

SE-MBSYS-02
Practical Model Based Systems Engineering
with SysML notation and tool – 3 Days
Agenda

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- Learn practical MBSE approach from requirements to architecture down to execution platform
 - Based ISO 15288:2015 technical processes
 - Using SysML notation for system global definition (requirements and architecture)



- Case study for practice
 - UAV for agriculture as System of Interest
 - Initial requirements from DOORS or Excel
 - Exercises on case study
 - Use of tool (Cameo Systems Modeler or other)



- Competencies to acquire
 - C1: Learn the main concepts and diagrams of the SysML notation
 - C2: Learn a practical approach that allows to choose the right SysML diagrams according to the development stage
 - C3: Know how to practice 5 key technical standard Systems Engineering processes with the support of the SysML notation: mission analysis, stakeholder needs and requirements definition, system requirements definition, architecture definition
- Target public
 - Systems Engineers, Architects, Designers and Project Managers who want to deploy MBSE in their team with practical use of MBSE tool.
- Prerequisites
 - Knowledge on requirement and function concepts



Introduction:

- Overview of SysML
- Introduction to the tool
- Introduction to the Case Study
- Project structure

Business and Mission Analysis process:

- Capture Business Requirements

Stakeholder needs and requirements definition process:

- Capture stakeholder requirements
- Identify External Entities
- Identify key properties to evaluate solution viability
- Define System Context
- Detail Operational Scenarios



Recall of Day 1

System Requirements Definition Process:

- Formalize Functions
- Define Operational Modes
- System Requirements and traceability

Architecture Definition Process:

- Sub-systems Identification
- Functional Architecture Definition
- Physical Architecture Definition
- Architecture Traceability



Recall of Day 2

Design Definition Process:

- Detailing the design of each logical (physical) component

System Analysis Process:

- Verification of properties, comparison of solutions

Other tool Capabilities

- Profiles
- Traceability
- Project Usage
- Document generation
- Validation Suites
- Simulation

Conclusion

