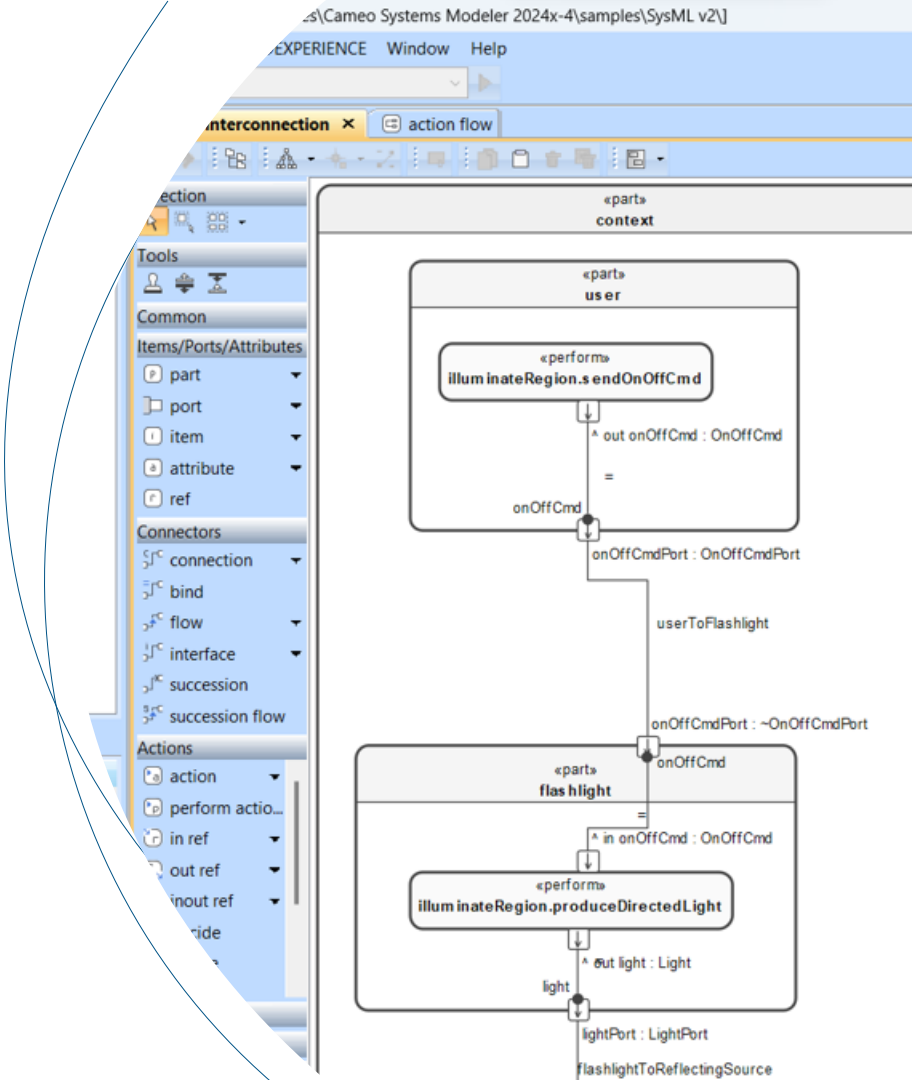
HOLISTIC VIEW INTO MBSE AND SOME SYSML V2

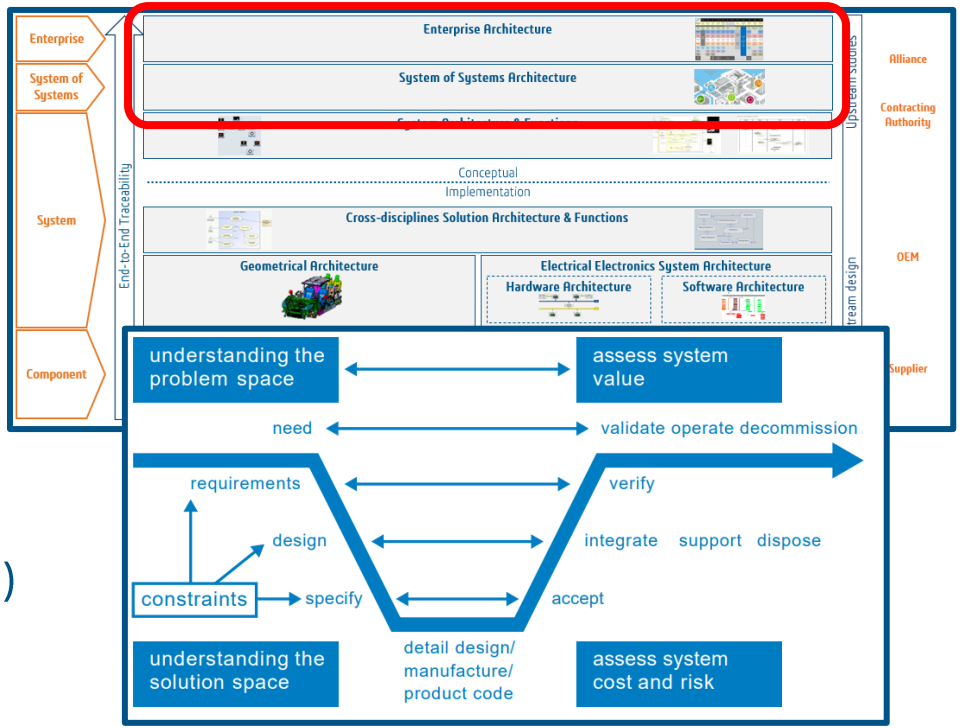
This is the sub-title of the presentation

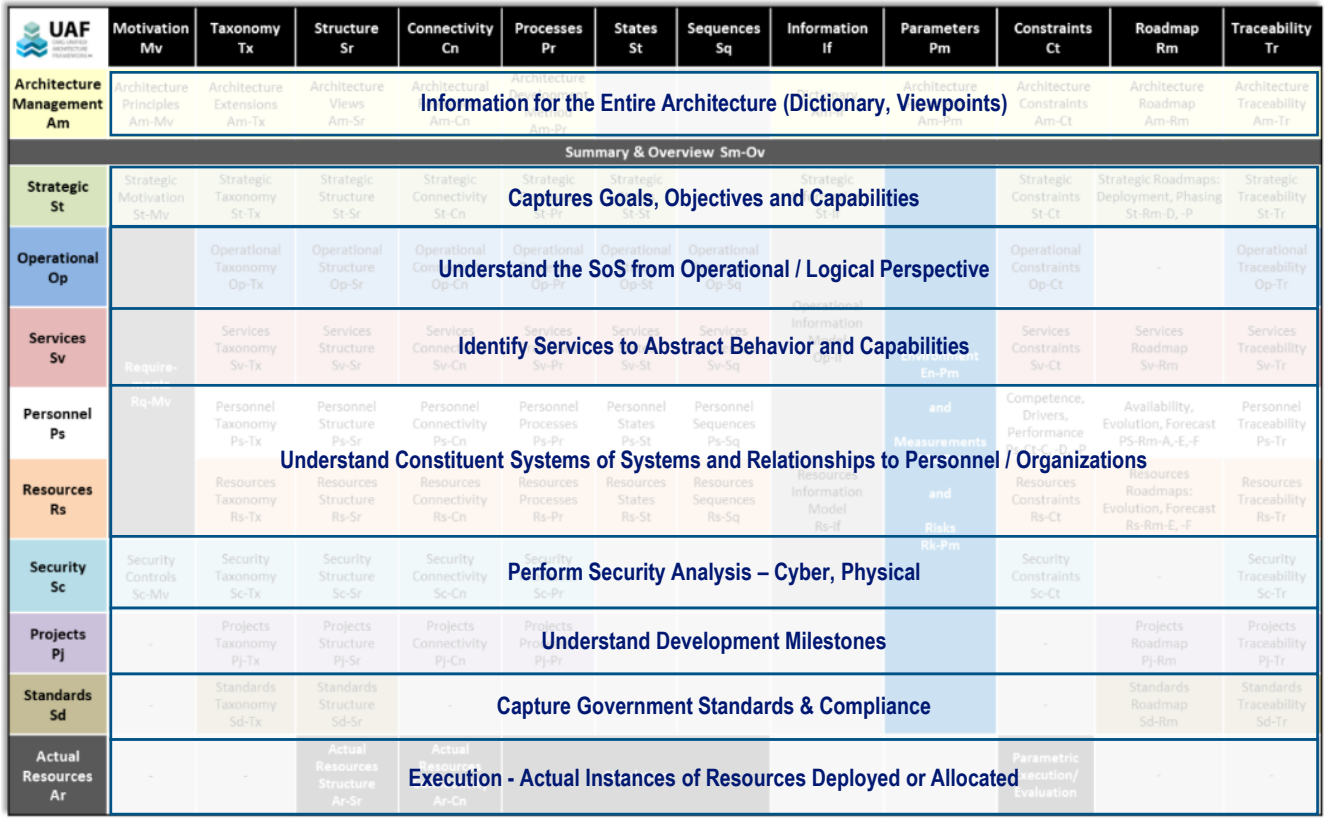


3DEXPERIENCE

SYSTEMS ENGINEERING ON MULTIPLE LEVELS

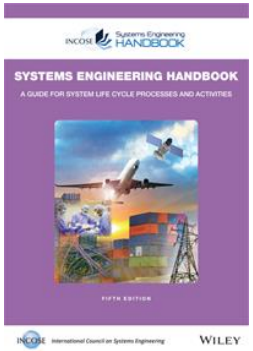
- Enterprise Architecture
  - Strategic Layer
    - Drivers
    - Challenges
    - Opportunities
- System of Systems
  - Investigating
    - Portfolio
    - Design Options
    - Constraints
- System of Interest (system -/product level)
  - Techniques
    - Trade Analysis
    - Requirements Validation

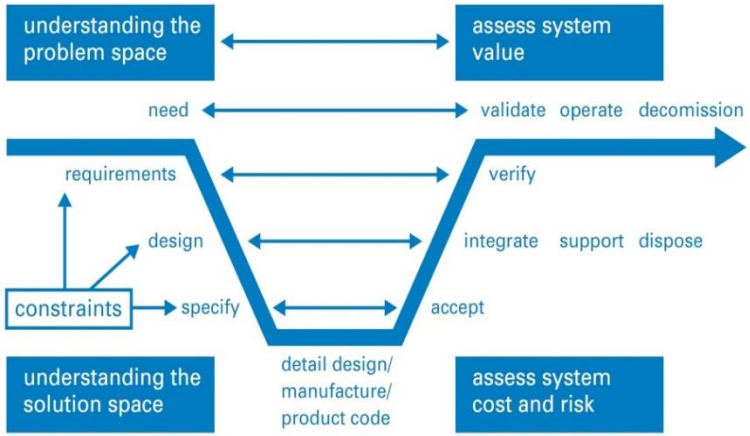




SYSTEMS ENGINEERING

- Understanding the problem before jumping into the solution (stakeholder needs, context, use cases, behavior)
- Strong focus on customer needs and required functionality for all product lifecycle phases
- Considering the complete problem
  incl. operations, performance, test, manufacturing, cost & schedule, training & support, maintenance, disposal
- Reducing complexity by decomposing the system of interests
  into subsystems with clearly defined functions, interactions, responsibilities,...





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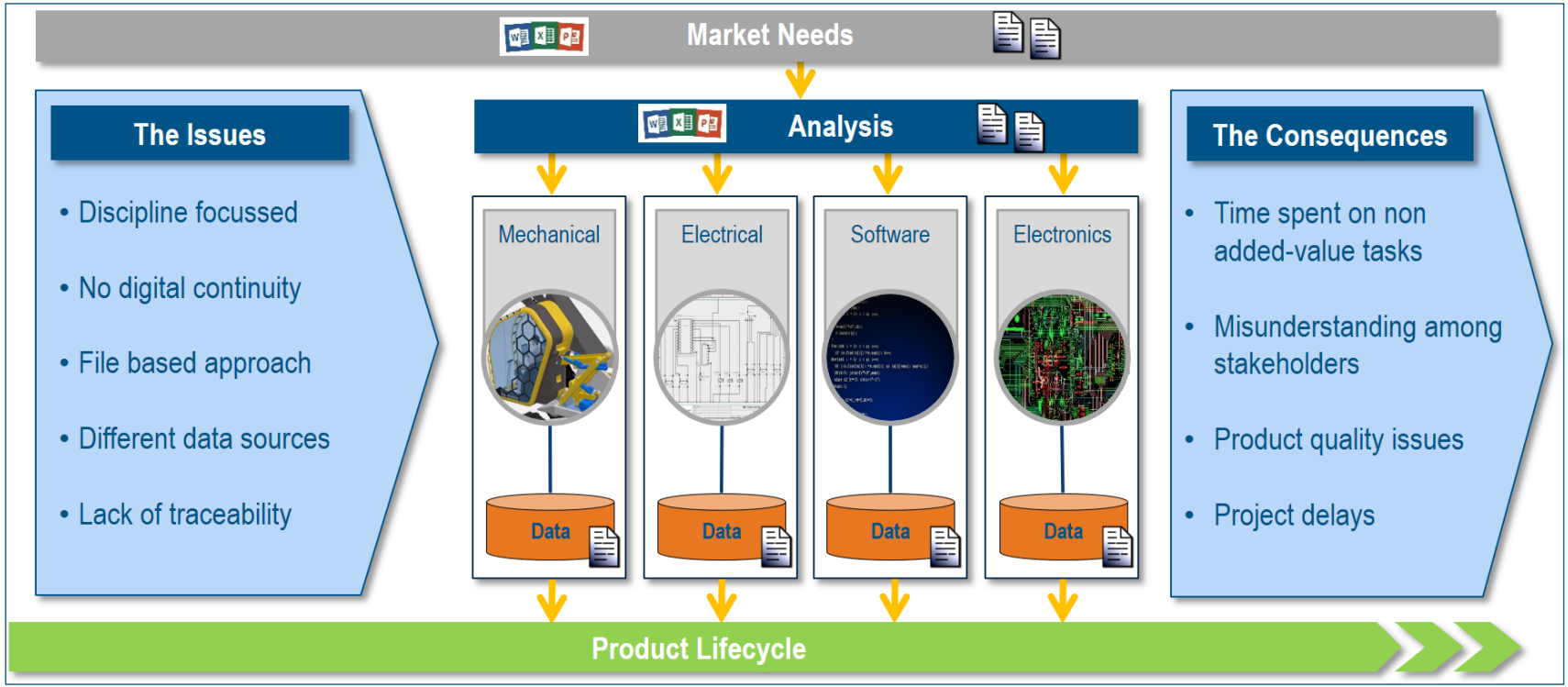
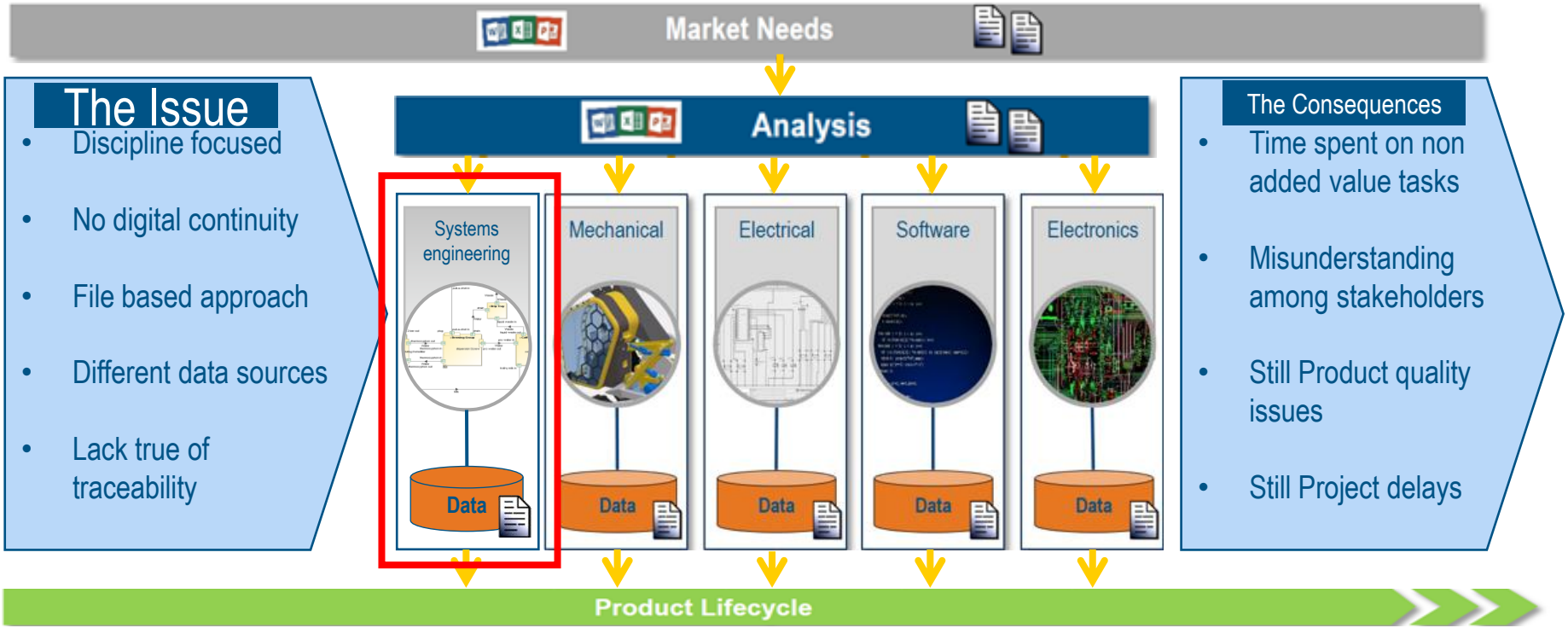
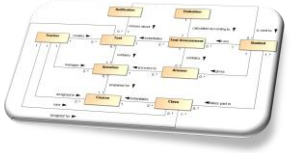
SILO WORKING



SYSTEMS ENGINEERING AND SILO WORKING



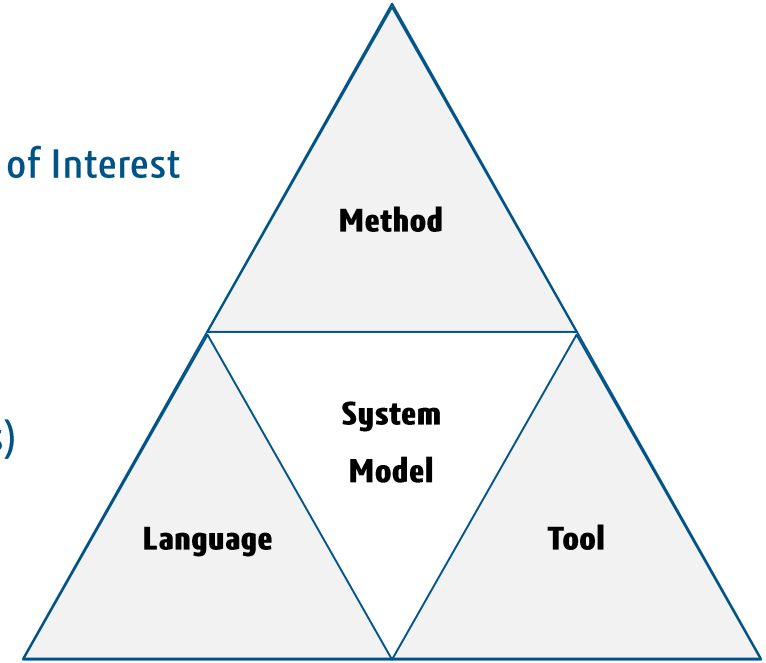
PICTURE ≠ MODEL



MBSE

MBSE needs:

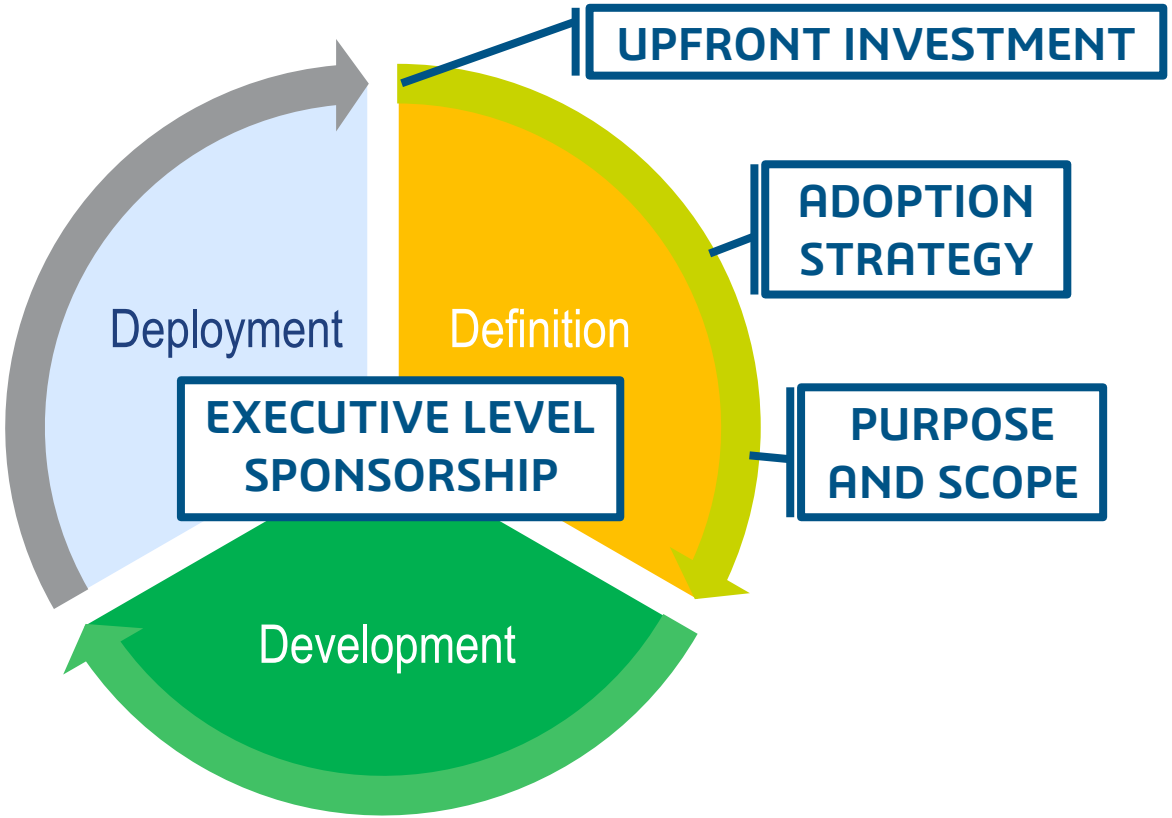
- A holistic modeling approach
- A central model for the whole System of Interest (System model)
- A unified modeling language (SysML)
- A modeling framework (method, rules)
- A modeling tool
- Qualified and motivated employees



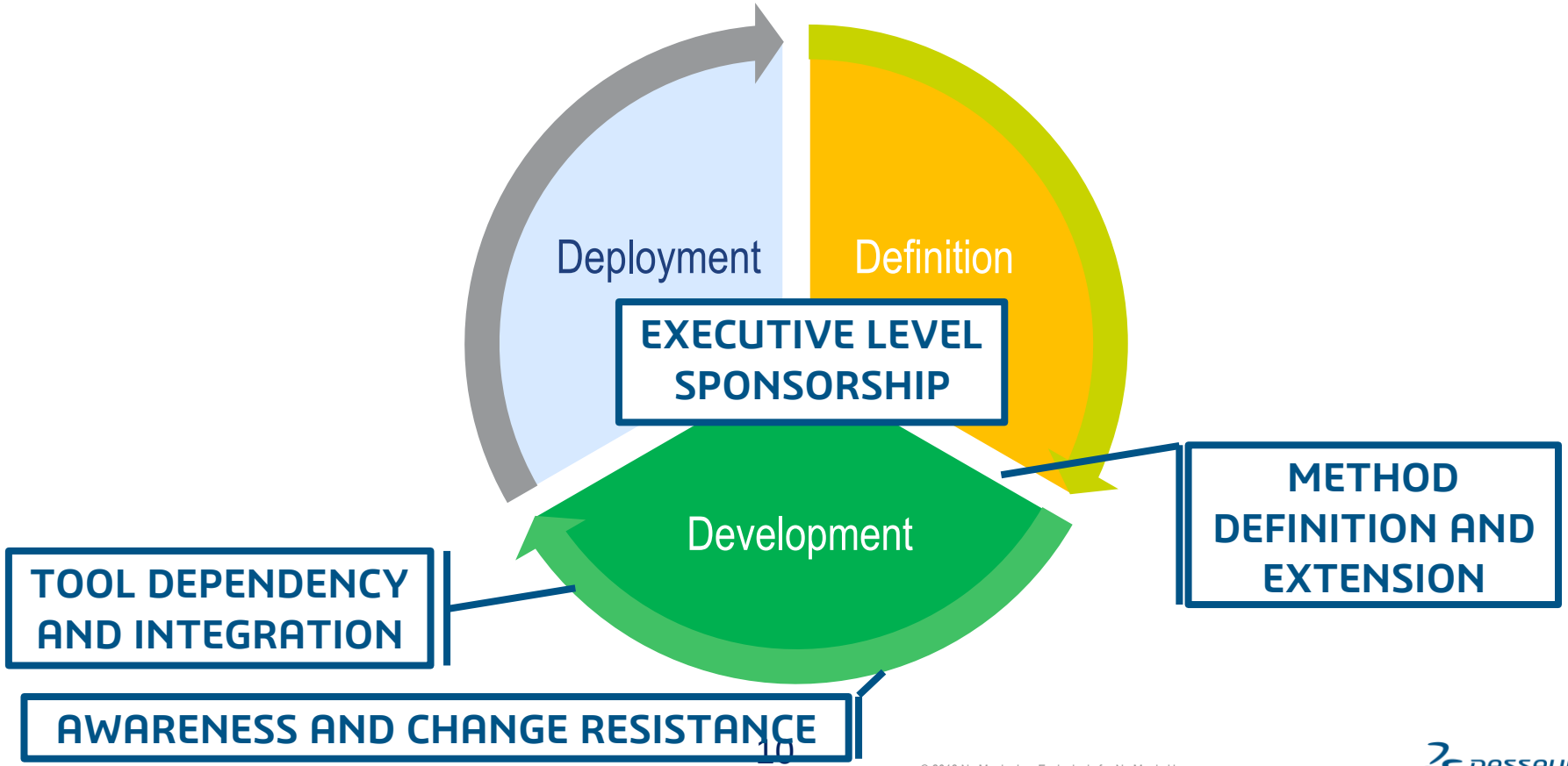
ORGANIZATION HAS TO ADOPT TO THE NEW METHODOLOGY

DASSAULT SYSTEMES

MBSE CHALLENGES – DEFINITION



MBSE CHALLENGES – DEVELOPMENT



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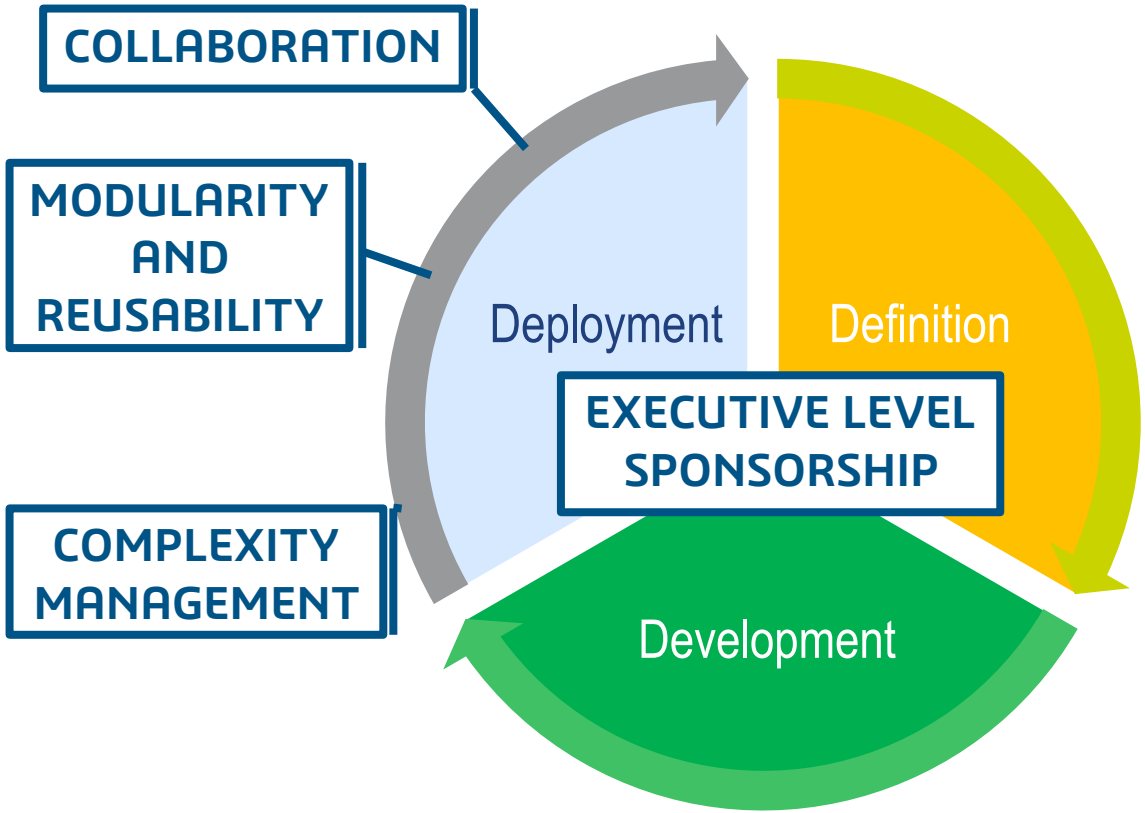
MBSE CHALLENGES – DEPLOYMENT

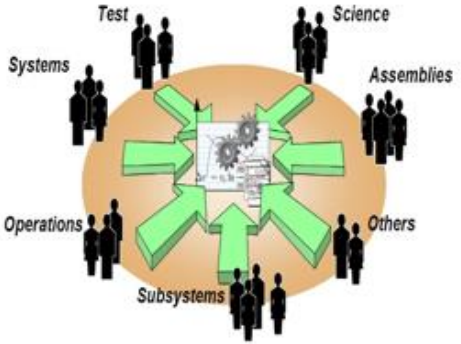


MAGIC GRID

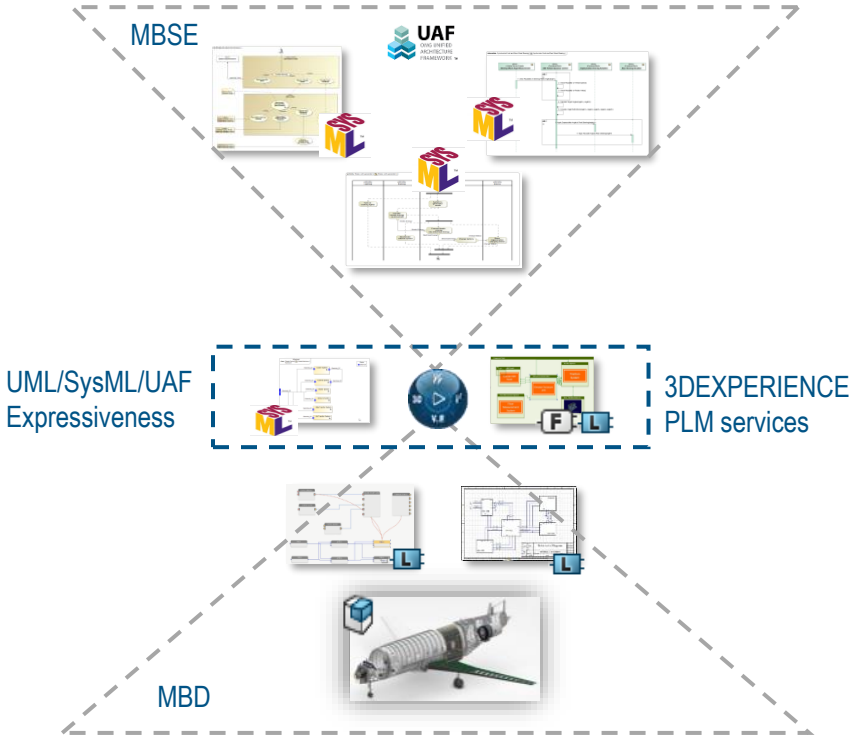
- MagicGrid is the bridge between the theory and practice, bringing three major MBSE components – method, language, and modeling tool – together.
- Companies needed an unambiguous approach for developing system models using SysML, the critical enabler for MBSE, as defined by the International Council on Systems Engineering (INCOSE).
- The MagicGrid framework has evolved by summarizing the experience of numerous MBSE adoption projects, as a foundation and collection of best practices that can be modified or extended to support specific customer needs. The framework is completely applicable in practice for the following reasons:
  - It is fully compatible with “vanilla” SysML, which means, no extensions for the standard SysML are required.
  - It clearly defines the modeling process, which is based on the best practices of the systems engineering process. It is tool-independent, as long as that tool supports SysML

MBSE AND MBD AS ONE PROCESS

- MBSE – Model Based Systems Engineering
- MBD – Model Based Definition



MBSE



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