



Hybrid System Simulation Standard

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Outline

- **Charter**
- **Problem statement**
- **Inter-industry Collaboration**
- **Industrial Use Case (OpenADx)**
- **Exploring the 'Simulation Solution Space'**
- **Summary**

Hybrid System Simulation Standard - Charter

Inter-industry collaboration to improve the **interoperability of product and environment simulation**
based on co-ordination between
existing and new open standards

Different simulation approaches and standards...



Avionics

**VISTAS /
VHTNG**



Space

SMP2



Semi's

**SystemC
TLM
IP-XACT**



Automotive

**OpenADx
OpenDRIVE
OpenSCENARIO
OpenCRG**



Mechatronics

FMI / FMU

How to bring all these simulation approaches together?

Inter-Industry Collaboration

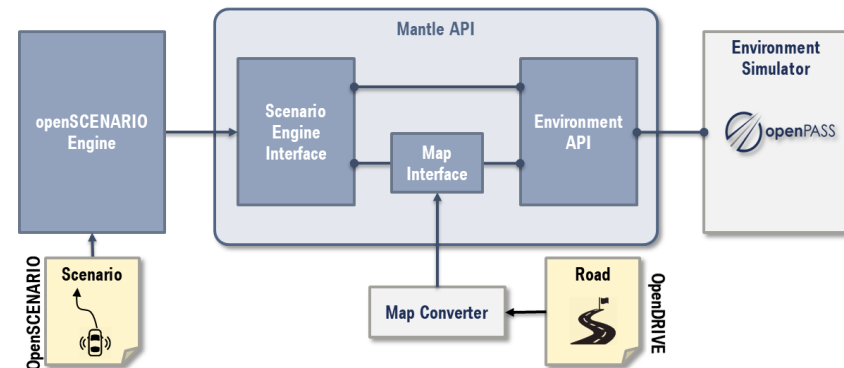
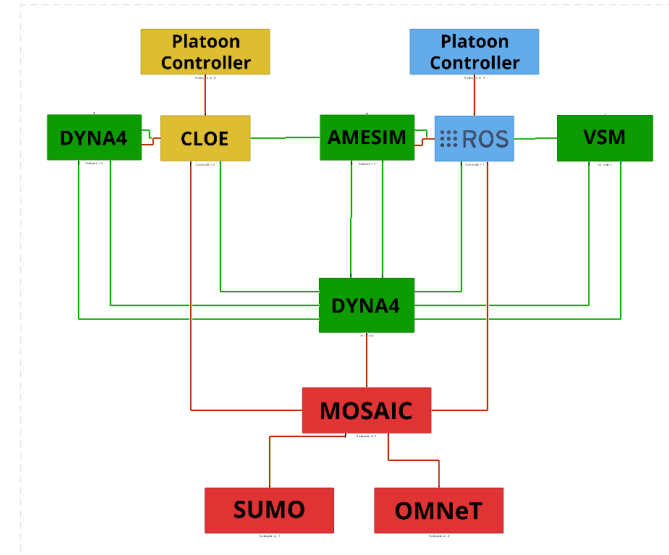
- A “Core Team” has been established to exchange knowledge and best-practices, to build a common understanding
 - Users to better understand standards coverage
 - Standards experts to understand requirements, potential overlaps, and points of interaction
- Foster and initiate actions to improve and co-ordinate standards development and integration of simulation technologies
 - Collaborative action to make standards evolve according to our needs (e.g., interoperability)
 - Enable cross-over groups in standards organizations

Core Team members*

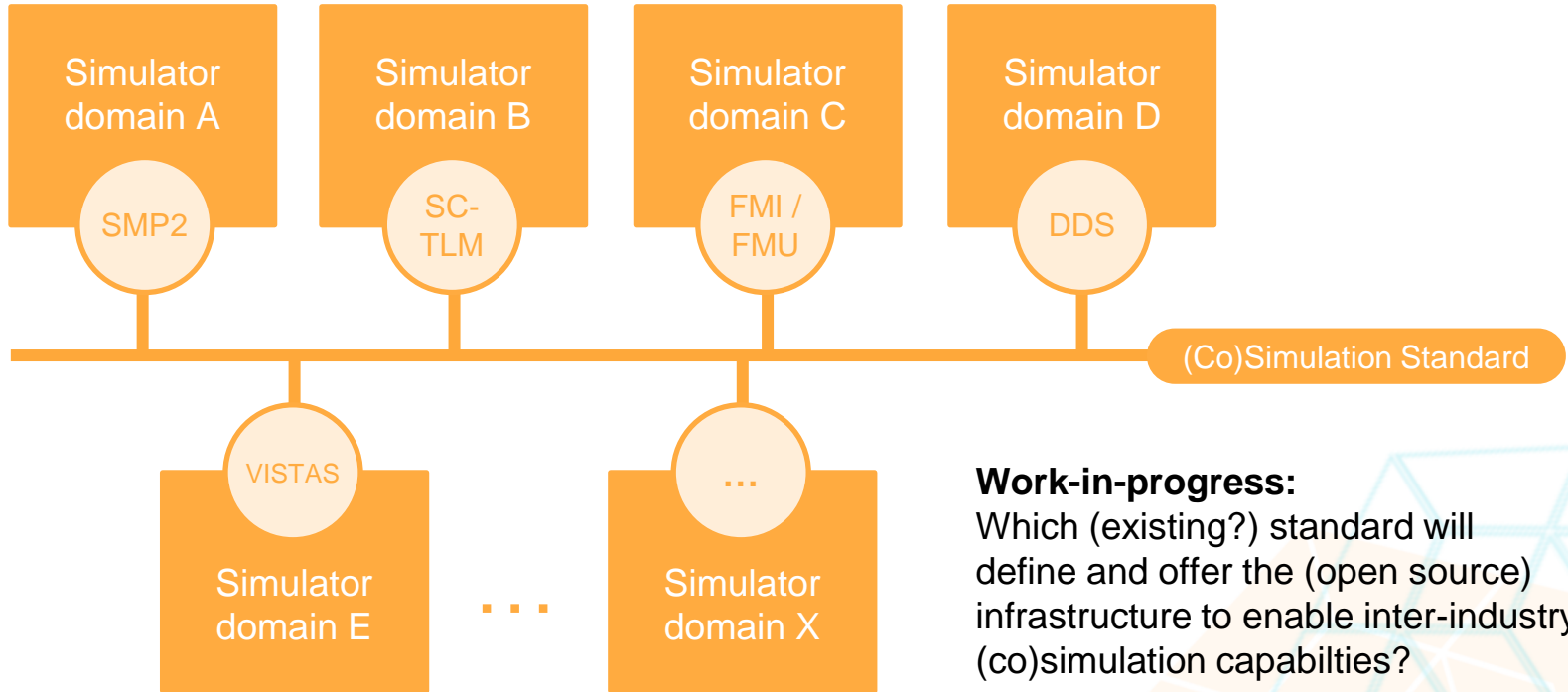
Airbus
Aptiv
AVL
Bosch
Collins
IRT Saint-Exupery
NXP
Qualcomm
Shokubai
Spacebel

Industrial Use Case (OpenADx): Co-Simulation across different tools

- Build a co-simulation architecture, that includes many tools and make them easily exchangeable
 - A mix of proprietary and open tools
 - Different interfaces and data models
 - Simulation as a service
- Used / supported standards
 - OSI Standard
 - ISO26262
 - ASAM openDRIVE, openSCENARIO, openCRG



Exploring the 'Simulation Solution Space'



Work-in-progress:
Which (existing?) standard will define and offer the (open source) infrastructure to enable inter-industry (co)simulation capabilities?

Summary

- Multi-disciplinary inter-industry team established to address the standardization and interoperability need for hybrid system simulations
- Core team is evaluating the appropriate ‘hosting organization’: Open Source Software Development organization (e.g. Eclipse Foundation) or Standards Developing Organization (e.g. Accellera Systems Initiative)
- Interested in joining? Please contact one of the following persons:
 - Martin Barnasconi @NXP
 - Mark Burton @Qualcomm
 - Andreas Riexinger @Bosch

Thank you!

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