DATA ITEM DESCRIPTION

Title: DIGITAL ENGINEERING ENVIRONMENT (DEE) DESCRIPTION

Number: DI-MNT-90000A
AMSC Number: 10057
DTIC Applicable: No
Preparing Activity: MNT
Applicable Forms:

Approval Date: TBD
Limitation:
GIDEP Applicable: No
Project Number: MNT-2025-002

Use/relationship: A Digital Engineering Environment (DEE) provides an integrated digital ecosystem that enables the development, validation, and management of engineering artifacts throughout the system lifecycle. It ensures that digital engineering tools, models, data formats, and governance structures adhere to DoD and industry standards, promoting interoperability, automation, and collaboration.

This DID establishes the minimum required content, format, and interoperability standards for a digital engineering environment used in DoD acquisition, design, development, sustainment, and operations.

Requirements:

1. Reference Documents

The applicable issue of the documents cited herein, including their approval dates and any applicable amendments, shall be specified in the contract.

Relevant standards include:

- DoD Digital Engineering Strategy
- MIL-STD-31000B (Technical Data Packages)
- IEEE 15288 (System Life Cycle Processes)
- ISO 10303 (STEP for CAD and digital threads)
- ISO 8000 (Data Quality)
- NIST 800-171 (Cybersecurity in DEE)
- DoD 5000.87 (Digital Engineering Implementation Guidance)

2. Format

The Digital Engineering Environment (DEE) shall:

- Be modular, scalable, and extensible
- Support federated and integrated toolchains
- Allow for secure multi-user collaboration
- Enable machine-readable, queryable digital threads
- Store data in open, vendor-neutral formats where possible
- Support classified and unclassified deployment environments

3. Content

A Digital Engineering Environment (DEE) Package shall include the following elements:

a. DEE System Architecture (DI-MNT-90000.01A)

- Tool Integration: Systems Engineering, CAD, PLM, Simulations, MBSE
- Data Interoperability: APIs, standardized exchange formats
- Governance Framework: Data access, cybersecurity, user roles

b. Digital Thread and Data Models (DI-MNT-90000.02A)

- Authoritative Source of Truth (ASOT)
- Federated Data Models across disciplines
- Versioning and Configuration Management
- Automated Data Validation

c. Engineering Workflows & Processes (DI-MNT-90000.03A)

- Model-Based Requirements Management
- Simulation-driven Design & Verification
- Digital Continuity from Concept to Sustainment
- Multi-disciplinary Design Optimization (MDO)

d. Cybersecurity and Compliance (DI-MNT-90000.04A)

- Access Controls & IAM (Active Directory, LDAP)
- Compliance with NIST 800-171 & CMMC

e. Digital Engineering Ecosystem Levels

- DI-MNT-90000.10A: DEE_Simple.json
- DI-MNT-90000.11A: DEE_Moderate.json
- DI-MNT-90000.12A: DEE_Comprehensive.json

End of DI-MNT-90101A.