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NASA Procedural Requirements

COMPLIANCE IS MANDATORY**NPR 2830.1A**
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19, 2018[Printable Format \(PDF\)](#)[Request Notification of Change](#) (NASA Only)**Subject: NASA Enterprise Architecture Procedures****Responsible Office: Office of the Chief Information Officer**[| TOC](#) | [Preface](#) | [Chapter1](#) | [Chapter2](#) | [Chapter3](#) | [Chapter4](#) | [AppendixA](#) | [AppendixB](#) |
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Chapter 1: The NASA EA Program

1.1 Enterprise Architecture Overview

a. NASA's EA Program is the ongoing process of translating business strategy and vision into effective information technology (IT) processes, services, and infrastructure. NASA EA informs and optimizes the IT investment decision process to ensure that IT expenditures are aligned with Agency, Mission Directorate, and Center goals while reducing unnecessary duplication of both material expenditures and efforts. NASA EA promotes effective planning and alignment of technology and resources to support NASA's Mission.

b. NASA's EA process utilizes a multi-phase approach that aligns with the steps of the IT investment management process to develop the NASA IT architecture. The EA process is driven by NASA's strategic planning guidance and utilizes this and other inputs to develop the target architecture. This target architecture is then compared against the current IT environment, resulting in a gap analysis and transition plan. The transition plan supports the future IT needs of NASA and progression toward the target architecture.

c. The term IT, as defined by Clinger-Cohen with respect to an executive agency, means any equipment or interconnected system or subsystem of equipment which is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information by the executive agency. Information technology includes computers, ancillary equipment, software, firmware and similar procedures, services (including support services), and related resources.

1.2 NASA EA Objectives

a. The goal of the NASA EA Program is to be the authoritative reference for effective IT planning and execution within NASA. This goal will be attained through the compliance with and the results of the EA process activities and products described in this NPR. The following objectives are key to realizing the full value of EA:

- (1) Establishing and maintaining the EA process and activities within the process.
- (2) Developing authoritative EA products that are utilized throughout the IT life cycle.
- (3) Enhancing the IT governance process by providing timely strategic investment information.
- (4) Establishing effective EA communication mechanisms that allow for easy access and usage of EA information and products.
- (5) Measuring EA effectiveness through meaningful metrics and continuously improving the EA program.

1.3 OMB EA Outcomes

NASA EA outcomes are aligned to those of the White House Office of Management and Budget (OMB) "The Common Approach to Federal Enterprise Architecture" published May 2, 2012, that states:

"EA is uniquely positioned as the management best practice which can provide a consistent view across all program and service areas to support planning and decision-making. EA standards also promote mission success by serving as an authoritative reference, and by promoting functional integration and resource optimization with both internal and external service partners."

b. OMB goes on to define four outcomes enabled by an effective EA: Service Delivery, Functional Integration, Resource Optimization, and Authoritative Reference. OMB emphasizes that "...these four outcomes are 'primary' in that they represent areas of direct, positive impact that architectures can make within and between agencies and with customers and partners external to government."

c. The four EA outcomes defined in "The Common Approach" are as follows:

(1) Service Delivery. Federal Agencies exist to perform a wide spectrum of missions that meet our Nation's ongoing needs through a variety of programs and services. Success in accomplishing an Agency's mission and optimizing resources requires a coherent and consistent understanding of program and service performance and agile planning and development processes. This coherent view and agility becomes more important in resource-constrained operating environments. EA must ensure that IT enables the business and mission functions to achieve optimal performance.

(2) Functional Integration. Functional integration denotes interoperability between applications, systems, and services. Applications, systems, and services interoperability is foundational for Federal Government organizations to be able to leverage current investments to successfully deliver more efficient service offerings. EA should provide context and be the source of standards for all levels of interoperability.

(3) Resource Optimization. As custodians of public funds, Federal sector organizations have a special responsibility to optimize their use of resources. Also, because of a variety of factors that cannot be anticipated or controlled, Federal organizations must often accomplish their mission with fewer resources than anticipated. The organization's EA supports effective planning and decision making in this resource constrained environment.

(4) Authoritative Reference. Just as the blueprints of a building are the authoritative reference for how a structure will be built and function, the organization's Enterprise Architecture provides a roadmap for an integrated, consistent view of strategic goals, mission and support services, data, and enabling technologies across the entire organization, including programs, services, and systems. When EA is recognized as the authoritative reference for the design and documentation of systems and services, issues of ownership, management, resourcing, and performance goals can be resolved in a more consistent and efficient manner.

1.4 EA Requirements and Governance

1.4.1 Clinger-Cohen Act

Executive Order 13011, Federal Information Technology, implements the Information Technology Management Reform Act (ITMRA) of 1996, also known as the Clinger-Cohen Act. The Clinger-Cohen Act assigns the responsibility for "developing, maintaining, and facilitating the implementation of sound and integrated IT architectures for agencies" to the NASA CIO.

1.4.2 Office of Management and Budget Requirements

a. "Common Approach to Federal Enterprise Architecture," May 2, 2012, defines updated reference models and EA submission requirements for Federal Agencies.

b. OMB Circular A-130, Management of Federal Information Resources requires, "As part of the EA effort, agencies must use or create an Enterprise Architecture Framework. The Framework must document linkages between mission needs, information content, and information technology capabilities. The Framework must also guide both strategic and operational IRM planning."

c. Additional OMB EA requirements are found in:

(1) "The Common Approach to Federal Enterprise Architecture" published by the OMB (May 2, 2012) provides guidance for a common approach to the practice of EA throughout the Executive Branch of the U.S. Federal Government. The document promotes increased levels of mission effectiveness by standardizing the development and use of architectures within and between Federal Agencies.

(2) OMB Circular A-11, Preparation, Submission, and Execution of the Budget, outlines the requirements and guidelines for the Federal budget process.

1.4.3 NASA Directives and Requirements

a. NPD 2830.1 - NASA Enterprise Architecture. Establishes the policy and responsibilities for maintaining and using the NASA EA. Under the direction of the Agency Chief Information Officer (CIO), the NASA EA program will develop and maintain the NASA enterprise architecture which will serve as the primary authoritative resource for IT planning

and execution.

b. NPR 2800.1B - Managing Information Technology. Establishes requirements and responsibilities for managing IT relative to the policy set forth in NPD 2800.1B. By implementing IT procedures and requirements that are aligned with NASA's Strategic Plan and integrated with its strategic management process, NASA seeks to make measurable improvements in mission performance, cost of program/project development and operations, and service delivery to the public through the strategic application of IT.

c. NPR 7120.7 - Information Technology and Institutional Infrastructure Program and Project Management Requirements. Establishes the requirements by which NASA will formulate and execute information technology and institutional infrastructure programs and projects, consistent with the governance model contained in the NASA Governance and Strategic Management Handbook (NPD 1000.0).

d. NPD 1001.0. - NASA Strategic Plan. Establishes the NASA mission goals and objectives for ten years.

e. NPR 9420.1 - Budget Formulation. Provides the financial management, performance requirements, and process for budget formulation.

f. NPR 1441.1 - NASA Records Retention Schedules. Provides retention periods of Federal records of NASA.

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