MODEL-BASED DESIGN AND TOOLS FOR SPACE APPLICATIONS

Development, Testing and Verification

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Engineering a Connected World

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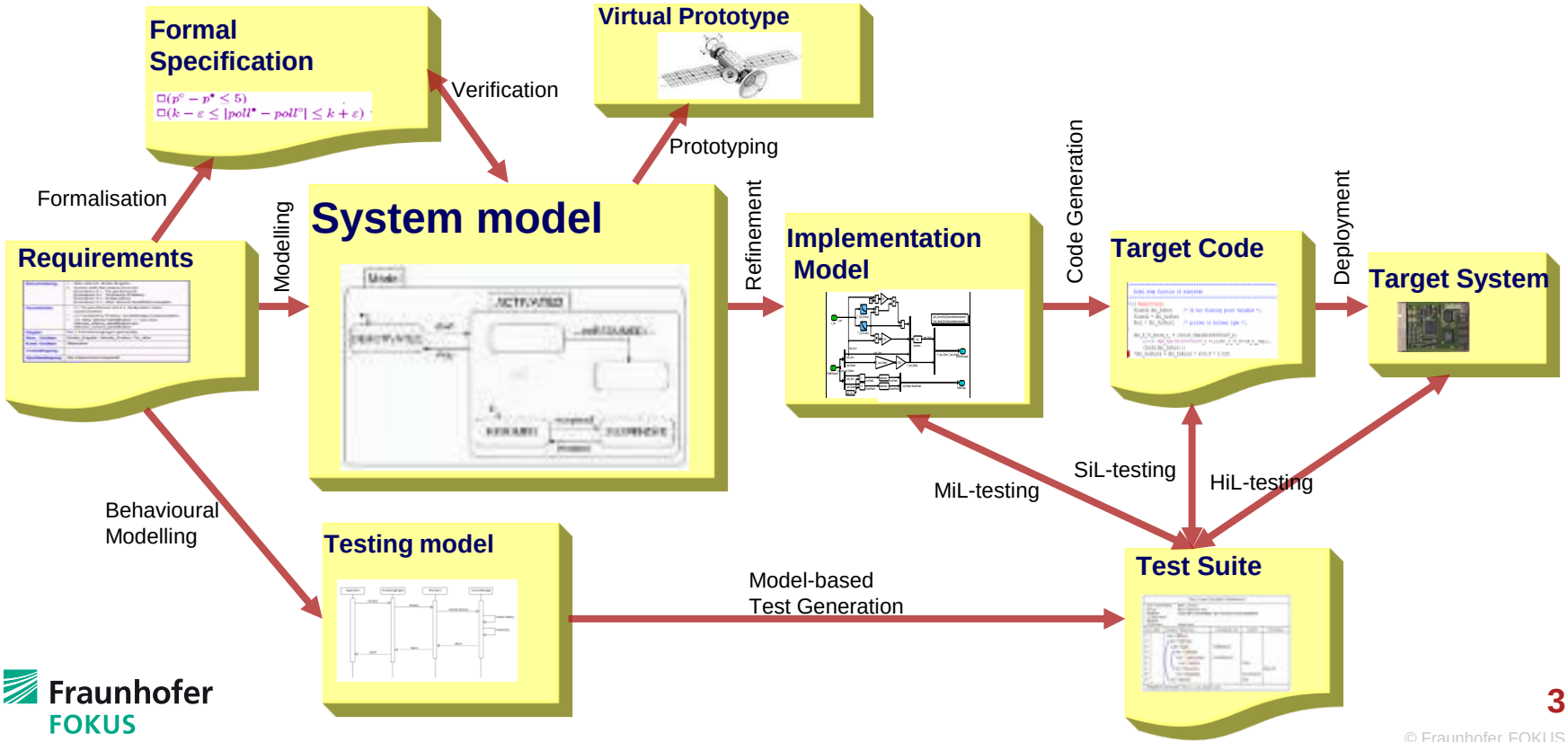
- **Fraunhofer:** Largest organization for applied research in Europe, ~70 institutes, ~23.000 scientific staff
- **FOKUS:** Largest I&K institute within Fraunhofer, ~ 500 staff
- Main competencies:
  - connected & embedded computational systems
  - cost-effective engineering of safety-critical software
  - aerospace, automotive, rail, and industrial production
- More than 20 years of experience in space applications
  - from BIRD (1999) to BIROS (2016)
- More than 14 years of experience in model-based techniques

MBSSE – ARTIFACTS AND ACTIVITIES



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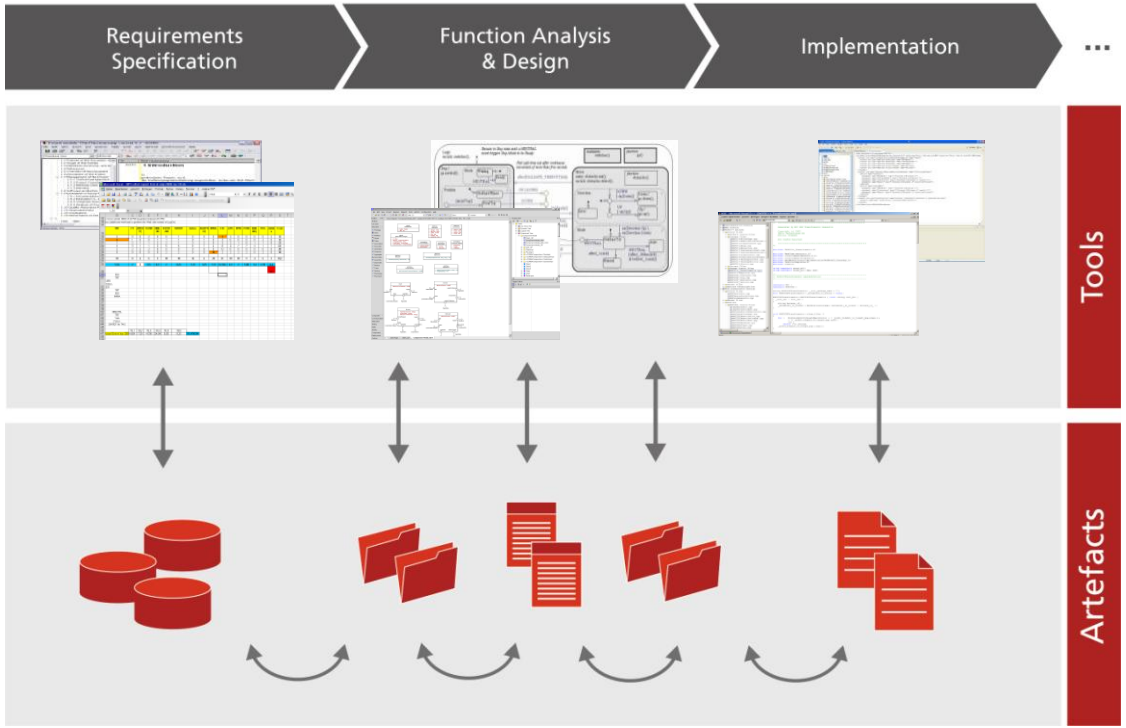
COMMON CHALLENGES IN MBSSE

Challenges

- Inconsistency, low degree of automation, insufficient common terminology
- Complexity and costs
- Decoupled software tools
- Produced data remains proprietary and depends on specific tools



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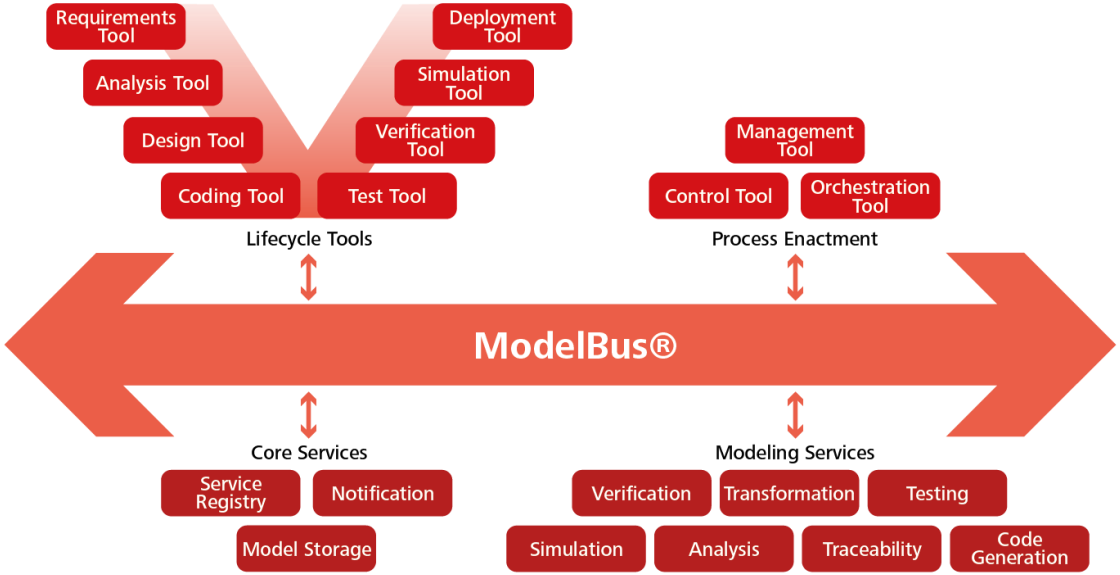
MODELBUS®

General Concept

- Lifecycle Tools are needed for creative work
- Process Enactment controls the development process
- Core services are needed to operate the ModelBus
- Modeling Services provides back-end functionality for automation



EXAMPLE

- Component concepts are shared
- Specifics of the tools are taken into account
- Skill control
- License cost management