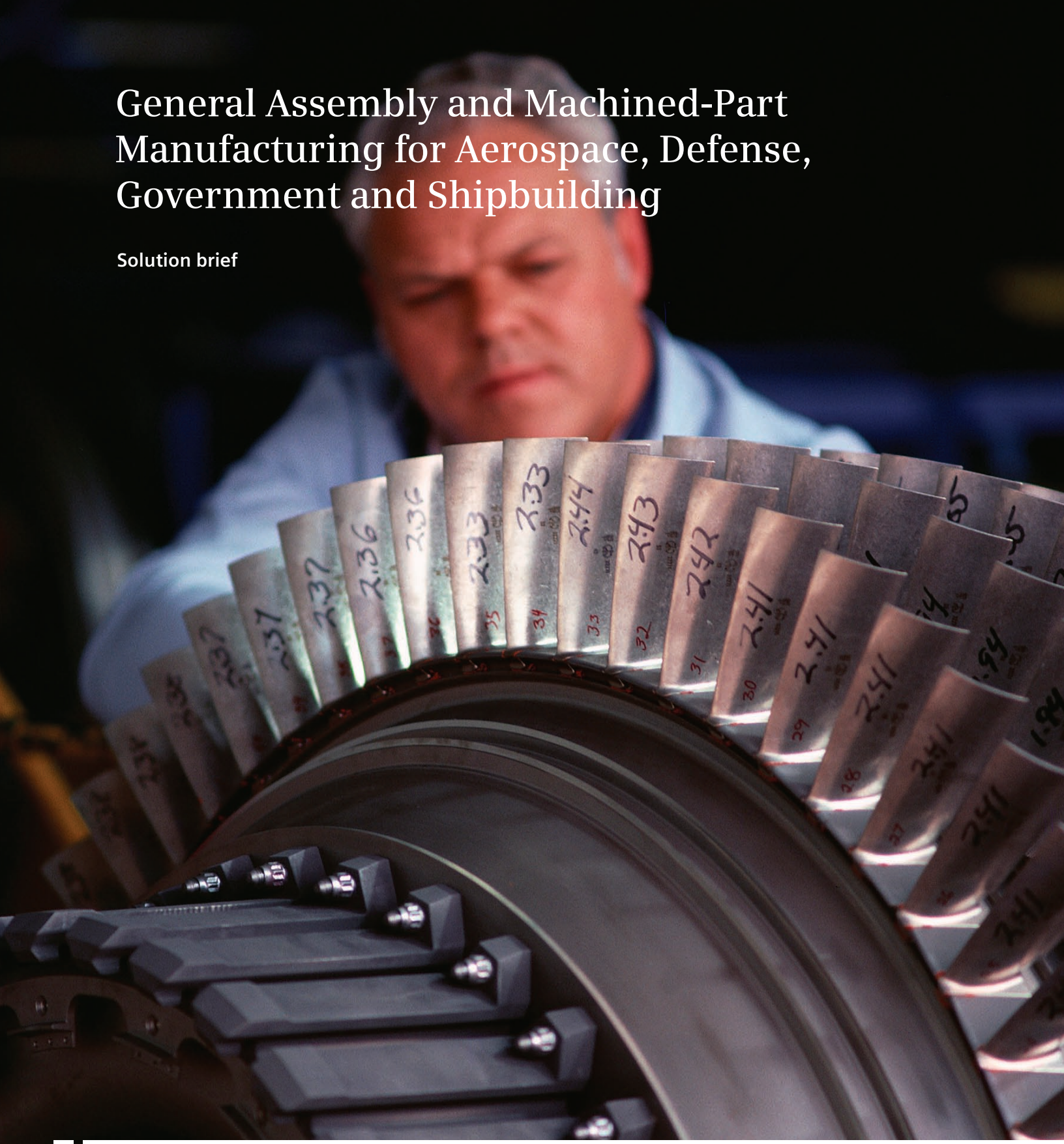
General Assembly and Machined-Part Manufacturing for Aerospace, Defense, Government and Shipbuilding

Solution brief



PLM Software

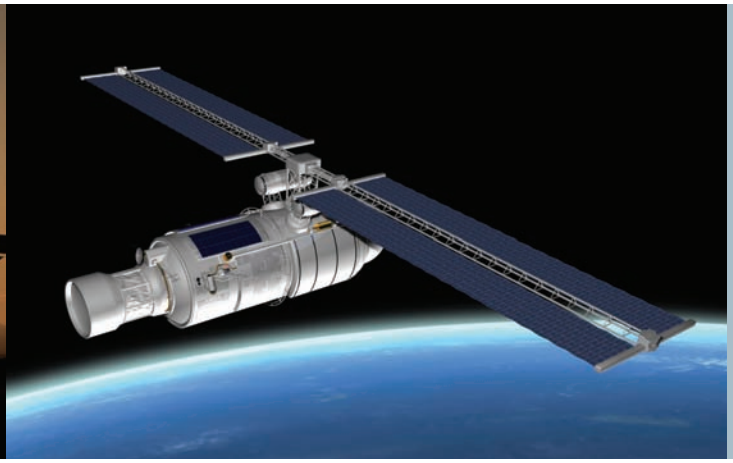
Answers for industry.

SIEMENS

Complexity driven by rigorous control







Aerospace systems and their parts are extremely complex to manufacture and assemble. Complete assemblies can range in size from hundreds of thousands to several millions of parts.

Space and weight are so critical that machining their tolerances and efficiently managing their space in the final assembly can mark the difference between design success and absolute failure.

If that weren't enough, vendors are expected to comply with rigorous program performance requirements and demanding technical specifications.

Every action in the general assembly and part manufacturing phases of an aerospace program needs to adhere to approved procedures – and must be documented to confirm compliance. Comprehensive process control and standards-based change management are mandatory for the operation of all aerospace production facilities.



How can Siemens help?

Siemens PLM Software provides a comprehensive product lifecycle management (PLM) portfolio that aerospace companies, defense services, government agencies and shipbuilders can use to manage today's most complex general assembly and machined-part manufacturing processes in order to:

- Optimize these processes by creating and maintaining a single source of stakeholder knowledge that includes both a comprehensive bill of material (BOM) and bill of process (BOP)
- Establish and manage a formal change process throughout key phases of a system's development, production, service and sustainment lifecycle
- Ensure that all lifecycle processes and their results comply with established program requirements, as well as design and engineering intent
- Monitor and document all program activities to confirm their conformance to approved procedures while ensuring that design changes/enhancements are introduced without disrupting the assembly process





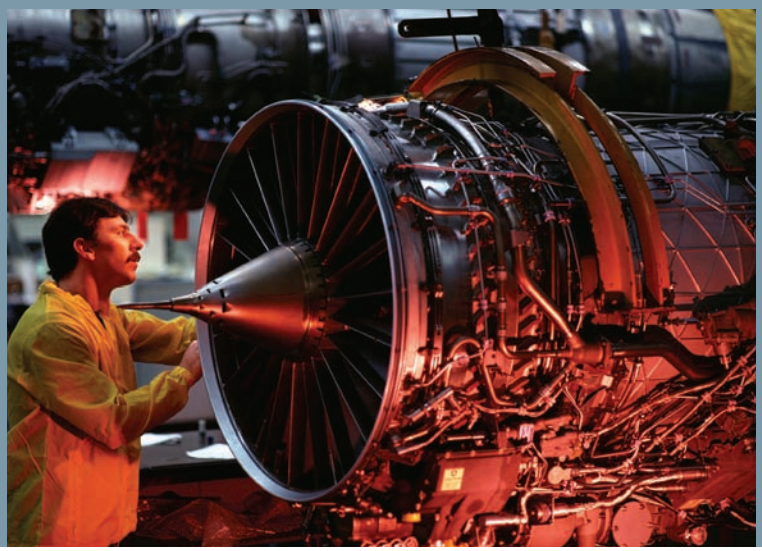
Siemens' PLM-centric approach to general assembly and machined-part manufacturing provides three essential elements for managing the development, production, service and sustainment of complex aerospace, defense, government and shipbuilding systems.

1 Single source of manufacturing knowledge

Siemens' General Assembly and Machined-Part Manufacturing solutions provides program teams with access to a single source of BOM and BOP information that is accurate, complete, synchronized and fully aligned to meet a complex system's program performance requirements and design intentions.

By leveraging this knowledge, program managers can minimize the amount of non-productive time that development, manufacturing, service and sustainment teams spend searching for information to do their jobs. Highly aligned information also ensures that proper parts and appropriate procedures are used to complete the assembly process.





This single source also provides comprehensive management knowledge that can be used to improve operational productivity, reduce cycle time, drive quality issues and capture best practices for future designs.

In addition, this single source of knowledge can be shared with suppliers, partners and customers to improve manufacturing and assembly collaboration – which has become the norm in today's aerospace and defense industry, where programs are increasingly implemented in globalized virtual enterprises.

2 In-context collaboration

The growing complexity of aerospace platforms and production operations – which often extend across the globe – place great emphasis on virtual collaboration and consistent process management. Processes must be aligned throughout all enterprises and controlled in a disciplined way to avoid errors and lost time.



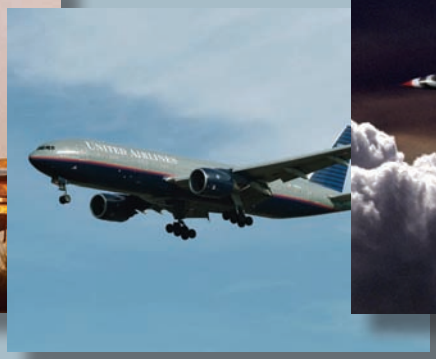
Each work task must be clearly documented with rigorous change management procedures and synchronized with production operations to minimize transition disruptions.

Siemens' General Assembly and Machined-Part Manufacturing solutions optimize assembly and machining processes by reducing non-productive time, managing workflow and minimizing potential quality issues. Their in-context collaboration capabilities improve production flexibility by enabling these processes to easily adapt to demand swings while minimizing the impact of potential choke points.











3 Proven solutions for process optimization

By documenting the steps in every general assembly and part manufacturing process, Siemens' solutions enable enterprises to retain best practices for future programs, which often require the participation of new team members.

The ability to carry these best practices forward is particularly important as large personnel turnovers are expected to affect the aerospace workforce. Siemens' comprehensive approach to information and process management enables enterprises to optimize their future programs and position themselves to deliver future systems in a more productive manner – as well as to optimize their current Six Sigma and Lean initiatives.





The bottom line

Siemens PLM Software's General Assembly and Machined-Parts Manufacturing solutions enable enterprises to create and maintain a single source of knowledge that includes both a complete BOM and complete BOP.

Enterprises such as aerospace companies, defense services, government agencies and shipbuilding companies can use this information to rigorously manage change that affects a complex system's process and product structure while synchronizing the actions of multiple stakeholders across all operations and functions that participate in the system's end-to-end lifecycle.

Siemens' solutions also offer production specialists the ability to optimize production operations across a global enterprise and extended supply chain for both current and future programs.

How do I get started?

Whether you want to implement a whole general assembly and machined-part manufacturing solution or build it incrementally, Siemens will work with you to meet your specific business needs.

Contact your Siemens PLM Software representative today and let us work with you to map an approach that will enable your organization to take a quantum leap forward in transforming your development, manufacturing, service and sustainment operations.

http://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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