NOAA/NESDIS

NESDIS-PD-1110.1

NESDIS SYSTEMS ENGINEERING AND PROGRAM MANAGEMENT POLICY

July 2017

COMPLIANCE IS MANDATORY

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

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Contents

1. PURPOSE

This directive captures and communicates the NESDIS policy and responsibilities for disciplined systems engineering and program management activities across the NESDIS Enterprise.

2. SCOPE

This directive applies to all NESDIS Offices (as defined in Appendix A) that perform strategy implementation, acquisition, program/project management, and systems engineering activities.

3. GENERAL POLICY AND GUIDANCE

a. Strategy Implementation. NESDIS will apply the processes and procedures described in NESDIS-PD-1000.1, NESDIS Governance and Strategic Management, to implement the NESDIS Strategic Plan, described in NESDIS-PD-1001.1.

b. Acquisition. NESDIS will comply with the acquisition policy described in the NOAA Acquisition Manual, established and maintained by the NOAA Acquisitions and Grants Office.

c. Program/Project Management (PM). NESDIS will apply program and project management procedural requirements identified in NESDIS-PR-1210.1 to plan, execute, monitor, and control programs and projects to accomplish mission objectives.

   (1) Risk Management. NESDIS will apply risk management procedural requirements described in NESDIS-PR-1303.1 to manage risks at all levels of the Enterprise.

d. Systems Engineering (SE). NESDIS will apply the systems engineering processes identified in NESDIS-PR-1300.1 across the life cycle of systems.

   (1) Requirements Management. NESDIS will apply the requirements management procedural requirements identified in NESDIS-PR-1302.1 to establish clear, concise, verifiable, and valid requirements for processes, products, and components.

   (2) Configuration Management. NESDIS will track and implement requirements using requirements management and configuration management (NESDIS-PR-1304.1) procedural requirements.

e. Management and Oversight Best Practices. NESDIS will implement management best practices to assure compliance with NESDIS directives, procedural requirements, and applicable standards. “Best practices” include the following key elements:

   (1) Governance. The NESDIS governance and strategy decision making executive bodies described in NESDIS-PD-1000.1, NESDIS Governance and Strategic Management, will provide high-level oversight, set requirements and priorities, and assess the overall effectiveness.

   (2) Independent Reviews. NESDIS will conduct independent programmatic and technical reviews covering scope, cost, schedule, risks, or functional acceptability. "Independence" in this context requires reviewers who are not under the supervision, direction, advocacy, or control of the program, project or major initiative.

(3) Compliance Assessments. NESDIS will conduct periodic assessments to check compliance against requirements (i.e., engineering and program/project management policies, procedural requirements, and invoked standards) to assure that the requirements are implemented.
(4) Dissenting Opinion Adjudication. Individuals who have dissenting views concerning project decisions that cannot be resolved within normal management chains of command will be able to appeal to the NESDIS AA or designee.

4. AUTHORITY

1. NESDIS-PD-1000.1, NESDIS Governance and Strategic Management.
2. NESDIS-PD-1100.1, NESDIS Enterprise Directives Publication Policy.

5. APPLICABLE DOCUMENTS

1. NESDIS-PD-1000.1, NESDIS Governance and Strategic Management.
2. NESDIS-PR-1210.1, NESDIS Program/Project Management Procedural Requirements.
3. NESDIS-PR-1300.1, NESDIS Systems Engineering Procedural Requirements.
4. NESDIS-PR-1302.1, NESDIS Requirements Management Procedural Requirements.
5. NESDIS-PR-1303.1, NESDIS Risk Management Procedural Requirements.
6. NESDIS-PR-1304.1, NESDIS Configuration Management Procedural Requirements.

6. RESPONSIBILITY

a. The Office of System Architecture and Advanced Planning (OSAAP) Director, the NESDIS Chief Financial Officer and Chief Acquisitions Officer (CFO/CAO), the NESDIS Assistant Chief Information Officer (ACIO), NESDIS Office Directors, and Program Directors are responsible for promoting policies, standards, best practices, and guidance in their areas of responsibility for compatibility with this PD. They will coordinate efforts to maximize the commonality, clarity, and effectiveness of direction and guidance.

b. The OSAAP Director:
(1) Develops enterprise level system architecture plans and requirements
(2) Provides guidance for program/project formulation, advanced system and technology planning and coordination
(3) Maintains configuration control of management and technical policies and procedures and their execution
(4) Provides NESDIS Enterprise risk assessments as part of the mission assurance function for the organization
(5) Manages the strategic planning process and coordinates plans for its implementation.

c. The CFO/CAO administers and oversees all business, financial, and administrative processes for NESDIS, including:
(1) Budget planning/formulation and execution
(2) Human Capital Management

(3) Facilities and support infrastructure
(4) Agreements/MOUs for the transfer of funds
(5) Health, safety and security
(6) Contracts administration
(7) Property accountability for NESDIS and all its component offices.

d. The ACIO:
(1) Sets NESDIS IT strategic direction, goals, and objectives
(2) Develops and executes policy, guidance, and activities consistent with the NOAA IT enterprise and architecture, vision and plans
(3) Reviews and reports compliance with standards applicable laws, regulations and policies
(4) Approves IT related acquisitions and investments for consistency with Federal Government/DOC/NOAA policy.

e. The NESDIS Office Directors and Program Directors:
(1) Align systems engineering and project management activities to support this policy
(2) Execute the policies and procedures governed by this policy
(3) Establish policies, processes, and procedures to support this policy and other policies and procedures governed by this policy
(4) Oversee planning and execution of programs and projects assigned to the Office/Program.

Appendix A: Definitions

Formulation: The identification of how the program or project supports NESDIS strategic needs, goals, and objectives; the assessment of feasibility, technology and concepts; risk assessment, team building, development of operations concepts and acquisition strategies; establishment of high-level requirements and success criteria; the preparation of plans, budgets, and schedules essential to the success of a program or project; and the establishment of control systems to ensure performance to those plans and alignment with current NESDIS strategies.

Implementation: The execution of approved plans for the development and operation of the program/project, and the use of control systems to ensure performance to approved plans and continued alignment with NESDIS strategic needs, goals, and objectives.

NESDIS Enterprise: Satellite Systems Acquisition, Operations and Maintenance, Use-inspired Scientific Research and Development, Data Stewardship and Preservation required to execute NOAA's mission in support of NOAA's Primary Mission essential Functions. (Derived from NESDIS-PD-1000.1, NESDIS Governance and Strategic Management.)

NESDIS Office(s): A term used in the widest sense to include NESDIS Headquarters elements, NESDIS Operations and Acquisitions offices, the Center for Satellite Applications and Research (STAR), and the National Centers for Environmental Information (NCEI).

Process: A set of activities used to convert inputs into desired outputs to generate expected outcomes and satisfy a purpose.

Product: A part of a system consisting of end products that perform operational functions and enabling products that perform life-cycle services related to the end product; a result of the technical efforts in the form of a work product (e.g., plan, baseline, or test result); derived data from the raw instrument measurements in a specific output format.

Program: A strategic investment that has a defined architecture and/or technical approach, requirements, funding level, and a management structure that initiates and directs one or more projects. A program defines a strategic direction that NESDIS has identified as critical.

Project: A specific investment having defined goals, objectives, requirements, life-cycle cost, a beginning, and an end. A project yields new or revised products or services that directly address NESDIS' strategic needs. Projects may be performed wholly in-house; by Government, industry, or academia partnerships; or through contracts with private industry. In this document, readers should treat the term project in the widest sense, to include projects, programs, portfolios, and major initiatives.

Requirement: The agreed upon and documented capability, capacity, or demand for personnel, equipment, facilities, or other resources or services by specified quantities for specific periods of time or at a specified time.

Risk: The potential for performance or programmatic shortfalls or increases, which may be realized in the future, with respect to achieving explicitly established and stated performance and programmatic requirements. The performance shortfalls or increases may be related to any one or more of the following mission execution domains: (1) safety, (2) technical, (3) cost, and (4) schedule.

System: The combination of elements that function together to produce the capability required to meet a need. The elements include all hardware, software, equipment, facilities, personnel, processes, and procedures needed for this purpose.

Systems Engineering: A methodical, multi-disciplinary approach for the design, realization, technical management, operations, and retirement of a system.

Appendix B: References

NASA 7120.4D, NASA Engineering and Program/Project Management Policy.

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