Satellite Products and Services Review Board (SPSRB)

Process Paper

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**1. Introduction**

NOAA's Satellite and Information Service (NESDIS) develops and distributes environmental satellite data and products for all NOAA line offices as well as for a wide range of Federal Government agencies, international users, state and local governments, and the general public. Considerable resources are required to develop new or enhanced satellite-derived data products. It is essential that an orderly review and approval process be used to manage the development of these products.

The NESDIS Satellite Products and Services Review Board (SPSRB) is responsible for the oversight and guidance necessary to effectively manage the product life cycle process from product development, transition into operations, enhancements and retirement. The SPSRB provides a powerful evaluation mechanism which enables a more efficient use of personnel, fiscal and information technology resources.

This paper describes current and proposed SPSRB processes. A few process details are still to be finalized. When this is the case a short explanation will be given on how the process update will be addressed. Details remaining to be worked are identified in *red italicized* font in the paper.

NOAA’s Strategy Execution and Evaluation (SEE) is a strategy implementation process that helps NOAA learn from its programs’ results and achieve its objectives, while simultaneously responding to ever-changing economic, governmental, societal and environmental forces.  The process emphasizes results-based budgeting and evaluation.  By using fiscal guidance and consistent performance measures across each step of the process, SEE enables improved communication between the Chief Financial Officer (CFO), Office of Program Planning and Integration (PPI), Line Offices (LOs), and Staff Offices (SOs).  This collaboration will yield a long-term perspective and aligned work throughout the Department.  It will reduce superfluous paperwork at the bureau and Department level as SEE products support the Department of Commerce (DOC) Budget Formulation Improvement Process (BFIP).  Further information on SEE can be found at <https://www.see.noaa.gov/governance.html>. This web site does require a secure NOAA log in.

The NOAA Business Operations Manual (BOM) provides NOAA employees with a comprehensive overview of the NOAA Functional Model, organizational structure, management techniques, Planning Programming, Budgeting, and Execution System (PPBES), Operational Support Services and Program Support Services. The latest NOAA BOM can be found at <https://www.see.noaa.gov/governance.html> under the training and education section. *The SPSRB helps bridge the gap between the requirements and program execution processes. Figure 1 shows how the SPSRB might fit into the overall NOAA Panel and Council proce*ss.



Figure 1: NOAA Panel and Councils

**2. SPSRB Entities:** The SPSRB process relies upon appointed individuals to execute the functions of SPSRB positions, working groups or advisory boards.

 a. ***SPSRB Executive Board***: The SPSRB Executive Board is co-chaired by the STAR and OSPO Directors. Principal voting members include the OSPO, STAR and OSD Office Directors. Interested observers include representatives from STAR, OSPO, OSD, the NESDIS Data Centers and NWS. *The SPSRB Executive Board meets quarterly to review and approve new processes and policies. The board also provides guidance on how to address outstanding SPSRB issues.*

 ***b. SPSRB:*** The SPSRB is co-chaired by OSPO Satellite Products and Services Division (SPSD) Chief and the STAR Deputy Director. Principal members include representatives from STAR, OSPO, OSD, the NESDIS Data Centers and NWS. *The membership may expand to include representatives from other NOAA line offices and/or programs.*  The SPSRB will provide a forum for OSPO, STAR and OSD management to evaluate user requirements, perform analysis of alternatives to meet user needs, monitor the progress of product development and approve new products going into operations. The SPSRB also provides satellite product development guidance and policy.

***c. SPSRB Executive Secretary:*** The SPSRB Executive Secretary is assigned for a 2-year appointment and rotates between STAR and OSPO. The secretary is responsible for conducting and recording meetings and actively executing the SPSRB processes.

***d. SPSRB Manager:*** The SPSRB Manager is a permanent OSPO employee who oversees and manages the processing of user requests and tracks their progress to completion or termination.

***e. Oversight Panels (OPs) and Product Oversight Panels (POPs):*** The NESDIS OPs and POPs provide technical oversight and guidance during the technical assessment of user requests and during development of products and services. OP/POPs are permanent with membership from STAR, OSPO, OSD and key users. Current OP/POPs are: Navigation, Calibration, Instrument Database, Services, Ocean, Ocean Color, Earth Radiation, Land Surface, Soundings, Precipitation, Images/Clouds/Aerosols, Winds, and Atmospheric Chemistry.

***f. Integrated Product Team (IPT):*** IPTs are temporary teams responsible for exploring technical alternatives to meet user requests. Once resources are identified to do product development, the IPT oversees product development and is disbanded shortly after a product goes operational. IPTs are led by a NESDIS person with membership from NESDIS product area leads, scientists and end users of the product. If a product is being proposed for archive, then the IPT will have a member from the appropriate NESDIS Data Center. The IPT membership can also include contractor personnel.

***g. SPSRB Process Improvement Working Group (SPI WG):*** The SPI WG is a group made up of representatives from OSPO, STAR and OSD, and includes the SPSRB Executive Secretary and Manager. The SPI WG develops recommendations for improving SPSRB procedures and oversees the development of the SPSRB web page.

***i. Project Lead:*** The project lead is the person within NESDIS that guides the project’s product development efforts from research to operations. The project lead is normally the IPT lead.

***j. NOAA Program Manager****:* The NOAA Program Managers define program requirements to be addressed through the Strategy Execution and Evaluation (SEE) process.

***k. NOAA Project Managers:*** The NOAA Project Managers control funding within their NOAA Line Offices. They work closely with the NOAA Program Managers to ensure acquisition efforts address approved requirements. Some project managers control funds that can be applied to satellite product development. These managers ensure funds are expended by appropriate personnel for specific project purposes.

**3. SPSRB Process**

The nominal SPSRB process is shown in Figure 2. There are ***six key SPSRB steps***:

(1) Requirements Identification

(2) Assessment

(3) Analysis of Alternatives

(4) Project Plan

(5) Operational Decision, and

(6) Product Divestiture or Retirement.

In addition, there are several ***SPSRB interface processes***. These include:

(1) Resource Identification and Product Development/Reporting,

(2) Consolidated Observational Requirements List (CORL) database, and

(3) NOAA Observing Systems Architecture (NOSA) database.

 The SPSRB focuses on the transition of satellite products from research into operations to meet a user need for satellite information.

The key SPSRB steps and interfaces are discussed in the following sections and are displayed graphically in Figure 2. The procedures for handling user requests will be described followed by discussions on handling science improvement and NOAA/NESDIS program/project development.



 **Requirement Identification**

**1. User Request**

**2. Science Improvement**

**3. Project Manager**

**Resource Identification**

**1. Annual Product Reviews**

**2. Project Manager Reviews**

**3. Out-of-cycle Review**

 **Assessment**

**1. Request and Requirement Assessment**

**2. Technical Assessment**

**3. NOAA Partnership Policy Requirement**

 **Operational Decision**

**1. New Product**

 **Product Development**

**1. Development**

**2. Pre-operational**

**3. Operational**

 **Reporting**

**1. Project**

**2. Management**

 **Divesture or Retirement Decision**

**NOAA Partnership Policy Requirement**

 **Analysis of Alternatives**

**1. Integrated Project Team Formed**

**2. Proposal for Product Development**

 **(Solution Analysis and Selection)**

**Initial Project Plan**

**Consolidated/Mission**

**Observational**

**Requirements List**

 **(CORL)**

**NOAA Observational**

**System Architecture**

**(NOSA)**

User

**Key SPSRB Processes**

**PROCESS STEPS**

**Resource and Development**

 **Planning**

**SPSRB**

**Databases**

**Change or**

**Project Manager**

**Allocate Funding**

**Approved Project Plan**

 **Operational Decision**

**1. Update Product**

**Archive**

Request

Appraisal

Submission

Agreement

Test

Ingest

Figure 2: Key SPSRB process steps (in blue) and interfaces to resources (in green) and program processes (in gray).

**3.1 Requirement Identification**

Requirement identification will include the requirements, specifications and other information needed to describe the requested product or service. Requirements can be identified by an end user submitting an SPSRB User Request or someone requesting a Science Improvements by submitting an SPSRB User Request. A Project or Program Manager can also choose to use the SPSRB process to address project requirements.

a. SPSRB User Request:

 (1) Users are required to register at <https://requesttracker.osd.noaa.gov/admin_login.asp>. Once registered, users can submit a user request form for a new or enhanced satellite product or service.

 (2) The user request tracking web is restricted to .gov and .mil web domains in the United States domain only. Other users can submit a request, but they have to work their requests through a NOAA sponsor. Finding a NOAA sponsor that endorses the need for a new or enhanced satellite product within NOAA will increase the likelihood that NOAA can address a non-NOAA user’s needs.

 (3) The current user request form includes adequate information to evaluate the product specifications/requirements, user benefits for the product and criticality of need. *The request form asks NOAA users to link their request to NOAA Mission Goals and Programs, however, the mission goal process was revised under SEE. The mission goal portion of the user request form will need to be updated.*

 (4) SPSRB User Requests are now kept in the secure SPSRB database, along with the actions taken to address the user request. The SPSRB database allows users to view the status of their requests and has hyperlinks to project plans addressing their needs. The database also has a variety of search and reporting tools (e.g., status of user request, outstanding actions, etc.).

 *(5) Ultimately, the SPSRB database should be integrated into an overall NESDIS/NOAA metadata system with improved web and desktop interfaces.*

b. **Science Improvement Requirements:** There is a special category of user request called ***“Science Improvements”.*** As scientific research matures, applications can be identified to improve an existing satellite product or introduce a new product to support a known user shortfall. For new products, the NOAA scientist should get the user community involved and the user should submit a SPSRB user request if they desire the new product. For enhancements to an existing product, the NOAA scientist can submit a SPSRB user request. In either case, the user request will follow the processes described in this section.

 c. **Project/Program Manager Requirements:**  NOAA/NESDIS program or project managers can receive requirements to develop new or improved satellite products. These acquisition managers formulate plans to acquire the new capabilities for users. Project managers can identify the satellite product requirements in a number of ways. Documenting satellite product needs in a NOAA Level 1 Requirements Document (L1RD) is becoming a standard practice. Legacy satellite program managers (e.g., POES and GOES) used the SPSRB process to develop new satellite and/or sensor capabilities to meet NOAA user needs. The program’s satellite product manager worked with the researchers and operators to ensure satellite product development was properly planned, budgeted and executed.

The NOAA Satellite Product End-to-End Documentation System (SPEEDS) found at http://www.ngdc.noaa.gov/speeds/ is an excellent tool for exploring what current capabilities NESDIS has to meet the user needs.

*Future development of an automated web page could link the SPSRB User Request, SPEEDS and CORL databases. This would enable the user to understand the products currently available that might address their needs and to better link their request to similar requirements within NOAA.*

**3.2 Assessment**

This step consists of four key steps: (1) Request Assessment, (2) Requirement Assessment, (3) Technical Assessments and (4) NOAA Partnership Policy Requirement.

The purpose of the Request and Requirement Assessment is to ensure the request is a valid requirement and contains sufficient information to process and perform a technical assessment. This step also determines whether the request should be addressed under the NOAA Partnership Policy.

The SPSRB Manager (SM) evaluates the user request form for completeness and interacts directly with the user for clarification or obtains any missing information. Once deemed complete, the request undergoes a requirement assessment.

The SM is responsible for doing the initial requirement assessment. If it is unclear whether a validated NOAA requirement might exist, the SM can refer to the CORL database and/or seek guidance from NESDIS/OSD’s Technology, Planning and Integration for Observations Program (TPIO). TPIO has CORL database search tools that help identify NOAA requirements for observational parameters.

*We need to establish a process where all satellite product development requirements are validated by an appropriate NOAA body. Line offices can identify the need for satellite products, but the end user requirements must be validated by an appropriate NOAA body before resources are expended. A process also needs to be established to validate requirements outside of NOAA. As we develop the requirement validation process we need to be consistent with the NOAA Administrative Order (NAO) 216-108 which describes the NOAA requirements management process (*[http://www.corporateservices.noaa.gov/%7Eames/NAOs/Chap\_216/naos\_216\_108.html](http://www.corporateservices.noaa.gov/~ames/NAOs/Chap_216/naos_216_108.html)).

The NOAA Partnership Policy establishes the basic principles that NOAA applies in making decisions regarding the advancement of the nation’s environmental information services, which include weather, water, climate, chemical, biological, and ecological parameters. NOAA carries out activities that contribute to its mission, with the primary responsibility being to protect life and property. NOAA will not institute significant changes in existing information dissemination activities or introduce new services without first considering the full range of views and capabilities of government, private sector, and academic/research institutions as well as the public’s interest in the environmental information.

The purpose of the technical assessment is to determine if it is technically feasible to satisfy the user request and provides NESDIS management the opportunity to determine the best way to process the user request. The SPI WG carries out a technical assessment with assistance from subject matter experts (SMEs), the Oversight Panels (OPs) and Product Oversight Panels (POPs) as required.

The SM kicks off the technical assessment process by entering a request to conduct a technical assessment in the secure SPSRB web database. Assessments are normally performed by STAR, OSPO and OSD. *If the user request asks for the proposed product to be archived, then a representative from the appropriate NOAA Data Center should be notified and they should be included in the technical assessment. The archive person would help validate the archive requirement and ensure the archive process is followed in other SPSRB process phases.*

Once the technical assessments are complete, the SM then leads the technical assessment discussions at a SPI WG meeting.

There are a number of courses of action that can be taken by the SPI WG:

(1) User requests may be terminated or returned to the user for further clarification.

 (2) The user request may require policy guidance from a higher board, like the SPSRB, NESDIS Director or NESDIS Executive Board (NEB).

(3) If the technical solution is a simple modification (such as a format change, adjustments to product coefficients, etc.), the request will be sent to STAR or OSPO as appropriate and treated as a configuration change request. For all change management requests, the SM will ask STAR or OSPO to provide an estimated completion date and inform the SPSRB Manager when the project is complete. Such change management requests will not go through all the steps described in this document, but will be tracked through standard change management processes until completed. Once completed, OSPO or STAR will notify the SM and the SM will update the SPSRB database and user.

(4) If the technical assessment determines the request can be addressed through an existing program or project effort, the request will be sent to the appropriate project lead (PL). The SPSRB Manager asks the PL to perform a project assessment concerning whether it is appropriate to address the requested development effort under their project. If it is appropriate, the PL will be asked to provide a schedule for implementation and asked to update the completion of the project to the SPI WG.

(5) If the technical assessment determines that additional research is needed before we can commit to the project plan step, then the SM will forward the user request to the appropriate STAR branch and request they update the SPI WG on the status of the research at future SPI WG meeting. Once it has been determined that research has progressed sufficiently and the product is ready for consideration for transition from research to operations, then next step will be followed.

(6) If it is clear that the satellite product development is required, the SM will document the SPIWG decision to enter into the Project Plan step. The SPIWG will identify membership to the IPT and identify whether the proposed project should follow a “complex” or “simple” review process as described on the SPSRB web at http://projects.osd.noaa.gov/SPSRB/design\_review\_guidance.htm.

(7) If the technical assessment concludes that a new or improved product development effort may be required but there are multiple options on the technical approach to develop a capability, the SPI WG can direct that an Analysis of Alternatives (AoA) be done before we proceed to the project plan step.

During the final step of the Assessment phase, the SM updates the SPSRB database and informs the user on the status of their request. The SM enters the appropriate SPI WG decision into the SPSRB database. A suspense action will be assigned to the appropriate individual and tracked until completion.

**3.3 Analysis of Alternatives**

The purpose of the AoA step is to identify viable technical solutions and to select/gain approval of the most cost-effective product development solution and implementation that satisfies the operational need. The SPIWG determines whether this optional step in the SPSRB process is to be exercised.

The lead branch’s IPT lead assembles NESDIS scientists, product area leads, and users as members of the IPT. *If archive is required, a NESDIS data center member will be part of the IPT*. The Lead Branch, IPT and OP/POP(s) explore alternatives. After all viable solutions have been identified and evaluated the IPT lead leads the effort to draft an SPSRB “Analysis of Alternatives (AoA) Decision Briefing” (see http://projects.osd.noaa.gov/SPSRB/briefing\_temps.htm for the briefing template). The IPT lead reviews the proposal for product development and arranges for a pre-brief to the appropriate STAR and OSPO division chiefs. After passing their division chief review, the lead branch arranges for the briefing to be presented at an SPSRB meeting.

*If appropriate, the analysis of alternatives should assess resources required to archive the proposed product at a NOAA Data Center.*

There are a number of outcomes possible from the AoA step in SPSRB process:

 (1) The user request may be terminated or returned to the user with a request for clarification.

 (2) The user request and/or proposal for product development may require policy guidance from management.

 (3) If the product development research is not mature enough for transition into operations, the user request along with the SPSRB recommendations will be sent to STAR with a request to estimate when the research can be done and how long it will take.

 (4) The SPSRB provides an endorsement or modifies the recommendation for product development. If the product development method is approved, then the Lead IPT will be directed to develop a “ Project Plan”.

(5) The SPSRB forwards the request to change management or to an existing project for execution.

In all possible SPSRB outcomes, the SM will document a decision in the SPSRB database and create a follow-up suspense action as appropriate. The SM will also send out an email update to the person with the suspense action and update the user on the status of their request.

The “Analysis of Alternatives (AoA) Decision Briefing” will be attached to the user request in the SPSRB database by the SM, so anyone querying the user request can view this briefing.

* 1. **Project Plan**

The purpose of the Project Plan is to define an end-to-end research to operations plan to meet end user requirements. The Lead IPT will develop the Project Plan using the project plan briefing template found at <http://projects.osd.noaa.gov/SPSRB/briefing_temps.htm>. The project plan will be approved by the Office Lead for the project and coordinated with OSD, STAR and/or OSPO as appropriate. The project plan will then be briefed to the SPSRB. The SM will document the SPSRB decision in the SPSRB database and create a follow-up suspense as appropriate. Once the SPSRB endorses the project plan, the SPSRB will either endorse the end user priority or define a different priority. The Lead IPT will be directed to seek funding through the appropriate NESDIS Project Manager and/or NOAA Program Manager. This action is referred to as entering the “Resource Identification” phase.

**3.5 Resource Identification**

The purpose of the Resource Identification step is to identify the resources needed for the product development, long-term maintenance and archive. Since the SPSRB has no funding authority, normally the SPSRB will recommend that a project plan briefing be sent by the lead branch to the appropriate NOAA Program Manager and/or NESDIS Project Manager(s) for funding consideration.

Resource identification is critical and a complex step. The primary NESDIS funding sources for product development are:

a. STAR base (e.g., Ocean Remote Sensing, etc.)

b. OSPO base (e.g., non-NOAA Satellite Products, etc.)

c. OSD’s:

(1) Polar-Product System Development and Implementation (Polar-PSDI)

(2) Geostationary-Product System Development and Implementation (Geo-PSDI)

(3) GOES Improved Measurements and Product Assurance Plan (GIMPAP)

(4) GOES-R

(5) Joint Polar Satellite System (JPSS) or JPSS Product System Development and Implementation (JPSS PSDI)

*Occasionally, OSPO or STAR receives external funding to do product development. When external funding is approved and it is addressing a known SPSRB user request, then the appropriate office manages the execution of this funding. If the funding includes a capability or plan to transition a product from research into operations, STAR and OSPO should develop a SPSRB project plan.*

SPSRB approved project plans seeking Polar-PSDI, Geo-PSDI and JPSS PSDI funding are reviewed annually at the Annual Review for Satellite Product Development. This review is the primary means for determining which satellite development projects are funded. An Executive Board made up of STAR and OSPO Deputies, and Program/Project Manager along with the NOAA Line Office representatives to the Low-Earth Orbiting Requirements Working Group (LORWG) prioritize proposed projects and provide guidance as required. After the Annual Review the Executive Board meets and determines the recommended funding allocations for the next fiscal year. The Executive Board also provides guidance for modifying proposed projects. The NESDIS OSD Satellite Product Manager works with project leads to finalize the project plans. Once the project plans are finalized they are frozen for a year and the project leads begin the process to submit purchase requests and the product development process begins.

Prior to committing resources the office and/or project lead will transform the recommended implementation solution approved by management into the final “Project Plan” for the upcoming fiscal year. These project plans will describe how development will transition from research into operations and will be updated at least annually. The OSD Satellite Product Manager ensures all final Project Plans are entered into the SPSRB database. Plans that are addressing a SPSRB User Request will be hyper-linked to the User Request. All final project plans can be viewed in the secure SPSRB web. The NESDIS OSD Satellite Product Manager will ensure that the final project plan is kept current in the SPSRB database. Prior to the next fiscal year the project leads are asked to update their project plans. The updated plans are reviewed at the next fiscal year Annual Review and the process is repeated until the project is completed.

An IPT lead or Project Lead will be responsible for the development of a product with oversight provided by the lead branch and appropriate OP/POP. Once funding has been identified, the project enters into the Product Development step.

**3.6 Product Development**

The purpose of the Product Development step is to develop and implement the approved technical solution in accordance with the defined capability, requirements, cost, schedule, and performance parameters.

Product development proceeds through three phases: development, pre-operational, and operational.

The tasks under each phase can vary because the level of effort for a new versus an enhanced project can be quite different. The SPIWG will identify membership to the IPT and identify whether the proposed project should follow a “complex” or “simple” review process as described on the SPSRB web at http://projects.osd.noaa.gov/SPSRB/design\_review\_guidance.htm.

The tasks described below describe a complex review tasks and should be considered by project leads as they progress through their development efforts. If a project lead has been directed to follow a simple review process, refer the web link above for review requirements.

**Development Stage**

The IPT uses the Project Plan as the basis for directing and tracking all major tasks for the Development phase milestones as defined on the Product Development Certificate. Major tasks to be accomplished during this phase include:

* + IPT Lead informed to begin product development
	+ Initial Archive Requirements identified
	+ Quality Monitoring Concept Defined
	+ Long-term Maintenance Concept Defined
	+ Requirement Allocation document Review
	+ Preliminary Design Review
	+ Development processing system defined
	+ Initial Information Technology (IT) Security concept defined
	+ Test case processed
	+ Critical Design Review
	+ Code is prepared for implementation
	+ Final Archive requirements identified
	+ Operational and backup processing defined
	+ Unit Test Readiness Review

In this step the initial and final archive requirements are identified. The IPT Lead and Backup Lead should follow the archive guidance found at http://projects.osd.noaa.gov/SPSRB/archive\_guidance.htm

**Pre-Operations Stage**

This stage allows the IPT to begin routine processing for the purpose of complete testing and validation of the product. This phase also allows for limited beta testing of the product by selected users. User feedback is then used to help refine the product and ensure product formats are documented properly and are compatible with defined requirements. Tuning of coefficients, if required, may also occur during this phase. The IPT uses the Project Plan as the basis for directing and tracking all seven Pre-Operations Stage milestones as defined on the Product Development Certificate:

* + Software Review
	+ Operational and backup processing capabilities in place
	+ Final IT Security Concept Defined
	+ Pre-operational product output evaluated & tested
	+ System/Algorithm Readiness Review
	+ Code transitions to operations; all documentation is complete
	+ Operational and backup capabilities reach ops status
	+ Operational Readiness Review
	+ Brief SPSRB capability is ready to go operational

For new products, STAR/OSPO management will jointly work with the IPTs to make the final decision on whether products are ready to be transitioned into operations. With STAR/OSPO management team approval, the IPT prepares and presents a SPSRB decision brief using the briefing template “Declaring a Product Operational” found at http://projects.osd.noaa.gov/SPSRB/briefing\_temps.htm. *The SPSRB secretary will invite end users to participate in the SPSRB briefing, ensuring user satisfaction and feedback can be given in the operational decision.* This briefing gives the SPSRB an opportunity to assess whether the project has met the user's needs, the user is prepared to use the product and the product can be supported operationally by OSPO. The IPT uses the Project Plan as the basis for directing and tracking the Operations Stage milestones as defined on the Product Development Certificate.

For enhanced satellite products the Office Division Chief (e.g., OSPO/S??) is briefed by the operational agency’s project lead using the “Declaring Enhancement Operational” briefing template found http://projects.osd.noaa.gov/SPSRB/briefing\_temps.htm.

**Operations Stage**

Once the SPSRB approves a new product or the Office Division Chief approves an enhanced product as ready for operations, the project enters the operations stage. The project IPT Lead or Backup Lead will notify the OSD Satellite Product Manager that the new capability has been approved to reach operational status in the next 45 days. The OSD Satellite Product Manager will:

* Update the SPSRB database and update end user on the status
* Update SPEEDS database

*We need to develop a process to document new capabilities in the NOAA Observational System Architecture (NOSA) database.*

If the user identifies a significant new requirement or a desired enhancement to an existing product, the user will be asked to submit a new User Request Form and the process begins again.

**Reporting**

Reporting is usually done at project and management levels.

**Project Reporting:**  Project leads within research (e.g., STAR) and operations (e.g. OSPO) normally request updates from their contractors on their development efforts. This can be weekly or monthly reports and are used to track the progress on contract efforts.

**STAR/OSPO/OSD Management Reporting:**

The STAR/OSPO/OSD management team developed a process to report the progress of all product development activities on the secure SPSRB web page. The IPT leads within research and operations offices provide an update on their project plan execution and status. The appropriate OP/POPs will be kept informed through these management reporting updates. These project updates are essential for the STAR/OSPO/OSD management team to ensure the IPTs meet cost, schedule, performance, and final capability criteria as defined by the project plans.

For all active projects the product phases are entered into the SPSRB database by the NESDIS OSD Satellite Product Manager and the STAR and OSPO project leads provide a red/yellow/green assessment of cost, schedule, capability, performance and overall for each product development effort. When the effort is assessed to be yellow or red, the project lead will explain the issue, courses of action they are exploring to resolve the issue and, when appropriate, recommended course of action. STAR/OSPO/OSD management team periodically meets to review product development status and provide assistance and guidance when appropriate. The management team will also track and validate all steps of the product development certificate for each project completed.

The OPs can use the SPSRB reporting process to track the transition of products in their area of responsibility. The OPs should be involved in assessing the science development of products. They should also review whether a product is ready to transition into operations before it is brought before the SPSRB.

**SPSRB Emergency Response Process**

Occasionally events or requirements may require an expedited SPSRB process. Examples might be when upper management directs a product development occur quickly, fallout funding is available for product development, etc. These situations will be classified as “emergency response” events. In emergency response events, the SPSRB processes can be streamlined through use of email and special meetings. However, the key processes (e.g., technical assessment, solution analysis, product development, etc.) will be followed as time permits. SPSRB co-chairs will identify if a situation warrants an emergency response.

**4. NESDIS Program/Project Management Developments and the SPSRB**

Larger NOAA projects, such as JPSS and GOES-R, assign product development responsibilities to a NESDIS project manager. These project managers respond to validated requirements and identify resources and shortfall through the Strategy Execution and Evaluation (SEE) process.

NESDIS project managers should keep the SPSRB involved and informed on satellite product development efforts. In addition, NESDIS project managers can use SPSRB tools in defining and overseeing their acquisition efforts. For example, the SPSRB can help project managers by developing “Project Plans”. When project funding has been identified for product development, the SPSRB can help oversee development by ensuring that Project Plans are developed. Bi-monthly updates to the STAR/OSPO/OSD Management and updates to the SPSRB can be an effective management oversight tool that will help transition products from research into operations.

SPSRB User Requests falling under a NESDIS Project Manager’s responsibility will be forwarded to the appropriate project manager. In addition, the SPSRB will request periodic product development briefings to the SPSRB.

*Project managers working on new or enhanced satellite products based on needs identified through some requirements process other than a SPSRB User Request (e.g., CORL, an operations requirement document, etc.) should brief the SRSRB prior to committing NESDIS resources on development efforts for transitioning products into operations.*

**5. Product Divestiture or Retirement Phase**

The purpose of the Product Retirement or Divestiture phase **(Figure 3)** is to identify products that are no longer needed and can be terminated or the responsibility for production can be divested or transferred to another organization. This process provides for the opportunity to obtain user feedback and for the evaluation of that input by several levels of management at key decision-making points leading either to the termination or transfer of the production of that product or service.

**Initiating Event**

**Notify Users**

**(PALs / User Services)**

**Preliminary Decision**

**OSPO / SPSD**

**Cease Production**

**Assess and Consolidate Input**

**OSPO / SPSD Audit Process**

**Update**

**Databases**

**Comment/Rebuttal Period (Users)**

**Final Decision (SPSRB / OSPO)**

**Assess Input & Prepare Briefing (SPSRB Manager)**

**Notify Users and Partners**

**(PALs / User Services)**

**OSPO Mgmt Review**

**Continue Production**

**Transfer Production**

**Notify Users**

**(PALs / User Services)**

**Implement Transition Plan**

**(PALs, OPS, Partners)**

**NO**

**NO**

**DIVEST**

**Retire**

**Appeal Process**

**NO**

**YES**

**Figure 3 – Product Divestiture or Retirement Phase**

**5.1 Initiation of the Retirement/Divestiture Process**

There are three broad categories of initiating events that may lead to a recommendation for product retirement or divestiture. These include: system-driven, user-driven, and fiscally-driven events. System-driven events include the failure, upgrade, or replacement of a satellite platform, satellite instrument or IT system. User-driven events result from evolving or new user requirements. Fiscally-driven events are those that necessitate ceasing or transferring production based on limited resources or changing organizational missions. It is recognized that for each initiating event, there must be a responsible party and criteria for initiating a product retirement or divestiture process. OSPO, as the owner of the retirement process, may receive recommendations for product retirement and/or divestiture from any entity in the SPSRB process including the user, Product Oversight Panels (POPs), Product Area Leads (PALs) and scientists, program managers, NESDIS Data Centers, STAR/OSPO/OSD management and internal or external oversight boards. Descriptions of initiating events and responsible parties can be found below in Table 1.

|  |  |  |
| --- | --- | --- |
| **Initiating Event** | **Initiating Criteria** | **Responsible Party** |
| System-driven |  |  |
| Satellite instrument failure | Degradation or unavailable data | OSPO; STAR; OSPO |
| Satellite platform failure | Unavailable data | OSD; OSPO |
| New satellite instrument/ platform | New and possibly improved data | OSD; STAR; OSPO |
| New, improved product | Improved quality; new algorithm; new parameter | OSPO; STAR |
| New IT systems | New production system | OSPO |
| User-driven |  |  |
| Quarterly product audit and re-validation of user requirements | Revalidate original user requirement; continuous customer satisfaction plan | OSPO |
| Quarterly product audit and objective product-use metrics | Metrics indicate no interest in product by user; continuous customer satisfaction | OSPO |
| Established decommissioning date | Agreement with user for divestiture or retirement | OSPO |
| Fiscally-driven |  |  |
| Reduction in fiscal or personnel resources | Annual ORF funding not adequate; automation of products realized  | OSPO |
| User ceases funding for production | PPBES or external product development/implementation funding not realized or terminated | OSPO |
| Not part of mission | Re-focus of assets; identical product produced by other agency | OSPO |

**Table 1**

In response to the User-Driven and Fiscally-Driven initiating events, OSPO defined and documented product audit criteria and procedures in “Environmental Satellite Product Audit Procedures” (ver3.2 Jan, 2014). OSPO executes performance audits at regular intervals during the lifecycle of all operational satellite products. One of the principal objectives of the audit is to determine whether the product still meets the original user requirements and performance specifications. Feedback on the importance of various products will be obtained through direct but informal correspondence between PALs, the SPSD user Services Team and the users. The outcome from a performance audit will be a preliminary recommendation by the independent audit review team to either continue production or to proceed with the retirement or divestiture of the product. Note that formal guidance, regulatory authorities and retirement policy principles for the OSPO product retirement process are captured in the draft NESDIS “Policy on Retirement and Divestiture of Environmental Satellite Products” (ver 8.0 Feb, 2014).

**5.2 Preliminary Decision on Suitability for Retirement/Divestiture**

Once a product is identified as a candidate for retirement or divesture from the results of the audit, OSPO will make a preliminary decision on whether to proceed with the recommended retirement/divestiture or continue production. If OSPO determines that there is sufficient justification for retirement or divestiture then OSPO will move forward to the next step of formally notifying users/partners and gathering comments during a defined rebuttal period.

**5.3 User Notification and Impact Assessment**

Feedback will be obtained from two groups of users: primary and secondary users. Primary users are those customers that are well-known to the Product Area Lead (PAL) and may very well be the originator of the product’s User Request. Primary users will be NOAA or other Government organizations. Secondary users are those users who utilize the product but may not be known as users by the PAL. This lack of awareness is often attributable to distribution methods such as web pages or ftp sites that lack accountability. Notification of user of the intent to retire a product will be accomplished via two methods including: (1) a broadcast e-mail notification from the ESPC help Desk and from the PAL and (2) the announcement of the retirement via the NESDIS Partnership Policy website at

<http://www.nesdis.noaa.gov/PartnershipPolicy.html>. These notifications will inform the users that they have 30 days to provide feedback on the impact of the proposed retirement on their applications. Typically, if no input is received by the end of that time period, it is construed as consent to retire or divest the product. In order to ensure notifications reach secondary users, an announcement of intent to retire/divest the product will be placed on the appropriate OSPO product web pages. In the case of divestiture, the PAL will liaise with the identified operational partner who has agreed to assume responsibility for the production of that product. The PAL will inform them of the intent of NESDIS to cease production of the product and will inform the operational partner that they also can provide information on the impact of the product retirement if they desire. In most cases, the coordination to transfer production responsibility to another agency should have already occurred by this time in the process. At the conclusion of the 30-day comment and rebuttal period, feedback on user impacts will be consolidated along with any supporting information, into a Final Product Retirement/Divestiture brief for final review by OSPO management.

**5.4 Final Decision on Retirement and/or Divestiture**

The decision to retire or divest a product will reside with the SPSRB based on the recommendation and presentation by OSPO management. The SPSRB will decide to either continue production or retire/divest the product. A consensus vote is required for the final decision to retire or divest a product. The SPSRB voting membership is the appropriate body for making this decision since feedback will be considered from representatives of all the NESDIS satellite service organizations, the NWS, NOS, NMFS, and the NESDIS data centers. The NWS, NOS, NMFS, and NESDIS data centers are the foremost consumers of NESDIS satellite data and, therefore, have the greatest stake in the continued production or retirement of a product. One possible outcome from the SPSRB voting membership could be that they require additional information to make a decision. In this case, the SPSRB Manager will solicit this additional information from the necessary source. The SPSRB Manager will have 30 days to obtain this information and deliver it to the SPSRB. With the additional information in hand, the SPSRB should make all efforts to render a decision within 10 working days by proxy vote, if necessary.

**5.5 User Notification and Implementation of Decision**

The decision of the SPSRB will be carried out during the Notification and Implementation Phase. If the Board decides that the product in question should stay in production, the SPSRB Manager will close the action and notify all parties of the decision.

If the decision of the Board is to RETIRE the product, the implementation of this retirement will occur within 30 days of the SPSRB decision. There may be exceptions to the 30-day retirement mandate. In those cases, the final termination of the processing and distribution of a product will not take place for up to but not exceed a 12 month grace period, thereby allowing users to terminate any dependence and switch to other product alternatives. During this 30-day period, three actions must be completed.

* First, the SPSRB will notify all users, including pertinent NOAA Program managers, of the decision to retire the product. This notification will take two forms. First, within 5 working days, the SPSRB Manager shall notify the appropriate PAL of the decision to retire the product. The responsibility for notifying primary users will then shift to the PAL. The PAL will also ensure that an announcement is posted to the appropriate OSPO web pages that inform secondary users of the plan to retire the given product on a specified date.
* Second, the PAL will initiate a CCR and receive approval from the ESPC Configuration Change Board (CCB) to formally “turn off” the processing and distribution of the product.
* Third, the PAL will update all necessary databases (e.g. PATRON CM data base and SPEEDS) regarding the retired status of the product. This step will occur on the specified retirement date.

If the decision of the Board is to DIVEST a given product, the implementation of this divestiture will also involve three actions that need to be completed. Two of the three will be similar to the retirement actions: the notification process and updating of databases. The actual divestiture will be more complicated as it will involve an organization outside the NESDIS umbrella. The responsible parties within NESDIS for coordinating the divestiture process will be the applicable PAL and an appropriate point of contact within the OSPO operational organization. The SPSRB Manager will notify these individuals within 5 working days of the Board’s decision to divest the product. This notification will include applicable information on the organization who is assuming production responsibilities. The PAL and OSPO individuals will assume responsibility for ensuring a smooth transition of production to the new, external partner. It is assumed that the product transition plan, previously approved by both organizations, will specify a time period to complete the product divestiture. It is recommended, however, that all parties strive to carry out the process with a goal of completing the transition within 90-180 days of the SPSRB decision.

**5.6 Appeal of SPSRB Decision or SPSRB Non-Consensus Vote**

An appeal of the SPSRB consensus decision or non-consensus vote of the SPSRB on a product retirement can be made to the NESDIS Deputy Assistant Administrator. A non-consensus vote may occur in cases where the product retirement is fiscally driven and continuation of the product may adversely impact the capability of OSPO to ensure the continuous and successful operation of NESDIS satellite processing and distribution systems. Appeals can be submitted only by the SPSRB principals from OSPO, STAR and/or OSD. If desired, SPSRB principals could represent the concerns of major user organizations or interagency partners. The appeal process must be initiated by the concerned party within 30 days of the SPSRB decision by notifying the SPSRB Manager. The SPSRB Manager will then facilitate discussion with the SPSRB voting membership who has 30 days after the appeal is filed to present their case to the DAA. During this time, all retirement and/or divestiture activities will cease until a decision is rendered by the NESDIS DAA. The appeal process would involve taking the same information and briefing that was given to the SPSRB voting membership and have a designated member of the SPSRB present that information to the NESDIS DAA. The NESDIS DAA is charged with deciding whether to uphold the SPSRB decision or overturn it. The NESDIS DAA decision will be final and binding. All comments, discussion, and votes shall become a part of the permanent SPSRB record.

**5.7 Simplified Retirement Process**

The retirement process can be tailored in situations when product retirement does not require user feedback. The purpose of simplified retirement process (Figure 4) is to speed up product retirement. A simplified retirement process can be triggered when either of the following events occurs:

(1) Sensor/Instrument failure

(2) Satellite failure (no immediate replacement)

(3) Product without an identified operational user from Product Audit



**Figure 4 – Simplified Product Retirement Process**

The implementation of the simplified retirement will be completed within a month from the occurrence of any of the events listed above. During this 30-day period, the following actions must be completed:

* Notification to users of the intent to retire a product will be sent from the ESPC help Desk. The PAL will ensure that an announcement is posted to the appropriate OSPO web pages including NESDIS Partnership Policy website at <http://www.nesdis.noaa.gov/PartnershipPolicy.html> informing all users on the impending change of the product status.
* The PAL will initiate a CCR and receive approval from the ESPC Configuration Change Board (CCB) formally to “turn off” the processing and distribution of the product.
* OSPO management will make an announcement of the product retirement at the next available session of the SPSRB.
* The PAL will update all necessary databases (e.g. PATRON CM data base and SPEEDS) regarding the retired status of the product. This step will occur on the specified retirement date.

**6. Critical Shortcomings in the Current SPSRB processes**

Product development efforts not documented in Project Plans

Archive processes

Training of STAR and OSPO staff

**7. Roles and responsibilities (see appendix A)**

**Appendices**

**Appendix A – Roles & Responsibilities**

**Appendix A: Roles and Responsibilities**

SPSRB

* Co-Chaired by the STAR and OSPO Office Deputies
* Voting Principals include the OSPO and STAR Deputies, OSD Program Managers, NESDIS Data Centers and the NWS
* Provides overall management oversight and guidance on all new or enhanced product development and operational implementation projects in NESDIS
* Responsible for reviewing, assessing and validating user requests and requirements for new or enhanced products
* Responsible for final evaluation of technical feasibility of new or enhanced algorithms and potential products and services
* Provides management oversight and makes decision to approve and prioritize user requests forwarded to Analysis of Alternatives phase
* Makes decisions on product development solutions for new or enhanced product requests
* Makes decisions on suitability to transition a new or enhanced product into operations
* Provides final decisions on product divestiture or retirement

Management Team (OSPO/STAR Division Chiefs)

* Responsible for providing management oversight for facilitating and implementing product development solutions; identifying resources for project support, and ensuring adherence to agreed cost, schedule and performance criteria during product development phases.
* Makes recommendation to transition new or enhanced product into operations.
* Conducts periodic joint reviews of operational products and services with users to assess product quality, sets priorities for new/enhanced products and identifies potential products suitable for retirement or divestiture
* Reviews reports from IPTs on a **bi-monthly** basis (STAR & OSPO)
* Provides project updates to SPSRB on **quarterly** basis organized by Atmosphere, Ocean and Land categories.

Oversight Panels

* Oversight Panels (POPs) are normally jointly chaired by a STAR scientist and an OSPO Product Area Lead
* Members include other scientists, contractors, representatives of other NOAA Line Offices, representatives of outside agencies, NESDIS Data Center representatives, OSD representatives, users and branch managers
* Provide end-to-end technical oversight for the feasibility assessment, development, and operational implementation of new, enhanced and existing satellite products
* Oversee the science quality of observing system performance within assigned product areas
* Serve as the science and operations technical authority for SPSRB, and IPT functions
* Support emergency anomaly identification and correction
* Notify the SPSRB Manager and SPSRB Executive Secretary when division chiefs approve changes to OP co-chair assignments
* Report to Branch and STAR/OSPO/OSD management team
* Help to identify potential IPT members to the lead branch and/or STAR/OSPO/OSD management team
* Assist NOAA Satellite Program Managers with scientific and operational issues

SPSRB Executive Secretary

* Actively participates in the SPSRB process
* Works closely with the co-chairs, voting principals, the SPIWG Chair, the SPSRB Manager, the web page manager and the oversight panels
* Schedules meetings, room reservations, and telecon reservations
* Distributes calls for briefings and meeting announcements
* Moderates SPSRB meetings and coordinates audio/visual logistics
* Coordinates gathering and review of meeting material between speakers and SPIWG
* Prepares and posts meeting minutes
* Prepares and tracks action items
* Maintains list of current POP co-chairs on the SPSRB internet web site
* Announces recent news including delays in operational promotion of SPSRB-approved products, changes to staffing of POP co-chairs and SPSRB staff
* Provides backup for SPSRB Manager responsibilities and 2nd backup for SPIWG Chair responsibilities

SPSRB Manager

* Performs the initial assessment on all incoming SPSRB user requests by ensuring they contain the information required to perform technical assessments.
* Ensures linkage of all user requests and prospective new or enhanced products to NOAA mission goals and CORL/MORL
* Tracks all SPSRB requests for new and enhanced satellite-derived products and services through the SPSRB process
* Forwards user requests to SPSRB technical assessment leads for initial technical assessment, leads the technical assessment discussion and documents SPSRB guidance
* Forwards request to the appropriate lead branches to perform analysis of alternatives and solutions
* Ensures that solutions recommended for product development are sent to the appropriate NESDIS Project Managers for consideration for implementation.
* Keeps users updated on NESDIS actions to address their needs
* Tracks projects that are funded for product development
* Ensures the SPSRB web page request and project databases are updated
* Keeps the SPSRB Executive Secretary aware of the user requests, so that backup may be provided
* Provides support to the Management Team and the SPSRB by tracking and reporting the end to end product development information needed to effectively provide long-term management oversight, including product divestitures/retirements
* Manages content of both the SPSRB internet web site and the SPSRB Request Tracking System and coordinates suggestions for development and maintenance with the web page manager and associated contractual support
* Provides backup for both the SPSRB Executive Secretary responsibilities and the SPIWG Chair responsibilities

Integrated Product Team (IPT)

* Assembled by the lead branch to guide product development project
* With guidance from the OP, submits a solution recommendation to STAR/ OSPO management team review and approval
* Presents Product and Service Development decision briefings to the SPSRB
* Guides development through the three product development stages (Development, Pre-Operations and Operations)
* Provides **bi-monthly** project updates to the STAR/OSPO/OSD management team
* Represents the stakeholders in all phases of the product/service development and implementation life-cycle
* Provides technical continuity from the solutions analysis/selection phase through all steps in product development
* The IPT is disbanded once the product is declared operational

Web Page Manager

* Provides overall management of both the SPSRB internet web site and the SPSRB Request Tracking System (RTS)
* Manages contractual support for modifications to both the web site and the RTS

SPIWG

* Composed of STAR, OSPO and OSD principals, SPSRB Executive Secretary, SPSRB Manager, and SPIWG Chair
* Develops recommendations to enhance SPSRB operating and reporting procedures, including development of templates for the SPSRB process
* Recommends changes to the SPSRB Charter
* Carries out technical assessments of user requests and determines course of action

SPIWG Chair

* Schedules SPIWG meetings, room reservations, and teleconference reservations
* Distributes SPIWG meeting announcements and agendas
* Moderates SPSRB meetings and coordinates audio/visual logistics
* Gathers briefing material from any guest attendees
* Prepares and distributes SPIWG meeting minutes
* Prepares and tracks SPIWG action items
* Provides 2nd backup for both the SPSRB Executive Secretary responsibilities and the SPSRB Manager responsibilities