

Essential Model-based Systems Engineering

Answering Key Questions about Digital Transformation of Systems Engineering

Course Description

What is Model-based Systems Engineering (MBSE)? How will it improve my project products and processes? Why is it worth the investment? These and other key questions are explored in the 1-day Essential MBSE course.

The course is tailored for project managers, engineering team member and systems engineers preparing to undertake digital transformation in their organizations.

Participants will leave with the knowledge and background to more critically evaluate MBSE implementation in their organizations and with the foundation to pursue more advanced MBSE training if needed.

Testimonials

"A valuable lesson learned was the realistic expectations of what MBSE can or cannot do"

"One of my primary take-aways is that MBSE is not a substitute for good, solid, rigorous systems engineering."

"I now have a better understanding of where MBSE begins/ends/fits/is defined within Digital engineering."

"I now see Systems Engineering holistically as the Art and Science of turning needs into capability; with this, I feel like I can step back and come up with a better proposition for being successful."

Course Objectives

At the end of this course you will be able to....

- ◆ Define model-based systems engineering (MBSE)
- ◆ Explain the MBSE value proposition across the project lifecycle.
- ◆ Recognize and explain the use of SysML as well as other commonly used systems engineering diagrams and artifacts.
- ◆ Describe the purpose of ontologies, modeling languages and architectural frameworks and give examples.
- ◆ Identify various use cases for MBSE artifacts
- ◆ Use MBSE artifacts to evaluate Project Maturity and Issues
- ◆ Explain how models can be re-used, integrated and extended.
- ◆ Discuss MBSE adoption challenges within organizations
- ◆ Embark on more advanced, hands-on MBSE training

Who Should Attend

Project Managers, Systems engineers, payload principle investigators, subsystem engineers or project managers who are participating in or responsible for digital transformation in their organization.

Course Topics

- ◆ **MBSE: Why Bother?**
 - Course Introduction
 - What is Systems Engineering?
 - What is Model-based Systems Engineering?
 - What is the Value/ROI for MBSE?
- ◆ **What are Ontologies, Languages, Frameworks?**
 - What is an Ontology?
 - What are Modeling Languages, Diagrams?
 - What is an Architectural Framework?
- ◆ **So I have a Model, Now What?**
 - What can models tell me about...
 - Design?
 - System Management?
 - System Realization?
- ◆ **I'm Sold! What's Next?**
 - How Do I Build My Own Model?
 - What Challenges will we Face?
 - What is Model Curation?
 - How Can My Organization Transition to MBSE?

Course Materials

Each participant will receive:

- A complete set of course notes with copies of all slides used in the presentations