# NASA Policy Directive

**NPD 2830.1D**
Effective Date: November 17, 2020
Expiration Date: November 17, 2025

**COMPLIANCE IS MANDATORY FOR NASA EMPLOYEES**

Printable Format (PDF)

## Subject: NASA Enterprise Architecture

**Responsible Office: Office of the Chief Information Officer**

### 1. POLICY

a. This directive establishes Agency-wide policy and responsibilities for the development, maintenance, and implementation of the NASA Enterprise Architecture (EA) as the authoritative resource for planning and execution across NASA Chief Information Officer (CIO) governed information technology (IT). The NASA EA will facilitate NASA's ability to provide consistent IT services, accessible information, scalable infrastructure, and flexible technology integration across the Agency.

b. It is NASA policy to develop and maintain an Agency-wide EA as it relates to IT that:

(1) Is an Agency-wide asset that requires the active participation of all NASA organizations to address current and future IT needs.

(2) Provides a foundation for identification of NASA's needs, continuous improvement of IT capabilities, and adoption of innovative ideas.

(3) Supports formulation of NASA's IT Strategic Plan and guides OCIO IT investment and priority decision-making by establishing a clear path between the current and future environment and ensuring NASA mission requirements are met and enabled.

(4) Integrates IT capabilities, processes, systems, services, data, and other IT resources into a comprehensive enterprise architecture.

(5) Provides insight into the IT investments of the Agency's missions, programs, projects, portfolios, and products.

(6) Provides a collection of integrated data in the EA that enables analysis of current IT capabilities allowing the identification of potential shortfalls, gaps, redundancies, and opportunities for improvement.

(7) Develops and utilizes the NASA Enterprise Architecture Framework (NEAF) and methodology for IT EA development and maintenance as required through the EA governance process. That has been approved through Agency IT governance.

(8) Incorporates applicable Federal requirement within the architecture.

(9) Documents the relationships among the mission, corporate, and operational technology architectures.

### 2. APPLICABILITY

a. This directive is applicable to NASA Headquarters and NASA Centers including Component Facilities and Technical and Service Support Centers. This directive applies to the Jet Propulsion Laboratory, a Federally Funded Research and Development Center, and other contractors only to the extent specified or referenced in applicable contracts.

b. In this directive, all mandatory actions (i.e., requirements) are denoted by statements containing the term "shall." The terms "may" or "can" denote discretionary privilege or permission, "should" denotes a good practice and is

recommended, but not required, "will" denotes expected outcome, and "are/is" denotes descriptive material.

c. In this directive, all document citations are assumed to be the latest version unless otherwise noted.

d. The "Enterprise", in the context of NASA as an organizational entity, includes the collective whole of Agency organizations defined in NPD 1000.3.

## 3. AUTHORITY

a. Agency Chief Information Officer, 40 U.S. Code §11315(b)(2).

b. Information Technology Management, 40 U.S.C. §§ 11101-11704.

c. The Federal Information Technology Acquisition Reform Act (FITARA), 2014, 40 U.S.C. § 11319.

## 4. APPLICABLE DOCUMENTS AND FORMS

a. Chief Financial Officers Act of 1990, 31 U.S.C. § 501 et seq., as amended.

b. NPD 1000.3E, The NASA Organization w/Change 65.

c. NPR 2800.1B, Managing Information Technology.

d. NPR 2830.1A, NASA Enterprise Architecture Procedures.

e. NASA Enterprise Architecture Framework (NEAF),available in ITEA-HBK- 2830.1-0002, NASA Enterprise Architecture Framework, 16 June 2020.

## 5. RESPONSIBILITY

a. The EA requires participation from organizations across NASA to keep content relevant to enable effective decision making. Detailed procedural requirements are documented in NPR 2830.1. The organizational responsibilities listed below are specific to the requirements of the EA practice within NASA.

b. The NASA Chief Information Officer (CIO):

(1) Is responsible for the NASA IT Strategic Plan which guides the development and maintenance of the NASA EA.

(2) Establishes an Agency-level EA governance process that will establish approval and inclusion criteria for the EA.

(3) Provides executive level sponsorship, guidance, and coordination of an integrated Agency-wide EA.

(4) Appoints a NASA Chief Enterprise Architect (NCEA) to manage all aspects of the EA program.

(5) Provides the NEAF, EA processes, and the Agency Enterprise Architecture System (AEAS).

(6) Provides EA expertise to assist, train, and guide personnel engaged in IT EA efforts throughout the Agency.

(7) Plays a significant role in the decision processes for all annual and multiyear planning, programming, budgeting, and execution decisions, related reporting requirements, and reports related to information technology (IT); and the management, governance, and oversight processes related to IT as described in FITRA, Title 1, Section 101.

c. The Officials-in-charge of Headquarters Offices, NASA Center Directors, Mission Directorate Associate Administrators, and Mission Support Directorate Assistant Administrators:

(1) Actively participate in EA governance process.

(2) Coordinate and collaborate with their organizational elements to ensure compliance and implementation of a successful NASA EA.

(3) Provide insight into the interconnectivity between mission IT, corporate IT, and operational technology that informs development of the NASA EA.

d. The Assistant Administrator for Procurement:

(1) Utilizes the NASA EA as a contributing component of the NASA-wide procurement strategy.

e. The Chief Financial Officer (CFO) is the responsible authority for ensuring the EA processes are integrated with the budgeting and execution phases of the planning, programming, budgeting, and execution (PPBE) process as defined in 31 U.S.C. §§ 501 et seq.

f. The NASA Chief Enterprise Architect (NCEA):

(1) Leads the development and implementation of the EA program, with input from Agency stakeholders (i.e. CISO, Missions, etc.).

(2) Promotes and communicates architecture results to Agency stakeholders.

(3) Defines and manages the NASA EA program, which includes EA goals, policies,framework, standards, processes, resources, and system.

(4) Advocates and utilizes the enterprise architecture for understanding and supporting Agency strategies, as well as analyzing the Agency's environment to identify IT-related needs, gaps, risks, and opportunities and recommend improvements.

(5) Identifies and facilitates intra-Agency and inter-Agency architecture integration opportunities.

(6) Ensure NASA's EA is maintained and accessible in the NASA EA system, which is the authoritative source for the NASA EA.

(7) Provides oversight and administration for EA efforts and activities.

(8) Engages with Center Lead Enterprise Architects, mission subject matter experts, and other stakeholders to ensure enterprise IT strategy is properly positioned to meet mission and business needs and to ensure mission stakeholders are aware of IT change drivers that could influence mission investments.

g. Each Center CIO:

(1) Appoints a Center Lead Enterprise Architect with the day-to-day responsibilities to:

a. Serve as primary interface for EA activities across center-level organizations, programs, and projects.

b. Support NCEA in order to develop, mature, and include center content within the NASA EA.

c. Manage the Center EA function.

d. Conduct oversight and administration of EA implementation throughout the Center.

(2) Champions EA work by opening communication channels, removing obstacles, and advocating for those performing the EA function to support customer needs.

(3) Utilize EA within processes involving center-level planning and investments.

h. Architects for OCIO Governed IT

Architects are responsible for developing architectures using the NAEF in collaboration with other stakeholders and subject matter experts. Architects will help ensure that the Agency has an integrated target architecture. Architects are the curators of their architecture products.

### 6. DELEGATION OF AUTHORITY

None.

### 7. MEASUREMENT/VERIFICATION

The NASA Chief Enterprise Architect will measure and report to the CIO via the OCIO governance structure including Agency level governance entities, quarterly and as requested by OMB or Executive leadership, EA measurements in the areas of value, activities, and process.

### 8. CANCELLATION

NPD 2830.1A, NASA Enterprise Architecture, November 2011.

## /s/Jim Bridenstine
## Administrator

---

## APPENDIX A: Definitions

Enterprise Architecture. A strategic information asset base which highlights the information, resources, and technologies necessary to perform the mission, and details the transitional processes for implementing new approaches in response to changing mission needs. It incorporates agency-wide IT architecture content. Framework. A logical structure for classifying and organizing complex information..[Source: GAO's CIO Council, A Practical Guide to Federal Enterprise Architecture, 2001, p.68]

Information Technology. Any equipment or interconnected system or subsystem of equipment that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information by an executive agency. It also includes computers, ancillary equipment (including imaging peripherals, input, output, and storage devices necessary for security and surveillance), peripheral equipment designed to be controlled by the central processing unit of a computer, software, firmware and similar procedures, services (including support services), and related resources; but does not include any equipment acquired by a federal contractor incidental to a federal contract. [Source: Derived from NPR 2800.1B Managing Information Technology]

Mission. NASA uses the term mission in two ways. When used as "Mission," it refers to NASA's core functions and responsibilities. When used as "mission," it refers to a special task given to an entity within NASA, such as a program or project, or a single flight of an aircraft or voyage of a spacecraft. [Source: NPD 1001.0C, NASA Strategic Plan]

Program. A strategic investment by a Mission Directorate or Mission Support Office that has a defined architecture, and/or technical approach, requirements, funding level, and a management structure that initiates and directs one or more projects.[Source: NPD 1000.0C, NASA Governance and Strategic Management Handbook, p. 47]

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 NASA's strategic goals. They may be performed wholly in-house, by Government, industry, academic partnerships, or through contracts with private industry. (This is a general definition for a NASA project. Specific project definitions are in the program/project management procedural requirements unique to project investment area.)[Source: NPD 1000.0C, NASA Governance and Strategic Management Handbook, p. 47]

## APPENDIX B:References

B1. Government Performance and Results Act of 2010 5 U.S.C. §§ 1 et seq., as amended.

B2. Government Paperwork Elimination Act of 1998, 44 U.S.C. § 3504, as amended.

B3. Coordination of Federal Information Policy - Federal Agency Responsibilities, 44 U.S.C. § 3544.

B4. E-Government Act of 2002: Management and Promotion of Electronic Government Services, 44 U.S.C. §§ 3601 et seq., as amended.

B5. National Institute of Standards and Technology (NIST) Special Publications 800 Series.

B6. NPD 2810.1E, NASA Information Security Policy.

B7. NPR 4200.1H, NASA Equipment Management Procedural Requirements.

B8. NPR 7120.7, NASA Information Technology and Institutional Infrastructure Program and Project Management Requirements.

B9. NPR 8831.2F, Facilities Maintenance and Operations Management.

### (URL for Graphic)

None.

**DISTRIBUTION:**
**NODIS**