Leaders in **AEROSPACE & DEFENSE**

Fly with Dassault Systèmes
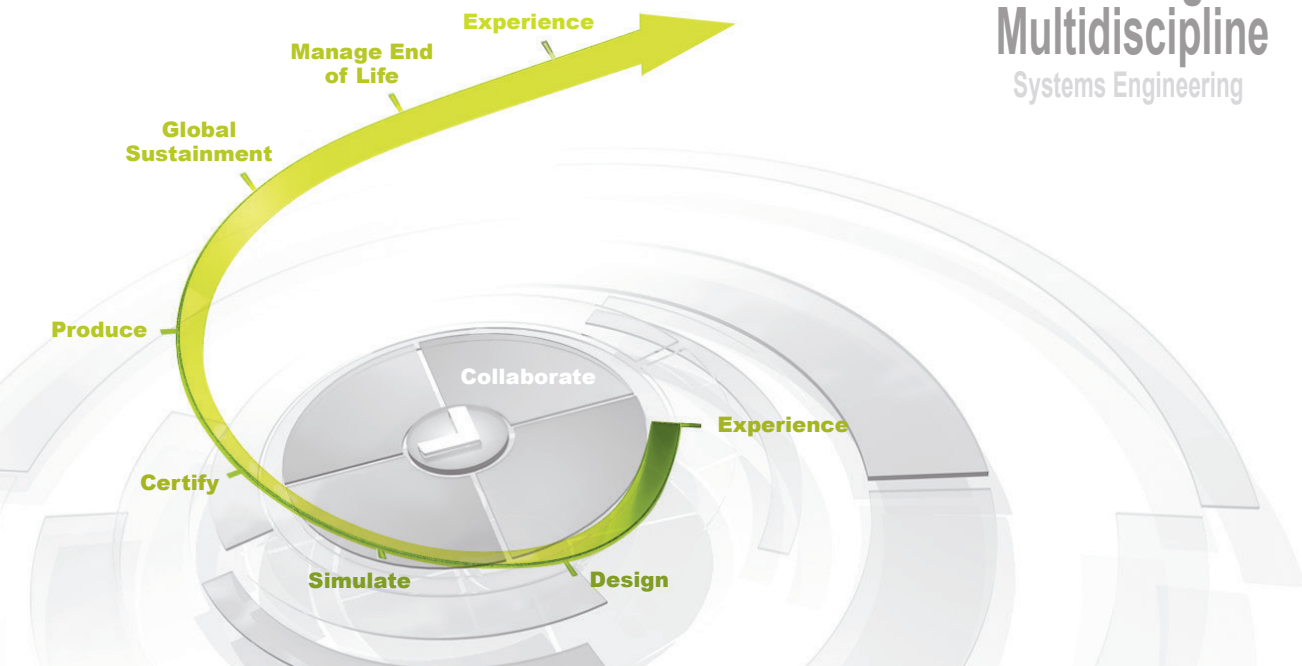
ЗS DASSAULT SYSTEMES

Leading 21st Century Innovation

With over a hundred years pioneering flight vehicles and defense products, aerospace and defense (A&D) companies are used to overcoming obstacles. Today they look for ways to make their programs take flight while meeting exacting product performance requirements in a challenging market. They also seek to mitigate and control risk while developing these products. Incorporating complex, efficient new technologies while addressing the environmental impact during each stage of development requires companies to seek the finest talent, tools and best practices.
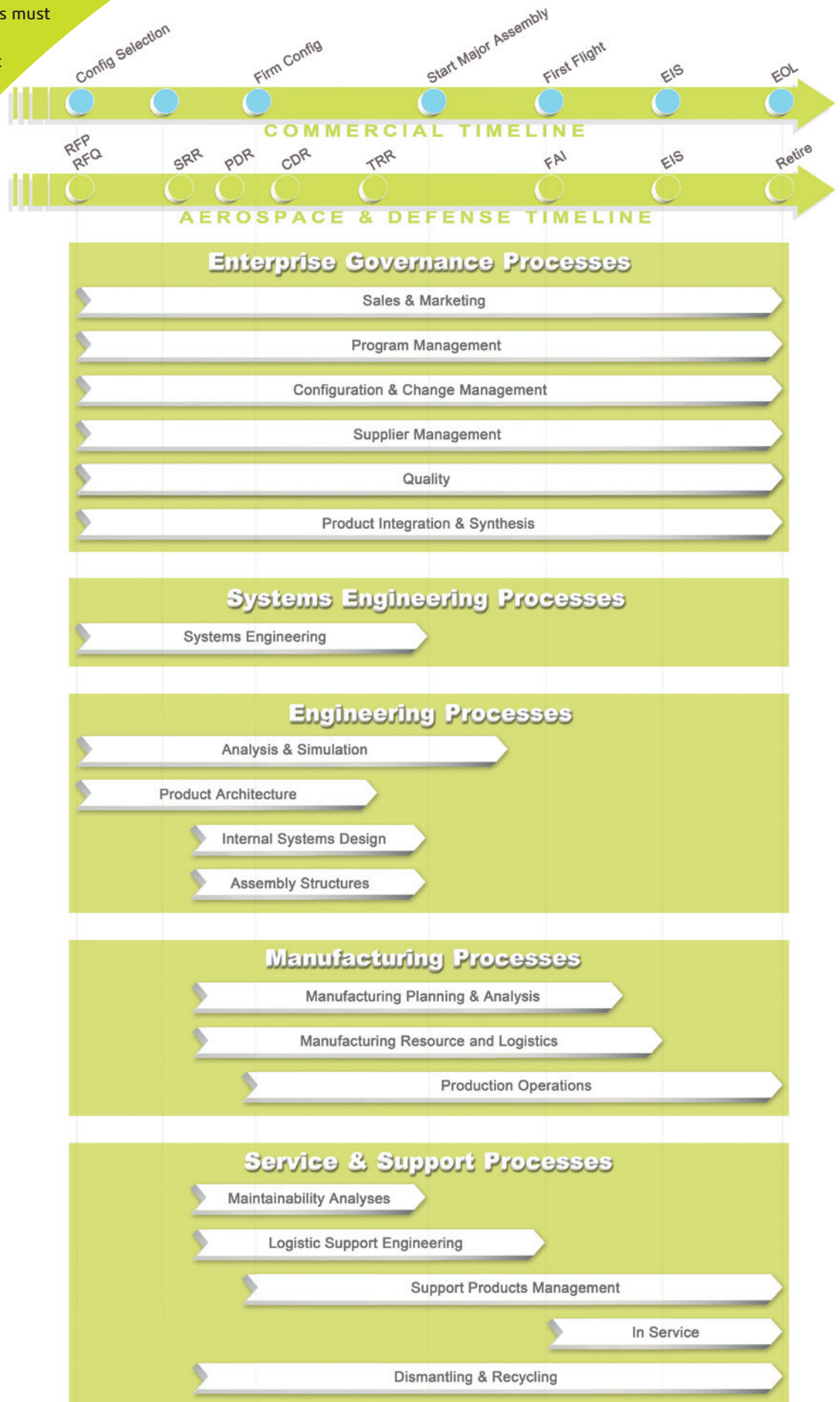
Tightening commercial and defense budgets mean those who are the most efficient will reap the most benefit. From concept to recycling Dassault Systèmes A&D solutions manage complexity and promote collaboration and innovation among key program members, their suppliers and extended A&D communities. Developing new tools for designing tomorrow's products, **Dassault Systèmes brings realistic simulation and life-like experience to Product Lifecycle Management**. 21st century A&D organizations will rely on DS solutions to harness global expertise and deliver products on time with improved total cost of ownership.

Deliver to Contract
Scalable Real-time Data
Profits On-time Delivery
Global Collaboration
Collaborative Composite Authoring 3D Structure Analysis
Manage Protect IP
Supply Chain OEM
Change Configuration Management
Manufacturing Collaboration
Supplier Performance
Accelerate Time to Market
Optimize Product Development
Open Integration Flexible
Requirements Management
Planning Production
Concurrent Engineering
Multidiscipline
Systems Engineering

Experience
Manage End of Life
Global Sustainment
Produce
Certify
Collaborate
Experience
Simulate
Design

Dassault Systèmes' Solutions for the **Aerospace & Defense Industry**

To maintain their competitive advantage, Aerospace & Defense companies must implement the proper business process transformation to meet the critical challenges they face.

COMMERCIAL TIMELINE

Config Selection — Firm Config — Start Major Assembly — First Flight — EIS — EOL

AEROSPACE & DEFENSE TIMELINE

RFP RFQ — SRR — PDR — CDR — TRR — FAI — EIS — Retire

Enterprise Governance Processes

- Sales & Marketing
- Program Management
- Configuration & Change Management
- Supplier Management
- Quality
- Product Integration & Synthesis

Systems Engineering Processes

- Systems Engineering

Engineering Processes

- Analysis & Simulation
- Product Architecture
- Internal Systems Design
- Assembly Structures

Manufacturing Processes

- Manufacturing Planning & Analysis
- Manufacturing Resource and Logistics
- Production Operations

Service & Support Processes

- Maintainability Analyses
- Logistic Support Engineering
- Support Products Management
- In Service
- Dismantling & Recycling

Ensure the product performs right the first time with full virtual product modeling and simulation including its shape, systems and behavior.

Build the product right the first time by designing and validating multi-disciplinary data – from structure to engine and system – within a single digital mockup.
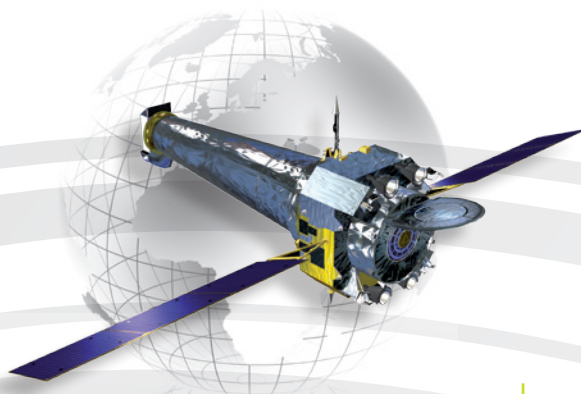
Technology Leadership for Program Success

To improve program performance, Dassault Systèmes offers a single repository, or "Program Home," that integrates all valuable intellectual property (IP) into a consistent whole to share, protect and reuse. Complex A&D programs require advanced tools to meet collaboration challenges. DS' PLM solutions integrate business process management with cutting-edge tools for design, engineering, manufacturing planning and after-sales services over the life of a program. The ability to track and share critical program information and processes, in real time, across the extended enterprise while protecting IP supports an increased role of global suppliers and improves a corporation's performance-to-contract. Working efficiently with suppliers and facilitating enterprise-wide collaboration provides companies with a competitive edge.

Meet All Requirements

Meet all requirements with end-to-end traceability using a Requirement, Functional, Logical and Physical (RFLP) infrastructure linking product design with logical and functional definitions as well as requirements coming from within your company, customers or regulatory organizations. Trace original requirement to the final product and - with other up-to-date product information – recognize how a change in requirement affects product architecture, detail design, and downstream processes.

Make Better Decisions

The Program Home supports key functional disciplines such as contract management, Program Planning and Control (PP&C), configuration management, change management and risk and resource management. At the core of the solution is a robust and flexible configuration management system with a 3D dashboard that provides on demand viewing and tracking of all changes to all product configurations throughout the entire program life cycle. Program managers can define and assign program deliverables with reliable and up-to-date information to all stakeholders at all times. Having the ability to define and validate product architecture earlier in the development process, before many product details are generated, promotes increased innovation while the change costs are low.
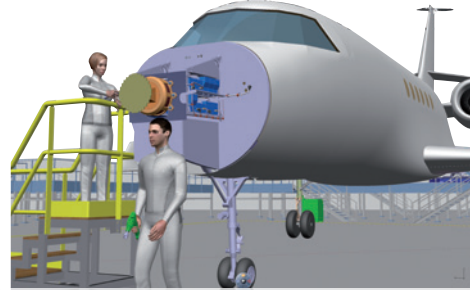
Accelerate Design with 3D

DS solutions for Aerospace product architecture enable designers to define high-level, multi-disciplinary, product architecture in 3D during the early product development phase. The solution supports all activities related to the definition of a product's external shapes, preliminary structure, and logical systems space allocation. An extensive set of applications enable all design activities ranging from lofting to structures and systems layout, basic structural analysis, and ergonomic studies. The use of 3D accelerates the definition and validation processes to ensure that the product architecture respects all installation and layout requirements.

Enhance Communication

Working with 3D data provides opportunities to drive additional efficiencies before and after product delivery. Interactive and animated 3D work instructions deliver enriched information to the service teams, reducing training costs and elevating the overall quality of maintenance, repair and overhaul (MRO) operations – while simultaneously driving down technical documentation costs. Digital interactive electronic training manuals (IETMs), aircraft maintenance manuals (AMMs), interactive product catalogs (IPCs) and other mission-critical applications can all be developed based on 3D master data, and then deployed electronically to support organizations across the globe.

Use 3D lifelike experiences to add a new dimension to your technical communications – establishing improved workflows, greater understanding and a clear competitive advantage.

Validate maintenance costs and cycle times before operation with high-fidelity manikin-in-the-loop task simulation. Leverage full visibility of maintenance requirements to improve design-for-maintainability.

Design in Quality

Integrated design and analysis solutions enable designers to rapidly evaluate multiple design alternatives, collaborate on projects and leverage high-performance computing resources to accelerate performance-based decision-making earlier in the design process. Unified Finite Element Analysis (FEA) and multiphysics simulation enable designers and engineers to perform highly-accurate, full-event simulations, allowing them to evolve their methods by taking advantage of these realistic simulation capabilities. Early collaboration between design, analysis and other engineering departments helps companies agree faster on validated designs. As new variations of the product are investigated, virtual testing can be performed quickly on the new options without extensive recreation of the data by using simulation lifecycle management.

Reduce Manufacturing Time

A design-for-manufacturing approach allows design and manufacturing processes to be optimized concurrently, in ways that best utilize available resources. The ability to define and validate product architecture much earlier in the development process allows engineers to increase innovation and manage costs. In the early stages of product development manufacturing planning, resource management and production operations can be defined so that manufacturing delays that occur when building products can be reduced or avoided. Comprehensive 3D process and resource planning tools provide manufacturing organizations throughout the extended enterprise the ability to create and optimize build-to-order, flexible manufacturing processes.

> **Our integrated DS PLM solution helps our people stay connected throughout the entire process, regardless of location, while ensuring that downstream processes match the correct released engineering.**
> **Tonya Cole,**
> *NC Programmer, GKN Aerospace*
>
> **We selected V6 PLM in order to create a safe, fast, scalable and powerful collaborative base for an efficient, global, risk-sharing supply chain.**
> **Roberto Zuffada,**
> *CIO, Piaggio Aero Industries*
>
> **With CATIA and DELMIA, we spent just 23 months developing a plane model that used to take four years in our traditional development environment.**
> **Luo Ronghui,**
> *President and General Manager of Chengdu Aircraft Industrial*

Count on Dassault Systèmes

Today, every successful aviation company in the world, such as, Airbus, Lockheed Martin, Pratt & Whitney Canada, Chengdu Aircraft Industrial, Cessna Aircraft and countless suppliers are Dassault Systèmes ' customers. As the de facto leader for PLM solutions in the Aerospace industry for over 25 years, DS has helped hundreds of customers in their strategic initiatives around the transformation of product development, manufacturing and enterprise collaboration processes. The DS long time commitment to addressing the unique challenges of the aerospace and defense continues.

For more information: www.3ds.com/aerospace

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Dassault Systèmes delivers Product Lifecycle Management (PLM) solutions for Aerospace and Defense (A&D) companies and their suppliers to accelerate the development of innovative products. For more than 25 years, DS has helped customers advance innovation by providing solutions that integrate business process management with cutting-edge tools for design, engineering, production planning and after sales services.

As a world leader in 3D and Product Lifecycle Management (PLM) solutions, Dassault Systèmes brings value to more than 115,000 customers and more than 300 A&D customers in 80 countries -- including Bell Helicopter, Boeing, Bombardier, EADS and Piaggio Aero. A&D companies rely on DS solutions for real-time integration of geographically dispersed work teams and the supply chain. A pioneer in the 3D software market since 1981, DS applications provide a 3D vision of the entire product lifecycle from conception to maintenance to recycling.

Six Brands, One Company:

CATIA
Virtual product design

ENOVIA
Global collaborative lifecycle management

SIMULIA
Realistic simulation

3DVIA
Online 3D lifelike experiences

DELMIA
Virtual production

SolidWorks
3D Mechanical design

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Discover our solutions and references:
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See What You Mean