



Mastering Requirements Using MBSE

- Context-Based Requirements Engineering

There is more to understanding requirements than writing nice descriptions! This one- or two-day workshop is aimed at requirements practitioners and gives a model-based approach to requirements engineering using a framework-based approach to requirements. This approach places an emphasis on understanding the often varying contexts in which requirements are understood.

Duration: 1 day if taken after our 3 day 'A Model-Based Approach to Systems Engineering' course

2 days if taken after our 1 day 'MBSE for Beginners' course

Introduction to Model-Based Systems Engineering

This introductory module revisits the need for Model-Based Systems Engineering (MBSE), of which Model-Based Requirements Engineering forms a part. It:

- Discusses the increase in complexity that has given rise to MBSE.
- Introduces the MBSE Mantra of People, Process & Tools
- Gives an overview of MBSE in One Slide
- Discusses how Model-Based Requirements Engineering (also known as context-based requirements engineering) fits in to the larger MBSE.

Modelling

An essential and obvious enabler for MBRE is, of course, modelling. In this module we:

- Give an overview of each of the SysML diagrams used for requirements engineering, with a focus on the relationships between the diagrams
- Demonstrate, by focusing on the use of modelling and consistency, how to build up a true, consistent collection of views that make up a model, rather than just a collection of pictures

Essential Requirements Terminology and Concepts

- Requirement descriptions
- Requirement rules
- Requirement sources
- Stakeholder identification
- Context identification
- Context definition
- Validation of requirements
- The requirements ontology



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This module discusses all of the essential concepts and terms needed to understand, define and manage requirements. Each concept is introduced, defined, discussed and justified and then used to build up a requirements domain-specific language in the form of an ontology.

The Workshop

- Describing requirements exercise
- Context modelling exercise
- Validation – semi-formal scenarios exercise
- Validation – formal scenarios exercise
- Traceability exercise

The workshop forms the bulk of the course where the delegates are divided into small groups in order to carry out the requirements exercise. The workshop itself is divided into five sections where the delegates are gently introduced to the modelling techniques needed to evolve their knowledge of the requirements through exercises. Each section comprises a short introduction, a facilitated group exercise and then a presentation session where teams present back to the tutors and other teams to validate their understanding of the concepts and techniques.

Implementation

In the final module, we cover:

- creating a requirements framework based on the requirements ontology
- the people, process and tools you will need to successfully put the strategy into effect

Target Audience

The course is aimed at, but not limited to engineers, scientists and managers who deal with requirements engineering or management in their working lives. No previous experience of modelling is required for this course.

Benefits

The benefits of this course are as follows:

- Discovering how modelling can help you with requirements engineering
- Understand how to use the Model-Based Systems Engineering (MBSE) approach for requirements engineering
- Understanding the importance of considering requirements in context, so that you draw out more detail and address them properly
- Understanding essential requirements terminology and concepts
- Understanding some of the issues around implementing a model-based requirements approach for your organisation through the use of a requirements framework.



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Prerequisites

Attendance on one of our core MBSE courses (either the 1- or 3- day versions).

Material

Face-to-Face Courses

Delegates receive PDF copies of the course notes, summary sheets and physical copies of the book '*Don't Panic! The Absolute Beginner's Guide to Model-Based Systems Engineering*' written by the course tutors and published by INCOSE UK.

Remote Courses

Delegates receive PDF copies of course notes and summary sheets, along with an eBook version of '*Don't Panic! The Absolute Beginner's Guide to Model-Based Systems Engineering*' written by the course tutors and published by INCOSE UK.

More Information

For more information on this course, or any of our other offerings, please contact Scarecrow Consultants Limited using the details above.