

DoD DE Strategy Goal	Model-Based Capability Name	Capability Description
Goal 1. Use of Models	MBSE Use Strategy	This is documenting the Digital Engineering/Model Based System Engineering (DE/MBSE) strategy as part of the overall strategy an organization has to provide the system/system-of-systems/enterprise. The concept is that DE/MBSE is used as it benefits the overall work and result.
Goal 1. Use of Models	Common DE and MBSE Terminology	A set of lexicon, taxonomies and glossaries with known precedence.
Goal 1. Use of Models	SE Agreement Process	This is a rollup of ISO/IEC/IEEE 15288.1 paragraphs 6.1.1 and 6.1.2. Matrix Users may want to replace this line item with the set of processes that are most important to their application. The stage descriptions may be the same for each process or tailored. Agreement Processes include: ► Acquisition ► Supply
Goal 1. Use of Models	SE Organizational Project-Enabling Processes	This is a rollup of ISO/IEC/IEEE 15288.1 paragraphs 6.2.1 to 6.1.6. Matrix Users may want to replace this line item with the set of processes that are most important to their application. The stage descriptions may be the same for each process or tailored. Organizational Project-Enabling Processes include: ► Life Cycle Model Management ► Infrastructure Management ► Portfolio Management ► Human Resource Management ► Quality Management ► Knowledge Management
Goal 1. Use of Models	SE Technical Management Processes	This is a rollup of ISO/IEC/IEEE 15288.1 paragraphs 6.3.1 to 6.3.8. Matrix Users may want to replace this line item with the set of processes that are most important to their application. The stage descriptions may be the same for each process or tailored.
Goal 1. Use of Models	Model Configuration Management	ISO/IEC/IEEE 15288.1 paragraph 6.3.5. Configuratoin Management
Goal 1. Use of Models	Model Data Management	ISO/IEC/IEEE 15288.1 paragraph 6.3.6. Information Management
Goal 1. Use of Models	SE Technical Processes	This is a rollup of ISO/IEC/IEEE 15288.1 paragraphs 6.4.1 Business or Mission Analysis and 6.4.14. Disposal. Matrix Users may want to replace this line item with the set of processes that are most important to their application. The stage descriptions may be the same for each process or tailored.
Goal 1. Use of Models	Modeling Stakeholder Requirements	ISO/IEC/IEEE 15288.1 paragraph 6.4.2. Stakeholder Needs and Requirements Definition
Goal 1. Use of Models	Model-Based Verification and Validation	ISO/IEC/IEEE 15288.1 paragraphs 6.4.1 Business or Mission Analysis and 6.4.14. Disposal
Goal 1. Use of Models	SE-driven Model Plan	Modeling is part of the System Engineering Plan or System Engineering Management Plan. It should cover the Information Technology (IT) infrastructure, modeling tools, modeling environments, identify the type and purpose of models and how they are managed.
Goal 1. Use of Models	Model Based Reviews; Management Program Reviews /MPR(s), Milestone reviews, program reviews, technical reviews, audits	Digital artifacts are the products from the Authoritative Source of Truth, so that as the system models are queried for evidence against the technical review and audit criteria, the system models may be updated. Note that System Models are a type of digital artifact themselves. MPRs recast to reflect model-driven processes and model-based artifacts (e.g., entrance/success criteria based on process objectives as reflected in the views/viewpoints, not doc creation). See ISO/IEC/IEEE 15288.2. See GAO/NSIAD-98-56 Best Practices for information on "Knowledge Points."
Goal 1. Use of Models	Model Metrics	Having a modeling metrics program to improve the modeling efforts and the target system or enterprise.
Goal 1. Use of Models	Modeling Integration	System Engineering Model pattern as defined by Object-Oriented Systems Engineering Method (OOSEM).
Goal 1. Use of Models	Verification and Validation of Models	Model objective examples include: ► Modeling a new concept (e.g., Universal command and control) ► Modeling system, subsystem, and interfaces ► Modeling operational functionality to generate/verify operational requirements ► Modeling a complex algorithm ► Model system V&V processes.
Goal 1. Use of Models	Modeling Assurance	Per ATR-2018-01074 Rev A from The Aerospace Corporation. Model Assurance Level (MAL)– A measurement system for model value, content and quality. Identifies risk areas related to models and is rated 1-3; 1 has the least assurance.
Goal 1. Use of Models	Model Management	Model management is responsible for establishing policy and managing the oversight of model collection activities, model valuation, acquisition and strategic model loans, for ensuring the application.
Goal 1. Use of Models	Distributed Database/Tool interoperability	A fully Federated (or Confederated) data and IT infrastructure that functions as one virtual common database. Includes a standardized interface(s) for other data sources to join the Federation (APIs, wrappers, etc.).
Goal 1. Use of Models	Model Based Data/Tool Independences	Bifurcation Opportunity: Connecting to non-MBE repositories as well as MBE repositories. One is for sharing data and the other is for sharing model artifacts.
Goal 1. Use of Models	Inter-Database/Tool Data Item Associations	Capture and manage associations between data items within and between disparate data sources. Associations can be traced between data items regardless of their location.
Goal 1. Use of Models	Modeling Methods	Methods examples include but are not limited to: ► OOSEM (Object-Oriented Systems Engineering Method) ► STRATA (Vitech) ► Harmony-SE (IBM Rational Telelogic) ► RUP-SE (IBM Rational Unified Process for Systems Engineering) ► JPL State Analysis (SA) ► OPM (Dori Object-Process Methodology) ► OOA/D (Object-oriented analysis and design) ► SYSMOD (Weilkiens Systems Modeling Process) ► VAMOS (Variant Modeling with SysML) ► Alstom ASAP methodology ► Pattern-Based Systems Engineering (PBSE) ► Modeling methods driven by SE objectives/analyses/uses and evidentiary artifacts, includes Library of standardized and frequently used patterns/models/components
Goal 1. Use of Models	Model Languages	Model Language examples: ► UML – Unified Modeling Language ► SysML – Systems Modelling Language ► SDL – System Definition Language ► STRATA (Vitech) ► Modelica ► LML – Lifecycle Modeling Language ► TOGAF – The Open Group Architecture Framework ► BPEL – Business Process Execution Language ► DoDAF – Department of Defense Architecture Framework ► UPDM – Unified Profile for DoDAF/MODAF ► UAF – Unified Architecture Framework
Goal 1. Use of Models	Model Libraries	Creating curated model libraries that are added to, retired, loaned, updated, etc.

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Goal 1. Use of Models	User Interface (UI), Viewpoint/Views, and visualization	Viewpoints reflecting SE and user objectives/analyses/needs are defined and standardized. Supports interrogation, navigation, tracing, etc., of data from disparate, heterogeneous data sources (See ISO 42010 for definitions).
Goal 1. Use of Models	Simulation Capability	GENESYS, Cameo, Spax EA and Rhapsody all have built in simulation capabilities. Additionally, they all also have the ability to interface with external simulation assets such as MaTLab Simulink.
Goal 1. Use of Models	Modeling Process quality	Having a quality program that incorporates modeling.
Goal 2. ASOT	Authoritative Source of Truth (ASOT)	The collection of modeling data that represents the target system(s) along with its rationale. https://www.acq.osd.mil/se/initiatives/init_de_def.html Reference NASA-STD-7009 for examples of factors for assessing "Acceptability for Use" and "Credibility of Results."
Goal 2. ASOT	Digital Threads	https://www.acq.osd.mil/se/initiatives/init_de_def.html Digital Thread: An extensible, configurable, and component enterprise-level analytical framework that seamlessly expedites the controlled interplay of authoritative technical data, software, information, and knowledge in the enterprise data-information-knowledge systems, based on the Digital System Model template, to inform decision makers throughout a system's life cycle by providing the capability to access, integrate, and transform disparate data into actionable information. (DAU Glossary)
Goal 2. ASOT	Digital Twin	https://www.acq.osd.mil/se/initiatives/init_de_def.html Digital Twin: An integrated multiphysics, multiscale, probabilistic simulation of an as-built system, enabled by Digital Thread, that uses the best available models, sensor information, and input data to mirror and predict activities/performance over the life of its corresponding physical twin. (DAU Glossary)
Goal 2. ASOT	Digital Artifacts	Digital Artifact: The artifacts produced within, or generated from, the digital engineering ecosystem. These artifacts provide data for alternative views to visualize, communicate, and deliver data, information, and knowledge to stakeholders. (DAU Glossary)
Goal 3. Innovation	MBSE Institutional Adoption (e.g., agency, service, center, business unit) for Digital Engineering	The level that MBSE is adopted uniformly across the target organization.
Goal 3. Innovation	MBSE Technical Innovation Process	The organization's process to adopt new modeling relevant technology.
Goal 3. Innovation	Enabling Technologies	An assessment of how enabling technology is adopted by an organization.
Goal 4. Establish Environments	Modeling Tool Access	The access to models based on modeling roles.
Goal 4. Establish Environments	Model Based Tool Licensing & Access	How well an organization manages tool licenses
Goal 4. Establish Environments	Collaboration capabilities	Synchronous and asynchronous data-rich collaboration among distributed teams
Goal 4. Establish Environments	Intellectual Property (IP)	Determining if the organization has and uses IP policy effectively across the enterprise to maximize transparency while protecting IP.
Goal 4. Establish Environments	Tool Governance	Tool governance is the establishment of policies and continuing monitoring of their implementation to include selecting tool sets, tool extensions and plug-ins, tool environments, tool procurements, licenses, and access.
Goal 5. Workforce Transformation	Modeling Roles and Responsibilities	Roles and responsibilities may include such modeling roles as: enterprise manager, program/project manager, SE, IT, Modeler, policy maker, contracting, model curator, model manager, model data manager, ASOT configuration manager or others.
Goal 5. Workforce Transformation	Modeling Development Skills	More than just modeling tool expertise. This includes expertise in model structure/architecture that supports all subsequent uses.
Goal 5. Workforce Transformation	Modeling Use skills	This covers a role that all government or acquirer team members must have to conduct model based acquisition.
Goal 5. Workforce Transformation	Modeling-related Training/ KSA development	Multilevel training series, including "hands-on" real world(-like) execution.