the services to manage, operate and maintain the LAN. The LAN Operator will provide network operational status of the JPSS nodes to the Enterprise Manager and will provide real-time network status reporting to the Enterprise Manager on an exception basis.

Local Computing Facility (LCF): An external computing system controlled by an affiliated organization, especially the home institution of an ACVST member that is used in the support of the JPSS mission. The CVN is the single point of interface provided by the JPSS Program between the CGS and the various LCFs.

Local Maintenance: Those maintenance activities carried out by individuals physically present at the information system or information system component.

Local Storage: A data storage resource that is contained within a computer, subsystem or system; and primarily used by that computer, subsystem or system.

Long Term Archive (LTA): The collection of facilities and data management functions designated by National Oceanic and Atmospheric Administration (NOAA)/National Environmental Satellite, Data, and Information Service (NESDIS) to receive Suomi National Polar-orbiting Partnership (S-NPP)/JPSS data products, metadata, and other documentation, in fulfillment of NOAA's responsibilities under the Federal Records Act (FRA) and other agreements and regulations. NOAA is managing the Comprehensive Large Array-data Stewardship System (CLASS) for this and similar tasks. JPSS data products from Interface Data Processing Segment (IDPS) and Environmental Satellite Processing Center (ESPC) will be

stored in the LTA. Called the Archive and Distribution Segment (ADS) in legacy S-NPP documentation.

Long Term Stability: The maximum excursion of the short-term average measured value against a truth reference under identical conditions over the life of the JPSS mission. The short-term average is the average of a sufficient number of successive measurements of the reference under identical conditions such that the random error is negligible relative to the systematic error.

Long Term Storage (LTS): (1) The transfer of the on-line schedules, logs, data, etc., to off-line storage media to be retained for the life of the missions supported. (2) on-ground storage and maintenance of instrument and satellite hardware and support equipment in advance of an extended launch date.

Look-Up Table (LUT): Auxiliary data input to an algorithm that contain tables of pre-computed values that are used in lieu of real-time algorithm computations or to provide a binning output value for each of a range or "window" of index value. LUTs are maintained off-line and are updated to reflect the best present knowledge of sensor performance and state of the environment.

Loss of Signal (LOS): This is the loss of telemetry or command link from the observatory either planned (end of contact) or unplanned (anomaly). For ground equipment, this is an indicator on a networking device to indicate that a network signal or other type of signal connection has been lost.

Low Earth Orbit (LEO): Generally defined as an orbit below an altitude of 2,000 kilometers (1,200 mi). Given the rapid orbital decay of objects below approximately 200 kilometers (120 mi), the commonly accepted definition for LEO is between 160 kilometers (99 mi) and 2,000 kilometers (1,200 mi) above the Earth's surface.

Maintainability: Characteristic of design and installation that determines the probability of a failed equipment, machine, or system being restored to its normal operable state within a given timeframe, using prescribed practices and procedures. Its two main components are serviceability (ease of conducting scheduled inspections and servicing) and reparability (ease of restoring service after a failure).

Make Available: To place data or material, either physically or electronically, in a location where it can be retrieved by authorized entities. See Distribute.

Managed Network: A type of network that is actively monitored and controlled by providing the status of components used in the transfer of data across the Wide Area Network (WAN) data link, and which should be visible or known to the Mission Management Center (MMC) element.

Management and Operations Node (MON): This node commands the spacecraft and ensures proper operation of the JPSS spacecraft and ground assets. The Management and Operations Node (MON) provides the mission planning and scheduling, flight operations, telemetry and commanding, orbit and attitude management, ground operations, alarms, warnings and events processing, and trending and analysis. MON also provides the infrastructure for enterprise management as well as monitoring for the security events within the system. The MON is

instantiated by the Common Ground System (CGS). The primary MON is located in Suitland, MD at the NSOF. The alternate MON is located at the NOAA Fairmont, WV Consolidated Backup (CBU) facility. A Stopgap MON for Suomi National Polar-orbiting Partnership (S-NPP) is provided at the CGS vendor location in Aurora, CO prior to the deployment of the Alternate Mission Management Center (AMMC). The primary purpose of this Stopgap MON is to maintain the health and safety of the satellite.

Management Control Plan (MCP): A document authorized by a Memorandum of Understanding that establishes the business plans and processes, management controls, and organizational structure of the Program.

Maneuver Planning Data: This is data sufficient to define a planned attitude, calibration, or other orbit adjustment maneuver, usually includes specification of the maneuver details such as target attitude or slew and start/end times at that attitude or slew. The target attitude specification can be either identification of an on-board stored target or specification of a desired target.

Mapping Accuracy: See Geolocation Accuracy.

Mapping Uncertainty: See Geolocation Uncertainty.

Margin: A value added to the estimated value that accounts for uncertainty in the estimated capability or for historically observed growth of a Technical Performance Measurement (TPM) in similar systems. Also applies to radio path or link performance surpassing the minimum required performance.

Mass Data Storage / Mass Memory: The generic term used to describe the data recording and playback capability on JPSS spacecraft beginning with the JPSS-2 mission, in the absence of a Solid State Recorder (SSR).

Master Schedule (Mst Sched/Mast Sched): Aggregates Ground Contact Schedules (GCS) of all missions into an overall "master" schedule (Mast Sched) for the JPSS Ground System (GS), including its antenna, network, and data processing resources. The Mast Sched illustrates from an individual resource (e.g. SG-4 antenna at Svalbard) perspective all activities from all missions that will bear on the resource over the scheduled period. This is a time-ordered timeline of events and activities for all JPSS supported missions. Various operational products are derived from the Mast Sched and distributed. These are known as the implementation plans that include the Mission Schedule (Msn Sched) which is the report of Events and Activities for a single mission, the Mission Planner works in a Master Schedule covering the planning period (months) and generates Msn Sched over a shorter scheduling period (days) defined by Operations documentation.

Maximum Expected Value (MEV): A resource estimate plus a contingency amount that accounts for uncertainty (or growth risk) above the CBE. MEV is generally used to determine margin.

McMurdo Ground Station (MG1): This is the name given to the McMurdo Ground Station (MG1) after it was refurbished.

McMurdo Multiple-mission Communication System (MMCS): A communication infrastructure shared among National Science Foundation (NSF), NOAA and the United States Air Force (USAF).

McMurdo Station (McM Stn/McMStn): The McMurdo Station include all the JPSS receive-only antennas and associated equipment that are capable of receiving downlinked SMD at the NSF McMurdo station down in Antarctica. The NASA McMurdo Ground Station (MG1) receptor is used to support Meteorological Operational Satellite (Metop), while the JPSS receptors are used for DMSP and eventually JPSS-x missions.

Mean Anomaly: Same orbit and constant separation with no overlap.

Mean Downtime (MDT): Time measured from the loss of the capability to deliver an Environmental Data Record (EDR) that facilitates the meeting of Key Performance Parameters (KPP) until the restoration of that capability.

Mean Mission Duration: For on-orbit space systems, the average time the system is operational before a mission critical failure occurs. The mean mission duration is equivalent to mean time to failure for non-repairable ground systems.

Mean Time Between Critical Failure (MTBCF): The average time between failures of mission-essential functions, calculated as the ratio of active hours (those excluding scheduled maintenance) and the number of critical failures.

Mean Time Between Downing Event (MTBDE): A measure calculated as the total uptime over the number of downing events. Calculated MTBDE = (operating time)/(number of downing events)

Mean Time Between Failures (MTBF): The average equipment operating time between failures of any type, calculated by dividing uptime by the total number of failures.

Mean Time to Failure (MTTF): A system, subsystem or device's average time to failure, as calculated at a specific point in time. This differs from MTBF in that it changes over time as the system is maintained.

Mean Time to First Failure (MTTFF): The average time before an initial failure starting from when the system is first made or formally declared to be Mission Capable.

Mean Time to Repair (MTTR): The total amount of time spent performing all corrective maintenance repairs divided by the total number of those repairs.

Measurement Accuracy: The magnitude of the mean measurement error. For a sample set of N measurement errors, the measurement accuracy βN is given by the following formula:

$$\beta N = |\mu N|$$

where: μN is the mean measurement error, and |…| denotes absolute value. The mean measurement error μN is given by the following formula:

$$\mu N = (\Sigma_{i=1,N}\ \varepsilon_i)/N$$

where: ε_i is the value of the measurement error for the i'th measurement and Σ_i=1,N denotes summation from i = 1 to i = N.

Measurement Bias: The mean of the distribution of measurement errors over an extended period of time. Measurement bias is commonly corrected in data analysis to improve measurement accuracy.

Measurement Error: The difference between the estimated value of a parameter and its true value. This estimate may be the result of a direct measurement, an indirect measurement, or an algorithmic derivation.

The measurement error ε is given by:

$$\varepsilon = xE - xT$$

where: xE is the estimate of the parameter x and xT is its true value.

Measurement Precision: The standard deviation (one sigma) of the measurement errors. For a sample set of N measurement errors, the measurement precision σN is given by the following formula:

$$\sigma N = [\Sigma_i=1,N (\varepsilon_i - \mu N)2/(N - 1)]1/2$$

where ε_i is the value of the measurement error for the i'th measurement, μN is the mean measurement error, and Σ_i=1,N denotes summation from i = 1 to i = N.

Measurement Range: The parameter range over which Measurement Accuracy, Precision, Uncertainty, and Probability of Correct Typing performance requirements must be verified and validated.

Measurement Stability: Generally used to describe the category of metrics of the measurement biases.

Measurement Uncertainty: (1) The root-mean-square (RMS) of the measurement errors. It results from the combined effects of all systematic and random errors. Measurement uncertainty converges to the square root of the sum of the squares (RSS) of the measurement accuracy and precision in the limit of an infinite number of measurements. For a sample set of N measurement errors, the measurement uncertainty ξN is given by the following formula:

$$\xi N = [\Sigma_i=1,N \varepsilon_i^2/N]^{1/2}$$

where ε_i is the value of the measurement error for the i'th measurement and Σ_i=1,N denotes summation from i = 1 to i = N. (2) A figure of merit that applies to JPSS data products that are derived from on-orbit sensor measurements using algorithmic processing. Measurement Uncertainty quantifies how close the measured data product value is believed to be to the true value based on simulations in which true values are known or post-launch validation campaigns in which data product estimates are independently measured with higher confidence than that provided by JPSS. Measurement Uncertainty is not an appropriate figure of merit for sensor parameters because the true value of a sensor parameter is never available, and sensor parameters are not independently validated in the sense in which S-NPP/JPSS data products are validated.

Mega Symbols per second (MSps): A symbol rate of 1,000,000 symbols per second.

Megabit per second (Mbps): A bit rate of 1,000,000 bits per second.

MegaByte per second (MBps): A Byte rate of 1,000,000 Bytes per second.

Memorandum of Agreement (MOA): A document written between parties to cooperatively work together on an agreed upon project or meet an agreed objective. The purpose of a MOA is to have a written understanding of the agreement between parties. A MOA is a good tool to use in order to track the heritage of many interrelated and interdependent projects. It can be used between agencies, the public and the federal or state governments, communities, and individuals. It lays out the ground rules of a positive cooperative effort.

Memorandum of Understanding (MOU): A document describing a bilateral or multilateral agreement between parties. It expresses a convergence of will between the parties, indicating an intended common line of action. It is often used in cases where parties either do not imply a legal commitment or in situations where the parties cannot create a legally enforceable agreement. It is a more formal alternative to a gentlemen's agreement.

Message (Msg): Any sort of data, records, notices, status, metadata, configuration, parameters and other information necessary to facilitate the mission and support system capabilities.

Metadata: Specific and detailed data about the content, quality, condition and other characteristics of data. Metadata is descriptive information that employs a common set of terms and definitions to characterize and describe data. For example, metadata is associated with each data item in the Interface Data Processing Segment (IDPS) internal archive, and is used to locate and interpret the data. Attributes or additional information associated with data, records, objects, information and products.

Meteorological Operational Satellite (Metop): A series of three polar-orbiting meteorological satellites (Metop-A/B/C) operated by the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT).

Meteorological Operational Satellite – Second Generation (Metop-SG): See European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) Polar System – Second Generation.

Microwave Integrated Retrieval System (MIRS): Developed by the NESDIS Center for Satellite Application and Research (STAR) to provide retrievals in all-weather and over all-surface conditions and extending spatial coverage to critical areas, and using non-exploited measurements such as those made by surface-sensitive channels for temperature sounding. MIRS supports the production of JPSS data products using Advanced Technology Microwave Sounder (ATMS) data to include temperature and humidity profiles in all-weather conditions, total precipitable water, land surface temperature, surface emissivity, non-precipitating cloud water, ice/graupel, and rain profiles as well as their integrated amounts, emissivity-based sea-ice concentration, snow-water equivalent, snow cover, surface type classification, and a high resolution surface rainfall rate.

Minor Problem Change Request: Priority 4 Problem Change Requests (PCRs): not determined to be necessary for proper system functionality. A Severity 4 PCR may be written for minor issues such as spelling.

Missing Application Packet: Are Application Packets (APs) that should have been collected according to the mission plan, but have not been created or received.

Mission (Msn): The performance of a coherent set of operations in space to achieve program goals. A single mission might require more than one spacecraft or orbit, or more than one mission might be accomplished on a single or multiple satellites.

Mission Assurance: The integrated use of the tasks of system safety, reliability assurance engineering, maintainability engineering, mission environmental engineering, materials and processes engineering, electronic parts engineering, quality assurance, software assurance, configuration management, and risk management to support NASA and NOAA projects.

Mission Critical Computer Resources (MsnC Compu Res): Computer resources whose function, operation or use involves intelligence activities, cryptologic activities related to national security, command and control of military forces, equipment that is an integral part of a weapon or weapon system, or is critical to direct fulfillment of military or intelligence missions. See National Security System (NSS).

Mission Critical Information System (MsnC IS): A system that meets the definition of "information system" and "National Security System" (NSS) in the Clinger-Cohen Act (CCA), the loss of which would cause the stoppage of warfighter operations or direct mission support of warfighter operations. A Component Head, a Combatant Commander (COCOM) or their designee should make the designation of mission critical (DoDI 5000.2).

Mission Critical System (MsnC Sys): A system whose Operational Effectiveness (OE) and Operational Suitability (OS) are essential to successful completion or to aggregate residual combat capability. If this system fails, the mission likely will not be completed. Such a system can be an auxiliary or supporting system, as well as a primary mission system. Include those systems: 1) Defined By The Clinger/Cohen Act As National Security Systems (NSS) [Intelligence Activities; Cryptologic Activities Related To National Security; Command And Control Of Military Forces, Integral To A Weapon Or Weapon System; Systems Critical To Direct Fulfillment Of Military Or Intelligence Missions]; 2) The Military Departments, CINCs, and Defense Agencies will be responsible for ensuring that effective October 1, 1998; 3) The list of mission-critical systems under his or her respective purview is accurately reported in the DoD Y2K database, with each change in mission-critical designation reported and explained within one month of the change to the OASD (C3I); 4) Identified by the CINCs which, if not functional, would preclude the CINC from conducting missions across the full spectrum of operations including: a) Nuclear; b) Readiness (to include personnel management critical to readiness); c) Transportation; d) Sustainment; e) Modernization; f) Surveillance/Reconnaissance; g) Financial; h) Security; i) Safety; j) Health; k) Information Warfare; and l) Information Security; and 4) Required to perform Department-level and Component-level core functions.

Mission Data (MD): Satellite data that consists of the primary output from the sensors that is processed into data products. It includes the sensed radiances, encoder outputs, time tags, calibration source data, etc. as appropriate for each sensor.

Mission Data Format Control Book (MDFCB): See Common Data Format Control Book.

Mission Event: An event defined and approved by Mission Management like orbit maneuvers, large-scale calibration events, etc. to notify JPSS operators and data consumers of upcoming events of which they should be aware (e.g., outages, orbital events, maneuvers, launches).

Mission Lifetime: The time period that the JPSS satellite is operational on-orbit, but not necessarily fully-calibrated and meeting all mission performance requirements. The JPSS mission lifetime starts at launch (L+0 days) and includes the on-orbit satellite checkout during the first 90 days (L+90 days) and the initial on-orbit calibration and validation of the mission instruments and data products which may take up to 1 year (L+365 days).

Mission Management (MM): The Overall mission operations management function responsible for managing, tracking, reporting and decision making aspects of activities throughout the mission lifetime; includes space and ground management in accomplishing mission objectives.

Mission Management Center (MMC): Operations center responsible for the overall mission operations and management functions of managing, tracking, reporting and decision making activities throughout the mission lifetime; includes space and ground management in accomplishing mission objectives.

Mission Management Subsystem Mode: Modes of the Mission Management Subsystem: a. Operational: active msn mgmt. (MM) processes on the operations network; b. System Upgrade: hot standby & ready maintenance/upgrade baseline MM processes on the operations network, but logically not connected to the JPSS operational network yet; c. Training/Test: MM processes, not connected to the JPSS operational network; available for testing bug fixes, implementing new functionality and training JPSS operators.

Mission Notice: Information generated to provide situational awareness and inform operators, data consumers and other internal/external users of upcoming events (e.g. outages, orbital or ground events, maneuvers, launches) that they should be aware related to thresholds, trend analysis and reports.

Mission Operations Support Team (MOST): An operations team that is satellite mission focused that works with the ground and flight operation and system teams to support systems engineering, integration, test, operations and life cycle sustainment functions. The MOST is the group of government and CGS-provided operations personnel who operate the JPSS Ground System (GS). The MOST's function is geared toward operations and excludes the GRAVITE operations and GS sustainment functions. The MOST covers all engineering issues/work until L+90 (Handover to NOAA) at which point OSPO Engineering and Operations Personnel assume this function.

Mission Operations Team (MOT): See Mission Support Team.

Mission Partner: A JPSS Program stakeholder whose mission objectives are expected to be served through the use, storage, and distribution of JPSS data products to JPSS Ground Segment users.

Mission Planning and Scheduling (MPS): The name given to the JPSS Mission Planning and Scheduling (MPS) Concept of Operations (ConOps). Ground System operations to manage mission tasks, plan mission activities, schedule system resources, and resolve any resource conflicts based on the mission guidelines, including task definition and request process, task scheduling and schedule deconfliction, system and mission schedule products generation, and light products generation and verification.

Mission Planning Permission: User permission levels available in the Mission Management function of Common Ground System (CGS), restricting user access as follows: a) "Read only" allows for the production of "what if" schedules, allowing manipulation of the schedule without updating any protected files; b) "Editor" allows task building on the support network. Once a task is validated, configuration management (CM) will bring over the new tasks into the CM tables and directories; and c) "Scheduler" allows scheduling of the CM validated tasks on the operations network.

Mission Planning Profile: These are mission access, permission and authority credentials (read, edit, schedule) currently generated by the Mission Management function of the Common Ground System (CGS); detail Mission Planning Permissions are assigned to a specified Mission Planner. A Mission Planner may have only one permission type, or a combination of Planner and Scheduler permission types.

Mission Schedule (Msn Sched): A mission-focused schedule comprised of events, activities and allocations of activities for all schedulable resources. This resides as soft copy (dynamic database) shared schedule. Activities and their allocations are schedule instances of a task. Activities are scheduled up to 68 days in advance to support autonomous operations of the satellite, receptors, data handling and data processing.

Mission Schedule Timeline: A visual representation of the mission schedule (whether displayed on a monitor, projection, or printed out as hard copy).

Mission Sensor: Any sensor on the spacecraft directly used to satisfy any JPSS data record performance requirement.

Mission Support Data (MSD): The set of data used in conjunction with Mission Data during the data product generation process (i.e., ancillary data, auxiliary data, telemetry), or data that supports the mission [i.e., ephemeris information for satellite acquisition, System status bulletins, Advanced Encryption Standard (AES) encryption/decryption keys, mission schedules]. The scope of MSD includes all the data, with exception of sensor-produced observation and engineering data, which are required to produce JPSS data products or ascertain mission status. The Mission Support Data (MSD) is categorized into two parts based on its source. The MSD produced externally to the JPSS program is called "Ancillary" (ANC) data; and the MSD produced internally to the JPSS is called "Auxiliary" (AUX) data.

Mission Support Data Handling (MSD): The name given to the JPSS Mission Support Data (MSD) Handling Concept of Operations (ConOps). Describe operations to acquire, manage, and

distribute Mission Support Data (MSD) in support of environmental data product generation and of mission operations. The MSD, consisting of ancillary data from external sources and auxiliary data from internal sources, plays a critical role in achieving the quality of data products. Both nominal flow and contingency flow are covered.

Mission Support Data Service (MSDS): A part of the Common Ground System (CGS) that provides a means for JPSS Ground System (GS) distribution of ancillary and auxiliary data to authorized JPSS users. The service will acquire the necessary data and refresh as configured and distribute to the configured users.

Mission Support Team (MST): The group of CGS-provided operations personnel who assist the MOST in operating the JPSS Ground System (GS) and supports systems engineering, integration, test, operations and life cycle sustainment functions.

Mission Unique Data Product: A data product with performance responsibility within the scope of the JPSS Common Ground System (CGS) due to its reliance on fundamental, sensor-specific data that are inexorably tied to the science performance of the supporting flight instrument. Mission unique data products are the foundation upon which the performance of higher-level Enterprise Data Products produced by the NESDIS Environmental Satellite Processing Center (ESPC) is dependent. Mission unique data products are sustained by definition during a Continuity of Operations (COOP) contingency. The JPSS data products containing Key Performance Parameters (KPPs) are among the data products designated as mission unique.

Mixed Aerosol: Defines a mixture of different types or composition of aerosols. This is a typical occurrence in the atmosphere except in the event of fires, dust storms, or volcanic eruptions where one type of aerosol is predominantly present. For example, in the event of a fire the aerosol type is predominantly smoke in the vicinity of the fire. As the smoke is transported downwind, it mixes with other types of aerosols present in the atmosphere and smoke may or may not be the dominant type. In general atmospheric aerosol loading is very high when one aerosol type dominates and therefore easy to detect that aerosol type from remote sensing measurements compared to when different aerosol types are present as a mixture.

Mode: A specification of the functional configuration of an item (i.e., system, segment, or subsystem) at a given point in time. Examples of Modes include: Operational, System Upgrade, Training/Test, etc.

Model Data: Data produced as the output of a model such as a radiative transfer model or numerical weather prediction Model. See also Simulated Data.

Moderate Problem Change Request: Priority 3 Problem Change Requests (PCRs): problem is an impact but does not get in the way of requirement verification or operational performance and there is an acceptable workaround.

Moisture Profile (MP): See Atmospheric Vertical Moisture Profile.

Mostly Cloudy: In meteorological terms, the condition when the sky coverage by clouds is greater than or equal to five-eighths and less than seven-eighths.

Multiple-mission Three-Axis Stabilized Spacecraft (MTASS): Multiple-mission Three-Axis Stabilized Spacecraft (MTASS) software to provide both the real-time and offline ground-based verification of the on-board Attitude Determination & Control System (ADCS) and other analysis applications.

Multiprotocol Label Switching (MPLS): A mechanism in high-performance telecommunications networks that directs data from one network node to the next based on short path labels rather than long network addresses, avoiding complex lookups in a routing table. The labels identify virtual links (*paths*) between distant nodes rather than endpoints. MPLS can encapsulate packets of various network protocols. MPLS supports a range of access technologies, including T1/E1, ATM, Frame Relay, and DSL. It is a standards-based approach to applying label switching to large-scale networks being defined by the Internet Engineering Task Force since early 1997. MPLS defines protocols and procedures that enable the fast switching capabilities of Asynchronous Transfer Mode (ATM) and Frame Relay to be used by IP networks. It represents the next level of standards-based evolution in combining layer two (data link layer) switching with layer three (network layer) routing in order to create flexible, faster, and more scalable networking. This includes traffic engineering capabilities which provide, for example, aspects of Quality of Service (QoS)/Class of Service (CoS) and facilitate the use of Virtual Private Networks (VPNs).

N-Wave: N-Wave is a scalable, stable, and secure NOAA science communications wide-area network built using 10GB per second Wave Division Multiplexed (WDM) fiber-optic links supplied by partners in the national Research and Education network community. N-Wave connects NOAA's high-performance computing sites, data archives and researchers and has the ability to scale to a 100-gigabit Ethernet and beyond as research demands increase and next-generation services, including the transfer of data from NOAA-sponsored satellite missions, are added.

NASA Policy Directive (NPD): NASA policies and directives that help guide NASA business.

NASA Procedural Requirement (NPR): NASA procedures and requirements that help guide NASA business.

National Aeronautics and Space Administration (NASA): An executive branch agency of the United States government, responsible for the nation's civilian space program, aeronautics and aerospace research.

National Aeronautics and Space Administration Key Management System (NASA KMS): A support system to the JPSS Program, applicable to the JPSS-3/3/4 missions, that generates government encryption keys and provides them for use by JPSS spacecraft.

National Centers for Environmental Information (NCEI): The organization within NOAA responsible for hosting and providing access to the managed archives of oceanic, atmospheric, and geophysical data and for preserving and providing effective stewardship of these data. The Consolidated and Further Continuing Appropriations Act, 2015, Public Law 113-235, approved the consolidation of the three preexisting NOAA data centers (the National Climatic Data Center, the National Geophysical Data Center, and the National Oceanographic Data Center) into NCEI.

National Centers for Environmental Prediction (NCEP): The National Centers for Environmental Prediction (NCEP) formulate numerical analyses and weather prediction products. NCEP is a source for ancillary data products used in JPSS data processing.

National Environmental Satellite, Data and Information Service (NESDIS): An organization created by the National Oceanic and Atmospheric Administration (NOAA) to operate and manage the United States environmental satellite programs, and manages the data gathered by the National Weather Service (NWS), other government agencies and departments. Data collected by the NWS, U.S. Navy, U.S. Air Force, the Federal Aviation Administration (FAA), and meteorological services around the world, are housed at the National Climatic Data Center (NCDC) in Asheville, North Carolina. National Environmental Satellite, Data and Information Service (NESDIS) also operates the National Geophysical Data Center (NGDC) in Boulder, Colorado, the National Oceanographic Data Center (NODC) in Silver Spring, Maryland, the National Snow and Ice Data Center (NSIDC) and the National Coastal Data Development Center (NCDDC), which are used internationally by environmental scientists.

National Institute of Standards and Technology (NIST): An agency of the Department of Commerce (DoC) that publishes standards, including the 800 series of Special Publications (SP); located in Gaithersburg, Maryland.

National Oceanic and Atmospheric Administration Satellite Operations Facility (NSOF): The primary NOAA facility supporting the launch, control, operation, and acquisition of data from NOAA's environmental satellites. The resident Office of Satellite and Product Operations (OSPO) operates earth-observing satellites as necessary to meet NOAA and U.S. Government economic, national security, scientific, and foreign policy goals. OSPO manages and directs the operation of NOAA's satellites and the acquisition of remotely sensed data. The office has operational responsibility for the NOAA's Satellite Operations Control Center (SOCC), which provides Command, Control & Communications (C3) for NOAA's satellites and Defense Meteorological Satellite Program (DMSP). NSOF processes more than 16 billion Bytes of environmental satellite data from NOAA's geostationary and polar-orbiting spacecraft, and the Department of Defense's Meteorological Satellite Program (DMSP). The NOAA National Weather Service uses these data for constant tracking of severe weather, and as inputs into models for medium to long-range forecasts for weather, and tracking climate change. NSOF spans 208,271 gross square feet, supports more than $50 million of high technology equipment, including 16 antennas that control more than $4.7 billion worth of environmental spacecraft.

National Oceanic and Atmospheric Administration Satellite Operations Facility Beneficial Occupancy Date (NSOF BOD): The date on which beneficial occupancy is granted for use of the NSOF following construction and upgrades to support JPSS mission operations. See Beneficial Occupancy Date (BOD).

National Oceanic and Atmospheric Administration-18/-19 (NOAA-18/NOAA-19) (NOAA-18 & NOAA-19): Polar-orbiting Operational Environmental Satellites (POES) is the NOAA constellation of weather and climate observing satellites in polar low-earth orbits with a Local Time Ascending Node (LTAN) covering the pm orbits. The POES system includes the Advanced Very High Resolution Radiometer (AVHRR) and the Tiros Operational Vertical Sounder (TOVS) instruments. NOAA-18 launched May 25, 2005 and NOAA-19 launched February 6, 2009 and is the latest in the series. NOAA-18 and -19 consist of the primary POES

assets, although older POES satellites are still in orbit providing additional observational capabilities to supplement the primary satellites.

National Oceanic and Atmospheric Administration-Computer Incident Response Team (N-CIRT): This is a NOAA information technology support system that provides incident response, sharing of common vulnerabilities to the NOAA community, training on proper configurations for security, etc. The N-CIRT coordinates incident response and is responsible for acting as a source of expertise and information regarding vulnerabilities and responses to them, as pertains to the NOAA environment.

National Oceanic and Atmospheric Administration-n (NOAA-n): Polar-orbiting Operational Environmental Satellites (POES) is the NOAA constellation of weather and climate observing satellites in polar low-earth orbits with a Local Time Ascending Node (LTAN) covering the pm orbits. The POES system includes the Advanced Very High Resolution Radiometer (AVHRR) and the Tiros Operational Vertical Sounder (TOVS) instruments. NOAA-N launched May 25, 2005. NOAA-N Prime lifted off Feb. 6, 2009 and is the latest in the series. N and N' consist of the primary POES assets, although older POES satellites are still in orbit providing additional observational capabilities to supplement the primary satellites.

National Oceanic and Atmospheric Administration (NOAA) Data Exploitation (NDE): A component of the Environmental Satellite Processing Center, this project prepares NOAA systems to receive data from environmental satellites, including the Suomi National Polar-orbiting Partnership (S-NPP) and Joint Polar Satellite System (JPSS) missions, and to process these data into value-added environmental data products required by the NOAA user community.

National Oceanic and Atmospheric Order (NAO): NOAA Administration Order (NAO): orders of an administrative nature from NOAA, e.g., NAO 207-12.

National Polar-orbiting Operational Environmental Satellite System (NPOESS): The legacy program for the United States' next-generation satellite system that transitioned into what is now known as the Joint Polar Satellite System (JPSS), which includes the Suomi National Polar-orbiting Partnership (S-NPP) satellite launched in October 2011.

National Polar-orbiting Operational Environmental Satellite System (NPOESS) Preparatory Project (NPP): The legacy project intending to bridge the gap between old and new polar satellite programs by flying new instruments on a satellite originally planned for launch in 2006. The renamed Suomi National Polar-orbiting Partnership (S-NPP) satellite was launched in October 2011.

National Polar-orbiting Partnership (NPP): See Suomi National Polar-orbiting Partnership.

National Telecommunications and Information Administration (NTIA): An agency of the United States Department of Commerce that serves as the President's principal adviser on telecommunications policies. The NTIA is responsible for approving radiofrequency spectrum usage requests.

National Science Foundation (NSF): An independent agency of the federal government responsible for the promotion of progress in science and engineering by supporting programs in research and education.

National Science Foundation Centennial (NSF Centennial): This is a data routing consumer that represents the National Science Foundation (NSF) facility located in Centennial, CO that coordinates their operations out of McMurdo station.

National Science Foundation McMurdo (NSF McMurdo): This is a data routing consumer and represents the NSF McMurdo Systems capabilities, services and infrastructure within the McMurdo Bay Station in Antarctica. This includes general Internet access and banking services for personnel at the station.

National Security Agency Key Management System (NSA KMS): A support system to the JPSS Program, applicable to S-NPP and JPSS-1 only, that generates government encryption keys and provides them to the JPSS program for use by JPSS spacecraft. This system also directs when there is a need to change keys used between the applicable spacecraft and ground system.

National Weather Service (NWS): One of the six scientific agencies that make up the National Oceanic and Atmospheric Administration (NOAA) of the United States government. It is headquartered in Silver Spring, Maryland. The NWS is tasked with providing "weather, hydrologic, climate forecasts and warnings for the United States, its territories, adjacent waters and ocean areas, for the protection of life and property, and the enhancement of the national economy". This is done through a collection of national and regional centers, and 122 local Weather Forecast Offices (WFOs). Since the NWS is a government agency, most of its products are in the public domain and available free of charge.

National Weather Service Telecommunication Gateway (NWS TG/NWSTG): A backup ancillary data provider to JPSS, data communication switching and monitoring facility that has four major operational components: Central Data Switching System; the Automated Surface Observing Systems (ASOS) Monitoring Center (AOMC); (AWIPS) Network Control Facility (NCF); and a staff for data acquisition and dissemination management. The Telecommunication Operations Center (TOC) is a component of the Office of Operational Systems (OPS) and manages the NWS Telecommunication Gateway (NWSTG). This is the NWS central communications data switching and monitoring facility. Top-level organizational management of this facility is from the OPS. The organizational structure of the TOC consists of four branches: Operations Support and Performance Monitoring Branch; Telecommunication Gateway Operations Branch; Telecommunication Software Branch; and Telecommunication Infrastructure Branch.

Native Format: The physical structure and technical content of a data set as it is available from the producer/source. This reference term currently applies to Official Static and Official Dynamic Ancillary Data sets.

Native Resolution: The spatial resolution that can be supported by a single dynamic field of view or beamwidth associated with an instrument measurement.

Naval Observatory: See United States Naval Observatory.

Naval Oceanographic Office (NAVOCEANO): A satellite data consumer that maximizes sea power by applying relevant oceanographic knowledge in support of U.S. National Security. The NAVOCEANO, located at John C. Stennis Space Center in south Mississippi, comprises approximately 1,000 civilian, military and contract personnel responsible for providing

oceanographic products and services to all elements within the DoD. The NAVOCEANO is a data processing center that uses JPSS and other data to produce environmental products for their customers, retaining responsibility for the processing, archiving and dissemination of these data products. In Block 2.0 and later, NAVOCEANO receives JPSS application packets and software support to enable local processing of data products.

Near Earth Network Scheduling System (NENSS): This is a scheduling system that the JPSS Ground System (GS) uses to provide scheduling and status for NASA Near Earth Network (NEN) resources. This is how the Meteorological Operational Satellite (Metop) schedules use of the McMurdo Ground Station (MG1) antenna at the NASA owned ground station in Antarctica.

Near Real-Time (NRT): For JPSS GS purposes real-time is primarily required and reserved for Command and Control operations and functions (sub second); whereas Near Real-Time [NRT] (1-10 seconds) is primarily required for data and information processing (communications and infrastructure delays). The term "NRT" or "nearly real-time", in telecommunications and computing, refers to the time delay introduced, by automated data processing or network transmission, between the occurrence of an event and the use of the processed data, such as for display or feedback and control purposes. For example, a NRT display depicts an event or situation, as it existed at the current time minus the processing time, as nearly the time of the live event. The important general distinction between the terms "NRT" (1-10 seconds) and "real-time" (sub second) are somewhat nebulous, and must be defined for the situation at hand (KPPs or metrics for T&E or IV&V purposes). The term real-time and NRT both imply that there are no significant time delays. In many cases, processing described as "real-time" would be more accurately described as "NRT". However, some mission KPPs require actions be taken in Nano or microseconds, while others can occur in under a second or several seconds. The distinction for us usually is Command & Control (C2) versus Command, Control, Communications (C3) and Interface Data Processing (IDP) [also closely tied and related to Enterprise Management (EM) and System Integration (SI)].

Network Equipment: This is equipment that routes network traffic between systems (i.e., routers, switches, modems, gateways, bridges, multiplexers, servers, network interface controllers, etc.).

Network Operations Center (NOC): An operations center that manages networks like the National Weather Service (NWS) Telecommunications Gateway (NWSTG). This particular NOC operates and ensures continuous acquisition and dissemination of NWS, and other domestic and foreign hydrometeorological data and products. It is the NWS central communications data switching and monitoring facility. Top-level organizational management of this facility is from the Office of the Chief Information Officer (OCIO). The Network (NOC) and Telecommunication Operations Center (TOC) is a component of the OCIO that manages the NWS Telecommunication Gateway (NWSTG). The organizational structure of the TOC consists of four branches: 1) The Operations Support and Performance Monitoring Branch; 2) The Telecommunication Gateway Operations Branch; 3) The Telecommunication Software Branch; and 4) The Telecommunication Infrastructure Branch.

New Task: A new task nominated for approval.

Nighttime Cloud Optical and Microphysical Properties (NCOMP): The Nighttime Cloud Optical and Microphysical Properties (NCOMP) science algorithm is used to retrieve nighttime water and ice cloud optical depth, particle size and liquid or ice water path from imagery taken by the Visible Infrared Imaging Radiometer Suite (VIIRS) aboard JPSS. The algorithm is based primarily on the Solar Infrared Technique from NASA Langley Research Center, but has been adapted to utilize upstream JPSS products and to function in the JPSS framework. This approach is identical to that used for processing Advanced Baseline Imager data from GOES-R.

Node: An element of the operational architecture that produces, consumes or processes information. A "node" may also be considered to be a logical entity that performs operational activities. This is an architecture term used generically to describe either a physical and/or logical set of elements that perform a system function in support of one or more mission capabilities. Nodes differ from segments in that nodes are logical partitions and segments are physical partitions of the JPSS Ground System (GS). Each JPSS segment consists of one or more nodes. The Common Ground System (CGS) being developed implements the functionality of four of the JPSS GS nodes: Space/Ground Communications Node, Ground Network Node, Management and Operations Node (MON), and Data Processing Node. This functionality includes the control of JPSS-managed satellites, collection data from satellites, transport of data to the data processing facility, data processing, and distribution of data products to the science users. Nodes are usually found in the form of a set of servers, other network devices (e.g., storage devices/printers) and facilities that have an interface to the network Command, Control and Communications (C3) infrastructure (C3S - legacy term). Nodes may also be a collection of processors supporting a particular Interface Data Processing (IDP) function or domain (IDPS - legacy term).

Noise Equivalent Differential Radiance (NEdN): The amount of uncertainty that random errors due to noise give to the measured radiance.

Noise Equivalent Differential Temperature (NEdT): The variation in the scene dependent temperature that is equivalent to the system noise.

Nominal: (1) Normal operational conditions. (2) Normal, “healthy” operational state.

Nominal Operations Mode: The System performs all functions necessary to satisfy nominal System requirements and operations in this mode. The required functions are to collect and send mission data, acquire mission support data, receive and distribute mission data, generate and distribute data and processed data records, manage space and ground resources, and provide System support. The operations functions include System management, mission planning and scheduling, satellite monitoring and control, and mission data acquisition, processing, and delivery. This mode also includes special operations including satellite orbit maintenance, ground maintenance, routine spacecraft and sensor calibrations, and routine preventive maintenance activities. This mode accommodates changes to the baseline System requirements, and includes acceptance of requirement waivers. The JPSS command link mode is always Advanced Encryption Standard (AES) encrypted, whereas the satellite Real-Time Telemetry (RT-TLM) and stored telemetry (S-TLM) are not encrypted.

Nominal Orbit: The nominal Suomi National Polar-orbiting Partnership (S-NPP)/JPSS orbit is a sun synchronous, repeat ground track, frozen orbit. The nominal altitude is specified at 824

±17 km, calculated as the mean Semi-Major Axis (7202.14 km) minus the Earth equatorial radius (6378.14 km). A theoretical orbit with zero eccentricity would have an altitude of 824 km everywhere for a spherical Earth. Because of Earth oblateness and the required frozen eccentricity (around 0.001), the actual height above the Earth varies between 828 km and 856 km (a range of 28 km). The exact repeat cycle is 227 orbits in 16 days with an orbital period of about 6090 seconds. The nominal Ascending Equator Crossing Time is specified at 1330 (local time) +/- 10 min. The nominal Ground Track Repeatability Accuracy is specified as +/- 20 km at the equator.

Nominal Stored State of Health (Nominal SSOH): Filtered housekeeping data that provides at least three orbits of data for satellite health and safety evaluation. These data are stored on the IEM SPAM Card Stored Telemetry Partition 1.

Non-local Maintenance: Those maintenance activities conducted by individuals communicating through some sort of approved network connection within the security boundary.

Non-Nominal (NNL): Anomalous operational conditions currently exist - infrequent, unfamiliar, uncharacteristic and/or potentially hazardous states (also off-nominal).

Non-Secure Internet Protocol Router Network (NIPRNet/NIPRNET): NIPRNet is also sometimes referred to as Non-classified Internet Protocol Router Network and Unclassified but Sensitive Internet Protocol Router Network in Department of Defense (DoD)/Government circles; but Non-Secure Internet Protocol Router Network is the most commonly used form of the term. The Non-Secure (Non-classified/Unclassified but Sensitive) Internet Protocol (IP) Router Network (abbreviated as "NIPRNet," but commonly written "NIPRNET"), but prevalently referred to as the "Non-classified IP Router Network," is used to exchange sensitive but unclassified information between "internal" users as well as providing users access to the Internet. NIPRNet is composed of Internet Protocol routers owned by the United States (US) DoD. It was created in the 1980s and managed by the Defense Information System Agency (DISA) to supersede the earlier MILNET. NIPRNET is the largest private network in the world. Over the last decades it has grown faster than the US DoD can monitor, which is why DoD is spending $10 million to map out the current state of the NIPRNET, in an effort to analyze its expansion and identify unauthorized users who are suspected to have not registered. The NIPRNET will analyze the networks for security weaknesses. The DoD has made a major effort over the last few years, to improve network security. The Pentagon announced it was requesting $2.3 billion in the 2012 budget to bolster network security within the DoD and to strengthen ties with its counterparts at the Homeland Security Department. SIPRNet and NIPRNet are referred to colloquially as sipper-net and nipper-net (or simply sipper and nipper), respectively.

Nonconformance: A condition of any hardware, software, material, or service in which one or more characteristics do not conform to requirements. As applied in quality assurance, nonconformances fall into two type categories – discrepancies and failures. A discrepancy is a departure from specification that is detected during inspection or process control testing, etc., while the hardware or software is not functioning or operating. A failure is a departure from specification that is discovered in the functioning or operation of the hardware or software.

Normal Distribution: A widely used distribution that is symmetric, allowing the curve to be defined by a mean and a standard deviation.

Normal Mission Operations Task: An approved task associated with accomplishing the day-to-day mission of the JPSS, and which applies to spacecraft activities for the Data Acquisition and Routing (DAR), Data Processing (DP), and Full Service (FS) missions.

Normalized Stored Mission Data: SMD that contains Virtual Channel Data Units (VCDUs) which are in sequence number order and do not contain duplicates for a particular spacecraft identifier (SCID) / virtual channel ID (VCID).

Northrop Grumman Aerospace Systems (NGAS): The JPSS Flight Project contractor supporting the design, development, integration, testing, and post-delivery support of the Clouds and the Earth's Radiant Energy System (CERES) instrument and the Advanced Technology Microwave Sounder (ATMS).

Northrop Grumman Innovation Systems (NGIS): The JPSS Flight Project contractor supporting the design, development, integration, testing, and post-delivery support of the JPSS-2, JPSS-3, and JPSS-4 spacecraft and integrated observatories (formerly Orbital Alliant Techsystems (ATK)).

Objective (Obj): An improved performance level above and beyond a threshold requirement that would better meet user needs and is a realistically achievable goal given the state of science and technology currently available.

Observatory: See Satellite.

Ocean Color (OC): See Ocean Color/Chlorophyll.

Ocean Color/Chlorophyll (OCC): A JPSS Environmental Data Record (EDR) used to deliver water-leaving radiances to quantify various pigments in the water in order to determine chlorophyll concentrations, turbidity, and other changing optical conditions and provides continuity from previous ocean color missions (MODIS and SeaWiFS). Also referred to as the Ocean Color EDR.

Off-Gassing: See Outgassing.

Off-Line: Separate from the operational system. For example, off-line processing may refer to processing occurring on the Interface Data Processing (IDP) Integration & Test (I&T) String. Off-line data storage may refer to data saved to disk or to an external storage device or archive. Access to information by mail, telephone, facsimile, or other non-direct interface may be referred to as off-line.

Office of Satellite and Product Operation Backup Satellite Operations Control Center (OSPO B/U SOCC|OSPO BU SOCC): The Office of Satellite and Product Operations (OSPO) Backup Satellite Operations Control Center (SOCC) is the NOAA Vertex Center facility in Fairmont, WV. It houses numerous NOAA systems, such as Environmental Satellite Processing Center (ESPC) backup, a Comprehensive Large Array-data Stewardship System (CLASS) interface and numerous backup JPSS components.

Office of Satellite and Product Operation Polar-orbiting Operational Environmental Satellite Operations (OSPO POES Ops): The Office of Satellite and Product Operations

(OSPO) POES Ops system provides mission management and operations for the NOAA POES satellites. This system operates out the NOAA Satellite Operations Facility (NSOF) in Suitland, MD.

Office of Satellite and Product Operation Satellite Operations Control Center (OSPO SOCC): The NOAA satellite control facility at the NOAA Satellite Operations Facility (NSOF) in Suitland, MD housing several NOAA systems including the Environmental Satellite Processing Center (ESPC), elements of the Comprehensive Large Array-data Stewardship System (CLASS), and numerous JPSS command, control, and data processing components.

Office of Satellite and Product Operations (OSPO): Office of Satellite and Product Operations (OSPO): Part of the National Environmental Satellite, Data and Information Service (NESDIS). NESDIS is part of the National Oceanic and Atmospheric Administration (NOAA), and the Department of Commerce (DoC). The Office of Satellite and Product Operations (OSPO) was created during reorganization by merging the Office of Satellite Operations (OSO) and Office of Satellite Data Processing and Distribution (OSDPD). These two previous offices ceased to exist after the creation of OSPO, however some remnants of them now exist in the mission operations and products and services divisions under OSPO. Fairbanks Command and Data Acquisition Station (FCDAS) and Wallops Command and Data Acquisition Station (WCDAS) are divisions under OSPO. The Satellite Operations Control Center (SOCC) and Environmental Satellite Processing Center (ESPC) fall under the Mission Operations Division (MOD) which is a division of OSPO. OSPO also encompasses the National Ice Center (NIC) and the Satellite Products and Services Division (SPSD).

Office of Satellite Ground Services (OSGS): The NOAA organization responsible for planning, acquisition, development, transition to operations, and sustainment of the enterprise ground investment supporting NOAA environmental satellite systems. The OSGS pursues an enterprise approach with flexible, agile concepts of operation that reduce costs and speed product and service deployment; integrates current infrastructure with common services for interoperability and improved utilization; improves parts commonality for more efficient use of resources; maintains separation of hardware and software sustainment activities, enabling hardware refresh and new capability insertions as opportunities and budgets permit; and establishes well-defined, common business processes, procedures, roles, and responsibilities.

Office of Science and Technology Policy (OSTP): Congress established the Office of Science and Technology Policy in 1976 with a broad mandate to advise the President and others within the Executive Office of the President on the effects of science and technology on domestic and international affairs. The 1976 Act also authorizes OSTP to lead interagency efforts to develop and implement sound science and technology policies and budgets, and to work with the private sector, state and local governments, the science and higher education communities, and other nations toward this end.

Office of System Architecture and Advanced Planning (OSAAP): The NOAA organization responsible for the conceptual development and the formal description and representation of all NOAA satellite and ground systems and for implementing agency-wide systems engineering best practices for these systems. OSAAP participates in domestic and international civil, commercial, and national security space sectors and interagency space policy organizations. OSAAP is the Level 1 requirements Verification Disposition Authority (VDA) for the JPSS Program.

Official Ancillary Product: Static and Dynamic Ancillary Data used in the production of Official Suomi National Polar-orbiting Partnership (S-NPP)/JPSS Data Products.

Official Data Product: Data products limited to Raw Data Records (RDRs), and their higher-level products produced using Official Ancillary Data. Official Data Products are subject to System Performance requirements as defined in the System Specification, unless they are produced during Graceful Degradation, in which case only Data Latency requirements are applicable.

Official Dynamic Ancillary Data (ODAD): External data used in the production of Suomi National Polar-orbiting Partnership (S-NPP)/JPSS Data Products, which are more frequently updated over the life of the mission; as compared to Static Ancillary Data which is updated approximately every few months or longer. Examples of Official Dynamic Ancillary Data include all of the following: National Centers for Environmental Prediction (NCEP) Global Positioning System (GPS) 3-Hour Interval Forecast, Fleet Numerical Meteorology and Oceanography Center (FNMOC) Navy Global Environmental Model (NAVGEM) 3-Hour Interval Forecast, Navy Aerosol Analysis and Prediction System (NAAPS) 3-Hour Interval Forecast, Earth Orientation Bulletin A, Near Real-Time Ice and Snow Extent (NISE).

Official Product: JPSS products made with the primary dynamic ancillary data as specified in the Environmental Data Record (EDR) Interdependency Report (IR) or JPSS Software Requirements Specifications (SRSs). See Official Data Product.

Ozone Mapping and Profiling Suite (OMPS) Command Load File: In addition to the file going to the Command Load Generator for the spacecraft, another file specific to the OMPS is produced and sent to the Command Load Generator to produce separate commands for this sensor.

On-Line: Operational part of the baseline operational system. For example, on-line processing refers to processing occurring on the Interface Data Processing (IDP) operational string, rather than the Integration & Test (I&T) String. On-line data storage may refer to data saved to operationally available disk or operationally available external storage device; rather than off-line disk, external or archive storage. Access to information by mail, telephone, facsimile, or other non-direct interface may be referred to as off-line. On-Line refers to processing or storage occurring on the operational or real-time system. May refer to access to information by direct interface to an information database via electronic networking.

On-Orbit System: Operational and on-orbit Suomi National Polar-orbiting Partnership (S-NPP)/JPSS space system currently planned, including S-NPP and JPSS satellites and sensors.

Onboard Processor Data (OBP Data): Data created or stored in the satellite onboard processors, including: a. Sensor onboard processor data; b. Spacecraft onboard processor data.

Operational: (1) A status designation that indicates readiness, capability, and authorization to support or conduct mission operations. (2) A descriptive term to refer to something in an operations-like state or configuration.

Operational Availability (Ao): (1) The probability that a system or equipment, when used under stated conditions in an ideal support environment (i.e., using available tools, spares and

personnel) will operate within specifications at all times. It excludes preventive maintenance actions, logistics supply time, and administrative downtime and is expressed as Ai = MTBF/(MTBF + MTTR) where MTBF = mean time between failures and MTTR = mean time to repair. Previously defined as Inherent Availability (Ai). (2) The measure of the probability that the JPSS system will be operationally capable of satisfying its Key Performance Parameters, including making the associated data products available to the JPSS user interface. Operational Availability compliance is calculated over any 30-day period following Operational Handover to NOAA (nominally L+90 days). Once on orbit, JPSS satellites are assumed to operate continuously for the mission lifetime. The availability factors include ground system reliability, ground system redundancy, and planned observing outages (Flight system downtime for spacecraft maneuvers, instrument calibration activities, maintenance activities (i.e., software updates), command loads, and planned ground system sustainment activities). The availability factors do not include on-orbit anomalies or failures or trouble shooting activities associated with these events.

Operational Difficulties Work Request: Priority 2 Work Requests (WRs): problem unnecessarily complicates operations or burdens operators. Examples: Spacecraft: Database alarm threshold settings too tight creating unnecessary operator alerts, or Sensor reporting bus errors with no associated data loss or corruption. Ground: Software process consistently fails on server, requiring reboots every 24 hours to maintain system in full operations or automated data injection is not available resulting in manual workaround.

Operations Handover: The process by which the operational and engineering authority for the JPSS space and ground systems are passed from JPSS to the Office of Satellite and Product Operations (OSPO). A supporting JPSS Program Transition, Handover, and System Acceptance Plan provides the operational transition plan, handover criteria, the schedule of handover events, lines of authority in the acceptance of Flight and Ground deliveries, and dependencies between the Projects as required for each step leading towards transfer of ownership (i.e., acceptance). For the flight system operation, the supporting Operations Acceptance and Handover Review milestone is nominally conducted 90 days following launch of a JPSS mission.

Operational Handover: See Operations Handover.

Operational Implementation Plan: This is a per-contact time phasing of both space and ground activities that execute spacecraft, instrument and ground commands and procedures.

Operational Instrument: See Operational Sensor.

Operational Mode: The operational modes for a unit, assembly, subsystem, or system include all combinations of operational configurations or conditions that can occur during its service life. Examples: power condition, command mode, readout mode, attitude control mode, redundancy management mode, safe mode and spinning or de-spin condition.

Operational Satellite: A spacecraft and its operational sensors or instruments, which together satisfy system-level Operational Availability requirements and are providing useful data to meet or supplement one or more of the JPSS observational data or service requirements. Note that data from sensors or instruments manifested on a spacecraft that together primarily serve a non-operational science, demonstration, or risk-reduction mission may be exploited in operational

ground systems (i.e., "used operationally") when the operational availability risks are considered acceptable, even though that spacecraft and instrument may not have been designed for operational support.

Operational Sensor: The primary sensor source used in normal operational mode or state. There may or may not be backup sensors (another sensor) or other sources (alternate means) on the satellite or ground depending on the satellite or ground system and architecture design (sensors are normally satellite payload, but there may be exceptions to this rule - sensing satellite is within contact line of sight). The Ground Segment must meet data availability requirements for all operational satellite sensors by producing data using either a backup, secondary or other methods based on the system architecture design, redundancies or backups available (see requirements). If a satellite sensor completely fails, it no longer contributes to KPP/TPM calculations; however, sensors with partial capabilities may continue to be used in these calculations.

Operational Support Data: Data routed between Suomi National Polar-orbiting Partnership (S-NPP)/JPSS sites that support the JPSS Mission; this data is exclusive of Telemetry and Command (T&C) or Stored Mission Data (SMD). Mission Support Data (MSD) will include Ancillary Data, Field Terminal (FT) Ancillary Data, Coordination, State of Health, and Monitor & Control information.

Operations: The staff necessary to operate a system and the recurring costs necessary to keep the system active (for example, facilities, networks, utilities, software licensing, and hardware maintenance). Referred to as Operations and Sustainment in legacy documentation.

Operations Concept (Ops Con/OpsCon): Evolves from a higher-level concept of operations and is a description of how a set of capabilities may be employed to achieve desired objectives or a particular end state for a specific scenario.

Optical Carrier (OC): TBD - Ex. OC1/OC3.

Optical Depth: A measure of the opacity of the atmosphere. It is expressed as the quantity of wavelength-dependent visible light removed from the optical path (i.e., extinction) by scattering or absorption. If I_0 is the initial radiant energy at the source and I is the observed radiant energy after transiting through a given optical path, then I / I_0 is the atmospheric transmittance and the optical thickness τ (Tau) is defined by the following equation:

$$I / I_0 = e^{-\tau}$$

Also commonly referred to as Optical Thickness.

Optical Thickness: See Optical Depth.

Optional Data: Certain on demand or upon request data that may or may not be outside our direct command and control chain to acquire, and also may have some associated reliability, quality or timeliness degradation potentially with it.

Orbit: See Nominal Orbit.

Orbit Analyst (OA): The Orbit Analyst (OA) is responsible for monitoring and adjusting the orbits of all satellites, including orbit maneuvers to maintain the required orbit, attitude and relative phasing over the life of the mission(s) and reports on these activities. Part of this is to test and verify any maneuvers using Flight Vehicle Simulator (FVS), Flight Vehicle Test Suite (FVTS) and Integration & Test (I&T) assets as appropriate. Post-maneuver, the OA verifies maneuver performance. The OA analyzes GPS measurements and on-board orbit propagation data on a routine basis and performs orbit determination to calibrate and verify accuracy of the on-board system. The OA produces a standard set of flight dynamics data and distributes it to interested users including Mission Management. The OA provides inputs to the Mission Planner for orbit maintenance, sensor calibration, and de-orbit maneuvers; and supports maneuvers in real-time. The OA interfaces with the FDF for orbit determination and supports the initial orbit attainment with NASA and the spacecraft vendor.

Orbit Event: Event defined by the satellite orbit: like lunar eclipses of the sun, crossing the day-night terminator, crossing the South Atlantic Anomaly (SAA) boundaries, Radio Frequency Interference (RFI) conjunctions and ground station view periods.

Orbit Event Prediction: Prediction of shadowing and conjunction with respect to the positions of satellite, moon, and earth; prediction of nodal crossing time violation, sun-sync altitude and inclination violations, etc.

Orbit Maintenance (OrM): This is the name given to the JPSS Orbit Maintenance (OrM) Concept of Operations (ConOps). Ground System operations to maintain proper orbits for the JPSS-operated satellites and to produce orbital or orbit related products. The scope includes estimating the satellite position, propagating the orbits to some future epoch, predicting orbit events, generating orbit products, checking constraint violations, designing delta-v maneuvers to adjust the orbit, commanding satellites to perform required maneuvers and verifying the results of completed maneuvers. As an alternate flow, the conjunction assessment process and necessary avoidance maneuver planning and execution are also discussed.

Orbit Product: A type of Auxiliary (AUX) Data generated and shared by several sources as needed.

Outage Event: A state-of-health alarm used to indicate if a hardware or software unit is not operational. This includes ‘planned’ or scheduled outages as well as ‘unplanned’ or unscheduled outages.

Outgassing: The emanation of volatile materials under vacuum conditions resulting in a mass loss and/or material condensation on nearby surfaces.

Outgoing Longwave Radiation (OLR): The instantaneous radiative energy flux emitted by the Earth-atmosphere system at the top of the atmosphere to space in the wavelength range of 5 to 100 μm.

Outside Interface: Interfaces between two or more outside or external entities that influence or support our missions. External interfaces in comparison normally interface with either the Ground System (GS) or Common Ground System (CGS), and internal interfaces happen within either the GS, CGS or between them.

Ozone Mapping and Profiler Suite (OMPS): A group of imaging spectrometers to measure ozone levels, especially near the poles. An advanced suite of three hyper spectral instruments extends the 25-plus year total-ozone and ozone-profile records. Ozone-assessment researchers and policy makers use these records to track the health of the ozone layer. The improved vertical resolution of OMPS data products allows for better testing and monitoring of the complex chemistry involved in ozone destruction near the troposphere. OMPS products, when combined with cloud predictions, also help produce better ultraviolet index forecasts.

Ozone Mapping and Profiler Suite Instrument Support Node (OMPS ISN): The OMPS Instrument Support Node is used by the Instrument Science Team (also known as the OMPS Science Operations Team) to ensure the proper operation and calibration of the Ozone Mapper Profiler Suite (OMPS) instrument. This also includes the OMPS Instrument Vendors and the JPSS Flight Project Instrument Manager and Instrument Science Lead. This is a support system for the JPSS Ground System (GS).

Ozone Mapping and Profiler Suite Sensor Processing (OMPS SP): The Ozone Product Evaluation and Analysis Tool Element (PEATE) of the NASA Science Data Segment (SDS) handles the OMPS Sensor Processing for the OMPS-Limb Profiler. This group is maturing the SDR and EDR algorithms before advancing the capabilities into the IDPS. This is a NASA support system for the JPSS Ground Segment Project.

Ozone Profile: A JPSS EDR that provides global ozone observations at high vertical resolution. The detailed vertical structure of stratospheric ozone (12 – 25 km altitude region) has been shown to be a useful contributor to extended range (beyond 1 week) forecast skill in global models.

Ozone Total Column: A JPSS EDR that is defined as the amount of Ozone in a vertical column of the atmosphere measured in Dobson Units (milli-atm-cm). Operational measurements of stratospheric ozone are used to improve operational numerical weather prediction and to support requirements for depiction of the upper atmosphere. This information also has relevance to human health.

Packet Identifier (Packet ID): An identifier assigned to each Application Packet as defined by the Consultative Committee for Space Data Systems (CCSDS) Packet Telemetry Standard (CCSDS 102.0-B-5 for S-NPP and JPSS-1; and 133.0-B-1 for JPSS-2/3/4). It is used to distinguish different data sources of Application Packets that are multiplexed in a single data stream. Commonly referred to in heritage documentation as an Application Process Identifier (APID).

Parallel Operations (Parallel Ops): An environment not in the operational configuration is used to validate new software and/or hardware releases, and/or new configurations without interrupting ongoing operations before deploying this new configuration to operations. The string ingests the same telemetry and/or mission data as the primary operations environment does, performs the same processing, and produces the same products as called for by the specific test. The commanding and/or data distribution may be temporarily enabled for validations. An environment performing parallel operations will not be used for backup operations.

Parent/Child Scenario: Terms used in the System level CONOPS and Segment level OPSCONS documents that refer to the relationship between operational scenarios. The scenarios at both levels are related to each other in the context of utilizing the same JPSS systems and ground segments. Segment level scenarios are the 'children' of the System level scenarios ('parents') when they are directly related in their function and purpose as well as exercising the same ground and/or flight system (also sometimes referred to as Use Cases or Mission Threads).

Partly Cloudy: (1) In meteorological terms, the condition when between three-eighths and five-eighths of the sky is covered by clouds. (2) In the context of the atmospheric sounding methodology used by the NOAA-Unique CrIS/ATMS Processing System (NUCAPS), partly cloudy refers to conditions where both the infrared and microwave retrievals are used, typically representing scenes with less than or equal to 50 percent cloudiness.

Pass Plan (PP): A per satellite or multiple satellite line-of-sight contact plan(s) currently generated by the Generate Nodal Plans functionality of the Common Ground System (CGS) using the Master Schedule; occurs following the generation of the Mission Schedules. Upon successful PP generation, they are released for distribution, coordination and to address conflicts as early on as is reasonable and feasibly possible.

Path C Problem Change Request (PCR): Path C is a Common Ground system process flow for noncompliant requirements (Failed or re-opened based on PCR/ECR flowdown) and is an efficient way to get new functionality into a deployed ground system baseline. This process requires additional formal steps to verify that the PCR fix is correct. Additional steps include adding the "Resolved" state to the normal PCR flow. This requires an additional review prior to the PCR moving into closed to ensure that the change/modification was successfully completed.

Payload: An instrument or communications component mounted on the spacecraft that provides measurement data or communications service to fulfill mission goals. See Instrument.

Payload Interface Electronics (PIE): Applicable to the JPSS-2/3/4 mission spacecraft, provides the 1553 and SpaceWire to the instruments and the 491 Gb (end-of-life) of on-board, Flash-based mission data storage. The PIE directly outputs the High Rate Data (HRD) to the X-band transmitter and outputs the Stored Mission Data (SMD) to the Ka-band transmitter on demand.

Peak Loading: Includes data flows for ingress and egress data, as well as all intra-system flows that move data from network-attached storage to the various services (integrity check, metadata parse, virus scan, deflation, tailoring, etc.) and includes processing required for product generation in a worst-case simultaneous data arrival.

Performance: A quantitative measure characterizing a physical or functional attribute relating to the execution of a mission operation or function. Performance attributes include quantity (how many or how-much), quality (how well), coverage (how much area, how far), timeliness (how responsive, how frequent), and readiness (availability, mission/operational readiness). Performance is an attribute for all system people, products, and processes including those for development, production, verification, deployment, operations, support, training, and disposal.

Thus, supportability parameters, manufacturing process variability, reliability, and so forth, are all performance measures.

Performance Parameter: A measure of performance often compare to a threshold or objective measure to determine whether the system is meeting or exceeding the critical or key performance parameters (KPP) or measure of merit levels (availability, latency, quality, reliability, etc.) desired.

Performance Requirement: A requirement specifying the extent to which a mission/operation or function must be executed, generally measured in terms of quantity, quality, coverage, latency or readiness.

Phase: A time period in the life cycle of an item (e.g., system, segment, unit, etc.). For example, the satellite mission phases are: pre-launch, launch & ascent, early orbit, on-orbit, and de-orbit.

Playback Telemetry (PB-TLM): Contains both housekeeping and engineering telemetry that is recorded on the spacecraft Digital Storage Unit (DSU) and is played back during telemetry downlink at 512 kibps for S-NPP, 512.5 kibps for JPSS-1, and 1.6 Msps for JPSS-2/3/4 (with a subset of the 1.6 Msps bandwidth used for the R-T data link during ground contacts). DSU is a separate recorder from the Solid-State Recorder (SSR) on S-NPP and JPSS-1, while JPSS-2/3/4 uses flash memory within the Integrated Electronics Module (IEM). PB-TLM is generally the nominal housekeeping and engineering used for evaluation of the health and safety of the satellite.

Playback Telemetry Application Packet (PB-TLM AP): One of multiple Application Packets of recorded telemetry sent down via S-band link. This enables access to back orbit telemetry from the spacecraft.

Polar Follow-On (PFO): See Joint Polar Satellite System Polar Follow-On.

Polar-orbiting Operational Environmental Satellite (POES): The NOAA-sponsored heritage operational satellite system providing a continuous history of low-Earth orbiting spacecraft in a polar orbit, providing advantages of high resolution and complete global coverage at the expense of the high temporal resolution in equatorial and middle latitudes available from geostationary satellites. Sometimes there are specific references to a Polar-orbiting Operational Environmental Satellite (no acronym), but this may be referring to the larger group of generic polar-orbiting satellites rather than specifically to the distinct POES acquisition program.

Polar Winds: Satellite-derived winds over the polar regions, used primarily in numerical weather prediction applications.

Post-Launch Test (PLT): Refers to a test phase, which begins immediately after launch and orbit raising with the execution of a pre-defined series of spacecraft and instrument test plans. These test sequences are designed to validate the pre-launch verification of all space and ground segment mission requirements. The PLT phase consists of activation and characterization testing followed by systems performance and operations testing.

Pre-Launch (PL): Plans, preparations and activities required and executed prior to launch designed to maximize probability of launch and overall mission success.

Pre-Launch and Launch Readiness (PLR): This is the name given to the JPSS Pre-Launch and Launch Readiness (PLR) Concept of Operations (ConOps). These are the Ground System operations that occur at the launch site in preparation for launch. It starts at the arrival of the satellite at the launch site and ends at the beginning of final countdown. The operations include final integration and testing, launch and flight readiness reviews, launch countdown rehearsals, and launch decision-making.

Precipitable Content: The total amount of water and ice contained in a vertical column of the atmosphere.

Precipitable Water (PW): The total equivalent water (in the form of water vapor) of unit cross-sectional area between any two specified levels, including the total atmospheric column. For this JPSS EDR, vertical cell size is the vertical height of the total atmospheric column specified and the horizontal reporting interval specifies the locations of the column bottoms for which the Total Integrated Water Vapor (TIWV) must be reported.

Precipitation (Type/Rate): The type and amount of rain, ice, or snow reaching the ground in a certain amount of time.

Precondition: Analogous to a prerequisite; must be in place before the activities in a thread are executed. It indicates events or conditions that are assumed to have happened, or to already be in place.

Predecessor Environmental Data Record: Environmental Data Records (EDRs) that are produced and become input (i.e., Cloud Mask) for other EDRs.

Predefined Contingency Task: A task that arises from scenarios that have been considered and developed in collaboration by JPSS Operators and Engineers. They are responses to situations that are believed to have a high likelihood of occurrence. Accordingly, they will only be performed if those situations materialize. The existence of a Predefined Contingency Task connotes a time criticality of accomplishment.

Predefined Report: A report that has been previously defined and is available to be run on a schedule or on an ad hoc basis.

Predicted Ephemeris: Data generated from operational state vectors that are calculated by feeding the JPSS onboard Global Positioning System (GPS) navigation data into high-fidelity models. These vectors are then propagated using the same high-fidelity models to provide users with datasets of predicted JPSS satellite states for time periods in the future.

Preprocessor: Consultative Committee for Space Data Systems (CCSDS) compatible preprocessor used at the ground station to receive satellite Stored Mission Data (SMD).

Pressure Profile (PP): See Atmospheric Vertical Pressure Profile.

Primary (Pri): Defines primary (before secondary or alternate) redundancy capability of any element/node within the Ground System. The optimal first choice element/node selected to meet a capability.

Primary Dynamic Ancillary Data (PDAD): External data specified for use as the first choice and best source by the Suomi National Polar-orbiting Partnership (S-NPP)/JPSS system because it is both available and more reliable.

Primary Instrument Side: The instrument operation is on its primary side.

Primary Mission Sensor: A sensor on the S-NPP or JPSS series of operational satellites that is used as the primary source of data needed to satisfy a specific set of data product performance requirements. Normally this is the most capable sensor of its type in the constellation.

Primary Operational Environment: The main operational environment that should be readily available to support primary mission operations. This primary operational environment is subsequently supported by required backup capabilities depending upon agreed upon dual and/or multiple uses of the secondary operational environment (i.e., test, integration, training, etc.).

Primary Operations (Primary Ops): Operational status supporting all of the functions of the Management and Operations Node (MON) and Data Processing Node (DPN) including planning and scheduling mission operations, monitoring satellite telemetry, commanding the satellite, processing science data to create JPSS data products, and delivering the products to the JPSS users. An environment performing this activity is called the primary operating environment.

Probabilistic Risk Assessment: An approach for documenting risk profiles based on the failures.

Probability of Correct Typing (PCT): The probability that a horizontal or vertical cell reported as being of type x is in fact of type x.

Probability of Success (Ps): The probability that an outcome is in fact the expected or desired outcome. For example, if a trial must result in any of (s+f) equally likely ways, where s is the number of successful ways and f is the number of failing ways, then the probability of success is Ps = s/(s+f).

Processing Center: A data processing facility that uses JPSS data to produce environmental products for their customers. The primary JPSS Processing Center is the National Environmental Satellite, Data and Information Service (NESDIS) Environmental Satellite Processing Center (ESPC); with an alternate Consolidated Backup (CBU) located at the Data Processing Node (DPN). The term “Central” is frequently used to refer to a Processing Center in legacy documentation.

Processing Coefficient Table (PCT): Auxiliary data input to an algorithm that contains constants (e.g., threshold values), sensor characteristic-related and logical switches that control turning on/off algorithm logical paths (e.g., applying a correction, a specific model, etc.). PCTs are used to configure algorithms for efficient on-line production and are changed only rarely.

Processing Component: A functional group of one or more software processes or hardware components supporting processing.

Processing Element: A hardware element (i.e., computer systems) where processing components will execute the needed data processing.

Processing Segmentation: Instead of performing the activities on an entire satellite data dump in a serial manner; the main processing activities are performed in parallel, where the system does not wait for step n to be complete for the entire dump before starting step n+1. Each activity is performed in a serial manner on small units, with the size of the unit (granule) being chosen for concurrent processing to optimize data latency performance.

Processing Subsystem (PRO): A term used to describe one of the five primary Interface Data Processing Segment (IDPS) subsystems (subsys): Processing (PRO) subsys, Infrastructure (INF) subsys, Data Delivery Subsys (DDS), Ingest (ING) subsys, and Data Management Subsys (DMS).

Product Data Availability (A_{PD}): The percentage of data products that should be generated from the data collected by operational sensors on each JPSS satellite and the mission support data that are made available to each user at the JPSS/User interface. A_{PD} is measured per sensor or sensor pair on the granule or file basis. The A_{PD} requirements are not applicable during on-orbit anomalies, failures, and recoveries when no mission data are generated or stored in the onboard mass memory. The A_{PD} requirements are also not applicable when the data product is not requested by the user or not made available due to the outages on the user side of interface.

Product Data Latency (L_{PD}): See Data Latency.

Product Security: Product security is a program for ensuring proper physical security of Government/DoD products at contractor facilities or under control of contractors before formal turnover to the government. The program is generally implemented during engineering and manufacturing, development, and production and deployment acquisition phases.

Program Concept of Operations (Prog ConOps): A "Program" wide and approved Concept of Operations (abbreviated CONOPS, CONOPs, or ConOps) is a document describing the characteristics of a proposed system from the viewpoint of an individual who will use that system. It is used to communicate the quantitative and qualitative system characteristics to all stakeholders. CONOPS are widely used in the military or in government services, as well as other fields. A CONOPS generally evolves from a concept and is a description of how a set of capabilities may be employed to achieve desired objectives or a particular end state for a specific scenario.

Program of Record (POR): See Joint Polar Satellite System Program of Record.

Programmable Downlink: Describes the capability to assemble science data (Stored Mission Data (SMD), or High Rate Data (HRD)) transmitted by the JPSS spacecraft to the ground by specifying the desired Application Process Identifier (APID) packets from the instrument and spacecraft data streams via ground command. This capability provides the ability to optimize downlink bandwidth and content in order to respond to unanticipated changes in instrument performance (e.g., failed bands) and to accommodate instrument channel prioritization schemes.

Proposed Schedule: Any type of schedule that is being suggested and/or recommended, but not yet fully vetted, coordinated, validated and/or approved for integration and/or deconfliction against shared and/or competing resources with any higher level and/or an integrated master schedule either by mission, across an entire project/program, and/or even an entire scheduling enterprise (i.e., similar to the Air Force Satellite Control Network). Proposal and coordination of schedules occurs at lower operational and system levels until it is adequately integrated and deconflicted against shared and/or competing resources, and ready for operational management and authoritative responsible validation and approval officials. Validation occurs at the operational management level. Approval occurs at the authoritative and responsible level.

Protoflight: The application of design qualification test levels and duration of flight acceptance tests to qualify hardware of a new or modified design for flight by subjecting it to a qualification test program that combines elements of prototype and flight acceptance verification.

Proxy Data: Data used as a substitute or stand-in for other data. For example, data from a similar heritage instrument can be used as proxy for the instrument data in an algorithm under investigation. Often proxy data will have to be modified before it can be used in test. Proxy data can be used to test an algorithm against realistic variation of data or to test volumes or loads on a system.

Quality Flag (QF): A pre-defined calculated characteristic (qualitative through semi quantitative to quantitative) of a pre-selected data element. These characteristics are evaluated at multiple levels of data processing and aggregation ranging from the lowest datum or pixel level of sensor data through any grouping with the data set (scan, granule, orbit, for example) to the finished product at an Environmental Data Record (EDR) level. Quality flags may be stored with their associated data product for long term archiving. Quality flags may also be defined for ancillary and auxiliary data needed for processing. The purpose of the Quality Flags is to bound estimates of attribute quality associated with the processed or collected data for decision-making processes, both internally (within the processing stream) and externally (through off-line analysis).

Radio Frequency (RF): Sinusoidal electrical oscillation generally considered to fall within the range of 8.3 kHz to 300 GHz and corresponding to frequencies of electrical signals in practice used to radiate and detect radio waves. RF generally refers to such oscillations in electrical circuits or electromagnetic radiation.

Radio Frequency Interference (RFI): (1) The radiation or conduction of radio frequency energy (or electronic noise produced by electrical and electronic devices at levels that interfere with the operation of adjacent equipment. (2) Simultaneous reception of one or more undesired RF signals disrupting reliable communication with the intended signal. (3) Two or more spacecraft simultaneously within the same field-of-view of a ground station and occupying frequencies that overlap and interfere.

Radio Frequency Downlink(s): A space-to-earth radio communications path.

Radiometric Calibration: The process of converting and correcting raw detector measurements (counts) into science data units (e.g. radiance) with the correct scale factors and the specified level of accuracy.

Rainfall Rate: (1) A measure of the intensity of rainfall by calculating the amount of rain that would fall over a given interval of time if the rainfall intensity were constant over that time period. (2) A NESDIS Microwave Integrated Retrieval System (MIRS) data product using observations from the JPSS Advance Technology Microwave Sounder (ATMS) to produce estimates of the rate of liquid precipitation.

Rational Publishing Engine: DOORS add-on that automates document generation from Rational DOORS based on templates created and coordinated with the JPSS GP CMO.

Raw Data Availability (A_{RD}): The percentage of data collected by operational sensors on each JPSS satellite that are made available to each user at the JPSS/User interface. A_{RD} is measured on the Application Packet (AP) basis. The A_{RD} requirements are not applicable during on-orbit anomalies, failures, and recoveries when no mission data are generated or stored in the onboard mass memory. The A_{RD} requirements are also not applicable when the data are not requested by the user or not made available due to the outages on the user side of interface.

Raw Data Record (RDR): (1) Full resolution digital sensor data, time referenced and earth located, with absolute radiometric and geometric calibration coefficients available, but not applied, to the data. Aggregates (sums or weighted averages) of detector samples are considered to be full resolution data if the aggregation is normally performed to meet resolution and other requirements. Sensor data must be unprocessed with the following exceptions: time delay and integration, detector array non-uniformity correction (i.e., offset and responsivity equalization), and data compression are allowed. Lossy data compression is allowed only if the total measurement error is dominated by error sources other than the data compression algorithm. All calibration data will be retained and communicated to the ground without lossy compression. (2) A NASA Committee on Earth Observation Satellites (CEOS) Level 1A Product, the RDR is reconstructed unprocessed data at full resolution, time-referenced, and annotated with ancillary information, including radiometric and geometric calibration coefficients and geo-referencing parameters (e.g. ephemeris) computed and appended but not applied. RDRs are assembled by the ground system from Application Packets using the Packet Identifier(s).

Raw Data Set: Time ordered telemetry data Extended Application Packets (EAPs) from the Data Handling Node (DHN). The Raw Data set is sent to Satellite Operations (SO) and/or to Stored Telemetry Analysis (STA). The raw data is stored as a Real-Time Telemetry (RT-TLM) file and also processed into a Processed Telemetry (PTM) file (C3).

Raytheon Space and Airborne Systems (Raytheon SAS): The JPSS Flight Project contractor supporting the design, development, integration, testing, and post-delivery support of the Visible Infrared Imaging Radiometer Suite (VIIRS).

Raytheon Intelligence and Information Systems (Raytheon IIS): The JPSS Ground Segment Project contractor supporting the design, development, integration, testing, and post-delivery support of the JPSS Common Ground System (CGS).

Real-Time (RT): For Suomi National Polar-orbiting Partnership (S-NPP)/JPSS purposes real-time (sub second) is primarily required for Command and Control (C2) operations and functions; whereas Near Real-Time [NRT] (1-10 seconds) is primarily required for data and information processing (communications and infrastructure delays). Real-time event timelines vary

somewhat based on the context the term is being use between nanoseconds, microseconds and less than a second. The actual time during which a process or event occurs - information updated in real-time; and of or relating to a system in which input data is processed within milliseconds so that it is available virtually immediately as feedback (i.e., in a missile guidance or airline booking system - real-time signal processing). For the JPSS Ground Segment Project use of this term is more appropriately defined as NRT due to processing and transmission delays. The important general distinction between the terms "NRT" (1-10 seconds) and "real-time" (sub second) are somewhat nebulous, and must be defined for the situation at hand [KPPs or metrics for Test & Evaluation (T&E) or Independent Validation & Verification (IV&V) purposes]. The term real-time and NRT both imply that there are no significant time delays. In many cases, processing described as "real-time" would be more accurately described as "NRT". However, some mission KPPs require actions be taken in nanoseconds (ns) or microseconds (μs), while others can occur in under a second or several seconds. The distinction for us usually is Command & Control (C2) versus Command, Control, Communications (C3) and Interface Data Processing (IDP) [also closely tied and related to Enterprise Management (EM) and System Integration (SI)].

Real-Time Attitude Determination System (RTADS): Real-time configuration of Multiple-mission Three-Axis Stabilized Spacecraft (MTASS) providing attitude estimates in near real-time utilizing the attitude telemetry stream.

Real-Time Command: A command uplinked for 'immediate' execution by the satellite. For Suomi National Polar-orbiting Partnership (S-NPP)/JPSS, real-time command contacts occur at Svalbard, and via the NASA Space Network (SN) [also TDRSS].

Real-Time Mission Data: Mission data downlinked immediately after the satellite sensors collect it via the High Rate Data (HRD) link.

Real-Time Processing: The processing of information (i.e., Telemetry, SMD, alarms, unplanned system outages, etc.) as it is received.

Real-Time Satellite Downlink Data: Data acquired on the satellite and transmitted immediately to the ground (as opposed to being stored onboard the satellite for later playback). Delay is limited to the actual time required to collect and transmit the data.

Real-Time Telemetry (RT-TLM): Telemetry transmitted to and from the satellite to the ground segments immediately upon generation. RT-TLM is delayed only by the data processing required, bypassing the Solid-State Recorder. This is the S-band spacecraft (S/C) Health & Housekeeping Telemetry from the S/C DSU.

Real-Time Telemetry History: A file created by Satellite Operations (SO) containing Real-Time Telemetry (RT-TLM). This file may be utilized by Satellite Operations (SO) for playback or sent to Stored Telemetry Analysis (STA) for analysis (C3).

Receptor Site: One of four polar-region facilities where a Receptor or a data acquisition service is located. The four Receptor sites are at McMurdo Station, Antarctica; Svalbard (Norway), Arctic; Fairbanks, Alaska; and Troll (Norway), Antarctica.

Redundancy: The existence of backup equipment that can be used to perform primary functions, in the event that the primary equipment should fail; also, the existence of more than one-way of performing a function.

Redundant: More than one independent means of accomplishing a given function; for example, A-Side hardware and B-Side hardware are redundant.

Redundant Instrument Side: The instrument operation is on its redundant side.

Refresh: Refresh is the time interval between successive collections of data from the same geographical point on, or above, the surface of the Earth. It is typically stated as a maximum local average time interval or a percent coverage of the entire globe within a fixed time period. JPSS refresh requirements are considered constrained by the design of the Flight system (e.g., orbital altitude, instrument swath width, etc.) and are not allocated to the Ground System. Refresh calculations are not constrained by complex, product-specific exclusion conditions (e.g., land/water, cloud cover, sun glint, turbidity, etc.) as these factors are considered algorithm (vice allocated Flight system) design constraints. Also commonly referred to as Revisit.

Registered User: Authorized users who have a formal agreement with a system or subsystem manager for access and use of that system or subsystem. For the Environmental Satellite Processing Center (ESPC), a Registered User has a formal agreement with the Office of Satellite Products and Operations, via the ESPC Data Access form, for the acquisition of data products.

Relative Time: Specified time as a reference to another scheduled benchmark (for example, two hours after orbit adjust maneuver).

Relative Time Command: A command initiated in a sequence relative to the previously executed command. Once initiated, each command has a 'delay time' that indicates the number of seconds and milliseconds to wait before executing the next command in the sequence. Relative time commands are contained in the Relative Time Sequence (RTS) stored command table. An RTS can be initiated from the ground or onboard the spacecraft. See also Absolute Time Command.

Reliability: The probability that a system will perform satisfactorily for a given time when used under specified operating conditions. More generally, reliability is the capacity of parts, components, equipment, products and systems to perform their required functions for desired periods of time without failure, in specified environments and with a desired confidence. (See also Basic Reliability and Mission Reliability). Also refers to the engineering discipline concerned with predicting, monitoring, testing, and improving the reliability of a system, device or process.

Reliability Analysis: A quantification of the sources of failures in a system, with emphasis on the most significant contributors towards the overall system unreliability, in order to correct them and therefore improve the reliability of the fielded system.

Reliability Block Diagram (RBD): This type of diagram represents how the components (represented by "blocks") are arranged and related reliability-wise in a larger system. This is often, but not necessarily, the same as the way that the components are physically related.

Reliability Distribution Curve: A curve that characterizes the changes to the probability of failure over time.

Reliability Engineering: The set of design, development and manufacturing tasks by which reliability is achieved.

Reliability Growth: The improvement in a reliability parameter caused by successfully correcting design or manufacturing deficiencies.

Reliability Prediction: The primary calculation in Reliability Analysis, referred to as the Failure Rate or number of failures during a period of time.

Reliability, Availability and Maintainability (RAM): Also referred to as Reliability, Maintainability and Availability (RMA).

Reliability, Maintainability and Availability (RMA): Also referred to as Reliability, Availability and Maintainability (RAM).

Remote Access: Remote access is any access to an organizational information system by a user (or process acting on behalf of a user) communicating through an external network (like the Internet) outside the security boundary. Remote access is not permitted on the JPSS networks for security risk and compliance reasons.

Repair: A corrective maintenance action performed as a result of a failure so as to restore an item to operate within specified limits.

Reporting Event: For Common Ground System (CGS), this is an event in the Data Monitor & Recovery (DMR) function critical enough to be reported to the Enterprise Management (EM) function.

Requirement Management Tool (RMT): This is the Working Group (WG) that maintains the common set of Dynamic Object-Oriented Requirements System (DOORS) attributes to be used in the Data Partition Transfer process between Raytheon and NASA DOORS databases.

Requirement Verification Compliance Matrix (RVCM): A verification related matrix that indicates the method by which a particular requirement is verified and the level and phase during which the requirements is verified; provides evidence of proper verification, in the form of pointers to the detailed verification documentation (verification plan, test case, verification procedure, verification report, waiver, deviation); and indicates the disposition of the verification. RVCMs are used to facilitate requirement verification review and approval (sell-off) to the associated Verification Disposition Authority (VDA).

Requirement Verification Compliance Report (RVCR): A verification related report that provides a description as to how the requirement will be verified; indicates the method by which a particular requirement is verified and the level and phase during which the requirements is verified; provides evidence of proper verification, in the form of pointers to the detailed verification documentation (verification plan, test case, verification procedure, verification report, waiver, deviation); and indicates the disposition of the verification. RVCRs are used to

facilitate JPSS System Specification requirement verification review and approval (sell-off) to the Joint Program Office (JPO).

Research, Development, Test and Evaluation (RDT&E) Support Complex (RSC): Space Test operates the RDT&E Support Complex (RSC) located at Kirtland AFB, and prepares for and conducts on-orbit operations of DoD and NASA R&D satellites, relays launch vehicle telemetry, and provides other telemetry and backup command capability to NASA. The Space Test Operations Squadron consists of an on-orbit communications satellite test site, mobile telemetry systems, and the wing's space Developmental Test and Evaluation (DT&E) experts - performing space vehicle DT&E, and supporting launch and on-orbit operations around the world.

Residual Risk: The element of risk remaining after a risk item has been mitigated or accepted.

Resource Configuration: Resource configuration is any configuration of the Suomi National Polar-orbiting Partnership (S-NPP)/JPSS system's hardware, software, or other resources, including hardware and software modes.

Restriction: The term pertaining to a constraint on the spacecraft when the expected outcome of its violation results in a reduced system or subsystem capability.

Retained Intermediate Product (RIP): This is a class of Intermediate Product (IP) as those that are persisted at an Interface Data Processing (IDP) Node for up to 2 orbits or more, in support of Calibration and Validation activities.

Retransmit Stored Mission Data: Data that has previously been transmitted from the satellite, for which the ground segment requests a subsequent retransmission from the satellite or from a ground storage location.

Reusable Item: A reusable item (i.e., HW) is an item (unit, subsystem, vehicle, or other hardware item) that is to be used for multi-missions. The service life of reusable hardware includes all planned reuses, refurbishment and retesting.

Revisit: See Refresh.

Rework: Return for completion of operations (complete to drawing). The article is to be reprocessed to conform to the original specifications or drawings.

Risk: The combination of the likelihood of an uncertain event and the consequence of the event, were it to occur. Positive-outcome events and/or extremely low probability/impact-outcome events can similarly be considered. Any circumstance or situation that impacts public safety, Program-controlled cost; Program-controlled schedule, or major mission objectives; and for which an acceptable resolution is deemed unlikely without focused management effort.

Risk Analysis: The activity of identifying risks or adverse events, and the analysis of the probability of occurrence and the consequence of occurrence of these events.

Risk Management: The identification, evaluation, and prioritization of risks followed by coordinated and economical application of resources to minimize, monitor, and control the probability or impact of unfortunate events or to maximize the realization of opportunities.

Risk Management Board (RMB): Management board that is the official forum for formal evaluation, deliberation, classification and control of program or project risks.

Robustness: See System Robustness; Robustness Criteria.

Robustness Criteria: In the context of the JPSS Program, the standards established by NESDIS to ensure continuity of critical polar satellite data by prescribing actions in program planning and execution to acceptably mitigate the risk of a gap in polar satellite observations used in numerical weather prediction systems. This planning constitutes maintenance of both primary and secondary sources of Advanced Technology Microwave Sounder (ATMS) and Cross-track Infrared Sounder (CrIS) data from all available on-orbit assets while simultaneously developing and maintaining on the ground a mission capability that includes, at a minimum, the ATMS and CrIS instruments in order to return to a "two failure to a gap" condition should an on-orbit failure occur.

Route Data: This is the movement of data through a specific path based on predefined criteria, table of rules or guidelines. Usually routing involves the physical distribution of data and information to appropriate destinations (as opposed to just making it available for retrieval).

Route Downlink Data: An activity for Stored Mission Data (SMD) handling that covers the distribution of downlink data from receptor sites to processing locations. This activity includes the management of the distribution, as well as the physical routing of the data.

Routine: A predefined set of steps, which is executed as needed (either manually or automatically). Predefined routines support repeatable, error-free execution of processes (i.e., a particular operational control sequence or mission task).

Routine Discrepancy Report: Priority 3 Discrepancy Reports (DRs): problem causes minor or no substantial impact to development, operations, services or data processing functions. Also, implies workaround exists. Support may be degraded, but mission can still be accomplished. Examples: Spacecraft: Database alarm threshold settings too tight creating unnecessary operator alerts, or sensor reporting bus errors with no associated data loss or corruption. Ground: Science Data Segment (SDS), Comprehensive Large Array-data Stewardship System (CLASS) and/or GRAVITE report not receiving particular Raw Data Records (RDRs) for a given orbit. Subscriptions resubmitted for CLASS and/or GRAVITE to ensure data from that orbit was delivered to these segments. No data was lost.

Routine Work Request: Priority 4 Work Requests (WRs): problem can be addressed whenever time permits. Examples: Spacecraft: Telemetry parameter description in database is incorrect or misleading. Ground: DVD burner on Integration and Test (I&T) server #3 non-functional.

S-Band: The ITU-R 2.5 GHz frequency band used for radio communication. Satellite telemetry uses an S-band space-to-earth communications link for transmission of satellite telemetry to ground stations. Satellite command uses an S-band earth-to-space communications link for satellite commanding from ground stations.

S-Band Telemetry (S-Band TLM): Telemetry transmitted on the S-Band telemetry link.

S-Band Telemetry Link: A communications link for transmission of satellite telemetry to ground stations. The Suomi National Polar-orbiting Partnership (S-NPP) and Joint Polar Satellite System (JPSS) satellite telemetry links are operated as follows: Real-Time Telemetry (RT-TLM) - 1, 4, 16 and 32 kibps, Playback Telemetry (PB-TLM) - S-NPP 512 kibps (524,288 bps) and JPSS 512.5 kibps (524,800 bps).

Safe Hold Mode: A nadir-facing, power-positive and thermally safe mode. There are several other spacecraft pointing modes considered safe hold mode (i.e., Sun Acquisition, Earth Point & Mission Point).

Safety Case: A final study that provides proof that the system will remain acceptably safe for a particular failure scenario.

Satellite (Sat): Combination of the spacecraft (S/C) bus and its integrated sensors (i.e., payload).

Satellite Access Contact Time: The set of all available times when specified satellites and ground sites, or relay satellites, are within each other's fields of view.

Satellite Command (Sat CMD): This is a command uplinked by the ground to the satellite defining actions to be performed by the satellite; sometimes referred to as a 'telecommand'.

Satellite Command and Control (Sat C2): Commands and tables are stored in the memory of the central onboard computer on the satellite. The execution of these commands or the result of loading these operational tables occurs sometime following their storage. The term "core-stored" applies only to the location where the items are stored on the spacecraft and instruments; core-stored commands or tables could be associated with the spacecraft or any of the instruments.

Satellite Command Load (SCL): A sequence of commands that is uplinked (or loaded) onto the satellite for execution in a time relative or absolute manner; sometimes referred to as 'stored command sequences' or 'satellite command sequence'.

Satellite Command Sequence (SCS): A sequence or list of commands generated by C3 to be executed by the satellite; sometimes referred to as 'Satellite Command Load'.

Satellite Communications and Navigation Point of Presence (SCaN PoP): The NASA Satellite Communications and Navigation (SCaN) Point of Presence (PoP) is a network drop within the NSOF in Suitland, MD to access NASA GSFC Code 450 networks in support of EOS and other NASA missions.

Satellite Controller (SATCON): The Satellite Controller (SATCON) is currently a NOAA OSPO employee who takes direction from OSPO Management and is considered part of the Mission Operations Support Team (MOST) who has real-time knowledge of each satellite. He/she executes the approved satellite pass plans, controls satellite and constellation activities, monitors satellite/constellation status. The SATCON monitors the command loads and has a

real-time commanding capability, if necessary and supported by the spacecraft. The SATCON has a limited capability to respond to out-of-limit warnings and other non-nominal conditions.

Satellite Data Load (SDL): Satellite data load is a generic term for data transmitted to the satellite. This data can consist of command loads, table loads or memory loads.

Satellite Operations Control Center (SOCC): OSPO of Satellite and Product Operations (OSPO) direct and manage the operation of NOAA's satellites and the acquisition of remotely sensed data. The Office has operational responsibility for the Satellite Operations Control Center (SOCC) at Suitland, MD and Command and Data Acquisition (CDA) facilities at Wallops, VA and Fairbanks, AK to command and control the satellites, to track the satellites, and to acquire their data. The Office supports the launch, activation, and evaluation of new satellites and the in-depth assessment of satellite and ground systems anomalies. It prepares plans and procedures for responding to satellite and ground anomalies, and establishes and coordinates the schedules for satellite operation and data acquisition to meet users' needs. The Office also evaluates the technical performance of the satellites and maintains current information and future prediction on satellite orbits and attitudes. It evaluates the effectiveness of the operational facilities and procedures in terms of the quality, quantity, coverage, and timeliness of the data acquired.

Satellite Retransmit Request Queue: A First-In First-Out list maintained in the C3 Spacecraft (S/C) Controller software containing separate Stored Mission Data (SMD) retransmit requests and associated control parameters (i.e., start pointer location, stop location, and estimated broadcast time).

Satellite Storage Life: Satellite storage life is the time from the completion of first time ground proto-qualification and/or acceptance testing of the satellite until Launch Vehicle Lift-off. The satellite is designed to sustain controlled-condition storage of up to 8 years prior to launch, including up to 3 years for intermittent testing. For this program, pre-launch processing falls into the intermittent testing category.

Satellite to Ground Contact Schedule (S-G CS / Sat-Grnd CS): The schedule that specifies at what time each satellite will downlink Stored Mission Data (SMD) to which ground receptor. From this schedule, end data users can determine when to expect specific Environmental Data Records (EDRs) for specific geographic regions to be available.

Scalability: The ability of a hardware or software system to continue to function according to original specifications when it is enlarged (e.g., in terms of processing, storage, or throughput capacity) and to take performance advantage of the increase.

Schedule Event (Sched Event): Event defined and approved by Mission Management like orbit maneuvers, large-scale calibration events, etc.

Schedule Priority (Sched Pri): The hierarchical ranking of tasks that are used while scheduling, to avoid resource conflicts between the tasks, shared assets, or other limited capabilities.

Schedule Request (Sched Req): A generic request to allocate a resource that may be available for use in a list of resources to perform a task in support of one or more planned event(s).

Schema: A database and/or model relationship schematic that clearly defines and describes the key aspects of the record and table relationships in an object oriented or hierarchical design methodology.

Science Data Record (SciDR): A general term used to describe Science Data Records (SciDRs) of all types past, current and future that may include xDRs and other previous or new data record formats also.

Science Data Segment (SDS): This is a data consumer and segment that supports science assessment by assuring the timely provision of Suomi National Polar-orbiting Partnership (S-NPP) data to NASA's science teams organized by climate measurement themes. The Science Data Segment (SDS) breaks down into nine major elements, an input element that receives data from the operational agencies and acts as a buffer, a calibration analysis element, five elements devoted to measurement based quality assessment, an element used to test algorithmic improvements, and an element that provides overall science direction. SDS Data Distribution & Depository Element (SD3E) - an input element that receives data from the operational agencies and acts as a buffer; VIIRS Calibration Support Element (VCST) - a calibration analysis element, primarily supporting the Atmospheric, Land and Ocean investigations; [Sounder, Ozone, Atmosphere, Land & Ocean] Product Evaluation & Analysis Tool Element (PEATE) - five elements devoted to measurement based quality assessment; Integration and Test Support Element (I&TSE) - an element used to test algorithmic improvements via a mini-IDPS; and Project Science Office Element (PSOE) - an element that provides overall science direction. There is also a tenth related element called the Earth Radiation Budget Climate Analysis Research System (ERBCARS) that supports the CERES instrument and its data products. The NASA SDS will leverage on NASA experience to provide a mission-reliable research capability for science assessment of S-NPP and JPSS derived measurements. SDS is distributed across 9 locations, from NASA GSFC, NASA Langley Research Center (LaRC), Jet Propulsion Laboratory, and University of Wisconsin-Madison.

Science Scenario Data: Data required and used to facilitate and support science and instrument related use case scenarios. Same as Instrument Characterization Data except it is from Instrument Support Node (ISN) to Field Terminal Support (FTS).

Sea Ice Age: See Ice Age.

Sea Ice Concentration: See Ice Concentration.

Sea Ice Thickness: See Ice Thickness.

Sea Surface Temperature (SST): A measurement of the skin temperature of the ocean surface.

Sea Surface Wind Speed: A measure of atmospheric wind speed at the sea/atmosphere interface. These winds are indicators of global and local circulation patterns, ocean surface circulation (surface currents), sea state, and coastal water levels.

Sea Surface Wind Stress: The magnitude of the frictional stress of the wind acting on the sea surface, causing it to move as a wind-drift current, and causing the formation of waves.

Secondary: Defines next alternate (behind primary) redundancy (physical/logical or both) capability of any element/node within the Ground System. This is the next alternate less optimal choice element/node to meet a mission capability or operational need.

Secondary Mission Capability: This capability is provided when mission sensors other than the Imager and Profiler Suites are capable of delivering their Raw Data Records (RDRs) to the C3 and IDP, as required.

Secondary Mission Sensor: A sensor on the S-NPP or JPSS series of operational satellites that is functional but not used as the primary source of data to satisfy a specific set of data product performance requirements. Normally this sensor has some degraded capability but some data from the sensor will be processed on the ground on a best effort basis to supplement the primary source to increase temporal or spatial coverage.

Secondary Operational Environment: An alternate operational environment that may or may not be readily available to support operations right away as a backup depending upon its dual or multiple uses (i.e., test, integration, training, etc.).

Secure File Transfer Protocol (SFTP): The "sftp" command is a command-line interface client program implementing the client-side of the Secure Shell (SSH) File Transfer Protocol (FTP) as implemented by the sftp-server command by the OpenSSH project, which runs inside the encrypted Secure Shell connection. It provides an interactive interface similar to that of traditional FTP clients. "sftp" should not be confused with running an FTP client over an SSH connection. One implementation of sftp is part of the OpenSSH project.

Secure Shell File Transfer Protocol (SSH FTP): In computing, the Secure Shell (SSH) File Transfer Protocol (FTP) [see also Secret FTP, Secure FTP or SFTP] is a network protocol that provides file access, file transfer, and file management functionalities over any reliable data stream. It was designed by the Internet Engineering Task Force (IETF) as an extension of the Secure Shell protocol (SSH) version 2.0 to provide secure file transfer capability, but is also intended to be usable with other protocols. The IETF of the Internet Draft states that even though this protocol is described in the context of the SSH-2 protocol, it could be used in a number of different applications, such as secure file transfer over Transport Layer Security (TLS) and transfer of management information in VPN applications. This protocol assumes that it is run over a secure channel, such as SSH, that the server has already authenticated the client, and that the identity of the client user is available to the protocol.

Security Analyst (Sec-A): The Security Analyst analyzes ground system status and alarms/warnings/event reports to monitor the security status of the JPSS Ground System (GS). If an incident is detected, the problem is addressed and the NOAA Computer Incident Response Team (N-CIRT) is notified.

Segment (Seg): (1) Segments differ from nodes in that segments are physical partitions and nodes are logical partitions of the JPSS Ground System. Each JPSS segment consists of one or more nodes. A segment, such as Field Terminal Support (FTS), is a specific term for a portion (and all its constituent parts) of a system. Previously defined segments include the Launch Support Segment (LSS), Space Segment (SS); Command, Control & Communications Segment (C3S); Interface Data Processing Segment (IDPS), and FTS. The major segments of most

modern space systems are: Space, Ground, Launch, Terminal, etc. This term is used to distinguish between the major segments of a larger system like JPSS (or GPS), and often even at lower levels of the system design to describe a group of subsystems that perform a synchronized and consistent function (C3S & IDPS). Each JPSS segment consists of one or more nodes. JPSS internal IRDs requirements are between segments rather than nodes because the interfaces defined in the IRDs are connections between two or more physical entities. (2) When used in conjunction with the term "Ground Segment," describes the combination of the JPSS Ground Segment Project and the NOAA-managed components of the Environmental Satellite Processing Center supporting the JPSS Program as an end-to-end synergistic capability for receiving, processing, and making available JPSS data products to the NOAA user community.

Segmented Time: The Consultative Committee for Space Data Systems (CCSDS) Day Segmented Time Code (CDS) is a Universal Time Coordinated (UTC) based time with leap second corrections, in a segmented Binary Coded Decimal (BCD) format. A field in the time code allows for a variable number of contiguous time segments. Each 8-bit segment represents two decimal digits. The CCSDS recommended day segment is a continuous counter of days from 1958 January 1 starting with zero. The JPSS-2/3/4 software packets generated by the instruments or spacecraft processor are in CDS format. See also Unsegmented Time.

Selective Data Encryption (SDE): A DoD data access mode that provides data deniability to unauthorized users for portions of the data output from the spacecraft (S/C).

Sensing Depth: The specified vertical region of interest where data are to be collected or information is to be provided.

Sensitive But Unclassified (SBU): A designation in the US Federal government of unclassified information that has been determined to have special protection requirements to preclude unauthorized disclosure to avoid compromises, risks to facilities, projects or programs, threats to the security or safety, disclosure of personal data (address, bank account, social security number, etc.), or to meet access restrictions established by laws, directives or regulations.

Sensor: A sensor is a component of an instrument or sensor suite. A sensor is a device on the satellite for collecting, recording and measuring data or information, as a component of the prime entity, the instrument.

Sensor Analyst (Sen-A): The Sensor Analyst analyzes instrument and spacecraft telemetry to identify and resolve anomalous behavior with a particular instrument on one of the JPSS spacecraft.

Sensor Calibration Table (SCT): Tables used by instrument vendors and scientist to calibrate and validate sensor performance parameters.

Sensor Command Load File: In addition to the file going to the Command Load Generator for the spacecraft, another file specific to a sensor [Visible Infrared Imaging Radiometer Suite (VIIRS) and Ozone Mapping and Profiler Suite (OMPS) respectively] is produced and sent to the Command Load Generator to produce separate commands for certain sensors.

Sensor Constellation Operations (SCO): This is the name given to the JPSS Sensor Constellation Operations (SCO) Concept of Operations (ConOps). This is the concept of

operating multiple sets of near-identical sensors in succession. Focus on the scenarios of transitioning the products from new sensors to operational while maintaining the operations of existing ones, of operating both operational and non-primary sensors, and of failovers.

Sensor Data Record (SDR): A NASA Committee on Earth Observation Satellites (CEOS) Level 1B product, the SDR is sensor data, time referenced; earth (GEO) located (or orbit located for in-situ measurements); radiometrically corrected and calibrated data in physical units at full instrument resolution as acquired. Data is expressed in sensed physical units (e.g., radar backscatter cross section, radiance, etc.). The SDR includes all relevant calibration data and ephemeris data to revert to RDR counts.

Sensor Operations and Payload Support (SOaP): This is the name given to the JPSS Sensor Operations and Payload (SOaP) Support Concept of Operations (ConOps). Concepts of sensor operations and associated Ground System support activities that provide sensor operations teams needed satellite telemetry, raw science data and other information. The focus is on the operational interactions between the instrument support node and the ground system. Special considerations will be given to the CERES operations since its ops team is outside of Mission Operations Team (MOT). The thread describes sensor operations, including monitoring of instrument state of health, activities planning, trending, table updates, etc.

Sensor Suite: One or more sensors needed to satisfy the Environmental Data Record (EDR) requirements allocated to a given Sensor Mission Document. It does not include sensors from other sensor suites that provide secondary data contributions to those EDRs.

Serious Work Request: Priority 2 Work Requests (WRs): problem is urgent, severe and important but has a workaround to prevent damage to the spacecraft or loss of mission data or impacts data production requirements. Examples: Spacecraft: Telemetry indicates unusual thermal increase on sensor but stays under red limit threshold or failure of primary system requiring transition to backup system. Ground: Command Load Generation (CLG) fails to complete load generation or loss of ability to ingest mission data or deliver data products to users.

Service (Srvc): A software process that runs in the background and performs a specified operation at predefined times or in response to certain events.

Service Delivery Point: The functional location or locations where the JPSS must provide data or services.

Seven-Day Ephemeris (7-Day Eph): A 7-day ephemeris file used for forecasting orbits. An ephemeris is a table of values that gives the positions of astronomical objects in the air or space at a given time or times. Different kinds of ephemerides are used for astronomy and astrology. Even though this was also one of the first applications of mechanical computers, an ephemeris will still often be a simple table.

Severe Problem Change Request: Priority 2 Problem Change Requests (PCRs): requirement cannot be verified or operational function cannot be performed with any acceptable workaround available.

Severity: The worst potential consequence of a failure, determined by the degree of injury, property damage, or system damage that could ultimately occur.

Severity Definitions: Taken from the System Design Plan (SDP) [PL60917-GND-030].

Shall: A verb used in a contractually binding requirements document to indicate a contractually imposed mandatory requirement that is to be verified.

Short Notice Task: A task similar to Unplanned Contingency Task except that it is not in response to situations that have the potential to disrupt the mission or place the satellite at risk.

Simulated: The Flight Vehicle Simulator (FVS) and/or Flight Vehicle Test Suite (FVTS) provides simulated telemetry and command interfaces identical to the satellites to support training, command load/procedure verification and anomaly resolution (i.e., Telemetry, Command, etc.).

Simulated Data: Data generated by modeling the observing system and the system observed. There are two key steps in the simulation of instrument data. The first step consists of generating the radiance of a scene as it would appear to instrument optics. This involves application of a Radiative Transfer Model to the geophysical parameters associated with a synthetic or reference scene in order to calculate simulated radiances. Once the scene radiance is generated, it is used as an input to a mathematical model of the sensor. Simulated data can be used to characterize algorithm response to known conditions.

Simulation Node (SimN): The JPSS Ground System (GS) Simulation Node (SimN) provides satellite simulators to support mission operations; as well as integration, test and verification of new capabilities to be fielded. The operation simulation and test capability is provided by the Flight Vehicle Test Suite (FVTS) system in support of the JPSS-1 mission and beyond. Prior to JPSS-1, the simulation capability is limited to the Suomi National Polar-orbiting Partnership (S-NPP) Flight Vehicle Simulator (FVS), which is an Engineering Development Unit (EDU) implementation of the S-NPP spacecraft located at the primary Management and Operations Node (MON) location. The FVTS system consists of EDU and software-based operations simulators to support operations; as well as integration, test and verification for the JPSS GS.

Single Point Failure (SPF): Any single hardware failure or software error that results in irreversible degradation of item mission performance below contractually specified levels. This is the failure of an item that would result in failure of the system and is not compensated for by redundancy or alternative operational procedures.

Snow Cover: A data record consisting of a measure of the horizontal extent of snow on the Earth's surface. Fractional snow cover is the fraction of a given area of the Earth's horizontal surface that is covered by snow. A binary snow/no-snow mask provides a mapping of snow-covered areas by designating horizontal cells as either containing or not having snow.

Snow Cover/Depth (SC/D): A data record that provides an estimate of the horizontal (cover) and vertical (depth) extent of snow on the Earth's surface.

Snow Depth: The combined total depth of both old and new snow on the Earth's surface.

Snow-Water Equivalent (SWE): The product of snow depth and snow relative density (with respect to the density of liquid water), a measure of the amount of water stored in a snowpack per unit area; it is expressed in units of length (e.g., cm or inches), being a quantity of type surface density, normalized by water density. SWE is extremely useful to the hydrological community to estimate runoff and stored water.

Software Reliability: The probability that software will contribute to failure-free system performance for a specified time under specified conditions. The probability depends on information input into the system, system use, and the existence of software faults encountered during input; calculated as the total Central Processing Unit (CPU) processing time over the number of software failures.

Soil Moisture (SM): Moisture in the soil within the zone of aeration, including water vapor present in soil pores. The requirement is to measure soil moisture within a thin layer at the surface for bare soil in regions with known soil type, as well as soil moisture for vegetated terrain.

Solar Backscatter Ultraviolet Spectrometer/2 Data (SBUV/2 Data): Solar Backscatter Ultraviolet Spectrometer/2 (SBUV/2) - NOAA. Comparative dataset for Ozone measurements (aka OMPS).

Solar Spectral Irradiance: The solar power per unit area per unit wavelength interval. Solar Irradiance is used as a component for monitoring the current state and variability of the climate system.

Solers: The NESDIS prime contractor supporting the design, development, integration, testing, and post-delivery support of the Environmental Satellite Processing Center (ESPC), including systems supporting JPSS data operations under the cognizance of the Ground Segment Project.

Solid State Recorder (SSR): Solid state, or flash memory, device crafted entirely from stationary parts. The SSR records and plays back binary information, commandable from the ground. This device is employed on the S-NPP and JPSS-1 missions only, replaced by Mass Data Storage on the JPSS-2 and subsequent missions.

Solid-State Recorder Playback (SSR Playback): The name given to the Suomi National Polar-orbiting Partnership (S-NPP)/JPSS-1 Solid-State Recorder (SSR) Playback Concept of Operations (ConOps). Concept of operations to manage the S-NPP and JPSS-1 SSR for SMD playback; the SSRs on S-NPP and JPSS-1 are identical models. The concept of operations takes into account planned SMD receiving sites, SSR capabilities and constraints, and flexibility in the spacecraft SMD transmission. Multiple SMD playbacks during each SMD contact, duplicate copies, and retransmissions on command are planned to meet the system data latency and availability requirements.

Space Communications and Navigation (SCaN): This is responsible for providing communications services for all of NASA's missions; the Space Communications and Navigation (SCaN) program places the three prime NASA space communications networks; Space Network (SN), Near Earth Network (NEN) [previously known as the Ground Network or GN], and the Deep Space Network (DSN); under one Management and Systems Engineering umbrella. It was

established in 2006. It was previously known as the Space Communications & Data Systems (SCDS) Program.

Space Network (SN): A NASA program that combines space and ground elements to support spacecraft communications in Earth vicinity. The SN Project Office at Goddard Space Flight Center (GSFC) manages the SN, which consists of the geosynchronous Tracking and Data Relay Satellites (TDRS), supporting ground terminal systems, the Bilateration Ranging and Transponder System (BRTS), Merritt Island Launch Annex (MILA) relay, and Network Control Center Data System (NCCDS).

Space Network Support (SN): This is the name given to the JPSS Space Network (SN) Support Concept of Operations (ConOps). Ground System operations to request and use the NASA Space Network (SN) in support of satellite T&C communication during launch and early orbit operations, orbit maneuver as well as during contingency operations. The SN support is also used as a backup to support JPSS-1 through JPSS-4 SMD downlink. Even during nominal operations, routine SN supports will be scheduled and exercised to maintain Mission Operations Team (MOT) proficiency and JPSS-1 through JPSS-4 Ka-band antenna working condition.

Space Network White Sands Complex (SN WSC): This is a support system for the JPSS Ground System (GS) that will be used for spacecraft communications during Suomi National Polar-orbiting Partnership (S-NPP)/JPSS-n/DoD Weather Satellite Follow-On (WSF)-n satellite launches and anomalies. Through SN's White Sand Complex (WSC) and TDRSS satellites, JPSS mission control will transmit commands to and receive real-time telemetry from its satellites via S-band.

Space Operations (SO): (1) The functionality that manages the comprehensive awareness and management capability for every satellite in the constellation. This includes vehicle state of health, planning and scheduling of satellite events, reporting of any satellite specific key performance parameters (KPP) and/or technical performance measurement (TPM). (2) The name given to the JPSS Space Operations (SO) Concept of Operations (ConOps). It describes the comprehensive awareness capability for every satellite in the fleet. This includes vehicle state of health and planning and scheduling of satellite events. Satellite awareness is provided visually through the use of a dashboard display per satellite that is available to all Mission Operations Support Team (MOST) members. The dashboard provides immediate, pertinent status from all of the software that is processing satellite specific data as well as some post-processing analysis of back orbit commanding completion. Also important to satellite awareness is telemetry analysis, which includes limit checking with alarm notification and telemetry reports, as well as options such as plotting, expression analysis, trending and curve fitting.

Space Segment (SS): Includes the satellite (spacecraft and instruments) and supporting pre-launch ground support equipment.

Space System: The spacecraft including its associated sensors, subsystems, equipment, and processors.

Space Weather Prediction Center (SWPC): This is an ancillary data provider to JPSS that provides warnings of severe solar weather that might impact spacecraft and science operations.

Space-Ground Communications Node (SGCN|S/G CN): The system node that manages and controls space-to-ground communications within the JPSS Ground System (GS). The Space/Ground Communications Node (SGCN) is distributed around the globe. The Node provides the Radio Frequency (RF) uplink and downlink communications between the ground and spacecraft to support telemetry and commanding operations, as well as mission data operations. Some of the assets used to provide Space/Ground Communications are owned and dedicated to the JPSS Program, while others are provided by other Government agencies or commercial entities. KSAT SvalSat located in Svalbard, Norway and the NOAA Fairbanks Command and Data Acquisition Station (FCDAS) provides primary communications. The ground system also leverages ground station assets in McMurdo, Antarctica to support Data Acquisition and Data Routing services for missions such as Meteorological Operational Satellite (Metop) program, Defense Meteorological Satellite Program (DMSP) and NASA missions supported by Satellite Communications and Navigation (SCaN). For Block 2.0 and later, the McMurdo site is also used to provide additional mission data downlink for JPSS missions to reduce data latency. In addition, Kongsberg Satellite Services (KSAT) TrollSat located in Jutulsessen, Antarctica is available to provide alternate Telemetry, Tracking and Command (TT&C) and Stored Mission Data (SMD) support to the JPSS missions. The White Sands Complex (WSC) is used to provide access to the TDRS System (TDRSS) for Telemetry & Command (T&C) communications when Svalbard and Fairbanks are not available or in view. For JPSS-1, WSC/TDRSS can also be used to provide backup for SMD downlink.

Spacecraft (S/C): The components and subsystems which support the sensor(s) and provide housekeeping functions such as orbit and attitude maintenance, navigation, power, command, telemetry and data handling, structure, rigidity, alignment, heater power, temperature measurements, etc. (or S/C Bus, does not include Payload; Bus + Payload = Satellite).

Spacecraft Analyst (S/C-A): The Spacecraft Analyst analyzes spacecraft bus telemetry to identify and resolve anomalous behavior.

Spacecraft Bus: (1) The general model on which multiple-production satellite spacecraft are often based. The bus is the infrastructure of a spacecraft, usually providing locations for the payload (typically space experiments or instruments). A spacecraft bus is most commonly used for certain types satellites, particularly communications satellites, but are also used in spacecraft that occupy lower orbits, occasionally including low earth orbit low earth orbit missions. A bus-derived satellite would be used as opposed to a one-off, or specially produced satellite in certain cases. Bus-derived satellites are usually customized to customer requirements, for example with specialized sensors or transponders, in order to achieve a specific mission. (2) Generically used as a term to describe the collection of components of a satellite that are unrelated to the payload and/or instrument. It provides power, command and data handling, communications, thermal control, attitude determination, control, and propulsion.

Spacecraft Command Load File (S/C CMD LD File): File used to generate a sequence of time-phased commands to control S/C bus (i.e., data & power).

Spacecraft Support Node (SSN): The Spacecraft Support Node (SSN) is managed under the JPSS Flight Project. It includes the infrastructure to support spacecraft sustainment operations. SSN includes the Flight Project Observatory Manager, spacecraft vendors, as well as relevant system and discipline engineers from the Flight project. The SSN maintains and updates the

spacecraft flight software and tables. They also provide anomaly investigation support, as needed.

Special Mission Task (SMT): When a new (or modification to an existing) Planning & Scheduling Mission Task is requested, it is considered a Special Mission Task and requires product control board approval.

Special Support Task: An approved task JPSS must perform which is outside of normal mission operations. The type of support from JPSS has been identified and has been translated into tasks with the required resources identified. There may or may not be a time criticality associated with their accomplishment. The criticality may be duration, start and/or end time, or both. Examples of these types of tasks could be launch support activities, factory testing support, and standard maintenance activities. A Special Support Task can be established to support all 3-mission service types [Data Acquisition Routing (DAcqR), Data Processing (DP), and Full Service (FS)].

Specific Humidity: The mass of water vapor contained in a unit mass of air (dry air plus water vapor) expressed in grams per kilogram.

Specification (Spec): The essential technical requirements for items, materials, and services that may include the verification criteria for determining whether these requirements are met. A specification supports the development and life cycle management of the item, material, and service described.

Specification Tree (Spec Tree): The hierarchical depiction of all the specifications needed to control the development, manufacture, and integration of items in the transition from customer needs to the complete set of system solutions that satisfy those needs.

Spectral Irradiance Monitor (SIM): An instrument that measures the solar spectral irradiance, useful in determining the response of different layers in the Earth's atmosphere to solar variations and in diagnosing the solar causes of irradiance variations.

Standing Report: This is a report that is routinely generated on a regular basis, as oppose to an ad hoc report.

Standing Task: An approved task that falls into one of three categories: Normal Mission Operations, Special Support, or Predefined Contingency tasks.

State-of-Health (SOH): (1) A combined summary status point for an entire device and/or defined group of devices. (2) A generic term for information from the satellite that can be used to determine the status of the satellite systems. See Housekeeping.

State-of-Service (SOS): A compound summary status point for an entire service, generated by Fleet Ground Management (FGM), directly supported by inputs from Ground Operations (GO) and Space Operations (SO); and possibly also critical internal and external interfaces of the Ground, Flight and Launch Systems.

Static: Steady, constant, stable, invariable or uniform.

Static Ancillary Data (SAD): External data used in the production of Suomi National Polar-orbiting Partnership (S-NPP)/JPSS Data Products, which are relatively infrequently updated, approximately every few months, quarterly, six months or longer, over the life of the mission. Examples of Static Ancillary Data include all of the following: Climatology and Space Environment, Moderate Resolution Imaging Spectroradiometer (MODIS) Land-Water Mask, National Imagery and Mapping Agency (NIMA) Vector Map Level 0, Ultraviolet (UV) Surface Reflectivity, Nitrate Depletion Temperature Database, Planetary Ephemeris, Earth Gravitational Model 1996 (EGM96) Geoid Model, Earth Resources and Digital Elevation Maps. By definition this means all DPNs should have a copy of the SAD.

Station Contact Schedule (SCS): Each ground station (or site) manages and controls its own shared and/or integrated resources based on mission and site specific dynamic priorities and resource constraints from a local deconfliction perspective. These localized resource parameters dynamically changing over time based on various factors feeds into higher level schedules of various types for planning, operations and execution purposes.

Station Summary Report (Stn Sum Rpt/StnSumRpt): This is a daily summary report for all the supported contacts from the ground station in question.

Status Report: A type of Auxiliary (AUX) Data generated and shared by several sources as needed.

Status Request: A message requesting status from a client process to a server process.

Status Response: A response message to a status request, providing status from a server process to a client process. The server process generates the Status Response after receiving a Status Request.

Status Update: A notification message providing updated status from a server process to a client process. The server process generates the Status Update message after status information is changed internal to the server process.

Steady-State Failure Rate: The constant failure rate after one year of operation.

Stop-Gap Mission Management Center (SGMMC): The backup ground system control center for the JPSS Ground System (GS). Operational now in Block 1.2, a Stop-Gap Mission Management Center (SGMMC) was established in Aurora, CO. By Block 2.0, the Common Ground System (CGS) Alternate MMC (AMMC) will be located at the NOAA National Environmental Satellite, Data and Information Service (NESDIS) Consolidated Backup (CBU) site in Fairmont, WV.

Stored Command: This is a command stored on the satellite for execution in time relative or absolute manner; typically uploaded as part of a command load consisting of a sequence of commands (aka stored command sequence).

Stored Command Sequence (SCS): This is a stored sequence of system and/or satellite commands on some form of media (ground, space or user segment).

Stored Mission Data (SMD): Consists of mission data stored on the satellite mass data storage for downlink to the ground during subsequent contacts, including instrument science data, spacecraft telemetry data, and instrument telemetry data. It is generically the collection of data from the instruments and the spacecraft that are exploited for generating weather and associated Earth science data products.

Stored Mission Data Handling (SMDH): This is the name given to the JPSS Stored Mission Data (SMD) Handling Concept of Operations (ConOps). Describe acquisition, routing and processing of Stored Mission Data (SMD), and distribution of JPSS environmental data products. The thread begins with the downlinked SMD being acquired at the ground stations and receptor sites. It further describes the SMD being routed to the Data Processing Nodes, and processed together with appropriate Mission Support Data (MSD) to produce data products and metadata. The thread finishes when selected JPSS data products and associated metadata are distributed to configured recipients such as the Processing Centers, Comprehensive Large Array-data Stewardship System (CLASS), and Science Data Segment (SDS).

Stored Mission Data Link: A method for transferring of JPSS satellite housekeeping telemetry, engineering telemetry, and commanded memory dump telemetry along with the mission data to ground stations. For the JPSS missions this link is accomplished in Ka-Band (X-Band for S-NPP).

Stored Mission Data Recovery Threshold: This is a numeric value that specifies the maximum amount of missing SMD that is acceptable for creating SMD application packets.

Stored Mission Data Retransmit Request: Are generated by an Interface Data Processing (IDP) to request retransmit of SMD data, when the IDPS experiences a warm start. Command, Control & Communications (C3) will also generate retransmit requests based on detection of missing SMD.

Stored Mission Data Stream: This is a data stream containing the SMD. SMD stream can refer to the data stream transmitted from the spacecraft to the ground segments, or the data streams passed within the ground segments in internal formats. For example, the streams of extended application packets passed from the Data Handling Node (DHN) to the Interface Data Processing (IDP) are referred to as SMD streams.

Stored State of Health (SSOH): Housekeeping data stored in both the Integrated Electronics Module (IEM) Spacewire and Memory (SPAM) card and the Payload Interface Electronics (PIE) Flash Memory Card (FMC) and downlinked to provide insight into spacecraft performance and events that occur outside the real-time contacts. Data stored in the IEM SPAM card are filtered. Data stored in the PIE FMC are unfiltered.

Stored Telemetry (S-TLM): For S-NPP and JPSS-1, the data stored on the spacecraft Solid-State Recorder (SSR) for transmission from the satellite to the ground segments via the SMD downlink; stored telemetry data or information on some form of media (ground, space or user segment). The JPSS-2 mission and its follow-on missions employ mass data storage rather than an SSR. See also Full Stored State of Health (FSSOH).

String: (1) Physical, logical and/or virtual instantiations of integrated system, network and interface capabilities. (2) A formally designated set of equipment and software used to accomplish a role, such as operations, test, or training. See Environment (2).

Subassembly: A hardware unit containing two or more parts, which is capable of disassembly or part replacement. Examples: printed circuit board and parts installed on a gear train.

Subject Matter Expert (SME): An expert on a particular subject, system or area of the technical baseline, program management or interface aspects of the JPSS.

Subscription Request: In Accordance With (IAW) subscription request captured in Operations Agreement.

Substitute Data Product: Legacy Intermediate Products (IPs) or Environmental Data Records (EDRs) produced using Substitute Dynamic Ancillary Data (SDAD).

Substitute Dynamic Ancillary Data (SDAD): Legacy external data specified by a Processing Center used in place of Official Ancillary Data to produce Suomi National Polar-orbiting Partnership (S-NPP)/JPSS Substitute Data Products.

Substitute Product: The legacy term describing a product produced with Substitute Dynamic Ancillary Data.

Subsystem (Subsys): A grouping of hardware or software units which function together to perform a distinct set of operations, and which functions along with other subsystems to perform system operations. For both the Ground Segment and Space Segment – identifiable grouping of units which function together to perform a distinct set of ground and spacecraft operations (e.g., Space Segment: Structures and Mechanisms Subsystem).

Summary Report (Sum Rpt): An aggregation of data, information, status, trends, extrapolation, and/or forecast usually relevant to metrics (KPPs/TPMs) that support "ilities" and life cycle development, operation, test & evaluation, transition and sustainment of a system or enterprise.

Summary Status (Sum Stat): Less detail overview level status for many items. May include only the most recent status, aggregate status, or condensed status data.

Suomi National Polar-orbiting Partnership (S-NPP/SNPP/Suomi NPP): The NPOESS Preparatory Project (NPP) was initially renamed the National Polar-orbiting Partnership (NPP) in late 2011. NASA subsequently renamed NPP to Suomi NPP (S-NPP) 24 January, 2012 in honor of the late Verner E. Suomi, a meteorologist at the University of Wisconsin, who is recognized widely as "the father of satellite meteorology", at the annual meeting of the American Meteorological Society in New Orleans. S-NPP was aimed to bridge the gap between old and new systems by flying new instruments on a satellite originally to be launched in 2006. The five instruments include the Advanced Technology Microwave Sounder (ATMS), the Cross-track Infrared Sounder (CrIS), the Clouds and the Earth's Radiant Energy System (CERES), the Visible Infrared Imaging Radiometer Suite (VIIRS) and the Ozone Mapping and Profiler Suite (OMPS). This is a NASA satellite that provides an opportunity to demonstrate and validate new instruments, algorithms, and pre-operational processing capabilities prior to the first JPSS flight.

Successfully launched on October 28, 2011, S-NPP is currently operating in the 1330 Local Time Ascending Node (LTAN) polar orbit at an altitude of approximately 828 km.

Support Data: Delivery reports, production reports, data quality reports, and ancillary and auxiliary orderable products.

Surface Albedo: See Albedo.

Surface Reflectance: The directional reflectance of solar energy from the Earth surface. The surface reflectance algorithm supporting the JPSS Environmental Data Product of the same name produces directional surface reflectance values for Visible Infrared Imaging Radiometer Suite (VIIRS) bands centered at 0.412 μm, 0.445 μm, 0.488 μm, 0.555 μm, 0.645 μm, 0.672 μm, 0.865 μm (two different spatial resolutions), 1.24 μm, 1.61 μm (two different spatial resolutions), and 2.25 μm.

Suspended Matter (SM): Atmospheric particulates consisting of sand, dust, smoke, volcanic ash, and urban/industrial particulate matter. Aircraft flying through these materials can suffer damage to cockpit canopies or windscreens. Aircraft engines suffer extremely high wear in the presence of suspended matter, leading to increased sustainment or engine failure. Volcanic ash plumes are a threat to military and civil aviation. NOAA participates in a civil aviation warning system for volcanic ash hazards by monitoring these plumes in satellite imagery. NOAA also monitors smoke from large-scale fire events to provide information to the relevant agencies and the public. Suspended matter is detected in a pixel when Aerosol Optical Thickness (AOT) is greater than 0.15 but for the quality of the suspended matter type (dust, smoke, volcanic ash, sea salt) to be considered "high", the AOT must have a value of at least 0.5.

Sustainment: The work required to keep the baseline system architecture functioning as technology and security requirements evolve, and the effort necessary to fix problems identified in the system during operations. System refresh as required.

Svalbard Satellite Station (SvalSat): A satellite station established in 1996 that contains more than two dozen state-of-the-art multi-mission and customer dedicated antenna systems in L-, S-, X- and Ka-band. Located near 78°N on Spitsbergen Island, SvalSat is optimally located for polar-orbiting satellite control and data acquisition at a latitude that nominally allows for all-pass line-of-sight visibility. See also KSAT.

Symbol: A waveform, state, or condition of the communication channel that can represent or convey one or several bits of data. A sending device places symbols on the channel at a fixed and known symbol rate, and the receiving device detects the sequence of symbols in order to reconstruct the transmitted data. Symbol rate is measured in baud (Bd) or symbols per second.

System (Sys): A system, such as JPSS, is an integrated composite of people, products, and processes that provide a capability to satisfy a stated need or objective. Often the term system is used interchangeably with the term segment, but fundamentally a segment is usually a major subset of a larger system. For example, within the Global Positioning System (GPS) there are three or more primary segments (i.e., Space, Ground, User Equipment, and Launch). In addition, each system and segment is also broken down into and made up of lower level systems, nodes, subsystems, elements, and units sometimes in a hierarchical or relational manner as needed.

System Development Life Cycle (SDLC): In systems engineering, information systems and software engineering, this is a process of creating or altering information systems, and the models and methodologies that people use to develop these systems. In software engineering the SDLC concept underpins many kinds of software development methodologies. These methodologies form the framework for planning and controlling the creation of an information system (also referred to as the software development process).

System Fault Analysis (SFA): The name given to the JPSS System Fault Analysis (SFA) Concept of Operations (ConOps). This describes the process for identifying and implementing solutions for issues or anomalies when they can't be resolved by the ground operations (for ground problems) or telemetry and commanding (for flight problems) using routine operations procedures.

System Latency: A compound latency or delay measure or metric used to analyze and evaluate the various routing and delivery aspects of the systems performance (i.e., nodes, networks, interfaces, products, data records, etc.).

System Life Cycle: The period extending from inception of development activities, based on an identified need or objective, through decommissioning and disposal of the system.

System Log (Sys Log): The log file(s) that holds specific entries useful to the system or subsystem that generates it. For example, the Enterprise Management (EM) Subsystem of C3 holds EM entries associated with a particular computer.

System Maintenance and Upgrade (SMU): The name given to the JPSS System Maintenance and Upgrade (SMU) Concept of Operations (ConOps). Concepts of performing system maintenance as well as system upgrade. As a multi-mission support infrastructure, the ground system will go through multiple upgrades over its life span. The upgrades, minor or major, will fix existing problems, enhance system functionalities and operations, and expand system capabilities to support new missions. The ConOps describes various scenarios to upgrade the system without interfering on-going mission operations and data productions.

System Owner (SO): The senior managing authority for the system as a whole.

System Performance (Sys Perf): The actual capability of the system with respect to system performance requirements, including mission data latency, availability and data product quality.

System Robustness: The measure or extent of the ability of a system to continue to function despite the existence of faults or failures in its component segments or subsystems. Full system performance may be diminished or otherwise altered until the faults or failures are corrected or otherwise mitigated.

System Security Plan (SSP): Provides an overview of the security requirements of the system and describe the controls in place, or planned responsibilities and expected behavior of all individuals who access the system. It is a core component of DIACAP/NIACAP. The system security plan should be viewed as documentation of the structured process of planning adequate, cost-effective security protection for a system. It should reflect input from various managers with responsibilities concerning the system, including information owners, the system operator, and the system security manager. Additional information may be included in the basic plan and

the structure and format organized according to agency needs, so long as the major sections described in this document are adequately covered and readily identifiable.

System Status (SyS): The name given to the JPSS System Status (SyS) Concept of Operations (ConOps). Describe State of Health (SOH) and State of Service (SOS) monitoring of the JPSS Ground System (GS) at the global and nodal level to support situational awareness. Provide the capability at both the global and nodal levels for operators to configure the information by viewing data hierarchically so that only a summary status is presented and by configuring filters based on thresholds so that only relevant detailed information is presented. The primary functions in the flow are nodal monitoring for the Ground System Nodes, monitoring of the interfaces of external systems such as the Processing Centers, Science Data Segment (SDS), Comprehensive Large Array-data Stewardship System (CLASS), and Ancillary data providers, global- and JPSS Mission-level monitoring, and providing status and reporting to internal operations and external customers.

System Status for Designated Authorities: Refers to system performance (e.g., resource utilization, storage system I/O operations), communications, data availability, data integrity, product latencies, and hardware and software anomaly information.

System Status for Registered Users: Refers to up-down status of system functionality and mode of operation.

System Upgrade Mode: Mode entered to enable any changes in the system configuration including: a. Technology refresh and insertion; b. Incorporation of additional functions or capabilities; c. Performance enhancements (e.g., improved algorithms); d. Hardware and Software Configuration Item (CI) versions and upgrades at the SS, C3S or IDPS; e. Launch preparation, launch, and early orbit operations for a new satellite; f. Disposal of satellites or ground sub-elements. System elements not affected by the upgrade or removal activities continue to operate as normal. After the upgrade/removal is completed and verified, the affected System elements return to the Normal Operations Mode upon Mission Director (or JPSS Associate Director for Operations) Authorization.

Systems Engineering Integration and Test (SEIT/SEI&T): The JPSS Programs integrated technical baseline management team responsible for developing, integrating, testing and transitioning the various incremental operational baselines of the flight and ground system over its entire life cycle.

Table Change Package: A table used to change algorithms submitted as an update to the existing baseline tables being used currently operationally.

Task: Requests to use or configure system resources. Tasks are received from internal and external sources. Tasks are approved and prioritized to become activities on the mission schedule.

Task Request: This is a request generated by the Common Ground System (CGS) Task Request System for one or more satellite or ground resources to use or reconfigure system resources. They establish priorities, scheduling windows and resource preferences.

Tau (τ): A letter in the Greek alphabet used to represent a number of scientific properties, among them, time-constant and optical thickness. See Optical Depth.

Technical Performance Measurement (TPM): Key parameter measurement used to status and manage the technical performance of a system. TPMs are presented to program management on a regular basis, providing system insight into problems that could impede a system in performing its mission. These are the key technical goals that need to be met because they are vital for the functioning of a system in its environment (also sometimes referred to as Technical Performance Measures, Metrics or Parameters).

Technical Performance Parameter (TPP): A key parameter or metric used to measure and track the technical performance of a system. TPPs feed into Technical Performance Measurements (TPMs) presented to program management on a regular basis, providing system insight into problems that could impede a system in performing its mission (also sometimes referred to as Technical Performance Measures, Metrics or Parameters).

Telecommunications Operations Center (TOC): An operations center that manages networks like the National Weather Service (NWS) Telecommunications Gateway (NWSTG). This particular TOC operates and ensures continuous acquisition and dissemination of NWS, and other domestic and foreign hydrometeorological data and products. It is the NWS central communications data switching and monitoring facility. Top-level organizational management of this facility is from the Office of the Chief Information Officer (OCIO). The Network (NOC) and Telecommunication Operations Center (TOC) is a component of the OCIO that manages the NWS Telecommunication Gateway (NWSTG). The organizational structure of the TOC consists of four branches: 1) the Operations Support and Performance Monitoring Branch; 2) the Telecommunication Gateway Operations Branch; 3) the Telecommunication Software Branch; and 4) the Telecommunication Infrastructure Branch.

Telemetry (TLM): Information downlinked by the spacecraft and processed on the ground to provide status on spacecraft and instrument configuration or actions.

Telemetry Analysis (TLMA/TLM Analysis): The statistical trending, evaluation and analysis of telemetry files used within the system.

Telemetry Analysis Report (TLMA Rpt): Reports that summarize the results of any statistical trending, evaluation and analysis done on available telemetry files used within the system.

Telemetry Analyst (TLM-A/TLM-Analyst): The Telemetry Analyst analyzes satellite telemetry to identify and resolve anomalous behavior.

Telemetry and Command (T&C): Information transmitted and received via Radio Frequency (RF) signals between space, ground and sometimes user segments used to locate and forecast a satellites current and future orbital position, and command the satellite bus and payload to perform primary and secondary missions. This is the name given to the JPSS Telemetry and Command (T&C) Concept of Operations (ConOps). During each contact, the T&C concept thread starts with a given set of contact schedules, pass plan and flight products; and describes T&C operations during the pass. Anomaly conditions and responses during the pass are considered. The thread includes T&C operations both through the primary ground station and through the Space Network (SN). Also referred to as Telemetry, Tracking and Command

(TT&C) although it should be noted that the "tracking" function is not applicable to JPSS satellites.

Telemetry and Command Site (T&C Site): A JPSS ground station capable of satellite Telemetry, Command and Ranging functions, including uplink of real-time commands, uplink of stored command loads and memory loads, receipt and processing of real-time telemetry, and satellite Ranging operations.

Telemetry Parameter: The complete set of Last Report Value (LRVs) managed by Common Ground System (CGS), including all satellite LRVs as well as database defined derived LRVs and operator defined LRVs defined through expression analysis.

Telemetry Report (TLM Rpt): A type of Auxiliary (AUX) Data generated and shared by several sources as needed.

Telemetry, Tracking and Command (TT&C): See Telemetry and Command (T&C).

Temperature Cycle: A test procedure represented by a transition from some initial temperature condition to temperature stabilization at one extreme and then to temperature stabilization at the opposite extreme, then returning to the initial temperature condition.

Temperature Data Record (TDR): A NASA Committee on Earth Observation Systems (CEOS) L1B product, the TDR consists of geolocated antenna temperatures radiometrically corrected and calibrated in temperature units at full instrument resolution as acquired. The TDR includes all relevant calibration data and ephemeris data to revert to RDR counts.

Temperature Profile (TP): See Atmospheric Vertical Temperature Profile.

Temperature Stabilization: The condition that exists when the rate of change of temperatures has decreased to the point where the test item may be expected to remain within the specified test tolerance for the necessary duration or where further change is considered acceptable.

Test: A verification method that verifies an item's operability, supportability, performance capability, or other specified qualities when subjected to controlled conditions that are real or simulated. These verifications require use of special test equipment and sensors to obtain quantitative data for analysis as well as qualitative data derived from displays and indicators inherent in the item(s) for monitor and control. The Test method includes examination of output data from the unit under test that has been collected and/or processed by special test equipment. This also applies to requirements to perform a test, or that specify how a test is to be performed.

Thermal Balance Test: A test conducted to provide data to correlate the thermal mathematical model, the adequacy of the thermal design, and the capability of the thermal control system to maintain thermal conditions within established mission limits, by simulating the nominal on-orbit operational configuration at hot and cold temperatures.

Thermal-Vacuum Test (TVAC): A test conducted to demonstrate the capability of the test item to operate satisfactorily in vacuum at temperatures based on those expected for the mission. The test, including the gradient shifts induced by cycling between temperature extremes, can also uncover latent defects in design, parts, and workmanship.

Threshold: (1) The minimum, measurable capability or characteristic required to meet the users' need. (2) A requirement representing the minimally acceptable level of performance that must be achieved.

Threshold Performance Parameter: A threshold performance requirement is considered the minimum, measurable capability or characteristic required to meet the users' need.

Time-Critical Function: Real-time functions within the system that are essential to performing command and control operations; receiving and processing telemetry; receiving, processing, and delivering of mission data; or functions necessary to maintain the health and safety of systems and operations. For the JPSS Common Ground System (CGS) the time-critical functions provided by the following subsystems are considered essential for satisfying Ground System transition requirements: Ground Operations (GO), Command Encryption Processor (CEP), Data Conversion and Provision (DCP), DCP Telemetry and Control Gateway (DTG), Stored Telemetry Analysis (STA), Satellite Operations Telemetry and Command (SOT&C), Command Load Generation (CLG), JPSS Stored Mission Data Hub (JSH), Ingest (ING), Processing (PRO), Infrastructure (INF) with the exception of INF:C-PERT, INF:SA, and INF:PDR, IDPS Hardware (IHW), Data Delivery (DDS), and Data Management (DMS).

Timeliness: A general description of the elapsed time between initiation of measurement of the environmental data parameter and delivery of that parameter to the user.

To Be Determined (TBD): Information that is currently unknown or uncertain.

To Be Reviewed (TBR): Statements, requirements, or values subject to further review. A requirement applies as written and the TBR indicates the specified value may change upon review and approval.

To Be Supplied/Specified (TBS): Information, data, details, or specifications to be supplied at a future time. TBS requirements include an expected date or milestone for final resolution.

Total Integrated Product and Process Development Time (Tot IPPD Time): Total Integrated Product and Process Development (IPPD) Time (Queuing plus Processing) for an Environmental Data Record (EDR) granule is defined as the time between: a) receipt of the JPSS sensor and auxiliary data associated with the last primary Raw Data Record (RDR) (plus adjacent scans required by the science algorithms) required to produce the product; and b) the time when the firstByte of the first copy of the product is delivered to the Adjacent Channel Interface (ACI) shared storage at the Processing Center.

Total Ozone Mapping Spectrometer Data (TOMS Data): Total Ozone Mapping Spectrometer (TOMS) - NASA. This is the comparative dataset for Ozone measurements (aka OMPS).

Total Solar Irradiance: The radiated solar power per unit area incident on a plane surface at the top of the atmosphere that is normal to the direction from the Sun.

Total Water Content (TWC): The water vapor (vertically resolved Total Integrated Water Vapor), cloud liquid water (vertically resolved), and cloud ice liquid equivalent (vertically resolved) in specified segments of a vertical column of the atmosphere. For an Environmental

Data Record (EDR), vertical cell size is the vertical height of the column segment and the vertical reporting interval specifies the location of the column segment bottoms for which TWC must be reported.

Tracking and Data Relay Satellite (TDRS): One of the satellites within the network of NASA communications satellites comprising the Tracking and Data Relay Satellite System (TDRSS). See Tracking and Data Relay Satellite System (TDRSS).

Tracking and Data Relay Satellite System (TDRSS): A support system for the JPSS Ground System (GS) and a network of NASA communications satellites (each called a Tracking and Data Relay Satellite or TDRS) and ground stations used by NASA for space communications. The system was designed to replace an existing network of ground stations that had supported all of NASA's manned flight missions. The prime design goal was to increase the time spacecraft were in communication with the ground and improve the amount of data that could be transferred. The most recent generation of satellites provides ground reception rates of 300 Mbit/s in the Ku- and Ka-bands and 800 Mbit/s in the S-band. The term TDRSS is analogous to Space Network. The TDRSS space segment consists of six on-orbit Tracking and Data Relay Satellites located in geosynchronous orbit. Three TDRSs are available for operational support at any given time. The operational spacecraft are located at 41°, 174° and 275° West longitude. The other TDRSs in the constellation provide ready backup in the event of a failure to an operational spacecraft and, in some specialized cases, resources for target of opportunity activities.

Tracking Report: A file generated by the Data Monitor & Recovery (DMR) Agents of C3 that contains the information about the data that was processed by each of the SMD processing locations in the Ground System.

Tracking Statistic: The tracking parameters of interest required by the subsystem collecting the metrics. For example, statistics generated by the Data Monitor & Recovery (DMR) Element of C3 that define the set of Sensor Mission Data that was processed by each of the SMD processing locations in the C3 segment.

Transfer Frame: See Virtual Channel Data Unit.

Transition: The act of moving a part of or all primary operations from one operational environment to another operational environment that is performing backup operations. This process may involve switching communications paths and enabling processes but does not involve turning on equipment or loading software.

Transmission Control Protocol (TCP): One of the core protocols of the Internet Protocol suite. TCP is one of the two original components of the suite, complementing the Internet Protocol (IP), and therefore the entire suite is commonly referred to as *TCP/IP*. TCP provides reliable, ordered delivery of a stream of Bytes from a program on one computer to another program on another computer. TCP is the protocol that major Internet applications such as the World Wide Web (www), email, remote administration and file transfer rely on. Other applications, which do not require reliable data stream service, may use the User Datagram Protocol (UDP), which provides a datagram service that emphasizes reduced latency over reliability.

Transmission Control Protocol/Internet Protocol: A descriptive framework of computer network protocols created in the 1970s by Defense Advanced Research Projects Agency (DARPA), an agency of the United States Department of Defense (US DoD). The name derives from the two most important protocols of the networking protocol suite, the Transmission Control Protocol (TCP) and the Internet Protocol (IP). The model evolved from the operational principles of the Advanced Research Projects Agency Network (ARPANET: world's first packet switching network), an early Wide Area Network (WAN) and a predecessor of the Internet. The TCP/IP model is formalized in the Internet protocol suite, and is sometimes called the Internet model or the HYPERLINK "/wiki/United_States_Department_of_Defense*"DoD model.*

Transmission Overlap: The presence of a satellite's First Copy SMD in the Data Routing & Retrieval (DRR) network from more than one ground station simultaneously. Occurs when the time it takes to transfer the SMD from a ground station is longer [due to Data Routing & Retrieval (DRR) data rates less than the SMD downlink rate] than the interval to the next contact for the satellite.

Trend Data Set: A set of data containing data for a specified set of parameters over time. For example, an ASCII data set, generated by the EclipseTM software, which contains statistical information on a specified set of LRVs over time.

Trending: A comparison of observed values over time for analysis of long-term variations of parameter values. Trending allows the analyst to make determinations, which are not possible or inherently obvious when the data is viewed individually.

Tropical Cyclone: The atmospheric phenomena characterized by a barotropic disturbance forming over tropical waters. The progression generally includes Tropical Depression, Tropical Storm and Hurricane/Typhoon/Cyclone.

Tropopause: The upper boundary of the troposphere, usually characterized by an abrupt change in lapse rate from positive (decreasing temperature with height) to neutral or negative (temperature constant or increasing with height).

Tropopause Height: The height of the Tropopause, which is the upper boundary of the Troposphere, where there is an abrupt change with respect to how the temperature changes with height, going from decreasing with height below the Tropopause to increasing with height above the Tropopause.

Trouble Ticket: A type of Work Request in the current S-NPP era Work Request system. This type of work request is used to manage problem reports. See also Work Request.

True Value: The actual value of a geophysical parameter corresponding to a JPSS measurement. It is defined in terms of ground truth generally accepted in the user community. When the output of the sensor is folded into atmospheric, radiative transfer, and other models to produce Environmental Data Records (EDRs), the measurement uncertainty of the EDR need not be traceable to an absolute reference standard (e.g., those maintained by the National Institute of Standards and Technology). The proof of meeting the measurement accuracy, precision, uncertainty, and long-term stability requirements has to be accomplished by analysis, laboratory measurements, simulations, and comparisons to ground based observations. The proof should include both sensor characteristics and the processing algorithms.

Truth Data: See Correlative Data.

Two-Line Element (TLE): A standard format of six independent orbital elements, which together are sufficient to completely describe the size, shape and orientation of an orbit.

Two-Line Element Set (TLE Set): A North American Aerospace Defense Command standard format of six independent orbital elements, and other identifying data, which together are sufficient to completely describe the size, shape and orientation of an orbit. The term, two-line element set, has its origin in the past necessity of using two punch cards to represent the data. The data provide a compact means of predicting satellite ephemeris.

Unary: In software programming, Unary or Monadic refers to a function or operator that takes one argument, (e.g. the unary minus operator, which negates its argument). The term is part of the same sequence as nullary and binary.

Undetectable Failure: A postulated failure mode in a FMEA for which there is no failure detection method by which the operator is made aware of the failure.

Unique Support Equipment (USE): Support equipment especially designed for use with a specific system and usable only on that system.

Unit: The next functional subdivision of a subsystem usually consisting of an individual and self-contained physical item often referred to as a "component". A unit is a functional item that is viewed as a complete and separate entity for purposes of manufacturing, maintenance, or record keeping. Examples: hydraulic actuator, valve, battery, electrical harness, transmitter. A unit is often the level at which configuration items are traced.

United States Air Force (USAF): The air force of the United States of America; the agency that defends the United States through control and exploitation of air and space.

United States Coast Guard Navigation Center (USCG Nav Ctr): This is an ancillary data provider to JPSS and data provider of GPS almanac information, which is used to support GPS positioning.

United States Naval Observatory (USNO): An operational command reporting to the Commander, Navy Oceanography and Meteorology Command, with headquarters located in Washington, DC and field activities located at the Naval Observatory Flagstaff Station (NOFS) in Flagstaff, AZ and the USNO Alternate Master Clock located at Schriever Air Force Base near Colorado Springs, CO. Its mission includes determination of the positions and motions of the Earth, Sun, Moon, planets, stars and other celestial objects; providing astronomical data; determining precise time; measuring the Earth's rotation; and maintaining the Master Clock for the United States. It is an ancillary data provider to the JPSS and other satellite programs.

United States Navy (USN): The navy of the United States of America; the agency that maintains, trains, and equips combat-ready naval forces.

Unplanned Contingency Task: A task generated in response to situations that have arisen and have the potential to disrupt the mission or place the satellite at risk. They arise because of the occurrence of situations that were unforeseen; that were given low probability of occurrence; or

that have so many degrees of freedom in how they can be manifested that it is impractical to try and plan for every one of them. Irrespective of the reason for their occurrence, there is an immediacy associated with their accomplishment that necessitates the expedited processing for approval and planning/re-planning of the Mission Schedule. Unplanned Contingency Tasks would typically be intended for accomplishment once or for a few times over a relatively short time period.

Unsegmented Time: CCSDS Unsegmented Time Code (CUC) - CUC is an International Atomic Time (TAI) based time code format that does not provide for leap second correction. The spacecraft reference epoch shall be the NASA Epoch of Jan 1, 1958,00:00:00 UTC (TAI). The J2/3/4 hardware generated packets are in CUC format. This time format is generally used only when the onboard processor and Flight Software are not running. See also Segmented Time.

Uplink Mission Support Data: The specific subset of Mission Support Data uplinked to the spacecraft and distributed to the Field Terminals (FT) via the High Rate Data (HRD) link. These MSD support the production of FT data products in the default operating configuration; this data includes the required subsets of Official Ancillary Data and Two Line Element (TLE) sets.

Upward Compatible: Hardware or software that is designed to be compatible with a planned later version is upward compatible.

Urgent Discrepancy Report: Priority 2 Discrepancy Reports (DRs): problem is urgent, severe and important but has a workaround to prevent damage to the satellite, ground system segment/element, or loss of mission data. Urgent problem discrepancies impact data production or latency. Examples: Spacecraft: Telemetry indicates unusual thermal increase on instrument but stays under red limit threshold or failure of primary system requiring transition to backup system. Ground: Command Load Generation (CLG) fails to complete load generation, or loss of ability to ingest mission data, or deliver data products to users.

User: (1) The people or systems that operate the JPSS system and/or receive the output products of the JPSS system. (2) An entity other than the JPSS Program's Government sponsors and stakeholders whose mission objectives are expected to be positively served through the use of JPSS data products.

User Datagram Protocol (UDP): This is one of the core members of the Internet protocol suite, the set of network protocols used for the Internet. With the User Datagram Protocol (UDP), computer applications can send messages, in this case referred to as datagrams, to other hosts on an Internet Protocol (IP) network without prior communications to set up special transmission channels or data paths.

User Interface: (1) The mechanism by which users interact with a system, including the hardware (physical) and software (logical) components. (2) The system/subsystem within the NESDIS Environmental Satellite Processing Center (ESPC) with which a user interacts to acquire data.

Validated Schedule: Any type of schedule that has been suggested and/or recommended, and partially vetted, coordinated, and validated; but not yet fully approved, at one or more levels for integration and/or de-confliction against shared and/or competing resources with any and/or all higher level and/or an integrated master schedule(s) either by mission, across an entire

project/program, and/or even an entire scheduling enterprise [i.e., similar to the Air Force Satellite Control Network, Space Network, Tracking and Data Relay Satellite System (TDRSS)]. This schedule is validated, but not yet approved for execution at one and/or more levels. Proposal and coordination of schedules occurs at lower operational and system levels until it is adequately integrated and deconflicted against shared and/or competing resources, and ready for operational management and authoritative responsible validation and approval officials. Validation occurs at the operational management level. Approval occurs at the authoritative and responsible level.

Validation (Val): (1) An engineering process that shows that a product accomplishes its intended purpose in the intended environment—that it meets the expectations of the customer and other stakeholders as shown through performance of a test, analysis, inspection, or demonstration. (2) A subjective or analytical assessment, based on objective evidence, that a system meets its intended mission, functions, and objectives.

Vandenberg Air Force Base (VAFB): Vandenberg Air Force Base is the primary launch site for all polar-orbiting and high-inclined missions for the U.S. VAFB provides real-time telemetry and tracking services during space launch missions as well as facilities any related support for pre-launch spacecraft processing.

Vegetation Index/Indices (VI): An index or set of indices of vegetation conditions based on differences in the amount of visible and near-infrared light reflected from plants on Earth's surface. A vegetation index is a gauge of plant health, productivity, and density.

Verification: An engineering process that shows proof of compliance with requirements ("shall" statements) through the application of one or more Verification Methods.

Verification Description: Describes how a particular requirement will be verified, including the pass/fail criteria associated with the verification.

Verification Disposition Authority (VDA): The organization/individual responsible for reviewing and approving verification plans, procedures and associated results in order to 'sell-off' the verification of a particular requirement. In general, the VDA is the receiving entity within the JPSS hierarchy.

Verification Event: Identifies the event expected to produce verification artifacts necessary to complete verification of a requirement, including the level (e.g. system, segment, etc.) and phase (development level) at which the requirement is verified.

Verification Method: The method by which a requirement is verified. The verification method is one or more of the following: Analysis, Inspection, Demonstration, and Test.

Verification Plan: A verification related document generally developed for each Verification Event. A Verification Plan generally includes: the objectives of the verification; a list of requirements to be verified; the pass/fail criteria for each requirement; required personnel and their roles and responsibilities; equipment configuration description; data recording and processing requirements; data review, evaluation and approval requirements; failure reporting, analysis, correction and re-verification requirements; quality assurance requirements; and safety and/or environmental requirements.

Verification Procedure: This is a verification related document used to perform verification. It provides the detailed step-by-step instructions that must be followed to perform the test; including test set-up, test execution, and test tear down. The as-run test procedure becomes the permanent record of what transpired during the test.

Verification Report: Verification related document generally developed for each Verification Event that provides a summary of the verification performed, discrepancies encountered, results (pass/fail) and disposition recommendation for each requirement.

Vertical Cell Size: For a parameter which is an estimate of the uniform spatial average of an environmental parameter within a square layer of the atmosphere, the vertical thickness of this layer (for a parameter which is an estimate of an environmental parameter at a point, the vertical cell size is defined to be zero).

Vertical Coverage: The specified vertical region of interest where data is to be collected or information is to be provided.

Vertical Height: The vertical height as measured either by atmospheric pressure or by height above mean sea level. A value of zero km for height refers to mean sea level. Negative values of height refer to depth below mean sea level.

Vertical Reporting Interval: The spacing between nearest neighbor points along a local vertical at which an environmental parameter is estimated and reported. This term was previously referred to as vertical sampling interval in the Initial Operational Requirements Document (IORD); the terminology has been changed to avoid misinterpretation as a sensor measurement-sampling interval.

Vertical Resolution: The thickness of an atmospheric layer for which environmental parameters are specified, averaged, and reported.

Vertical Sampling Interval: The vertical increments at which the values of a parameter that varies with height are reported. For soundings, it may represent the pressure levels at which the profile is to be specified.

VIIRS Cloud Mask (VCM): See Cloud Mask.

VIIRS Command Load File: In addition to the file going to the Command Load Generator for the spacecraft, another file specific to the VIIR Sensor is produced and sent to the Command Load Generator to produce separate commands for this sensor.

Virtual Channel Data Unit (VCDU): Packet of data made by adding a VCDU primary header and a VCDU trailer to the beginning and end of a single Multiplexing Protocol Data Unit (MPDU) packet. This is a legacy term in Consultative Committee for Space Data Systems (CCSDS) documentation that has been replaced by the term “Transfer Frame.” The standard Transfer Frames (2 types) are described in CCSDS 132.0-B and CCSDS 732.0-B.

Virtual Channel Identifier (VCID): 6 bits in the VCDU header that describes the content of the VCDU or the virtual channel that is being transmitted.

Visibility: The ability to detect objects horizontally or vertically through a layer of the atmosphere.

Visible Infrared Imaging Radiometer Suite Instrument Support Node (VIIRS ISN): This is a support system for the JPSS Ground System (GS) that is used by the Instrument Science Team (IST) to ensure the proper operation and calibration of the Visible-Infrared Imaging Radiometer Suite (VIIRS) instrument. This also includes the VIIRS Instrument Vendors and the JPSS Flight Project Instrument Manager and Instrument Science Lead.

Visible Infrared Imaging Radiometer Suite (VIIRS): A scanning radiometer used on JPSS missions to collect visible and infrared imagery and radiometric measurements of the land, atmosphere, cryosphere, and oceans. VIIRS data are used to measure cloud and aerosol properties, ocean color, sea and land surface temperature, ice motion and temperature, fires, and Earth's albedo. Climate scientists use VIIRS data to improve our understanding of global climate change. Also referred to as the Visible/Infrared Imager/Radiometer Suite in heritage contractual documentation.

Visible Radiation: The radiation that the human eye senses as part of the process of "seeing". It is generally in the spectral wavelength interval between 0.4 and 0.7 micrometers. The blue end is near 0.4 micrometers and the red end is near 0.7 micrometers.

Voice Communication: Usually over the phone voice communication, but may be in person or other verbal means available (i.e., radio).

Wallops Command Data Acquisition Station (WCDAS/WCDAStn): Wallops Command Data Acquisition Station (WCDAS/WCDAStn): A division under The Office of Satellite and Product Operations (OSPO). Command and Data Acquisition (CDA) at the Wallops Island ground station. The images of swirling white clouds and storms moving across your TV screen during the local news weather forecast come from data received at the National Oceanic and Atmospheric Administration (NOAA) Fairbanks Command and Data Acquisition Station (Fairbanks Station) in Fairbanks, Alaska; or the NOAA Wallops Command and Data Acquisition Station (Wallops Station) located on Wallops Island, Virginia. From these stations, data is distributed to users worldwide within minutes. Environmental satellites, operated by NOAA's National Environmental Satellite, Data and Information Service (NESDIS), collect data from Earth's atmosphere, land, oceans, poles, and even the Sun. Weather forecasters, climate scientists and others to better understand our planet, protect lives and property and safeguard critical infrastructure use this important information. The Wallops Station acquires satellite data from several different legacy missions: Geostationary Operational Environmental Satellite (GOES), a NOAA operational system; Polar-orbiting Operational Environmental Satellite (POES), a NOAA operational system; an European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) operational system; and Ocean Surface Topography Mission/Jason-2, a joint NOAA, NASA, EUMETSAT, French Centre National D'Etudes Spatiales (CNES) operational system.

Wallops Flight Facility (WFF): This is a launch facility located on Virginia's Eastern Shore was established in 1945 by the National Advisory Committee for Aeronautics, as a center for aeronautic research. Wallops are now NASA's principal facility for management and implementation of suborbital research programs. It helps achieve NASA's strategic objectives

for scientific and educational excellence through cost efficient integration, launch, and operations of suborbital and small orbital payloads; enables scientific, educational, and economic advancement by providing the facilities and expertise to enable frequent flight opportunities for a diverse customer base; serves as a key facility for operational test, integration, and certification of NASA and commercial next-generation, low-cost orbital launch technologies; and facilitates productive and innovative government, industry, and academic partnerships.

Wallops Orbital Tracking Information System (WOTIS): This is an implementation of the Near Earth Network Scheduling System (NENSS). See NENSS definition for additional details.

Warm Start: Reboot hardware and software to resume normal operations from a reconstituted recovery point in time with minimal impact to mission and data.

Warning (Warn): (1) Notification, message, or display sent to the Enterprise Management Operations Controller (EMOC) or other designated operator position classified as "Warning". Warnings are used to identify negative trends that have either exceeded or are approaching some arbitrary (configured) or predetermined critical level of performance established. (2) Warnings or fatal error messages are provided to indicate if a Flight Software task encounters a situation that is not nominal. Event messages relay the status of significant nominal or non-nominal events to operations. The event messages are stored with other telemetry data in the various storage buffers in the C&DH hardware and are available in the data that is stored and played back.

Weather Forecast Office (WFO): The National Weather Service (NWS) is tasked with providing "weather, hydrologic, and climate forecasts and warnings for the United States, its territories, adjacent waters and ocean areas, for the protection of life and property and the enhancement of the national economy." This is done through a collection of national and regional centers, and 122 local Weather Forecast Offices (WFOs). Since the NWS is a government agency, most of its products are in the public domain and available free of charge.

Web Interface: A Human Machine Interface (HMI) gives an authorized human access to a particular software application or database, while the specific web interface facilitates the client software access often via a web site.

Web Server Data: Data, which may include reports, ancillary data, and auxiliary data, posted to the web server.

What if Schedule: Used for analysis and contingency purposes to allow manipulation of the existing schedule without updating any protected files. For example, manipulation of a “what if” schedule allows the Mission Planner to see what the resulting schedule would look like based upon the Mission Planner’s and other inputs.

White Ice: Thin first year ice 30-70 cm thick, also called Thin First-year Ice.

White Sands Complex (WSC): Consists of two highly automated functionally identical ground terminals. The White Sands Ground Terminal Upgrade (WSGTU) also known as Cacique, and the Second TDRSS Ground Terminal (STGT) also known as Danzante, provide a relay interface between the space segment, the ground segment and the other ground elements [i.e. the Network Control Center (NCC), the NASA Communications Network (NASCOM), the customer Payload

Operations Control Centers (POCCs), the Flight Dynamics Facility (FDF) and the Extended Tracking and Data Relay Satellite (TDRS) Ground Terminal (ETGT)]. The WSC, or Tracking and Data Relay Satellite System (TDRSS) ground segment includes transmit and receive equipment to support the three types of available customer satellite communications services: Multiple Access (MA), K-Band Single Access (KSA) and S-Band Single Access (SSA). Tracking service can be provided through any of the three types of communication services. TDRSS provides two-way range, two way Doppler, or one-way Doppler measurements. Sampled range and Doppler data is routed from the WSC to the Goddard Space Flight Center (GSFC) Flight Dynamics Facility (FDF) for orbit determination.

The WSC consists of three 18.3-meter K-Band customer traffic antennas, three 19-meter K-Band customer traffic antennas with backup TDRS S-Band TT&C capability, two 10-meter TDRS S-Band TT&C antennas, two co-located operations buildings with associated RF, signal processing, data processing, and control center equipment, a co-located Software Maintenance and Training Facility and a hardware maintenance depot repair facility, and a co-located logistics and engineering facility. Each ground terminal includes two fully redundant independent Space Ground Link Terminals (SGLT) that provide the ground RF interface, the transmit and receive equipment, multiple access RF and demodulation equipment, and the multiplexing/demutiplexing, buffering, switching and interface with the NASCOM data transport equipment. In addition each ground terminal has a "spare" SGLT that can be utilized by the spare TDRS or reserved as a "hot standby" for the primary SGLT. The spare SGLTs do not have Multiple Access (MA) capability.

Wide Area Network (WAN): A computer network that covers a broad area (i.e., any network whose communications links cross metropolitan, regional, or national boundaries); less formally, a network that uses routers and public communications links. Contrast with personal area networks (PANs), local area networks (LANs), campus area networks (CANs), or metropolitan area networks (MANs) that are usually limited to a room, building, campus or specific metropolitan area (e.g., a city) respectively. The largest and most well-known example of a WAN is the Internet. WANs are used to connect LANs and other types of networks together, so that users and computers in one location can communicate with users and computers in other locations. Many WANs are built for one particular organization and are private. Others, built by Internet service providers, provide connections from an organization's LAN to the Internet. WANs are often built using leased lines. At each end of the leased line, a router connects to the LAN on one side and a hub within the WAN on the other. Leased lines can be very expensive. Instead of using leased lines, WANs can also be built using less costly circuit switching or packet switching methods. Network protocols including TCP/IP deliver transport and addressing functions. Service providers to deliver the links that are used in WANs often use protocols including Packet over SONET/SDH, MPLS, Asynchronous Transfer Mode (ATM) and Frame relay. X.25 was an important early WAN protocol, and is often considered to be the "grandfather" of Frame Relay as many of the underlying protocols and functions of X.25 are still in use today (with upgrades) by Frame Relay.

Wide Area Network Operator (WAN Op): The WAN Operator is responsible for managing the Wide Area Network (WAN) currently provided by an external source, including all defined circuitry, any associated local loops, all equipment [hardware and software], documentation, facilities, and the services to manage, operate and maintain the WAN. The WAN Operator

provides network operational status of the JPSS nodes to the Enterprise Manager and real-time network status reporting to the Enterprise Manager on an exception basis.

Will: When used in a program contractual document, a verb that indicates an expected outcome or action.

WindSat (WindSat/Windsat): A satellite-based polarimetric microwave radiometer instrument developed by the Naval Research Laboratory Remote Sensing Division and the Naval Center for Space Technology for the U.S. Navy and the National Polar-orbiting Operational Environmental Satellite System (NPOESS) Integrated Program Office (IPO). WindSat is designed to demonstrate the capability of polarimetric microwave radiometry to measure the ocean surface wind vector from space. This instrument was launched aboard the Coriolis satellite by a Titan II rocket on 6 January 2003 into an 830-km 98.7-degree orbit.

WindSat Data Processing (WindSat DP): This is a data consumer of the JPSS Ground System (GS) that receives raw WindSat data for subsequent processing into environmental and climate weather products. The WindSat Data Processing (DP) is performed by FNMOC in Monterey, CA. JPSS is responsible for conveying data downlinked at the Svalsat ground station to NSOF. DISA provides the connectivity from the NSOF to FNMOC.

Work Request (WR): A request to complete a specific task, which progress and accountability need to be tracked. There are four types of work requests: task requests, trouble tickets, ad-hoc report requests, and mission notices. For every work request generated, there are four possible priority levels that can be assigned based on the impact to the program.

Work Request System (WRS): A suite of tools used by Enterprise Management (EM) for tracking problems, incidents, faults, failures, and observations relating to the JPSS system. Also supports the tracking of corrective action and closure of maintenance issues.

Workmanship Test: See Acceptance Test.

Working Group (WG): This is an interdisciplinary collaboration of personnel with diverse backgrounds working on new development, operations, research and life cycle sustainment activities that would be difficult to develop under traditional funding mechanisms (e.g., federal agencies). The lifespan of the WG can last anywhere between a few months and several years. Such groups have the tendency to develop a quasi-permanent existence once the assigned task is accomplished (subtly different from a tiger team focused usually on a specific problem/solution); hence the need to disband (or phase out) the WG once it has provided solutions to the issues for which it was initially convened [i.e., ConOps, Architecture, Preliminary Requirements & Interfaces (CAPRI) Working Group (WG)].

Workstation: A desktop or a computer used by an operator to run client processes and programs.

x Data Record (xDR): JPSS data records include Raw Data Records (RDRs), *Intermediate Products (IPs),* Sensor DRs (SDRs), Temperature DRs (TDRs) and Environmental DRs (EDRs). These data records are collectively called xDRs.

X-Band: The band 8025-8400 MHz is allocated for Earth Exploration radio communication by the ITU-R. S-NPP uses part of this band to downlink Stored Mission Data and High Rate Data. The JPSS satellites use part of this band to downlink High Rate Data.

4. PROGRAM ACRONYM LIST

Acronym/Abbreviation	Definition
3MI	Multi-view Multi-channel Multi-polarization Imager
7-Day Eph	Seven-Day Ephemeris
A	
A	System Availability
A&T	Assembly and Test
AAA	Authentication, Authorization, and Accounting
AAM	Acquisition Assistance Message
AAR	After Action Review
AARR	After Action Review Report
AAU	Advanced Encryption Standard (AES) Authentication Unit
AAV	Algorithm Analysis and Verification
A_D	Data Availability
A_{PD}	Product Data Availability
A_{RD}	Raw Data Availability
ABCI	As-Built Configuration Index
ABEC	Annular Bearing Engineering Committee
ABMA	American Bearing Manufacturers Association
Abs Hum	Absolute Humidity
Abs Tm	Absolute Time
AC	Access Control
AC	Alternating Current
ACA	Antenna Control Assembly
ACA	Atmospheric Correction for Aerosols
ACBM	Automated Command Block Memory
ACC	Attitude Control Console
ACCB	Algorithm Configuration Control Board
ACGS	Alternate Common Ground System

Acronym/Abbreviation	Definition
ACGS C3	Alternate Common Ground System Command, Control and Communication
ACMP	Algorithm Change Management Plan
ACP	Algorithm Change Package
ACQ	Acquisition
ACS	Advanced Control Segment
ACS	Alternative Commanding System
ACS	Attitude Control System
ACWP	Actual Cost of Work Performed
Ad	Data Availability
AD	Attitude Determination
ADA	Algorithm Development Area
ADAD	Alternate Dynamic Ancillary Data
ADAMS	Automatic Dynamic Analysis of Mechanical Systems
ADC	Analog to Digital Converter
ADCS	Attitude Determination and Control System
ADD	Architecture Description Document
ADF	Algorithm Development Facility
ADL	Algorithm Development Library
ADM	Algorithm Development and Maintenance
ADR	Algorithm Discrepancy Report
ADR	Ancillary Data Router
ADR	Automated Data Recorder
ADRS	Ancillary Data Relay System
ADS	Attitude Determination System
ADS	Archive and Distribution Segment
AE	Acquisition Executive
AERB	Algorithm Engineering Review Board
AES	Advanced Encryption Standard

Acronym/Abbreviation	Definition
AETD	Applied Engineering and Technology Directorate
AF	Active Fires
AF	Air Force
AFB	Air Force Base
AFSCN	Air Force Satellite Control Network
AFSPCMAN	Air Force Space Command Manual
AGE	Aerospace Ground Equipment
AGS	Attitude Ground System
AGS Cfg Data	Attitude Ground System Configuration Data
AGS SW	Attitude Ground System Software
AGST	Attitude Ground System Team
AGSupt	Attitude Ground Support
AGU	American Geophysical Union
AI	Action Item
AI&T	Assembly, Integration, and Testing
AIAA	American Institute of Aeronautics and Astronautics
AIDPN	Alternate Interface Data Processing Node
AIP	Analysis and Inspection Plan
AIR	Analysis and Inspection Report
AIRS	Atmospheric Infrared Sounder
AIT	Algorithm Integration Team
AIX	Advanced IBM UNIX
Alg	Algorithm
AMMC	Alternate Mission Management Center
Amp	Amperes
Amp	Amplifier
AMP	Algorithm Management Project
AMS	American Meteorological Society
AMSR	Advanced Microwave Scanning Radiometer

Acronym/Abbreviation	Definition
AMSU	Advanced Microwave Sounding Unit
Anc/ANC	Ancillary Data
Anc & Aux OP	Ancillary and Auxiliary Orderable Products
ANSI	American National Standards Institute
Ant	Antenna
A_o	Operational Availability
AO	Atomic Oxygen
AO	Authorizing Official
AOD	Aerosol Optical Depth
AOP	Annual Operating Plan
AoR	Area of Responsibility
AOR	Atlantic Operational Region
AoS / AOS	Acquisition of Signal
AOS	Advanced Orbiting System
AOT	Aerosol Optical Thickness
AP	Application Packet
APC	Alternate Processing Center
A_{pd}	Data Product Availability
APE	Application Packet Extractor
APEATE	Atmosphere Product Evaluation and Analysis Tool Element
APHY	Analog Physical Layer
API	Application Programming Interface
API	Antecedent Precipitation Index
APID	Application Process Identifier
APL	Applied Physics Laboratory
APMC	Agency Program Management Council
APS	Aerosol Particle Size
APSP	Aerosol Particle Size Parameter
APU	Accuracy, Precision, and Uncertainty

Acronym/Abbreviation	Definition
AQPN	Asynchronous Quadrature Pseudo-random Noise
ARB	Architecture Review Board
ARC	Accelerated Release Cycle
A_{rd}	Raw Data Availability
ARF	Antenna Radio Frequency
ARF	Architecture Review Forum
ARM	Active Risk Manager
ARP	Application Related Product
ART	Anomaly Resolution Team
ASA	Algorithm Support Area
ASA	Adaptive Security Applicance
ASC	Algorithm Support Capability
ASCII	American Standard Code for Information Interchange
ASD	Application Process Identifier Sorted Data
ASD	Acceleration Spectral Density
ASDC	Atmospheric Science Data Center
ASF	Algorithm Support Function
ASF	Alaska Satellite Facility (U. of Alaska, Fairbanks)
A-Side	Operations A Processing String
ASM	Acquisition Strategy Meeting
ASOS	Automated Surface Observing System
ASP	Analog Signal Processor
ASR	Aggregation Services Router
AT	Aliveness Test
AT	Awareness Training
ATBD	Algorithm Theoretical Basis Document
ATDS	Algorithm Timing Dependencies Simulation
ATF	Australian Tracking Data Relay Satellite System Facility

Acronym/Abbreviation	Definition
ATM	Asynchronous Transfer Mode
Atm-Cm	Atmosphere-Centimeter
Atmos	Atmosphere
ATMS	Advanced Technology Microwave Sounder
ATMS ISN	Advanced Technology Microwave Sounder Instrument Support Node
ATO	Authority to Operate
ATP	Authorization To Proceed
ATP	Acceptance Test Program
ATRR	Acceptance Test Readiness Review
AU	Audit
Aux/AUX	Auxiliary Data
AV	All Views
aVCDU	Annotated Virtual Channel Data Unit
AVHRR	Advanced Very High Resolution Radiometer
AVMP	Atmospheric Vertical Moisture Profile
AVP	Atmospheric Vertical Profile
AVPP	Atmospheric Vertical Pressure Profile
AVTP	Atmospheric Vertical Temperature Profile
AWE	Alarms, Warnings and Events
AWG	American Wire Gauge
AWIPS	Advanced Weather Information Processing System
B	
B/L	Baseline
B/U	Backup
B2B	Band-to-Band
BA	Ball Aerospace
BAA	Binary Algorithm Adapter
BAE	British Aerospace
BAR	Build Architecture Review

Acronym/Abbreviation	Definition
BAT	Bench Acceptance Test
BB	Black Body
BBB	Battery Bus Board
BBR	Band-to-Band Registration
BBS	Baseband Subsystem
BCB	Balance Control Board
BCDR	Baseline Critical Design Review
BCP	Ball Commercial Platform
BCR	Baseline Change Request
BCR	Block Content Review
BCU	Bench Check-Out Unit
BCWP	Budgeted Cost of Work Performed
BCWS	Budgeted Cost of Work Scheduled
BD	Business Development
BDR	Baseline Design Review
BEET	Block Evolution Estimate Team
BEM	Bandwidth Efficient Modulation
BER	Bit Error Rate
BET	Best Estimate Trajectory
BGST	Block Ground System Test
BIT	Built-In Test
BL/B/L	Baseline
Blk/BLK	Block
BMEB	Brassboard Main Electronics Box
BOD	Beneficial Occupancy Date
BOE	Basis of Estimate
BOL	Beginning of Life
BPGT	Blossom Point Ground Terminal
BPSK	Binary Phase-Shift Keying

Acronym/Abbreviation	Definition
BRDF	Bidirectional Reflectance Distribution Function
BRR	Block Readiness Review
BRR	Build Release Review
BRTS	Bilateration Ranging Transponder System
BSA	Biaxial Scan Assembly
B-Side	Operations B Processing String
BSR	Baseline Status Review
BU / B/U	Backup
BUFR	Binary Universal Form for the Representation of Meteorological Data
C	
C-PERT	Common Ground System (CGS) Performance Evaluation and Reporting Tool
C-TPAT	Customs Trade Partnership Against Terrorism
C&A	Certification and Accreditation
C&DH	Command and Data Handling
C&Dp	Command and Data Processor
C&S	Control and Status
C&S	Coordinating and Scheduling
C&T	Command and Telemetry
C&T DB	Command and Telemetry Database
C/O	Change Order
C/O	Closeout
C2	Command and Control
C3	Command, Control, and Communications
C3S	Command, Control and Communications Segment
C4ISR	Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance
CA	Conjunction Assessment
CA	Collision Avoidance

Acronym/Abbreviation	Definition
CA	Certifying Agent
CA	Certificate Authority
CA	Corrective Action
CA	Cost Analysis
CAC	Common Access Card
CAD	Command Allocation Document
CADU	Channel Access Data Unit
Cal / CAL	Calibration
Cal/Val	Calibration and Validation
CAM	Command Authorization Meeting
CAM	Collision Avoidance Maneuver
CAMDb	Common Asset Management Database
CAMPUS	Common Ground System Architecture and Mission Performance Unified Simulation
CAO	Chief Acquisition Officer
Cap	Capability
CAPRI	Concept of Operations, Architecture, Preliminary Requirements and Interfaces
CAPRI WG	Concept of Operations, Architecture, Preliminary Requirements and Interface Working Group
CARA	Conjunction Assessment Risk Analysis
CARB	C3S Architecture Review Board
CARS	Climate Analysis Research System
CasaNOSA	Casa National Oceanic and Atmospheric Administration Observing System Architecture
CASE	Computer-Aided Software Engineering
CAT	Command Authorization Tool
CATEX	Categorical Exclusions
CATR	Compact Antenna Test Range
CBB	Cell Balancing Board

Acronym/Abbreviation	Definition
CBC-MAC	Cipher Block Chaining Message Authentication Code
CBE	Current Best Estimate
CBH	Cloud Base Height
CBM	Command Block Memory
CBOD	Clamp Band Opening Device
CBT	Computer Based Training
CBU	Consolidated Backup
CBU BOD	Consolidated Backup Beneficial Occupancy Date
CC	Configuration Control
CC	Critical Component
CC/L	Cloud Cover/Layers
CCA	Circuit Card Assembly
CCA	Contamination Control Analysis
CCAM	Contamination and Collision Avoidance Maneuver
CCB	Charge Control Board
CCB	Configuration Control Board
CCD	Charge Coupled Device
CCM	Configuration Control Manager
CCM	Counter with Cipher Block Chaining Message Authentication Code
CCP	Contamination Control Plan
CCR	Configuration Change Request
CCR	Critical Computer Resource
CCS	Common Contact Schedule
CCS	Confirmed Contact Schedule
CCSDS	Consultative Committee for Space Data Systems
CCT	Control Channel Toolkit
CDA	Critical Design Audit
CDA	Command and Data Acquisition

Acronym/Abbreviation	Definition
CDAA	Common Data Analysis Approach
CDAD/CoDAD	Contingency Dynamic Ancillary Data
CDAS	Command and Data Acquisition Station
CDD	Capability Development Document
CDDR	Consolidated Data Delivery Report
CDF	Contractor Software Development Facility
CDFCB	Common Data Format Control Book
CDFDB	Common Data Format Database
CDH	Command and Data Handling
CDM	Configuration Data Management
CDMS	Climate Data Management Service
CDP	Command and Data Processor
CDR	Critical Design Review
CDRL	Contract Data Requirements List
CDS	Common Data Services
CDU	Channel Data Unit
CDU	Command Decoder Unit
CDW	Critical Design Walk-through
CE	Conducted Emission
CE	Chief Engineer
CECIL	C-Extended Command Interface Language
CEK	Command Encryption Key
CEOS	Committee on Earth Observation Satellites
CEP	Command Encryption Processor Subsystem
CEPS	Cloud Effective Particle Size
CERES	Clouds and the Earth's Radiant Energy System
CERES ISN	Clouds and the Earth's Radiant Energy System Instrument Support Node
CERT	Computer Emergency Readiness Team
CEVMS	Common Earned Value Management System

Acronym/Abbreviation	Definition
CFCR	Common Format Control Repository
CFD	Computational Fluid Dynamics
CfgID	Configuration Identifier
CFO	Chief Financial Officer
CFPA	Cold Focal Plane Assembly
CFT	Comprehensive Functional Test
CG	Center of Gravity
CGMS	WMO Coordination Group for Meteorological Satellites
CGS	Common Ground System
CGS GStn	Common Ground System Ground Station
CGS MMC	Common Ground System Mission Management Center
CGS Msn Opr HMI	Common Ground System Mission Operator Human-Machine Interface
CGSRD	Common Ground System Requirements Document
CGS WSC	Common Ground System White Sands Complex
CGTT	Command Generation Toolkit
A.1 CH_4	Methane
Chnl ID/ChnlID	Channel Identifier
CHW	Computer and Storage Subsystem
CI	Configuration Item
CI	Continuous Integration
CICS	Cooperative Institute for Climate and Satellites
CIFS	Common Internet File System
CIL	Critical Items List
CIMSS	Cooperative Institute for Meteorological Satellite Studies
CIO	Chief Information Officer
CIOSS	Cooperative Institute for Oceanographic Satellite Studies

Acronym/Abbreviation	Definition
CIP	Critical Infrastructure Protection
CIP	Contract Implementation Plan
CIR	Climate Information Record
CIRA	Cooperative Institute for Research in the Atmosphere
CIS	Common Interfaces and Services
CITR	Commerce Interim Technical Requirement
CLA	Coupled Loads Analysis
CLASS	Comprehensive Large Array-data Stewardship System
CLCW	Command Link Control Word
CLF	Command Load File
CLG	Command Load Generation
CLIN	Contract Line Item Number
CLM	Centralized Logistics Management
CLTU	Command Link Transmission Unit
CLTU	Command Load Table Unit
CLW	Cloud Liquid Water
CLWS	Command Line Web Services
CM	Change Management
CM	Configuration Management
CM	Cost Model
CMBCE	Common Mode Bulk Current Emissions
CMC	Center Management Council
CMD/Cmd	Command
Cmd Tbl	Command Table
CMLB	Ceramic Multi-Layer Board
CMM	Capability Maturity Model
CMMI	Capability Maturity Model Integrated
CMO	Configuration Management Office

Acronym/Abbreviation	Definition
CMOS	Complementary Metal-Oxide Semiconductor
CMP	Configuration Management Plan
CMR	Configuration Modification Request
CMS	Configuration Management System
CNE	GSFC Center Network Environment
CNES	Centre National d'Etudes Spatiales
CNSS	Committee on National Security Systems
CO	Carbon Monoxide
A.2 CO_2	Carbon Dioxide
CO	Change Order
CO	Contracting Officer
COD	Cloud Optical Depth
CoDDS	Coriolis Data Distribution System
COE	Common Operating Environment
COLA	Collision on Launch Assessment
COM	Chief of Maintenance
COMM	Communications
COMPUSEC	Computer Security
COMSEC	Communication Security
CONFIG/Config/Cfg	Configuration
Config Data/Cfg Data	Configuration Data
ConOps/CONOPS	Concept of Operations
CONUS	Continental United States
CoOP	Continuity of Operations Plan
COOP	Continuity of Operations
COOP DPN	COOP Data Processing Node
COOP MON	COOP Management and Operations Node
COP	Command Operations Procedure
COP	Command Operations Protocol

Acronym/Abbreviation	Definition
COR	Central Office of Records
COR	Contracting Officer's Representative
CoS	Criticality of Service
COSMIC	Constellation Observing System for Meteorology Ionosphere and Climate
COT	Cloud Optical Thickness
COT	CLASS Operations Team
COTS	Commercial Off-the-Shelf
CP	Contingency Plan
CPA	Common Process Architecture
CPAA	Corrective and Preventative Action Authority
CPAB	Corrective and Preventative Action Board
CPAF	Cost Plus Award Fee
CPAS	Corrective and Preventative Action System
CPC	Climate Prediction Center
cPCI	Compact Peripheral Component Interconnect
CPCI	Computer Program Configuration Item
CPE	Control Processor
CPFF	Cost Plus Fixed Fee
CPI	Cost Performance Index
CPMT	Comprehensive Large Array-data Stewardship System Project Management Team
CPR	Concept Peer Review
CPR	Contract Performance Report
CPS	Climate Information Record / Climate Data Record Production System
CPSD	Cloud Particle Size Distribution
CPT	Comprehensive Performance Test
CPT	Cross Product Team
CPU	Central Processing Unit

Acronym/Abbreviation	Definition
CPU Util	Central Processing Unit Utilization
CR	Change Request
CRA	Cryoradiator Assembly
CRAT	Collision Risk Assessment Team
CRC	Cyclic Redundancy Check
CrDAD	Critical Dynamic Ancillary Data
CREME	Cosmic Ray Effects on Micro Electronics
CREST	Cooperative Remote Sensing Science and Technology Center
CrIMSS	Cross-track Infrared and Microwave Sounding Suite
CrIS	Cross-track Infrared Sounder
CrIS ISN	Cross-track Infrared Sounder Instrument Support Node
CRM	Continuous Risk Management
CRM	Comment Resolution Matrix
CROH	Control Room Operating Handbook
CRR	Configuration Readiness Review
CS	Control System
CS	Communications Subsystem
CS	Conducted Susceptibility
CS	Civil Servant
CSAM	Cyber Security Assessment and Management
CSCI	Computer Software Configuration Item
CSE	Common Support Equipment
CSI	Continuous Segment Integration
CSM	Customer Service Management
CSM	Command Storage Memory
CSO	Cavity Stabilized Oscillator
CSO	Chief Safety Officer
CSO	Communications Services Office

Acronym/Abbreviation	Definition
CSN	Common Ground System Support Node
CSP	Communications Security Plan
CSP	Create Service Package
CSPP	Community Satellite Processing Package
CSS	Common Ground System Shared Services
CSS	Coarse Sun Sensor
CSV	Comma Separated Variable
CSWA	Chief Software Architect
CT	Connectivity Test
CT	Common Ground System Technical Performance Metric
CT	Channel Access Data Unit Transmorgrifier
CT	Cipher Text
CTB	Command and Telemetry Board
CTB	Consent to Break
CTD	Command Translation Definition
CTDB	Command and Telemetry Database
CTE	Charge Transfer Efficiency
CTE	Coefficient of Thermal Expansion
CTH	Cloud Top Height
CTI	Consent to Integrate
CTIF	Command and Telemetry Interface
CTIU	Cipher Text Interface Unit
CTO	Configure to Order
CTP	Cloud Top Pressure
CTP	Consent to Proceed
CTRL	Control
CTS	Consent to Ship
CTSIM	Command and Telemetry Simulator
CTT	Cloud Top Temperature

Acronym/Abbreviation	Definition
CTU	Command and Telemetry Unit
CTUP	Command and Telemetry Data Update
CTV	Command Test Van
CUT	Code and Unit Test
CV	Capabilities View
CV	Cost Variance
CVN	Calibration/Validation Node
CVS	Calibration and Validation Subsystem
CVT	Current Value Table
CWBS	Contract Work Breakdown Structure
CWD	Critical Weather Day
CWDM	Coarse Wavelength Division Multiplexing
CWIP	Construction Work in Progress
CY	Calendar Year
CZCS	Coastal Zone Color Scanner
D	
D-ECL	Differential-Emitter Coupled Logic
D&D	De-orbit and De-commissioning
D4	Database Design Deep Dive
DA	Data Acquisition
DA	Decision Authority
DA	Dynamic Alignment
DAA	Designated Approval Authority
DAAC	Distributed Active Archive Center
DAC	Digital to Analog Converter
DAccR	Data Accounting and Recovery
DAcqR/DAR	Data Acquisition and Routing
DAD	Dynamic Ancillary Data
DAD	Data Accountability Dashboard

Acronym/Abbreviation	Definition
DADS	Data and Application Demonstration System
DAE	Data Acquisition Engineer
DAR	Data Acquisition and Routing
DAS	Daily Activity Schedule
DAS	Data Acquisition Station
DAS	Detailed Activity Schedule
DAS	Demand Access Service
DASM	Direct Readout Algorithm and Software Maintenance
DAU	Decryption Authentication Unit
DAWG	Data Analysis Working Group
DB	Database
Db	Decibel
DB	Direct Broadcast
DBA	Database Administrator
DBA	Deployable Boom Assembly
DBMS	Database Management System
DBQM	Direct Broadcast Quality Monitoring
DC	Direct Current
DC	Domain Controller
DCA	Debris Casualty Area
DCCS	Distributed Command and Control System
DCMA	Defense Contract Management Agency
DCOMP	Daytime Cloud Optical and Microphysical Properties
DCP	Data Conversion and Provision
DCS	Data Collection System
DD	Data Delivery
DDAN	Data Delivery Automatic Notification
DDPR	Detailed Design Peer Review

Acronym/Abbreviation	Definition
DDR	Data Delivery Report
DDS	Data Delivery Subsystem
DDS	Detailed Deployment Schedule
DDS	Detailed Design Schedule
DE	Data Exchange
DEC	Decommissioning
DEM	Digital Elevation Model
Demarc	Demarcation
Demo	Demonstration
DEMOD	Demodulator
DETVAL	Detector Validation
DEWG	Data Engineering Working Group
DFCB	Data Format Control Book
DFD	Data Flow Diagram
DFICD	Data Format Interface Control Document
DFO	Deputy for Operations
DFOV	Dynamic Field of View
DHN	Data Handling Node
DI	Desk Instruction
DIAG	Diagnostic
DID	Data Identifier
DID	Delivery Item Description
DIM	Data Input Manager
DISA	Defense Information Systems Agency
DITL	Day-In-The-Life
DITSCAP	Department of Defense Information Technology Security Certification and Accreditation Process
DIV	Data and Information View
DLM	Data Link Management
DM	Data Management

Acronym/Abbreviation	Definition
DMA	Data Made Available
DML	Data Made Latency
DMO	Data Management Office
DMP	Data Management Plan
DMP	Delay in Maintenance
DMR	Data Management and Recovery
DMR	Data Monitoring and Recovery
DMS	Data Management Subsystem
DMSG	Disaster Management Support Group
DMSMS	Diminishing Manufacturing Sources and Material Shortages Plan
DMSP	Defense Meteorological Satellite Program
DMU	Drag Make-up Maneuver
DMVPN	Dynamic Multipurpose Virtual Private Network
DMZ	De-Militarized Zone
DN	Delivery Notification
DNB	Day-Night Band
DNMA	Data Not Made Available
DNS	Domain Name Service
DO	Delivery Order
Doc	Document
DoC / DOC	Department of Commerce
DoD / DOD	Department of Defense
DoDAF	Department of Defense Architecture Framework
DOM	Data Operations Manager
DOMSAT	Domestic Satellite
DOORS	Dynamic Object-Oriented Requirements System
DPA	Data Products and Algorithms
DPE	Data Processing Element
DPE	Data Processor Element

Acronym/Abbreviation	Definition
DPE	Data Product Engineering
DPES	Data Product Engineering and Services
DPG	Data Product Generation
DPG	Data Processing Guide
DPGD	Data Product Generation Database
DPHY	Digital Physical Layer
DPIS	Data Processing Inter-Subsystem
DPM	Deputy Project Manager
DPMC	Directorate Program Management Council
DPN	Data Processing Node
DPP	Data Protection Plan
DPP	Digital Pre-Processor
DQ	Data Quality
DQA	Data Quality Assurance
DQE	Data Quality Engineer
DQL	Data Quality Library
DQM	Data Quality Monitoring
DQMS	Data Quality Monitoring Subsystem
DQN	Data Quality Notification
DQSN	Data Quality Support Node
DQST	Data Quality Support Team
DR	Data Record
DR	Deficiency Report
DR	Delivery Report
DR	Direct Readout
DR	Discrepancy Report
DRAT	Discrepancy Report Action Team
DRB	Discrepancy Review Board
DRI	Data Ready Indicator

Acronym/Abbreviation	Definition
DRN	Distributive Receptor Network
DRO	Direct Readout
DRL	Direct Readout Laboratory
DRR	Data Routing and Retrieval
DRS	Data Relay Satellite
DRS	Design Reference System
DRS	Distributed Resource Scheduler
DRSN	Direct Readout Support Node
DRSS	Direct Readout Support System
DRW	Detailed Rolling Wave
dSAT	Delta Site Acceptance Test
DSBL	Disable
DSCOVR	Deep Space Climate Observatory
DSEP	Distributed Support and Electronics Package
DSI	Direct Source Instructions
DSLOC	Delivered Source Lines of Code
DSMC	Data Services Management Center
DSP	Digital Signal Processing
dSRR	Delta System Requirements Review
DSS	Dual Spacecraft System
DSWG	Data Storage Working Group
DSU	Data Storage Unit
DT	Downtime
DTC	Data Conversion and Provision Telemetry and Control Gateway Subsystem
DTO	Detailed Test Objectives
DTU	Digital Telemetry Unit
DU	Dobson Unit
DUS	Deputy Under Secretary
DUSO	Deputy Under Secretary for Operations

Acronym/Abbreviation	Definition
DV	Delta Velocity
DWSS	Defense Weather Satellite System
E	
E2E	End-to-End (Test)
E/H	Excluded/Hazardous
EAC	Estimate at Completion
EAP / eAP	Extended Application Packet
EAPDR	Extended Application Packet Delivery Report
EAR	Export Administration Regulations
EAS	Enterprise Archive System
EC	Engineering Change
EC	European Commission
ECC	Elliptical Curve Cryptography
ECC	Error Correction Code
ECD	Estimated Completion Date
ECEF	Earth Centered Earth Fixed Reference Frame
ECI	Earth Centered Inertial
ECL	Emitter Coupled Logic
ECLCW	Extended Command Link Control Word
ECMWF	European Center for Medium-range Weather Forecasting
ECN	Equipment Control Number
ECP	Engineering Change Proposal
ECR	Engineering Change Request
ECT	External Calibration Target
ED	Event Driven
EDAC	Error Detection and Correction
EDD	Engineering Data Description
EDD	Event Driven Data Delivery Subsystem
EDMC	Enterprise Data Management Council

Acronym/Abbreviation	Definition
EDOS	Earth Observation System Data and Operations System
EDR	Environmental Data Record
EDRIR	Environmental Data Record Interdependency Report
EDRPR	Environmental Data Record Production Report
EDTS	Environmental Design and Test Specification
EDU	Engineering Development Unit
EE	Engineering Estimate
EED	Electro-Explosive Device
EEE	Electrical, Electronic, and Electromechanical
EELV	Evolved Expendable Launch Vehicle
EEM	Electrical Emulation Module
EEMTB	Electrical Engineering Model Test Bed
EEO	Early Engineering Opportunity
EEPROM	Electrical Erasable Programmable Read-Only Memory
EET	End-to-End Test
Eff	Effectivity
EFM	External Filter Monitor
EFR	Engineering Failure Report
EFR	Event Failure Report
EGM	Earth Gravitational Model
EGSE	Electrical Ground Support Equipment
EHS	Environmental Health and Safety
EI	Enterprise Infrastructure
EIA	Electronic Industries Alliance
EIA	Error Injection Application
EIDP	End Item Data Package
EIT	Early Interface Test
EIWG	External Interface Working Group

Acronym/Abbreviation	Definition
EKMS	Electronic Key Management System
ELDRS	Enhanced Low Dose Rate Sensitivity
Ele	Element
ELF	Extended Application Packet Log File
ELM	Event Log Manager
ELSET	Element Set
ELV	Expendable Launch Vehicle
EM	Electronics Module
EM	Engineering Model
EM / EMgmt	Enterprise Management
EMC	Electromagnetic Compatibility
EMC	Electromagnetic Contamination
EMC	Environmental Modeling Center
EMD	Engineering, Manufacturing, and Development
EMD	Enterprise Management Data
EMF	Electromotive Force
EMgr	Enterprise Manager
EMI	Electromagnetic Interference
EMOC	Emergency Management Operations Center
EMOC	Enterprise Management Operations Controller
EMSDS	External Mission Support Data Server
EMST	External Mission Support Team
EMU	Engineering Model Unit
EN	Engineering Notice
ENBL	Enable
ENV	Environmental
Env Anc Data	Environmental Ancillary Data
EO	Engineering Order
EOC	Early Orbit Checkout

Acronym/Abbreviation	Definition
EOD	Earth Orientation Data
EOL	End of Life
EOM	End of Mission
EOMP	End Of Mission Plan
EOS	Earth Observing System
EOS	End of Support
EOSDIS	Earth Observing System Data and Information System
EOT	Extended Operations Team
EP	Electrical Performance
EPA	Environmental Protection Agency
EPDS	Electrical Power and Distribution System
EPM	Earth Point Mode
EPO	Education and Public Outreach
EPR	Engineering Peer Review
EPS	Electrical Power Subsystem
EPS	European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) Polar System
EPS-SG	EUMETSAT Polar System - Second Generation
EQAS	Environmental Data Record Quality Assurance System
EQP	Equipment
ER	Eastern Range
ERB	Earth Radiation Budget
ERB	Engineering Review Board
ERB	Executive Review Board
ERBE	Earth Radiation Budget Experiment
ERD	EUMETSAT Reference Document
ERDL	Enhanced Remote Data Logger
ERI	Engineering Review Items

Acronym/Abbreviation	Definition
ERTO	Estimated Return to Operations
ESA	European Space Agency
ESB	Essential Bus
ESC	Equipment Status and Control
ESD	Earth Science Division
ESD	Electro-Static Discharge
ESDIS	Earth Science Data and Information System
ESE	Earth Science Enterprise
ESLOC	Equivalent Source Lines of Code
ESOC	EUMETSAT Space Operations Center
ESPC	Environmental Satellite Processing Center
ESPDS	Environmental Satellite Processing and Distribution System
ESR	Extended Support Release
ESSOH	Extended Stored State of Health
ETA	Engineering Technical Authority
ETA	Estimated Time of Arrival
ETB	Environmental Test Bench
ETE	End-to-End
ETGT	Extended Tracking Data Relay Satellite System Ground Terminal
ETN	Engineering Test Notice
ETR	Extended Virtual Channel Data Unit Tracking Report
EUMETSAT	European Organisation for the Exploitation of Meteorological Satellites
EV	Earned Value
eV	Electron Volt
EVA	Enterprise Virtual Array
EVAL	Evaluation
EVCDU	Extended Virtual Channel Data Unit

Acronym/Abbreviation	Definition
EVERST	Event Re-Planning and Scheduling Tool
EVM	Earned Value Management
EVMS	Earned Value Management System
EWR	Eastern and Western Range
EXCOM	Executive Committee
Ext	External
F	
F2F	Face-to-Face
FAA	Federal Aviation Administration
FAD	Formulation Authorization Document
FAOP	Flight Activation and Operations Plan
FAPS	Fixed Azimuth Plane Scan
FAR	Federal Acquisition Regulations
FAR	Final Acceptance Review
FARB	Flight Anomaly Review Board
FARS	Failure Anomaly Reporting System
FAT	Factory Acceptance Test
FB GStn/FB Grnd Stn/FBGStn	Fairbanks Ground Station
FBI	Federal Bureau of Investigation
FBT	Factory Benchmark Test
FC	Fiber Channel
FCA	Functional Configuration Audit
FCC	Federal Communication Commission
FCDA	Fairbanks Command and Data Acquisition
FCDAS	Fairbanks Command and Data Acquisition Station
FCE	Fringe Count Error
FCLA	Final Coupled Loads Analysis
FCLTU	Forward Command Link Transmission Unit
FCO	Functional Checkout

Acronym/Abbreviation	Definition
FD	Flight Director
FD	Flight Dynamics
FDCC	Federal Desktop Core Configurations
FDF	Flight Dynamics Facility
FDFS/FDF Sys	Flight Dynamics Facility Systems
FDLC	Flight Design Loads Cycle
FDR	Final Design Review
FDS	Flight Dynamics Systems
FEC	Forward Error Correction
FEP	Front-End Preprocessor
FEP	Front-End Processor
FFBD	Functional Flow Block Diagram
FFP	Firm Fixed Price
FFRDC	Federally Funded Research and Development Corporation
FFT	Fast Fourier Transform
FG	Focus Group
FGM	Fleet and Ground Management
FIA	Final Implementation Agreement
FIP	Facility Implementation Plan
FIP	Fault Isolation Procedure
FIPS	Federal Information Processing Standard
FISMA	Federal Information Security Management Act
FIST	Factory Integration Site Test
FIT	Fault Isolation Test
FLT	Flight
FMC	Full Mission Capability
FM	Flight Model
FMA	Final Mission Analysis
FMA	Fold Mirror Astigmatism

Acronym/Abbreviation	Definition
FMEA	Failure Mode and Effects Analysis
FMECA	Failure Modes, Effects Analysis, and Criticality Analysis
FMM	Fleet Mission Management
FMMgr	Fleet Mission Manager
FMP	Facility Management Plan
FNMOC	Fleet Numerical Meteorology and Oceanography Center
Fnx	Function
FO	Flight Operations
FO&S	Flight Operations and Sustainment
FOC	Final Operations Capability
FOC	Full Operational Capability
FOD	Foreign Object Debris
FOG	Fiber Optic Gyroscope
FOM	Flight Operations Manual
FOR	Field of Regard
FOR	Flight Operations Review
FOSS	Free and Open Source Software
FOT	Flight Operations Team
FOT	Fiber Optic Transceiver
FOUO	For Official Use Only
FOV	Field of View
FP/Flt Proj	Flight Project
FPA	Focal Plane Assembly
FPB	Flight Planning Board
FPD	Flight Procedural Document
FPGA	Field Programmable Gate Array
FPI	Flat Plate Illuminator
FPIE	Focal Plane Interface Electronics

Acronym/Abbreviation	Definition
FPO	Flight Project Office
FQT	Formal Qualification Test
FRACA	Failure Reporting, Analysis, and Corrective Action
FRACAS	Failure Reporting, Analysis, and Corrective Action System
FRB	Failure Review Board
FRCR	Final Release Content Review
FRD	Flight Requirements Document
FRR	Flight Readiness Review
FS	Factor of Safety
FS	Flight System
FSDE	Flight Software Development Environment
FSE	Flight Segment Emulator
FSM	Firmware Support Manual
FSN	Full Service Network
FSRD	Flight Segment Requirements Document
FSSOH	Full Stored State of Health
FST	Flight Support Team
FSTB	Flight Software Test Bed
FSTL	Flight Support Team Lead
FSU	Flight Software Upgrade
FSW	Flight Software
FSWCR	Flight Software Change Request
FSWWG	Flight Software Working Group
FT	Fault Tolerance
FT	Field Terminal
FT	File Transfer
FT	Functional Test
FTA	Fault Tree Analysis
FTC	Focal Plane Temperature Controller

Acronym/Abbreviation	Definition
FTE	Full Time Equivalent
FTP	File Transfer Protocol
FTP-S	File Transfer Protocol – Secure (TLS/SSL)
FTS	Field Terminal Support
FTS	File Transfer Software
FTSN	Field Terminal Support Node
FTSupt	Field Terminal Support
FTT	Functional Thread Test
FU	Flight Unit
FUDP	Flight Software Update Delivery Process
FUSE	Far Ultraviolet Spectroscopic Explorer
FVS	Flight Vehicle Simulator
FVS	Flight Vehicle Simulation
FVTS	Flight Vehicle Test Suite
FW	Firewall
FW	Firmware
FWHM	Full Width at Half Maximum
FWSM	Firewall Services Module
FY	Fiscal Year
G	
G-ADA	GRAVITE – Algorithm Development Area
G&A	General and Administrative
G/R	Giver/Receiver
G/R	Ground Refresh
GAC	Global Area Coverage
GARWG	Ground Availability and Reliability Working Group
GAS	Ground Analysis Software
Gb	Gigabit
GB	GigaByte

Acronym/Abbreviation	Definition
GbE	Gigabit Ethernet
Gbps	Gigabit per second
GBps	GigaByte per second
GCC	Gnu Compiler Collection
GCE	Gimbal Control Electronics
GCE	Government Cost Estimate
GCE	Ground Control Equipment
GCMR	Ground Control Message Request
GCOM	Global Change Observation Mission
GCOM-C	Global Change Observation Mission-Climate
GC	Ground Control
GCOM-W	Global Change Observation Mission - Water
GCR	Galactic Cosmic Ray
GCR	Ground Control Request
GCS	Ground Contact Schedule
GDMS	Gamma-Ray Large Area Space Telescope
GDMS	Goddard Directives Management System
GDO	Gunn Diode Oscillator
GDS	Ground Data System
GEDU	Ground Encryption/Decryption Unit
GEM	Ground Extended Virtual Channel Data Unit Manager
GEMSEC	GSFC Mission Services Evolution Center
GEO	Geostationary Earth Orbit
GES	Ground Equipment Status
GEVS	General Environmental Verification Standard
GFE	Government-Furnished Equipment
GFO	GeoSat Follow-On
GFS	Global Forecast System

Acronym/Abbreviation	Definition
GFX	Government Furnished Items
GHe	Gaseous Helium
GHz	Gigahertz
GIDEP	Government Industry Data Exchange Program
GIF	Graphics Interchange Format
GIID	General Instrument Interface Document
GIP	GRAVITE Information Portal
GIP	Gridded Intermediate Product
GISF	Ground Integrated Support Facility
GIWG	Ground Integration Working Group
GLS	Ground Link Simulator
GMAO	Global Modeling and Simulation Office
GMASI	Global Multi-Sensor Automated Snow/Ice
GMT	Greenwich Mean Time
GN2	Gaseous Nitrogen
GN	Ground Network
GNC | GN&C	Guidance, Navigation, and Control
GND	Ground
GNI	Ground Network Infrastructure
GNN	Ground Network Node
GO	Ground Operations
GO&S	Ground Operations and Support
GOE	Ground Operations Exercise
GOES	Geostationary Operational Environmental Satellite
GOES-N	Geostationary Operational Environmental Satellite-N Series
GOES-R	Geostationary Operational Environmental Satellite-R Series
GOFC	Global Observation of Forest Cover Dynamics
GOLD	Goddard Space Flight Center Open Learning Design

Acronym/Abbreviation	Definition
GOLD	Global Observation of Land Cover Dynamics
GOME	Global Ozone Monitoring System
GOMOS	Global Ozone Monitoring by Occultation of Stars
GORR	Ground Operations Readiness Review
GOTS	Government Off-the-Shelf
Govt	Government
GOWG	Ground Operations Working Group
GP	Ground Project / Ground Segment Project
GPAT	Ground Project Acceptance Test
GPD	GSFC Program Director
GPDS	GCOM Processing and Distribution System
GPFS	General Parallel File System
GPG	Goddard Space Flight Center Procedures and Guidelines
GPIO	General Purpose Input/Output Board
GPO	Ground Systems and Operations Program Office
GPR	Goddard Space Flight Center Procedural Requirements
GPS	Global Positioning System
GPSRx	Global Positioning System Receiver
GR&A	Ground Rules and Assumptions
GRAVITE	Government Resource for Algorithm Verification, Independent Testing, and Evaluation
GRC	Governance, Risk, and Compliance
GRcptr	Ground Receptor
GRE	Generic Routing Encapsulation
GRE	Ground Readiness Exercise
GRF	Geodetic Reference Frame
GRGT	Guam Remote Ground Terminal
GRI	Ground Reference Image

Acronym/Abbreviation	Definition
GRIB	Gridded Binary Data Format
GRR	General Roles and Responsibilities
GRR	Ground Readiness Review
GRS	Ground Receptor Site
GS	Ground System
GSA	General Services Administration
GSAT	Ground System Acceptance Test
GSB	Gimbal Switch Box
GSDR	Ground System Design Review
GSE	Ground Station Element
GSE	Ground Support Engineer
GSE	Ground Support Equipment
GSE	Ground System Engineer
GSE	Ground Systems Equipment
GSeg	Ground Segment
GSegDPS	Ground Segment Data Product Specification
GSFC	Goddard Space Flight Center
GSIM	Ground Segment Integrated Management Steering Group
GSIR	Ground System Integration Review
GSIT	Ground Segment Integration Test
GSN	Ground Support Node
GSR	Generic Schedule Request
GSRD	Ground System Requirements Document
GSRR	Ground System Requirements Review
GSRT	Goddard Space Flight Center Systems Review Team
GSSRD	Ground System Security Requirements Document
GT	Ground Terminal
G/T	Gain-to-Noise
GTM	Ground Track Mercator

Acronym/Abbreviation	Definition
GTP	General Test Plan
GTP	GRAVITE Transfer Protocol
GU	General User
GUI	Graphical User Interface
GVF	Green Vegetation Fraction
H	
H&S	Health and Safety
H&S	Housekeeping and Safety
HCS	Horizontal Cell Size
HCT	Hazard Control
HD	Hard Drive
HDF	Hierarchical Data Format
HDF4	Hierarchical Data Format, Release 4
HDF5	Hierarchical Data Format, Release 5
HDMP	Hardware Development and Management Plan
HDR	High Data Rate
HDW	Hardware
HEX	Hexadecimal
HFE	Hydrofluoroether
HGA	High Gain Antenna
HGS	High Gain State
HI	Hardware Item
HIB	Harness Interface Box
HIE	High Interest Event
HIRS	High Resolution Infrared Radiation Sounder
HK | H/K	Housekeeping
HLDC	High-Level Discrete Command
HLM	High Rate Data Monitor
HMI	Human-Machine Interface

Acronym/Abbreviation	Definition
HPC	High Performance Computing
HPS	Hydrazine Propulsion System
HQ	Headquarters
HQE	Hardware Quality Engineer
HR	Human Resources
HRD	High Rate Data
HRIT	High Rate Information Transmission
HRPT	High Resolution Picture Transmission
HRR	Handover Readiness Review
HRTG	High Rate Test Generation
HSI	Horizontal Sampling Interval
HSKP	Housekeeping
HSR	Horizontal Spatial Resolution
HST	Hubble Space Telescope
HTTP	Hypertext Transfer Protocol
HTTPS	Hypertext Transfer Protocol Secure
HVPS	High Voltage Power Supply
HW	Hardware
HWCI	Hardware Configuration Item
HWI	Hardware Interface
HWIL	Hardware In-The-Loop
HWRR	Hardware Requirements Review
HZB	Hazard Bus
HZD	Hazard
I	
I&C/O	Installation and Check Out
I&C/O	Installation and Close Out
I&I	Interfaces and Integration
I&R	Interface and Routing

Acronym/Abbreviation	Definition
I&T	Integration and Test
I&TSC	Integration and Testing Support Element
I/F	Interface
I/O | IO	Input/Output
IA	Identification and Authentication
IA	Independent Assessment
IA	Indeterminate Anomaly
IA	Information Assurance
IA	Interagency
IAA	Interagency Agreement
IACS	International Annealed Copper Standard
IASI	Infrared Atmospheric Sounding Interferometer
IASI-NG	Infrared Atmospheric Sounder Interferometer-Next Generation
IATT	Interim Authorization to Test
IBM	International Business Machines
IBR	Initial Baseline Review
ICB	Implementation Control Board
ICD	Interface Control Document
iCDR	Incremental Critical Design Review
iCDW	Incremental Critical Design Walk-through
ICESat	Ice, Cloud, and Land Elevation Satellite
ICF	Investigator Computer Facility
ICI	Ice Cloud Imager
ICM	Internal Calibration Module
ICMP	Internet Control Message Protocol
ICO	Integration and Checkout
ICRF	International Celestial Reference Frame
ICT	Interface Confidence Test
ICT	Internal Calibration Target

Acronym/Abbreviation	Definition
ICV	Initial Condition Vector
ICV	Intensive Calibration and Validation
ICVS	Integrated Calibration and Validation System
ID	Identification
ID	Image Data
IDD	Interface Description Document
IDD	Integrated Data Dictionary
IDF	Intermediate Distribution Facility
IDFCB	Internal Data Format Control Book
IDIQ	Indefinite Delivery / Indefinite Quantity
IDL	Indentured Drawing List
IDL	Interactive Data Language
IDL	Interface Data Processing Segment Development Library
IDMZ	Internet Demilitarized Zone
IDP	Interface Data Processing
IDPS	Interface Data Processing Segment
IDPSys	Interface Data Processing System
IDR	Interim Design Review
IDR	Internal Design Review
IDS	Intrusion Detection System
IE	Information Exchange
IEEE	Institute of Electrical and Electronics Engineers
IER	Information Exchange Requirement / Request
IERS	International Earth Rotation and Reference System
IETF	Internet Engineering Task Force
IF	Intermediate Frequency
IF	Interface
IFA	Integrated Filter Assembly
IFC	Instrument Flight Computer

Acronym/Abbreviation	Definition
IFC	Investigator Findings Container
IFL	Inter-Facility Link
IFM	Instrument Flight Manager
IFOV	Instantaneous Field of View
IGARSS	International Geosciences and Remote Sensing Society
IGBP	International Geosphere Biosphere Programme
IGSE	Instrument Ground Support Equipment
IHW	Interface Data Processing Segment Hardware Subsystem
IIAD	International and Interagency Affairs Division
IICDO	Integrated Instrument Control and Data Operations
IID	Instrument Interface Description
IIR	Integrated Independent Review
IIRR	Instrument Integration Readiness Review
IIRT	Integrated Independent Review Team
IIRV	Improved Inter-Range Vector
IIS	Intelligence and Information Systems
IJPS	Initial Joint Polar-orbiting Satellite System
ILS	Integrated Logistics Support
ILSP	Integrated Logistics Support Plan
IM	Instrument Manager
IM	Interferogram Module
IMAR	Instrument Mission Assurance Requirements
IMF	Integrated Management Framework
IMP	Integrated Master Plan
IMS	Integrated Management System
IMS	Integrated Master Schedule
IMSDS	Internal Mission Support Data Server
IMT	Integrated Mission Timeline

Acronym/Abbreviation	Definition
IN	Integrated Networks
INC	Inclination
INC	Increment
INF	Infrastructure / Infrastructure Subsystem
Info Sec	Information Security
Ing	Ingest
ING	Ingest Subsystem
INR	Interface and Routing Subsystem
InS	Integrated Sustainment
INST	Instrument
Interop	Interoperability
INT | I/F	Interface
INTF	Interface Specification
IOC	Initial Operational / Operations Capability
IONET	Internet Protocol Operational Network
IOOB	Integrated Out-of-Band
IOR	Integration Objectives Review
IORD	Integrated Operational Requirements Document
IOT	Instrument Operations Team
IP	Intellectual Property
IP	Internet Protocol
IP	Intermediate Product
IPAC	Interface Data Processing Segment Performance Acceptance Criteria
IPDS	Integrated Product Development System
IPEP	Independent Verification and Validation Project Execution Plan
IPH	Inter-Panel Hinge Sets
IPMAP	Internal Program Measures and Analysis Plan
IPMS	Instrument Performance Monitoring System

Acronym/Abbreviation	Definition
IPO	Industrial Property Office
I-P-O	Input-Processing-Output
IPOI	Initial Plan of Instruction
IPOPP	International Polar-Orbiter Processing Package
IPP	Interim Program Plan
IPPD	Integrated Process and Product Development
IPS	Investigator Processing System
IPSEC	Internet Protocol Security
IPT	Integrated Product/Process Team
IPV	Individual Pressure Vessel
IPv4	Internet Protocol Version 4
IPv6	Internet Protocol Version 6
IQ	Ice Quality
IQT	Initial Qualification Training
IR	Incident Response
IR	Infrared
IR	Incident Report
IR	Interface and Routing
IR&D	Independent Research and Development
IRB	Internal Review Board
IRC	Inter-Rack Communication
IRCD	Interface Requirements and Control Document
IRD	Interface Requirements Document
IRIG	Inter-Range Instrumentation Group
IRR	Integration Readiness Review
IRRT	Integration Readiness Review Team
IRS	Interface and Routing Subsystem
IRT	Independent Review Team
IRU	Inertial Reference Unit

Acronym/Abbreviation	Definition
IS	Isolation System
ISA	Interconnection Security Agreement
ISCM	Information System Configuration Management
ISCSI	Internet Small Computer System Interface
ISE	Instrument Systems Engineer
ISE	Instrument Support Equipment
ISF	Integrated Support Facility
ISIF	Instrument Simulator Interface
ISIS	Instrument Simulator Interface Simulator
ISM	Instrument System Manager
ISN	Instrument Support Node
ISO	International Standards Organization
ISR	Integration Summary Report
ISS	Integrated Sensor Suite
ISSO	Information System Security Officer
IST	Ice Surface Temperature
IST	Instrument Science Team
IT	Information Technology
ITA	Independent Technical Authority
ITAR	International Traffic in Arms Regulation
ITB	Integrated Technical Baseline
ITCO	Installation, Test, and Checkout
ITIB	Instrument and Thermal Interface Board
ITOC	Instrument Test Operations Console
ITOS	Integrated Test and Operations System
ITP	Information Technology Plan
ITPS	Integrated Trending and Plotting System
ITR	Instrument Technical Review
ITRF	International Terrestrial Reference Frame

Acronym/Abbreviation	Definition
ITRR	Integration and Test Readiness Review
ITSM	Information Technology Security Manual
ITSMP	Information Technology Security Management Plan
ITSO	Information Technology Security Officer
ITSP	Information Technology Security Plan
ITU	International Telecommunications Union
ITU-R	International Telecommunications Union - Radiocommunication Sector
IV&T	Integration, Verification, and Test
IV&V | IVV	Independent Verification and Validation
IVVP	Independent Verification and Validation Project Plan
J	
J1	Joint Polar Satellite System - 1
J2	Joint Polar Satellite System - 2
J3	Joint Polar Satellite System - 3
J4	Joint Polar Satellite System - 4
JAAS	Java Authentication and Authorization
JASD	Joint Agency Satellite Division
JAXA	Japanese Aerospace Exploration Agency
JCCB	Joint Configuration Control Board
JCL	Joint Confidence Level
JCSDA	Joint Center for Satellite Data Assimilation
JCE	Joint Polar Satellite System Connectivity Excercise
JCRD	Joint Polar Satellite System CLASS Requirements Document
JCT	Joint Polar Satellite System Compatibility Test
JDK	Java Development Kit
JDM/JPSS DBM	Joint Polar Satellite System Database Management
JERD	Joint Polar Satellite System Environmental Satellite Processing Center Requirements Document

Acronym/Abbreviation	Definition
JHA	Job Hazard Analysis
JIL	Joint Polar System Interactions List
JMA	Japan Meteorological Agency
JMAP	Joint Polar Satellite System Common Ground System Measures and Analysis Plan
JMS	Java Messaging Service
JORP	Joint Operational Rules and Procedures
JPEG	Joint Photographic Experts Group
JPS	Joint Polar System
JPSS	Joint Polar Satellite System
JPSS-1	Joint Polar Satellite System-1
JPSS-2	Joint Polar Satellite System-2
JPSS-3	Joint Polar Satellite System-3
JPSS-4	Joint Polar Satellite System-4
JPS WG	Joint Polar System Working Group
JRD	Joint Reference Document
JRD	Joint Polar System Reference Document
JRE	Java Real-Time Environment
JSC	Joint Spectrum Center
JSCARB	Joint Polar Satellite System Spacecraft Anomaly Review Board
JSH	Joint Polar Satellite System Stored Mission Data Hub
JSOC	Joint Spacecraft Operations Center
JSpOC	Joint Space Operations Center
JSTAR	Joint Polar Satellite System Center for Satellite Applications and Research
JTA	Joint Technical Architecture
JTA	Joint Transition Activities
JTWC	Joint Typhoon Warning Center

Acronym/Abbreviation	Definition
JWG	Joint Polar System Working Group
JWST	James Webb Space Telescope
K	
K	Kelvin
K	Thousand
kb	Kilobit
kB | KB	Kilobyte
kbps	Kilobit per second
kBps	KiloByte per second
KDP	Key Decision Point
keV	Kilo-Electron Volt
kibps	Kilobits per second (binary)
KM	Key Management
KMA	Key Management Authority
KML	Keyhole Markup Language
KMZ	Compressed Keyhole Markup Language
KNOS	Kongsberg Satellite Services Network Operations System
KPP	Key Performance Parameter
KSAT	Kongsberg Satellite Services
KSAT SvalSat	Kongsberg Satellite Services Svalbard Satellite Station
KSAT TNOC	Kongsberg Satellite Services Tromsø Network Operations Centre
KSAT TrollSat	Kongsberg Satellite Services Troll Satellite Station
KSC	Kennedy Space Center
KSPT	Kongsberg Spacetec
KTMX	Keyset T1 Multiplexer
L	
L	Latency

Acronym/Abbreviation	Definition
L	Launch
L1	Level 1
L1RD	Level 1 Requirements Document
L1RDS	Level 1 Requirements Document Supplement
L2	Level 2
L3	Level 3
L4	Level 4
L5	Level 5
L&EO	Launch and Early Orbit
L_D	Data Latency
L_{PD}	Product Data Latency
A.3 L_{RD}	Raw Data Latency
LAN	Local Area Network
LAN Op	Local Area Network Operator
LAPSS	Large Area Pulsed Solar Simulator
LaRC	NASA Langley Research Center
LASP	Laboratory for Atmospheric and Space Physics
LC	Launch Conductor
LCB	Load Control Board
LCC	Lamp Control Console
LCC	Life Cycle Cost
LCF	Local Computing Facility
LCR	Launch Control Room
LCR	Life Cycle Review
LCROSS	Lunar Crater Observation and Sensing Satellite
LDAP	Lightweight Directory Access Protocol
LDAT	Long Duration Ambient Test
LDR	Low Data Rate
LED	Light Emitting Diode

Acronym/Abbreviation	Definition
LEO	Low Earth Orbit
LEO&A	Launch, Early Orbit, and Activation
LEOMP	Launch and Early Orbit Management Plan
LEOWG	Launch and Early Orbit Working Group
LET	Linear Energy Transfer
LGS	Low Gain State
LHCP	Left-Hand Circular Polarization
LISN	Line Impedance Stabilization Network
LL	Launch Lock
LL	Lessons Learned
LLC	Link Layer Chip/Component
LLI	Limited Life Item
LM	Life Margin
LM	Link Margin
LMCM	Launch Management Coordination Meeting
LN2	Gaseous Nitrogen
LOC	Lines of Code
LOD	Letter of Delegation
LOE	Level of Effort
LOM	Life of Mission
LORWG	Low-Earth Orbit Operational Requirements Working Group
LOS	Line of Sight
LOS	Loss of Signal
LP	Limb Profiler
LPAR	Logical Partition
LPRR	Launch Processing Readiness Review
LpSec	Leap Seconds
LPT	Limited Performance Test
LRD	Launch Readiness Date

Acronym/Abbreviation	Definition
LRD	Low Rate Data
LRE	Latest Revised Estimate
LRO	Lunar Reconnaissance Orbiter
LRR	Launch Readiness Review
LRU	Line Replaceable Unit
LRU	Lowest Replaceable Unit
LRV	Last Recorded Value
LRV	Last Reported Value
LRWG	Launch Readiness Working Group
LS	Launch Segment
LSE	Launch Support Equipment
LSM	Land Surface Model
LSP	Launch Services Program
LSP	Logistics Support Plan
LSS	Launch Support Segment
LSSP	Launch Site Support Plan
LST	Land Surface Temperature
LSTO	Launch Services Task Order
LT	Local Time
LTA	Long Term Archive
LTAN	Local Time of Ascending Node
LTM	Long Term Monitoring
LTS	Long Term Storage
LUT	Look-Up Table
LV	Launch Vehicle
LVDS	Low Voltage Differential Signal
Lvl	Level
LVPS	Low-Voltage Power Supply
LVRR	Launch Vehicle Readiness Review

Acronym/Abbreviation	Definition
LW	Long Wavelength
LWIR	Long Wave Infrared
LZ	Landing Zone
M	
M	Million
M&C	Monitor and Control
M&P	Materials and Parts
M&S	Modeling and Simulation
MA	Mission Assurance
MAADD	Measurement and Analysis Definition Document
MAC	Master Alignment Cube
MAC	Mission Assurance Category
MAD	Mission Awareness Dashboard
MAIP	Mission Assurance Implementation Plan
MAM	Main Access Mirror
MAM	Micro Attenuator Mosaic
MAM	Mission Assurance Manager
MAP	Multiplexer Access Point
MAR	Mission Assurance Requirement
Mbps	Megabit per second
MBps	MegaByte per second
MBSE	Model Based Systems Engineering
MC	Mission Critical
MC	Multi Connector
MC1	McMurdo Receptor #1
MC2	McMurdo Receptor #2
MCB	Modification Control Board
MCD	Memory Configuration Data
MCDR	Mission Critical Design Review

Acronym/Abbreviation	Definition
MCE	Mission Commitment Engineer
MCP	Management Control Plan
McM Stn	McMurdo Station
MCR	Mission Confirmation Review
MD	Mission Data
MD	Mission Director
MDAA	Mission Directorate Associate Administrator
MDF	Main Distribution Facility
MDFCB	Mission Data Format Control Book
MDH	Main Deployment Hinge
MDL	Mission Design Laboratory
MDMZ	Mission Demilitarized Zone
MDR	Mission Data Request
MDR	Mission Discrepancy Report
MDR	Mission Definition Review
MDRB	Mission Discrepancy Review Board
MDS	Mission Data Services
MDT	Mean Down Time
MEB	Main Electronics Box
MEC	Minimum Essential Capability
MECH	Mechanical
MECO	Main Engine Cut-Off
MEF	Mission Essential Function
MELV	Medium Expendable Launch Vehicle
MEOP	Mean Expected Operating Pressure
MEOS	Multiple-mission Earth Observation Systen
Metop | MetOp	Meteorological Operational Satellite
METS	Multidisciplinary Engineering and Technology Services
MeV	Mega-Electron Volt

Acronym/Abbreviation	Definition
MEV	Maximum Expected Value
MFCC	Mission Flight Control Center
MFPS	Master Facility Planning Spreadsheet
MGS	Mars Global Surveyor
MGS	McMurdo Ground Station
MGSE	Mechanical Ground Support Equipment
MHEMT	Metamorphic High Electron Mobility Transistor
MHS	Microwave Humidity Sounder
MHz	Megahertz
MICD	Mechanical Interface Control Document
MicroTCA | µTCA	Micro Telecommunications Core Applications
MILSTD	Military Standard
MIS	Management Information System
MIST	Modular Integrated Solutions Toolkit
MIWG	Mission Integration Working Group
MLE	Mission Operations Support Team Lead Engineer
MLI	Multi-Layer Insulation
MLTAN	Mean Local Time of Ascending Node
MM	Mission Management
MM	Multi-Mission
MM&R	Management, Monitoring, and Reporting
MMC	Mission Management Center
MMCC	McMurdo Mission Control Center
MMCS	McMurdo Multiple-mission Communication System
MMIB	Multi-Mission Interim Briefing
MMOD	Micro-Meteoroid and Orbital Debris
MMF	Master Milestone Framework
MMIC	Monolithic Microwave Integrated Circuit
MMRR	Multi-Mission Requirements Review

Acronym/Abbreviation	Definition
MMSS	Multi-Mission System Specification
MOA	Memorandum of Agreement
MOAWG	Mission Orbit Analysis Working Group
MOC	Mission Operations Center
MOCI	Mission Operational Configuration Item
MOD	Mission Operations Division
MOD	Modification
MODAF	British Ministry of Defense Architecture Framework
MODAPS	Moderate Resolution Imaging Spectroradiometer Data Processing System
MODEM	Mission Operations Detailed Execution Meeting
MODIS	Moderate Resolution Imaging Spectroradiometer
MOIS	Mission Operations Interface Specification
MOM	Message-Oriented Middleware
MOM	Mission Operations Manager
MOMP	Mission Operations Management Plan
MON	Management and Operations Node
MOP	Mission Operations Plan
MOR	Mission Operations Review
MOR	Monthly Operating Review
MORR	Mission Operations Readiness Review
MOS	Mission Operations and Services
MOS	Mission Operations System
MOSFET	Metal-Oxide Semiconductor Field-Effect Transistor
MOST	Mission Operations Support Team
MOT	Mission Operations Team
MOTS	Modified Off-the-Shelf
MOU	Memorandum of Understanding
MOWG	Mission Operations Working Group
MP	Media Protection

Acronym/Abbreviation	Definition
MPCP	Mishap Preparedness and Contingency Plan
MPDR	Mission Preliminary Design Review
MPL	Mission Planner
MPLS	Multiprotocol Label Switching
MPM	Mission Point Model
MPOE	Minimum Point of Entry
MPS	Mission Planning and Scheduling
MPSS	Mission Planning and Scheduling System
MR	Maintenance Release
MR	Management Reserve
MR	Mission Rehearsal
MRB	Material Review Board
MRB	Mission Readiness Briefing
MRE	Mission Readiness Exercise
MRFG	Mission Rehearsal Focus Group
MRR	Mission Readiness Review
MRR	Mission Requirements Review
MRR	Maintenance Release Review
MRS	Mission Requirements Specification
MSA	Mass Storage Array
MSD	Mission Support Data
MSDS	Mission Support Data Service
MSE	Mission Systems Engineer
MSFC	Marshall Space Flight Center
MSIR	Mission Systems Integration Review
MSG	Message
MSM	Mission System Manager
MSN	Mission
MSps	Mega Symbols per second

Acronym/Abbreviation	Definition
MSPSP	Missile Pre-Launch Safety Package
MSR	Monthly Status Review
MSRR	Mission System Requirements Review
MSS	Mission Simulation System
MSS	Mission System Specification
MST	Mission Support Team
Mst Sched	Master Schedule
MSWG	Mission Simulation Working Group
MT	Mobile Telemetry
MTAP	Mobile Two-Axis Positioner
MTASS	Multiple-mission Three-Axis Stabilized Spacecraft
MTBCF	Mean Time Between Critical Failure
MTBDE	Mean Time Between Downing Event
MTBF	Mean Time Between Failures
MTF	Maintenance and Training Facility
MTF	Mean Time to Failure
MTF	Modulation Transfer Function
MTLAN	Mean Local Time at Ascending Node
MTR	Mission Task Request
MTR	Mission Transfer Review
MTRR	Mission Test Readiness Review
MTTF	Mean Time to Failure
MTTFF	Mean Time to First Failure
MTTR	Mean Time to Repair
MU	Measurement Uncertainty
MU	Microprocessor Unit
MUF	Model Uncertainty Factor
MUP	Mission-Unique Product
MUX	Multiplexer

Acronym/Abbreviation	Definition
MW	Medium Wavelength
MWIR	Medium Wave Infrared
Mx	Maintenance Release
N	
N-CIRT	National Oceanic and Atmospheric Administration-Computer Incident Response Team
N-WAVE	National Oceanic and Atmospheric Administration Science Network
N/A	Not Applicable
NAAPS	Navy Atmospheric Aerosol Prediction System
NAC	National Agency Check
NAD	Nadir Aperture Door
NAO	National Oceanic and Atmospheric Administration Administrative Order
NAR	Non-Advocate Review
NAS	Network Attached Storage
NASA	National Aeronautics and Space Administration
NASS	National Agricultural Statistics Service
NATO	North Atlantic Treaty Organization
NAVGEM	Navy Global Environmental Model
NAVOCEANO	Naval Oceanographic Office
NBAR/NBRDFAR	Nadir Bidirectional Reflectance Distribution Function Adjusted Reflectance
NBTX	Narrow Band Transmitter
NC	Non-Conformance
NCC	Near-Constant Contrast
NCCB	National Oceanic and Atmospheric Administration Data Exploitation Configuration Control Board
NCCDS	Network Control Center Data System
NCEI	National Centers for Environmental Information
NCEP	National Centers for Environmental Prediction

Acronym/Abbreviation	Definition
NCI	Non-Costable Improvement
NCMR	Non-Conforming Materials Report
NCO	National Centers for Environmental Prediction Central Operations
NCOMP	Nighttime Cloud Optical and Microphysical Properties
NCR	Non-Costable Risk
NCSL	National Conference of Standards Laboratories
NCWCP	National Centers for Weather and Climate Prediction
NDA	Non-Disclosure Agreement
NDE	National Oceanic and Atmospheric Administration Data Exploitation
NDI	Non-Developmental Item
NDVI	Normalized Difference Vegetation Index
NEA	Non-Explosive Actuator
NEB	Non-Essential Bus
NEdN	Noise Equivalent Differential Radiance
NEdT	Noise Equivalent Differential Temperature
NEF	National Essential Function
NEMS	National Aeronautics and Space Administration Equipment Management System
NEN	Near Earth Network
NENSS	Near Earth Network Scheduling System
NEPA	National Environmental Policy Act
NESC	National Aeronautics and Space Administration Engineering and Safety Center
NESCC	National Oceanic and Atmospheric Administration Environmental Security Computing Center
NESDIS	National Environmental Satellite, Data and Information Service
NESS	National Environment and Satellite Services

Acronym/Abbreviation	Definition
NET	Not Earlier Than
netCDF	Network Common Data Format
NEXRAD	Next Generation Weather Radar
NFG	Unclassified but Sensitive (Non-classified) Interface Protocol Router Network Federated Gateway
NGA	National Geospatial Intelligence Agency
NGAS	Northrop Grumman Aerospace Systems
NGES	Northrop Grumman Electronic Systems
NGIS	Northrop Grumman Innovation Systems
NHC	National Hurricane Center
NHF	Net Heat Flux
NIC	National / Naval Ice Center
NIC	Networks Integration Center
NIC	Network Interface Card
NICSE	Suomi-National Polar-orbiting Partnership Instrument Calibration Support Element
NICST	Suomi-National Polar-orbiting Partnership Instrument Characterization Support Team
NIDS	Network Intrusion Detection System
NIM	Network Integration Manager
NIMO	Networks Integration Management Office
NIPRNet | NIPRNET	Non-Secure Internet Protocol Router Network
NIR	Near-Infrared
NISN	National Aeronautics and Space Administration Integrated Services Network
NIST	National Institute of Standards and Technology
NL	Need Line
NLA	National Aeronautics and Space Administration – Kennedy Space Center Launch Services
NLS	National Aeronautics and Space Administration Launch Services

Acronym/Abbreviation	Definition
NLT	Not Later Than
NMFC	National Maritime Forecast Center
NMMR	National Oceanic and Atmospheric Administration Metadata Manager Repository
NNL	Non-Nominal
NOAA	National Oceanic and Atmospheric Administration
NOAA-n	National Oceanic and Atmospheric Administration – (Mission "n")
NOC	Network Operations Center
NOM	Network Operations Manager
NORAD	North American Aerospace Defense Command
NOS	National Ocean Service
NOSC	National Oceanic and Atmospheric Administration Observing Systems Council
NOSP	Networks Operations Support Plan
NP	Nadir Profiler
NPD	National Aeronautics and Space Administration Policy Directive
NPE	Non-Person Entity
NPOESS	National Polar-orbiting Operational Environmental Satellite System
NPP	National Polar-orbiting Partnership
NPP	National Polar-orbiting Operational Environmental Satellite System (NPOESS) Preparatory Project
NPR	National Aeronautics and Space Administration Procedural Requirement
NPS	Noise Power Stability
NRA	National Aeronautics and Space Administration Research Announcement
NRC	National Research Council
NRD	Network Requirements Document
NRE	Non-Recurring Engineering

Acronym/Abbreviation	Definition
NRL	Naval Research Laboratory
NRR	Networks Requirements Review
NRT	Near Real-Time
NRZ-L	Non-Return to Zero-Level
NRZ-M	Non-Return to Zero-Mark
NSA	National Security Agency
NSC	Norwegian Space Centre
NSD	Network Shared Disk
NSF	National Science Foundation
NSIPS	National Oceanic and Atmospheric Administration Science Investigator-led Processing System
NSOF	National Oceanic and Atmospheric Administration Satellite Operations Facility
NTE	Not to Exceed
NTIA	National Telecommunications and Information Administration
NTP	Network Time Protocol
NVM	Non-Volatile Memory
NVR	Non-Volatile Residue
NWP	Numerical Weather Prediction
NWS	National Weather Service
NWS TG | NWSTG	National Weather Service Telecommunication Gateway
NXOS	Nexus Operating System
O	
O&M	Operations and Maintenance
O&S	Operations and Sustainment
OA	Operations Agreement
OA	Orbit Analyst
OAA	Operational Algorithm Assessment
OAD	Operational Algorithm Description Document

Acronym/Abbreviation	Definition
OAHR	Operational Acceptance and Handover Review
OAIS-RM	Open Archival Information System – Reference Model
OAR	Office of Oceanic and Atmospheric Research
OAR	Operational Acceptance Review
OASPL	Overall Sound Pressure Level
OBC	On-Board Calibration
OBC	On-Board Computer
OBE	Overtaken by Events
Obj	Objective
OBP	On-Board Processor
Obs	Observatory
OC	Ocean Color
OC	Optical Carrier
OCC	Ocean Color/Chlorophyll
OCCB	Operational Configuration Control Board
OCD	Operations Concept Document
OCE	Office of the Chief Engineer
OCFO	Office of the Chief Financial Officer
OCI	Organizational Conflict of Interest
OCIO	Office of the Chief Information Officer
OCONUS	Outside the Continental United States
OCP	Operating Command Procedures
OCS	Operations Capable String
OCS	Operational Control System
OCTS	Ocean Color Temperature Scanner
OCXO	Oven Control Crystal Oscillator
OD	On Dock
OD	Operations Day
OD	Operations Director

Acronym/Abbreviation	Definition
ODA	Orbital Debris Assessment
ODAD	Official Dynamic Ancillary Data
ODAR	Orbital Debris Assessment Report
ODM	Operational Data Message
ODPS	Ocean Data Processing System
ODTK	Orbit Determination Toolkit
OEM	Orbital Ephemeris Message
OGR	Out-Gassing Rate
OHA	Operations Hazard Analysis
OHCM	Office of Human Capital Management
OHR	Operations Handover Review
OJT	On-the-Job Training
OLR	Outgoing Longwave Radiation
OLS	Operational Line Scanner
OM	Operations Manager
OMB	Office of Management and Budget
OMI	Ozone Monitoring Instrument
OMIDAPS	Ozone Monitoring Instrument Data Processing System
OMM	Operations Maintenance Manual
OMM	Optical Mechanical Module
OMPS	Ozone Mapping and Profiler Suite
OMPS-L	Ozone Mapping and Profiler Suite Limb Profiler
OMPS-N	Ozone Mapping and Profiler Suite Nadir Mapper
OMPS ISN	Ozone Mapping and Profiler Suite Instrument Support Node
OO	Object Oriented
OO	Orbit/Orbital Operations
OOA	Object Oriented Analysis
OOD	Object Oriented Design

Acronym/Abbreviation	Definition
OOOM	On-Orbit Operations Manual
OOS	Orbit Operations Software/Subsystem
OOTT	Ozone Mapping and Profiling Suite Optical Trending Test
OPC	Ocean Prediction Center
OPS	Optical Sensor
OPS	Ozone Profiler/Monitor Suite
Ops | OPS	Operations
OPSCON | Ops Con | OpsCon	Operations Concept
OPSTT	Operational Product Status Tracking Tool
OPT	Optical
Opto-Mech	Optical-Mechanical
OQPSK	Offset Quadrature Phase Shift Key
ORB	Operations Review Board
ORE	Operational Readiness Exercise
ORF	Operations, Research, and Facilities
ORR	Operational Readiness Review
ORSAT	Object Re-Entry Survivability Analysis Tool
ORT	Operational Readiness Test
OS	Operating System
OSA	Optional Support Activities
OSAAP	Office of Systems Architecture and Advanced Planning
OSD	Office of Space Development
OSD	Office of Systems Development
OSE	Operational/Operations Support Equipment
OSGI	Open Services Gateway Initiative
OSGS	Office of Satellite Ground Services
OSHA	Occupational Safety and Health Administration
OSIRIS	Optical Spectrograph and Infrared Imaging System

Acronym/Abbreviation	Definition
OSMA	Office of Safety and Mission Assurance
OSO	Office of Space Operations
OSOL	Observed Solar Irradiance
OSPA	Office of Satellite and Product Assurance
OSPO	Office of Satellite and Product Operations
OSPO	Office of Security and Privacy Oversight
OSR	Operational Status Review
OSSMA	Office of Systems Safety and Mission Assurance
OST	Office of Science and Technology
OSTP	Office of Science and Technology Policy
OT	Overtime
OTB	Over Target Baseline
OTH	On The Hook
OTP	Operations Training Plan
OTR	Operations Transition Review
OTS	Over Target Schedule
OTT	Over Temperature Test
OV	Operational View
OV	Over Voltage
OX	Original Transmission
OX1	Original Transmission 1
OX2	Original Transmission 2
P	
P&S	Pack and Ship
P&S	Planning and Scheduling
P/F	Pass/Fail
P/L | PL	Payload
PA	Product Assurance
PA&E	Program Analysis and Evaluation

Acronym/Abbreviation	Definition
PAC	Percent Area Coverage
PAC	Procurement, Acquisition, and Construction
PACI	Payload Attitude and Control Board
PAF	Payload Attachment Fitting
PAL	Product Area Lead
PAPS	Programmable Azimuth Plane Scan
PB	Playback
PB	Playback Pointer
PBRA	Portfolio Based Risk Assessment
PB-TLM	Playback Telemetry
PBX	Private Branch Exchange
PC	Personal Computer
PCA	Physical Configuration Audit
PCA	Program Commitment Agreement
PCB	Parts Control Board
PCB	Process Control Board
PCB	Program Control Board
PCC	Power Control Console
PCDU	Power Control and Distribution Unit
PCE	Processing and Control Electronics
PCL	Parts Catalog List
PCM	Power Converter Board
PCR	Problem Change Request/Report
PCR	Program Concept Review
PCRB	Problem/Change Request Board
PCS	Probability of Command Shutdown
PCT	Processing Coefficient Table
PCT	Probability of Correct Typing
PD	Position Description

Acronym/Abbreviation	Definition
PD	Product Distribution
PDA	Product Distribution and Access
PDAD	Primary Dynamic Ancillary Data
PDE	Propulsion Drive Electronics
PDF	Portable Document Format
PDOOM	Post Delivery and On Orbit Maintenance
PDR	Preliminary Design Review
PDR	Performance Data Repository Subsystem
PDRR	Program Definition and Risk Reduction
PDS	Post-Delivery Support
PDU	Protocol Data Unit
PE	Packet End
PE	Physical Environmental Protection
PE	Program/Project Engineer
PEATE	Product Evaluation and Analysis Tool Element
PEB	Performance Evaluation Board
PEC	Precision External Clock
PEICP	Program Export Import Control Plan
PEO	Program Executive Office
PEP	Performance Evaluation Plan
PER	Pre-Environmental Review
PF	Proto-Flight
PFB	Program Failure Reporting, Analysis, and Corrective Action Board
PFF	Polar Free Flyer
PFM	Proto-Flight Model
PFO	Polar Follow-On
PFS	Product Functional Specification
PG	Procedures and Guidelines
PG	Product Generation

Acronym/Abbreviation	Definition
PGAA	Performance and Guidance Accuracy Analysis
PGE	Product Generation Executable
PGM	Pragmatic General Multicast
PHA	Preliminary/Process Hazard Analysis
PHY	Physical Layer Chip
PID	Program Implementation Document
PID	Project Information Document
PIE	Payload Interface Electronics
PIP	Program Implementation Plan
PIR	Program Implementation Review
PITF	Payload Integration and Test Facility
PKI	Public Key Infrastructure
PL	Planning
PL	Pre-Launch
PLAR	Post-Launch Assessment Review
PLB	Playback
PLF	Payload Fairing
PLO	Phase Lock Oscillator
PLR	Peer Level Review
PLR	Pre-Launch and Launch Readiness
PLT	Post-Launch Test
PLTMP	Post-Launch Test Management Plan
PM	Post Meridian
PM	Preventative Maintenance
PM	Program/Project Manager/Management
PM&P	Parts, Materials, and Processes
PMA	Preliminary Mission Analysis
PMB	Performance Measurement Baseline
PMC	Program Management Council

Acronym/Abbreviation	Definition
PMCD	Part/Material Control Document
PMEF	Primary Mission Essential Function
PMO	Program Management Office
PMOP	Common Ground System Performance Management Operations Plan
PMP	Program Management Plan
PMPCB	Parts, Materials, and Processes Review Board
PMR	Program/Project Management Review
pMSR	Pre-Monthly Status Review
PMT	Platform Message Terminal
PMT	Portable Mission Terminal
PMT	Program Management Team
PMT	Product Management Tool
PNG	Portable Network Graphic
PO	Program Office
POA&M | POAM	Plan of Actions and Milestones
POC	Point of Contact
POES	Polar-orbiting Operational Environmental Satellite
PoP	Point of Presence
POP	Program Operating Plan
POPS	Parallel Operations
PoR	Point of Reference
POR	Pacific Operational Region
POR	Program of Record
POS	Performance Operations Specification
POSIX	Portable Operating System Interface for Computer Environments
PP	Pass Plan
PP	Pre-Processor
PP	Pressure Profile

Acronym/Abbreviation	Definition
PPBE	Planning, Programming, Budgeting, and Execution
PPC	Perform Parallax Correction
PPC	Pre-Priced Change
PPF	Payload Processing Facility
PPODS	Poly Pico Satellite Orbital Deployer
PPP	Program Protection Plan
PPS	Pass Plan Schedule
PPS	Pre-Processor Subsystem
PPS	Pulses per Second
PQ	Proto-Qualification
PR	Procurement Request
PR	Production Report
PR	Production Request
PRA	Price Reasonableness Analysis
PRA	Probabilistic Risk Assessment/Analysis
PRD	Performance Requirements Document
PRD	Preliminary Requirements Document
Pri	Primary
PRO	Processing Subsystem
PROC	Pre-validated Command File
PROC | Proc	Procedure
Prog	Program
PROM	Programmable Read-Only Memory
PROP	Propulsion
PRT	Platinum Resistance Thermometer
PS	Packet Start
PS	Personal Security
PS	Power Supply
Ps	Probability of Success

Acronym/Abbreviation	Definition
PSD	Power Spectral Density
PSE	Program Systems Engineering/Engineer
PSG	Project Science Group
PSLA	Project Service Level Agreement
PSMP	Product Support Management Plan
PSNOC	Primary Space Network Operations Center
PSOE	Project Science Office Element
PSR	Pre-Shipment Review
PSRR	Pre-Shipment Readiness Review
PST	Payload Support Tool
PST	Project Science Team
PT	Plain Text
PTCLTU	Plain Text Command Link Transmission Unit
PTF	Post-Launch Test Form
PTIM	Proposal Preparation and Technical Interchange Meeting Support
PTIU	Plain Text Interface Unit
PTM	Processed Telemetry Mnemonic
PTP	Programmable Telemetry Processor
PTR	Post Test Review
PTR	Post-Launch Test Report
PUMA	Power Utilization and Management Assembly
PVD	Package Version Description
PVMP	Patch and Vulnerability Management Plan
PVP	Performance Verification Plan
PVR	Performance Verification Report
PW	Precipitable Water
PWB	Printed Wiring Board
PWM	Pulse Width Modulation
PWR	Power

Acronym/Abbreviation	Definition
Q	
Q	Quarter
QA	Quality Assurance
QAP	Quality Assurance Plan
QBD	Quantifiable Backup Data
QBS	Quality Business System
QC	Quality Control
QE	Quality Engineer
QED	Quarterly Executive Dialog
QF	Quality Flag
QoS	Quality of Service
QPMR	Quarterly Program Management Review
QPSK	Quadrature Phase Shift Key
QST	Qualification Site Test
QST	Quarterly Surface Type
QT	Qualification Test
QTP	Quality Test Procedure
QTR	Quarter
QTRR	Qualification Test Readiness Review
QTY	Quantity
QUAL	Qualification
QuikSCAT	Quick Scatterometer
QVD	Quasi-Volume Diffuser
R	
R&D	Research and Development
R&O	Risk and Opportunity
R&V	Requirements and Verification
R/T	Real-Time
R4R	Run for Record

Acronym/Abbreviation	Definition
RA	Resource Analyst
RA	Risk Assessment
RAC	Requirement Analysis Cycle
RAD	Requirements Allocation Document
RAF	Return All Frames
RAID	Redundant Array of Inexpensive Disks
RAM	Random Access Memory
RAM	Reliability, Availability and Maintainability
RAM	Responsibility Assignment Matrix
RAMMB	Regional and Mesoscale Meteorology Branch
RAPS	Rotating Azimuth Plane Scan
RAT	Risk Assessment Team
RATS	Request for Action and Tracking System
Raytheon IIS	Raytheon Intelligence and Information Systems
Raytheon SAS	Raytheon Space and Airborne Systems
RB	Risk Board
RBA	Risk Based Assessment
RBD	Reliability Block Diagram
RBI	Radiation Budget Instrument
RCF	Return Channel Frames
RCR	Release Content Review
RCS	Receptor Contact Schedule
RCT	Radiant Cooler Target
RCVR	Receiver
RD	Requirements Document
RDA	Rotational Drive Assembly
RDBMS	Relational Data Base Management System
RDE	Rotational Drive Electronics
RDM	Radiation Design Margin

Acronym/Abbreviation	Definition
RDNT	Redundant
RDP	Remote Desktop Protocol
RDR	Raw Data Record
RDT&E | RDTE	Research, Development, Test and Evaluation
RE	Radiated Emission
RE	Responsible Engineer
REA	Request for Equitable Adjustment
REC/Rec	Record
REM	Reaction Engine Module
REV	Revision
RF	Radio Frequency
RFA	Request for Action
RFE	Receiver Front End
RFG	Receiver Forwarder Group
RFI	Radio Frequency Interference
RFI	Request for Information
RFO	Request for Offer
RFP	Request for Proposal
RFR	Run for Record
RFTC	Radio Frequency Test Console
RFU	Ready For Use
RGA	Residual Gas Analyzer
RHCP	Right-Hand Circular Polarization
RHEL	Red Hat Enterprise Linux
RHP	Risk Handling Plan
RIB	Redundancy Interface Board
RIP	Retained Intermediate Product
RIS	Remote Interface Simulator

Acronym/Abbreviation	Definition
RLAT	Radiation Lot Acceptance Test
RM	Review Manager
RM	Risk Management
RMA	Reliability, Maintainability, and Availability
RMAPP	Reliability, Maintainability, and Availability Program Plan
RMB	Risk Management Board
RMM	Risk Mitigation Maneuver
RMP	Risk Management Plan/Process
RMT	Requirements Management Tool
RMT	Resource Management Tool
RN	Receipt Node
ROE	Rules of Engagement
ROI	Return On Investment
ROIC	Read Out Integrated Circuit
ROM	Read Only Memory
ROMB	Risk and Opportunity Management Board
ROMP	Risk and Opportunity Management Plan
ROOD	Recorded On-Orbit Data
ROP	Recommended Operating Procedure
RP	Random Playback
RPDU	Remote Power Distribution Unit
RPN	Risk Priority Number
RPS	Receiver Power Supply
RR	Readiness Review
RR	Residual Risk
RRA	Request for Review Assessment
RRP	Revised Recovery Plan
RRR	Risk Reduction Review
RRS	Restraint Release System

Acronym/Abbreviation	Definition
RS	Radiated Susceptibility
RS	Reed-Solomon
RSB	Reflective Solar Band
RSB AutoCal	Reflective Solar Band Automated Calibration
RSC	Research, Development, Test and Evaluation Support Complex
RSDO	Rapid Spacecraft Development Office
RSR	Relative Spectral Response
RT	Real-Time
RT	Remote Terminal
RTA	Rotating Telescope Assembly
RTADS	Real-Time Attitude Determination System
RTC	Rational Team Concert
RTCS	Relative Time Command Sequence
RTM	Raw Telemetry Mnemonic
RTM	Requirements Traceability Matrix
RTM	Reduced Thermal Model
RTN	Raytheon
RTS	Relative Time Sequence
RT-STPS	Real-Time Satellite Telemetry Processing System
RT-TLM	Real-Time Telemetry
RTVM	Requirements Traceability Verification Matrix
RV	Random Vibration
RVB	Requirement Validation Board
RVCM	Requirement Verification Compliance Matrix
RVCR	Requirement Verification Compliance Report
RVM	Requirements Verification Matrix
RVP	Requirements Verification Plan
RVS	Response Versus Scan Angle
RW	Reaction Wheel

Acronym/Abbreviation	Definition
RWA	Reaction Wheel Assembly
RWG	Recommended Operating Procedure Working Group
RWG	Requirements Working Group
Rx	Receiver Transmitter
Rx | RXMT	Retransmit/Retransmission
S	
S&C	Status and Control
S&MA	Safety and Mission Assurance
S&R	Ship and Release
S/C	Spacecraft
S/C-A	Spacecraft Analyst
S/GCN	Space/Ground Communications Node
S/MWIR	Short/Medium Wavelength Infrared
S/S	Subsystem
S/SSR	System/Subsystem Specification Review
S/W	Software
S2S	Shoulder-to-Shoulder
S4	Site System Support Staff
SA	Single Access
SA	Situational Awareness
SA	Solar Array
SA	Static Analysis
SA	System and Services Acquisition
SAA	South Atlantic Anomaly
SAB	Satellite Analysis Branch
SACO	System Architecture and Concept of Operations
SAD	Software Algorithm Development
SAD	Substitute Ancillary Data
SADA	Solar Array Drive Assembly

Acronym/Abbreviation	Definition
SADIE	Systems Command Architecture Development and Integration Environment
SAGE	Stratospheric Aerosol and Gas Experiment
SAIC	Science Applications International Corporation
SAM	Systems Assurance Manager
SAMP	Software Acquisition Management Plan
SAN	Storage Area Network
SAP	Security Assessment Plan
SAR	Search and Rescue
SAR	Satellite Acceptance Review
SAR	Software Architecture Review
SARB	Science Algorithm Review Board
SARP	Search and Rescue Processor
SARR	Search and Rescue Repeater
SARSAT	Search and Rescue Satellite Aided Tracking
SAS	Situational Awareness System
SAS	Solar Array Simulator
SAS	Space and Airborne Systems
Sat	Satellite
SAT	Science Advisory Team
SAT	System/Segment/Software/Site Acceptance Test
SATCOM	Satellite Communications
SATCON	Satellite Controller
SAW	Solar Array Wing
SAW	Standing Acoustics Wave Filter
SAWG	Schedule Assessment Working Group
SBC	Single Board Computer
SBS	Space Background Simulator
SBSP	Small Business Subcontracting Plan
SBSS	Space-Based Space Surveillance

Acronym/Abbreviation	Definition
SBU	Sensitive But Unclassified
SBUV	Solar Backscatter Ultraviolet Sounding Spectral Radiometer
SC	Snow Cover
SC	Software Component
SC	Spacecraft
SC	Spacecraft Controller
SC	System and Communications Protection
SCA	Security Controls Assessment
SCA	Spacecraft Analysis
SCAMA	Station Conferencing and Monitoring Arrangement
SCAMPI	Standard Capability Maturity Model Integrated Appraisal Method for Process Improvement
SCaN	Space/Satellite Communications and Navigation
SCAR	Supplier Corrective Action Request
SCB	Schedule Control Board
SCC	Software Control Category
SCC	Spacecraft Control Computer
SCCB	Segment Configuration Control Board
SCCD	SmartCloud Control Desk
SC/D	Snow Cover/Depth
SCE	Scan Control Electronics
SCG	Security Configuration Guide
SCG	Spacecraft Chassis Ground
Sched Event	Schedule Event
Sched Pri	Schedule Priority
Sched Req	Schedule Request
Sci	Science
Sci2Ops	Science-to-Operations
SCID	Spacecraft Identification

Acronym/Abbreviation	Definition
SCIF	Spacecraft Interface
SCL	Satellite Command Load
SCM	Software Configuration Management
SCNS	Spacecraft Communications and Networks Services
SCO	Sensor Constellation Operations
SCoRe	Signature Controlled Request
SCP	Spacecraft Control Processor
SCR	Safety Critical Requirement
SCS	Stored Command Sequence/Script
SCS	Station Contact Schedule
SCS	Satellite Command Sequence
SCSB	Satellite Climate Studies Branch
SCSIM-EDU	Spacecraft Simulator – Engineering Development Unit
SCSIM-OPS	Spacecraft Simulator – Operations
SCT	Sensor Calibration Table
SCT	Silver Coated Teflon
SCT	Space Calibration Target
SCT	Stored Command Table
SCTGEN	Spacecraft Telemetry Generator
SD	Solar Diffuser
SD3E	Science Data Segment Data Distribution and Depository Element
SDAD	Substitute Dynamic Ancillary Data
SDAD	Software Design Architecture Document
SDD	Software Design Document/Description
SDE	Scan Drive Electronics
SDE	Selective Data Encryption
SEGR	Single Event Gate Rupture
SDF	Software Development Folder

Acronym/Abbreviation	Definition
SDL	Satellite Data Load
SDL	Software Development Library
SDLC	System Development Life Cycle
SDM	Scan Drive Mechanism
SDO	Solar Dynamics Observatory
SDP	Service Delivery Point
SDP	Software Development Plan
SDR	Sensor Data Record
SDR	System Definition/Design Review
SDRD	Subcontract Data Requirements Description
SDRL	Subcontract Data Requirements List
SDS	Science Data Segment
SDSM	Solar Diffuser Stability Monitor
SDU	Space Link Extension Data Unit
SE	Systems Engineer/Engineering
SE&I	Systems Engineering and Integration
SeaBASS	Sea-Viewing Wide Field-of-View Sensor Bio-Optical Archive and Storage System
SeaWiFS	Sea-Viewing Wide Field-of-View Sensor
SEB	Source Evaluation Board
SEC	Space Environment Center
SECO	Second Stage Engine Cut-Off
SEDR	Single Event Dielectric Rupture
SEE	Software Engineering Environment
SEER	System Evaluation and Estimation of Resources
Seg	Segment
SEI	Software Engineering Institute
SEIT | SEI&T	Systems Engineering Integration and Test
SEL	Single Event Latch-Up
SEM	Software Estimation Model

Acronym/Abbreviation	Definition
SEM	Space Environment Monitor
SEMP	System Engineering Management Plan
SEPG	Software Engineering Process Group
SER	Science, Engineering, and Research
SER	System Engineering Report
SES	Space Environmental Suite
SES	Spacecraft Electrical Simulator
SET	Systems Engineering Team
SEU	Single Event Upset
SEWG	System Engineering Working Group
SEWP	Solutions for Enterprise-Wide Procurement
SFA	System Fault Analysis
SFC	Surface
SFCG	Space Frequency Coordination Group
SFR	System Functional Review
SFS	Shared File System
SFS	Super Flange Saver
SFTP | S-FTP	Secure File Transfer Protocol
S-G | S/G	Space/Satellite to Ground
SG	Svalbard Ground
SG1	Kongsberg Satellite Services Tromsø Space-Ground Antenna #1
SG3	Kongsberg Satellite Services Tromsø Space-Ground Antenna #3
SG4	Kongsberg Satellite Services Tromsø Space-Ground Antenna #4
SGCN | S/G CN	Space-Ground Communications Node
SGE	Stored Mission Data Ground Equipment
SGI	Space-to-Ground Interface
SGL	Space-Ground Link

Acronym/Abbreviation	Definition
SGLI	Second Generation Global Imager
SGLT	Space-Ground Link Terminal
SGMMC	Stop-Gap Mission Management Center
SGN	Space-Ground Communications Node
SGSS	Space Network Ground Segment Sustainment
SI	International System of Units
SI	Site/System Integration
SI	Software Item
SI	System and Information Integrity
SI&T	System Integration and Test
SI&TWG	System Integration and Test Working Group
SIA	Sea Ice Age
SIA	Security Impact Assessment
SIC	Sea Ice Characterization
SIFT	Similar Item Functional Test
SIM	Simulator/Simulation
SIM	Spectral Irradiance Monitor
SIMMS	Scalable Integrated Multi-Mission Suite
SIRM	Svalbard Initial Mission Recovery
SING	Schedule Integration and Negotiation Group
SIP	Security Integration/Implementation Plan
SIP	Ship In Place
SIPS	Science Investigator-led Processing System
SIQT	Software Item Qualification Test
SIR	System Integration Review
SIRD	System Interface Requirements Document
SIRR	System Integration Readiness Review
SISF	Space Integrated Support Facility
SITA	Satellite Integration and Test

Acronym/Abbreviation	Definition
SITWG	System Integration and Test Working Group
SLA	Service Level Agreement
SLATE	System Level Automation Tool for Engineers
SLC	Space Launch Complex
SLE	Space Link Extension
SLOC	Source Lines of Code
SLPP	Satellite Level Planning and Preparation
SLSCF	System Level Safety Critical Function
SM	Service Management
SM	Soil Moisture
SM	Suspended Matter
SMA	Safety and Mission Assurance
SMAP	Safety and Mission Assurance Plan
SMARD	Subcontractor Mission Assurance Requirements Document
SMATA	Safety and Mission Assurance Technical Authority
SMC	Air Force Space and Missile Systems Center
SMCA	Survival Mode Configuration Assembly
SMD	Spacecraft Mission Director
SMD	Stored Mission Data
SMDH	Stored Mission Data Handling
SME	Subject Matter Expert
SMP	Software Maintenance Plan
SMP	Subcontract Management Plan
SMSR	Safety and Mission Success Review
SMT	Special Mission Task
SMT	Subcontract Management Team
SMU	System Maintenance and Upgrade
SN	Serial Number
SN	Space Network

Acronym/Abbreviation	Definition
SNAS	Space Network Access System
SNMP	Simple Network Management Protocol
SNOC	Space Network Operations Center
SNPP | S-NPP	Suomi National Polar-orbiting Partnership
SNR	Signal-to-Noise Ratio
SNUG	Space Network Users Guide
SN WSC	Space Network White Sands Complex
SO	Satellite/Space Operations
SO	Support Order
SO	System Owner
SOaP	Sensor Operations and Payload Support
SOCC	Satellite Operations Control Center
SODM	Satellite Operations Description Manual
SOE	Satellite Operations Exercises
SOE	Schedule of Events
SOF	Satellite Operations Facility
SOH	State-of-Health
SOHO	Solar and Heliospheric Observatory
SOP	Standard Operating Procedure
SORCE	Solar Radiation and Climate Experiment
SOS	State-of-Service
SOT&C | SOTC	Satellite Operations Telemetry and Command
SOW	Statement of Work
SP	Sequential Playback
SP	Service Package
SP	Signal Processor
SP	Special Publication
SPA	Signal Processing Assembly
SPA	Single Point Adjustment

Acronym/Abbreviation	Definition
SPAM	SpaceWire and Memory Board
SPB	Science Policy Branch
SPC	Storm Prediction Center
SPCR	Software Problem Change Report
SpE	Specialty Engineering
Spec	Specification
SPF	Single Point Failure
SPG	Single Point Ground
SPI	Schedule Performance Index
SPIWG	Satellite Products and Services Review Board Process Improvement Working Group
SPL	Software Process Lead
SPL	Sound Pressure Level
SPM	Sun Point Mode
SPRM	Software Policy and Requirements Manual
SPS	Spectrum Planning Subcommittee
SPSD	Satellite Products and Services Division
SPSR	Satellite Pre-Shipment Review
SPSR	Solar Presence Sensor
SPSRB	Satellite Products and Services Review Board
SPT	System Performance Test
SpW	SpaceWire
SQA	Software Quality Assurance
SQAS	Sensor Data Record Quality Assurance System
SQL	Structured Query Language
SQPN	Staggered Quadriphase Pseudorandom Noise
SQPSK	Staggered Quadrature Phase-Shift Keying
SR	Surface Reflectance
SRB	Standing Review Board
SRCC	Safety Requirements Compliance Checklist

Acronym/Abbreviation	Definition
SRD	Satellite/System Requirements Document
SRI	System Risk Indicator
SRM	Solid Rocket Motor
SRO	Systems Review Office
SRR	System/Satellite/Segment/Software Requirements Review
SRR	System Readiness Review
SRS	Shock Response Spectrum
SRS	System/Satellite/Segment/Software Requirements Specification
Srvc	Service
SS	Space Segment
SSA	S-Band Single Access
SSAF	Software Safety Analysis Folder
SS-BPSK	Spread Spectrum Binary Shift Keying
SSC	Service Specification Code
SSD	Solid State Drive
SSD	Space Systems Division
SSE	Senior Systems Engineer
SSE	Software/System Safety Engineer
SSEC	Space Science and Engineering Center
SSH	Secure Shell
SSI	Solar Spectral Irradiance
SSIS	Substitute Science Instrument Simulator
SSL	Secure Socket Layer
SSM	Scene Selection Module
SSMAP	System Safety and Mission Assurance Plan
SSM/I	Special Sensor Microwave Imager
SSMIS	Special Sensor Microwave Imager Sounder
SSM/T	Special Sensor Microwave Thermal Sounder

Acronym/Abbreviation	Definition
SSN	Spacecraft Support Node
SSOH	Stored State of Health
SSP	System Security Plan
SSPM	Software Standards and Practices Manual
SSPP	System Safety Program Plan
SSR	Software Specification Review
SSR	Solid-State Recorder
SSRB	System Safety Review Board
SSS	Security Support Specification
SSSS	Site System Support Staff
SST	Sea Surface Temperature
ST	Star Tracker
ST	Surface Type
STA	Stored Telemetry Analysis
STA-ATOM	Stored Telemetry Analysis – Analysis Tool for Orchestrated Measurement/Measuring
STAR	Center for Satellite Applications and Research
STARS	Space-Based Telemetry and Range Safety
STC	Software Test Case
STD	Software Test Description
STD	Standard
STD	Status Translation Definitions
StdV	Standards View
STE	Special Test Equipment
STEREO	Solar Terrestrial Relations Observatory
STGT	Second Tracking Data Relay Satellite System Ground Terminal
STK	Satellite Tool Kit
S-TLM	Stored Telemetry
Stn Sum Rpt	Station Summary Report

Acronym/Abbreviation	Definition
STOC	Spacecraft Test and Operations Console
STOL	Spacecraft Test and Operations Language
STOP	Structural, Thermal, and Optical Performance
STP	Software Test Plan
STPR	Software Test Procedures
STR	Special Test Request
STS	Space Transportation System
SU	Software Unit
SUM	Software Users Manual
SUROM	Start-Up Read-Only Memory
SUST	Sustainment
SUWG	String Utilization Working Group
SV	Space Vehicle
SV	System View
SVAL	Svalbard
SVALSAT | SvalSat Stn	Svalbard Satellite Station
SvcV	Service View
SVN	Subversion
SVP	System Verification Plan
SVR	Supplemental Verification Report
SVS	Space View Source
SW | S/W	Software
SW	Switch
SW/MIR	Short Wavelength / Medium Wavelength Infrared
SWCI	Software Configuration Item
SWCM	Software Configuration Management
SWE	Snow-Water Equivalent
SWE	Software Engineering
SWEM	Sensor Without Electronics Module

Acronym/Abbreviation	Definition
SWEN	Software Engineering Notebook
SWIC	Software Integration and Checkout
SWICS	Short Wavelength In-Flight Calibration Source
SWIL	Software In-The-Loop
SWIR	Short Wavelength Infrared
SWIT	Software Integration and Test
SWPC	Space Weather Prediction Center
SWRI	Software Risk Index
SWRR	Software Requirements Review
SWSI	Space Network Web System Interface
SWTB	Software Test Bed
Sys	System
SyS	System Status
SysML	Systems Markup Language
T	
T&C	Telemetry and Command
T&E	Test and Evaluation
T/V	Thermal Vacuum
T2O	Transition to Operations
T3	Telemetry Test Tool
TA	Technical Authority
TAD	Telemetry Allocation Document
TAM	Three-Axis Magnetometer
TARA	Two-Axis Rate Assembly
TARS	Test Analysis Reporting System
TAYF	Test-As-You-Fly
TB	Terebyte
TBA/TBAn	To Be Announced
TBA/TBAp	To Be Approved

Acronym/Abbreviation	Definition
TBal	Thermal Balance
TBC/TBConf	To Be Confirmed
TBC/TBCont	To Be Continued
TBD	To Be Determined
TBR/TBRes	To Be Resolved
TBR/TBRevis	To Be Revised
TBR/TBRvw	To Be Reviewed
TBS/TBSpec	To Be Specified
TBS/TBSup	To Be Supplied
TBX	To Be (undetermined action)
TC	Telecommand
TC	Test Case
TC	Total Column
TCP	Transmission Control Protocol
TCP/IP	Transmission Control Protocol over Internet Protocol
TCS	Thermal Control System
TD	Test Director
TDR	Temperature Data Record
TDRS	Tracking and Data Relay Satellite
TDRSS	Tracking and Data Relay Satellite System
TDTWG	Test Data Tools Working Group
TE	Test Engineer
TEB	Thermal Emissive Bands
TEC	Thermal Electric Cooler
TED	Testable Environment Document
TEK	Traffic Encryption Key
TEM	Tivoli Endpoint Manager
TEM	Technical Exchange Meeting
TG	Telecommunications Gateway

Acronym/Abbreviation	Definition
TGE	Telemetry Ground Equipment
THERM	Thermal
THSA	Transition, Handover, and System Acceptance
TIB	Temperature Interface Board
TIC	Trusted Internet Connection
TICAP	Trusted Internet Connection Access Provider
TID	Total Ionization Dose
TIM	Technical Interchange Meeting
TIM	Total Irradiance Monitor
TIRD	Technology Interface Requirements Document
TIWV	Total Integrated Water Vapor
TKSC	Tsukuba
TLE	Two-Line Element
TLE Set	Two-Line Element Set
TLH	Top Level Hazard
TLM	Telemetry
TLM Rpt	Telemetry Report
TLM-A/TLM-Analyst	Telemetry Analyst
TLMA/TLM Analysis	Telemetry Analysis
TLMA Rpt	Telemetry Analysis Report
TM	Test Manager
TM	Torque Margin
TMA	Three Mirror Astigmatism
TMON	Telemetry Monitor/Monitoring
TMT	Timeline Management Tool
TNC	Telemetry and Command Subsystem
TNOC	Tromsø Network Operations Centre
TO	Task Order
TOA	Top of Atmosphere

Acronym/Abbreviation	Definition
TOC	Telecommunications Operations Center
TOD	Total Optical Depth
TOD	Time of Day
TOITL	Two-Orbit in the Life
TOMS	Total Ozone Mapping Spectrometer
TOOT	Target of Opportunity Time
TOPS	Transitional Operations
TOR	Terms of Reference
ToR	Top of Rack
Tot IPPD Time	Total Integrated Product and Process Development Time
TP	Test Procedure/Plan
TPI	Technical Performance Incentive
TPM	Technical Performance Measurement
TPP	Technical Performance Parameter/Plan
TPR	Technical Performance Report
TPWG	Test Planning Working Group
TQCM	Thermal Quartz Crystal Microbalance
TR	Test/Tracking Report
TRANS	Translator
TRD	Technical Requirements Document
TRK	Tracking
TRL	Technology Readiness Level
TRMM	Tropical Rainfall Measuring Mission
TRN	Test Receipt Node
TrollSat Stn/Trollsat Stn	Troll Satellite Station
TROPOMI	Tropospheric Monitoring Instrument
TRR	Test Readiness Review
TSG	Transition Steering Group
TSI	Total Solar Irradiance

Acronym/Abbreviation	Definition
TSIS	Total Solar Irradiance Sensor
TT&C	Telemetry, Tracking and Command
TTA	Technology Transfer Agreement
TTD	Telemetry Translation Definition
TTL	Transistor-to-Transistor Logic
TTO	Transition To Operations
TTR	Table Top Review
TTT	Telemetry Test Tool
TUT	Tracking and Data Relay Satellite Unscheduled Time
TVAC | TV | T/V	Thermal-Vacuum
TWC	Total Water Content
TWG	Transition/Thread Working Group
TWTA	Traveling Wave Tube Amplifier
Tx | TX	Transmit/Transmission
U	
UAI	Use As-Is
UARC	University Affiliated Research Centers
UCA	Undefinitized Contract Action
UDP	User Datagram Protocol
UI	User Input/Interface
UID	Unique Identifier
UIID	Unique Instrument Interface Document
UKMET	United Kingdom Meteorology Office
ULA	United Launch Alliance
ULE	User Local Equipment
UML	Unified Modeling Language
UoW	Unit of Work
UPD	User Performance Data
UPN	Unique Project Number

Acronym/Abbreviation	Definition
UPS	Uninterruptable Power Supply
URL	Uniform Resource Locator
US	United States
USAF	United States Air Force
USAP	United States Antarctic Program
USCG	United States Coast Guard
USB	Universal Serial Bus
USB	Universal S-Band
USDA	United States Department of Agriculture
USE	Unique Support Equipment
USFS	United States Forest Service
USG	User Services Gateway
USGCB	United States Government Configuration Baseline
USGS	United States Geological Survey
USN	United States Navy
USNO	United States Naval Observatory
USSTRATCOM	United States Strategic Command
UTC	Coordinated Universal Time
UUT	Unit Under Test
UV	Ultra-Violet
UV	Under Voltage
V	
V	Volt
V&V	Verification and Validation
VAC	Vacuum
VAFB	Vandenberg Air Force Base
Val	Validation
VCC	Vehicle Command Count
VCDU	Virtual Channel Data Unit

Acronym/Abbreviation	Definition
VCF	Verification Change Form
VCID	Virtual Channel Identifier
VCM	Visible Infrared Imaging Radiometer Suite Cloud Mask
VCN	Voice Communications Network
VCO	Virtual Channel Zero
VCRM	Verification Cross Reference Matrix
VCS	Vertical Cell Size
VCST	Visible Infrared Imaging Radiometer Suite Calibration Support Team
VD	Verification Description
VDA	Verification Decision/Disposition Authority
VDC	Volts, Direct Current
VDD	Version Description Document
VDI	Virtual Desktop Infrastructure
VE	Verification Event
Ver	Version
VI	Vegetation Index
VIIRS	Visible Infrared Imaging Radiometer Suite
VIPR	Video Imaging and Photographic Requirements
VIS	Vibration Isolation System
VIS	Visible
VIS/NIR	Visible/Near Infrared
VLAN	Virtual Local Area Network
VLC	Verification Load Cycle
VM	Verification Method
VM	Virtual Machine
VoIP	Voice Over Internet Protocol
VPN	Virtual Private Network
VSA	Vector Signal Analyzer

Acronym/Abbreviation	Definition
VTK	Visualization Toolkit
VV&C	Verification, Validation, and Certification
W	
W	Watts
w/o	Without
WAAS	Wide Area Augmentation System
WAN	Wide Area Network
WAOB	World Agricultural Outlook Board
Warn	Warning
WB	Wideband
WBS	Work Breakdown Structure
WBU	Wallops Backup
WCDAS/WCDAStn	Wallops Command Data Acquisition Station
WDA	Weather Data Analysis
WFE	Wave Front Error
WFF	Wallops Flight Facility
WFM	Workflow Manager
WFO	Weather Forecast Office
WG	Working Group
WGS	Wallops Ground Station
WGS	World Geodetic System
WI	Work Instruction
WindSat | Windsat | WindSAT	Sea Surface Winds Satellite
WITL	Week-In-the-Life
WKS	Workstation
WKSP	Workshop
WMO	World Meteorological Organization
WMT	Workflow Management Tool
WOA	Work Order Authorization

Acronym/Abbreviation	Definition
WOTIS	Wallops Orbital Tracking Information System
WOW	Web Offline Workspace
WR	Western Range
WR	Work Request
WRRB	Work Request Review Board
WRRP	Work Request Review Panel
WRS	Work Request System
WSC	White Sands Complex
WSDL	Web Service Definition Language
WSF	Weather Satellite Follow-On
WSGT	White Sands Ground Terminal
X	
X-Band	Designated Region of Radiofrequency Spectrum
xDR	Data Record (EDR, SDR, TDR, RDR)
XIPT	Cross Integrated Product Team
XML	Extensible Markup Language
XSD	Extensible Markup Language Schema
XSLT	Extensible Markup Language Translation
XTCE	Extensible Markup Language Telemetric and Command Exchange
Y	
Y	Year
Z	
ZPD	Zero Path Difference