

NOAA Satellite, Data and Information Service (NESDIS)
1330 Polar-Orbiting Launch Policy

1. Introduction

1.1 Purpose

The purpose of this launch policy is to ensure continuity of critical polar-orbiting satellite data by prescribing a process to mitigate or identify alternate approaches to Joint Polar Satellite System implementation in the event of:

1. development issues or delays
2. launch failures
3. on-orbit anomalies or failures
4. on-orbit operations beyond expected lifetimes

1.2 Background

NESDIS recognizes the criticality of ensuring the continuity of satellite operations to provide uninterrupted coverage for weather forecasts and environmental measurements. A gap in polar-orbiting weather satellite data would result in degraded weather forecasts and warnings and a high risk to lives, property, and our Nation's critical infrastructures.

The National Plan for Civil Earth Observations dated July 18, 2014, identifies priorities for the continuity of sustained observations for public services and issues guidance to the Secretary of Commerce, through the NOAA Administrator, to achieve a constant operations for atmospheric soundings and Earth imaging observations. Additionally, the Department's Primary Mission Essential Functions require NOAA to collect and provide the Nation with critical intelligence data, imagery, and other essential information for predictive environmental and atmospheric modeling systems by operation NOAA-controlled satellites.

NOAA's Administrator and National Weather Service (NWS) Director letter dated October 2013, acknowledges that "the Joint Polar Satellite System's (JPSS) microwave and infrared sounding instruments in afternoon orbit are critical for ensuring the global satellite coverage required for accurate, extended-range daily weather forecasts."

1.3 Scope

The scope of this policy is NOAA's JPSS operational polar-orbiting environmental satellites program.

1.4 Applicability

This policy shall replace NESDIS Polar-orbiting Satellite Launch Policy dated November 16, 2011, and applies to the current JPSS program. Its provisions apply to all Offices, Centers, Divisions and groups within NESDIS

Application of this policy is subject to sufficient annual appropriations.

2. Policy

NESDIS will conduct the following activities to ensure availability of polar-orbiting satellite data:

- a) Maintain on-orbit a primary and a secondary source of microwave and infrared sounding data co-manifested with visible -infrared and UV imagery / radiometry instruments in the afternoon sun-synchronous orbit ;
- b) Develop and maintain a tertiary asset in a state of launch readiness carrying at least a microwave sounder and an infrared sounder to return to a “two failures to a gap” condition for sounding if a failure that prevents delivery of either microwave or infrared sounding observations occurs;
- c) Manifest the full complement of instruments designed to fly on the same missions as the sounders, unless precluded by an urgent need to launch a de-scoped, sounder-only mission before the other manifested instruments can be ready; and
- d) Rely on partners under international agreement with NOAA and other government agencies for sounding and imagery observations from other orbits.

3. Roles and Responsibilities

Maintaining continuity

Maintaining continuity includes active monitoring and assessment activities. Therefore:

1. The Office of Satellite and Product Operations (OSPO) will provide continuous monitoring of spacecraft and instruments, conduct trend analysis to enable rapid response to emerging issues, and preserve the life of each satellite asset as much as possible during primary and extended mission operations until conditions are met for de-orbit to comply with U.S orbital debris risk mitigation policy.
2. The JPSS Program Office, with the support of OSAAP, STAR, and OSGS, will formulate plans and implement programs to maintain continuity of critical weather data in the afternoon orbit and provide flight segment sustainment (e.g.: longevity risk mitigation and anomaly resolution) support for the life cycle of JPSS; and develop,

deliver to orbit, commission, and handover to OSPO the necessary assets, as well as applicable ground system upgrades.

Process for Planning and Execution of Mitigation and Alternate Approaches

The requirements and schedule of the JPSS program are defined in a way that meets the Policy above. However, development delays, launch failures, on-orbit degradations, and JPSS satellites operating longer than planned can each affect JPSS implementation steps to meet this policy. The following section outlines the Assessment Process NESDIS will undertake to maintain continuity of appropriate data and provide the most efficient use of existing assets. NESDIS will undertake this process at the following times:

- upon notification by JPSS of a launch delay due to development issues
- upon notification by OSPO of a current degradation or failure in JPSS satellite performance impacting any polar-orbiting Key Performance Parameter, or
- in the case of on-orbit JPSS satellites lasting longer than planned, at a milestone for the next JPSS satellite early enough to affect its launch date.

I. The Office of Systems Architecture and Advanced Planning (OSAAP) will:

- i. Initiate and lead an assessment, in cooperation with OSPO, JPSS, other appropriate NESDIS offices, and affected stakeholders to evaluate the necessity and urgency of the situation based on current ability to mitigate data loss or degradation using other operational observations for the NWS between the start of the issue and the next scheduled JPSS launch date.
- ii. The OSAAP Director will inform the NESDIS Assistant Administrator (AA) that an assessment has been initiated.
- iii. In particular, OSAAP, in consultation with the Center for Satellite Applications and Research (STAR), NOAA customers of NESDIS products, and applicable partners, will:
 1. determine the impact to satellite products and users as a consequence of the data loss, degradation, or delay and the ability to acquire data from other sources, or
 2. in the case of extended life, the impact of delaying the launch of the next JPSS satellite.
- iv. OSAAP's assessments should determine the qualitative loss of product output and/or the quality of data generated in the loss or degraded condition.
- v. In the case of extended life of existing on-orbit JPSS satellites, OSAAP will coordinate assessment of expected performance of on-orbit assets and other options to determine if the launch date for the next JPSS satellite

should be delayed or some other method be employed to maximize the lifetime of the system.

II. JPSS Program Office will:

- i. In the case of launch or on orbit failure:
 1. coordinate all operational satellite sensor risk assessment activities addressing the constellation risk until the next possible launch
 2. provide a programmatic flight and ground readiness status summary, in coordination with NOAA's Office of Satellite Ground Systems (OSGS) and the Center for Satellite Applications and Research (STAR), addressing JPSS' ability to restore a robust architecture that will mitigate the incident.
- ii. In the case of launch delays due to development issues:
 1. coordinate all operational satellite sensor risk assessment activities addressing the constellation risk until the next possible launch
 2. develop alternate resolution plans with projected new launch dates to restore a robust architecture.

III. OSAAP, OSPO, and JPSS Directors will receive the results of the assessment, and decide what actions to recommend to satisfy the requirements of this policy.

IV. The NESDIS AA will decide on what action to take based upon the recommendations made to him by the Directors in Step III.

V. The NESDIS AA will brief the National Weather Service (NWS) AA to obtain concurrence with his decision.

VI. The NESDIS AA and NWS AA will brief the NOAA Deputy Under Secretary (Operations), the ASEOP, and the NOAA Administrator on the decision.

VII. Upon concurrence by the Under Secretary of Commerce for Oceans and Atmosphere / NOAA Administrator, The NESDIS AA will direct the JPSS Director to proceed with the decision.

VIII. NOAA Headquarters Staff notify the Department of Commerce, the Office of Management and Budget, Congressional committee staff, and media about the plan forward.

4. Policy Review and Update: This policy is under NESDIS configuration control with the change authority vested in the NESDIS Assistant Administrator. NOAA's Office of System Architecture & Advanced Planning (OSAAP) will manage and update this Policy as needed.

Approved By:



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Assistant Administrator for
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12/20/18

Date