Systems engineering and requirements management for the aerospace, defense, government and shipbuilding industry
Aerospace platforms and major systems often comprise a myriad of interacting subsystems that independently and collectively must satisfy a complex set of performance requirements. Moreover, these requirements often evolve throughout the lengthy development cycle which can be 5-10 years for some major systems and subsequently change again during the life of the system – often 30-50 years – to satisfy new challenges and performance requirements.

Systems engineering provides designers and engineers the capability to manage these complex relationships within a subsystem and across the rest of the platform subsystems to ensure the primary system complies with the most challenging requirements from concept development through production and then the protracted service life.

How can Siemens help?

Teamcenter® Systems Engineering and Requirements Management software from Siemens PLM Software integrates the management of complex major aerospace and defense systems by ensuring the alignment of each subsystem with specific requirements, by managing the inaction and impact of all subsystems and ultimately ensuring the collective performance of all subsystems satisfies the overall platform/prime system/vehicle performance requirements.

Teamcenter Systems Engineering can optimize requirements management and configuration management from concept development through service by providing designers, engineers and service engineers a rigorous/inactive process to ensure compliance throughout the entire lifecycle and value chain – minimizing potential quality escapes, reducing cycle times and improving overall productivity.
Enterprise requirements management

Teamcenter Systems Engineering ensures that the top-level operational requirements for a major aerospace system are satisfied by allocating and concurrently managing the requirements at the component, subsystem and super-system levels for designers, engineers and partners across the extended enterprise and value chain.
Cross-domain system design

Teamcenter Systems Engineering coordinates the actions of all functions throughout the lifecycle to ensure decisions are synchronized with production operations, partners, suppliers and service personnel. With lead times for some parts measured in years and supply-chains often extending across the globe, harmony among all functions is critical to overall productivity, cost and schedule management.

Teamcenter Systems Engineering creates a single source for traceability to help reduce risk, resolve interface issues and preclude failures throughout the product lifecycle. Additionally, Teamcenter Systems Engineering ensures the super-system product structure – from as-designed through as-maintained, FAA certification requirements, CDRL/SDRL compliance – are captured and managed in a single environment with proven standard processes.
**Unified development environment**

Major aerospace systems can have millions of parts and a concomitant number of complex relationships which must be coordinated throughout the design and engineering development phases as well as across the production and service phases. Teamcenter Systems Engineering creates and manages a single database of authority for a global value chain to use to synchronize the evolution and maturation of the total super-system for periods that can span 50 years and include 50 TB of data.

Teamcenter Systems Engineering rigorously manages and coordinates change management and configuration management with discipline workflows from concept creation through detailed design, using production- and sustainment-based system engineering principles and a disciplined, interactive approach to requirements compliance.
The bottom line

Siemens’ Teamcenter Systems Engineering and Requirements Management integrates the management of complex major aerospace and defense systems. This solution ensures the alignment of each subsystem with specific requirements by managing the inaction and impact of all subsystems. The solution ultimately ensures that the collective performance of all subsystems satisfies the overall platform/prime super-system and/or vehicle performance requirements.

How do I get started?

Contact Siemens PLM Software for help in mapping an approach for your organization/enterprise to achieve a quantum leap forward in service/sustainment transformation.

www.siemens.com/plm/aerospacedefense
About Siemens PLM Software

Siemens PLM Software, a business unit of the Siemens Industry Automation Division, is a leading global provider of product lifecycle management (PLM) software and services with nearly six million licensed seats and 56,000 customers worldwide. Headquartered in Plano, Texas, Siemens PLM Software works collaboratively with companies to deliver open solutions that help them turn more ideas into successful products. For more information on Siemens PLM Software products and services, visit www.siemens.com/plm.

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