

**SIEMENS**

*Ingenuity for life*

1 1 1 1 0 0 1 0 1 0 1 1 0 0 1 1 1 0 0 1 0 0 0 1 1 0 1 0 0 1 1 1 0 0 1 1 0 1

1 0 1 1 1 1 0 0 1 0 1 0 1 1 0 0 1

Siemens Digital Industries Software

# Accelerate your product development

Orchestrate your technical  
program and become more agile  
and efficient with Model Based  
Systems Engineering

[www.siemens.com/plm/mbse](http://www.siemens.com/plm/mbse)

# Industry Megatrends

The aerospace and defense industry is going through an exciting period of innovation. But innovation means complexity, and complexity means challenges.

One of the most important challenges is to **reduce program costs and improve program schedules**, because too many aerospace programs across the industry are either over budget, late, or both.

To compete successfully companies are no longer looking to just bend the cost curve they really want to break the cost curve.

Second, customers demand **products that are safer, more reliable and with better performance**. That requires higher integration of software, electronics and mechatronics, leading to increased program complexity. The scale of complexity increases the challenges of certifying new products and bringing them to market.

**Growing regulatory pressure and higher demand for more sustainable, efficient products** with electrical or other alternative propulsion systems require more software integration, adding another level of complexity. Companies are also replacing mechanical systems such as hydraulics with electrical systems to improve reliability and maintainability of their products.

And finally, **globalization** is offering great opportunities, but turns an effective management of suppliers and workforce distributed all over the world into a must.

In short, you have to make **better, more reliable, more sustainable and more complex products faster and with less production and maintenance cost**.

Is that easy? Not at all! But there is an alternative and the good news is that you can rely on the help of Siemens MBSE solutions.



# Orchestrate your Technical Program

Drive technical scope through the comprehensive MBSE digital thread



Companies are turning to Model Based Systems Engineering (MBSE) processes to manage product development, requirements flow down and overall integration

## One thread to connect and guide all domains

Aerospace and defense companies are faced with several challenges such as difficulty in managing document-centric systems engineering processes, risks due to integration of complex systems and supplier relationships, and compliance with regulatory requirements.

### Orchestrate your technical program

By using modeling to define product architecture and requirements, explore design space, design interfaces from the product architecture, manage integrations, test virtually and finally verify the product fulfills the requirements.

### Comprehensive Digital Thread

The Siemens model-based systems engineering (MBSE) digital thread is at the core of creating a digital enterprise that brings together all elements of the Siemens collaboration platform with systems engineering, mechanical, electrical/electronics, software design, multi-domain modeling and simulation.

### Manage complex product and Supply Chain integration

Furthermore, you can eliminate integration issues before reaching detail design, and trace design decisions from requirements and architectures through implementations within your product. This will accelerate the design, development and certification process for the product and ensure its safety and compliance with requirements.

### Performance Monitoring

And finally, you will reach full visibility of the product performance by monitoring key technical performance indicators live throughout the lifecycle.

Improve agility and flexibility, avoid risks and save time and money to **gain a competitive advantage** in your industry!

### Orchestrate your Technical Program

- Track requirements and architecture implementations
- Capture design decisions as your product matures
- Integrate complex supply chain and product interfaces
- Flexible and open multi-tool solution

### Accelerate your new product development and become more agile

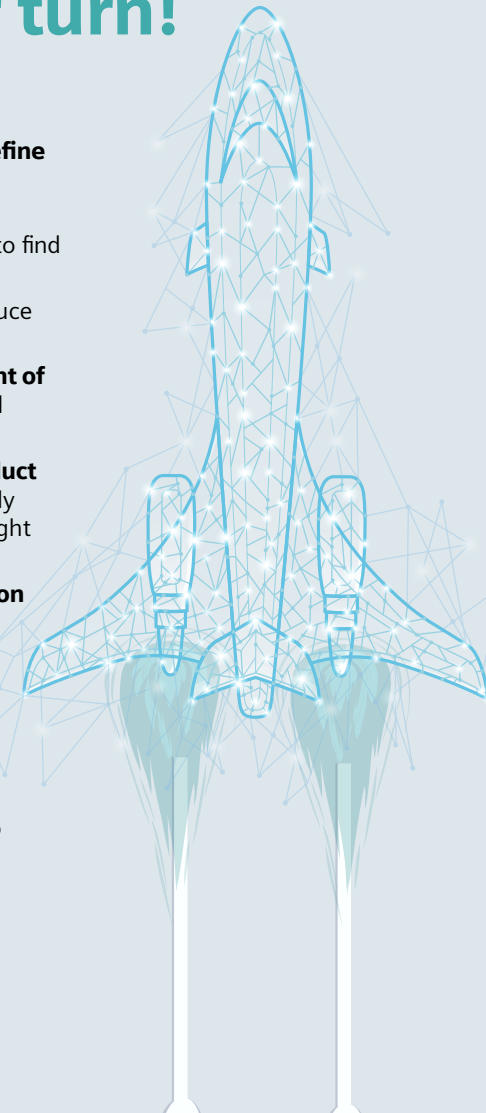
- Getting your design right the first time through up front systems engineering
- Manage complex product and supply chain integration
- Deliver safe, reliable products and improve maintainability

# Key Siemens Solution Enablers



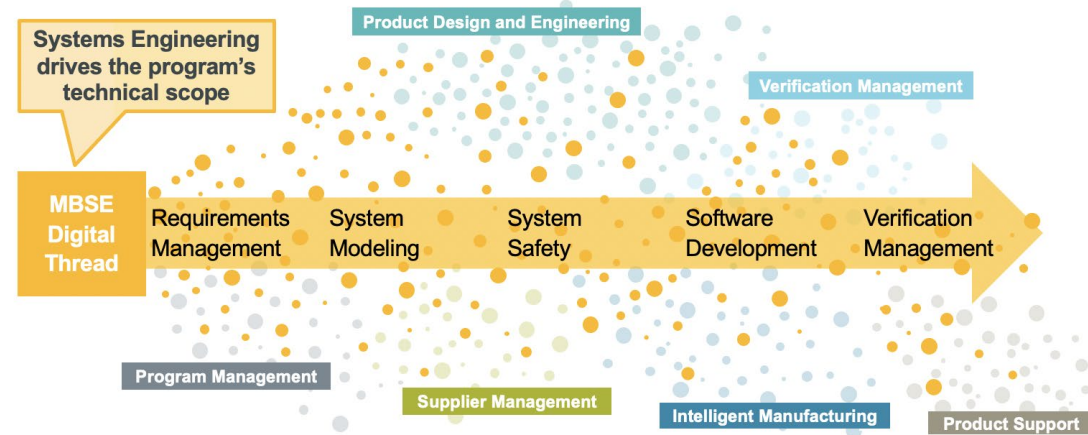
## Now it's your turn!

- Use modeling to define the product architecture and requirements, **and define your systems of systems.**
- **Explore your design space** with multi-disciplinary design optimization to find the best possible design.
- **Test virtually before you build** to reduce amount, risk and cost of testing.
- Use design interfaces for **full alignment of program** technical scope and technical responsibilities.
- **Manage the integration of your product** across your supply chain through clearly defined interfaces and technical oversight over the design process.
- **Trace all requirements and verification means** to ensure compliance at final verification.
- **Monitor KPIs** throughout the design, development and certification process.



Now it's your turn!

Accelerate your product development to become more agile and efficient with Siemens' **Model Based Systems Engineering** digital thread and the Xcelerator portfolio.



### About Siemens Model Based System Engineering

Companies implementing MBSE are accelerating product development. They are moving faster than the competition and becoming more agile. With the Siemens MBSE digital thread, customers gain traceability, continuity and accessible information – so when there is a change, they can do a better job of understanding the impact of that change.

For more information on Siemens MBSE, visit [www.siemens.com/plm/mbse](http://www.siemens.com/plm/mbse) or follow us on [LinkedIn](#), [Twitter](#), [Facebook](#) and [Instagram](#).

### Siemens Digital Industries Software

Where today meets tomorrow.

Headquarters: **+1 972 987 3000**  
Americas: **+1 800 498 5351**  
EMEA: **+44 (0) 1276 413200**  
Asia-Pacific: **+852 2230 3333**

© Siemens 2020. A list of relevant Siemens trademarks can be found [here](#).  
Other trademarks belong to their respective owners.  
a

