Aerospace and Automotive Cooperation for practical MBSE Standards

Kenny Swope
Steven Vettermann
Bernd Feldvoss

Bibliographies

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Bernd Feldvoss

Technology Specialist PLM Data Exchange, AIRBUS
Based in Hamburg, Germany
Joined Airbus in 1998
Since November 2011 Speaker of prostep ivip Technical Steering Committee

Kenny Swope

Senior Manager, Boeing

Steven Vettermann

prostep ivip Manager Openness & Japan
PROSTEP Cluster Lead Systems Engineering
Based in Hamburg, Germany
Joined PROSTEP in 2004
Until 2017: General Manager prostep ivip
PhD in IT-Security in PLM

Role of MBSE for Airbus

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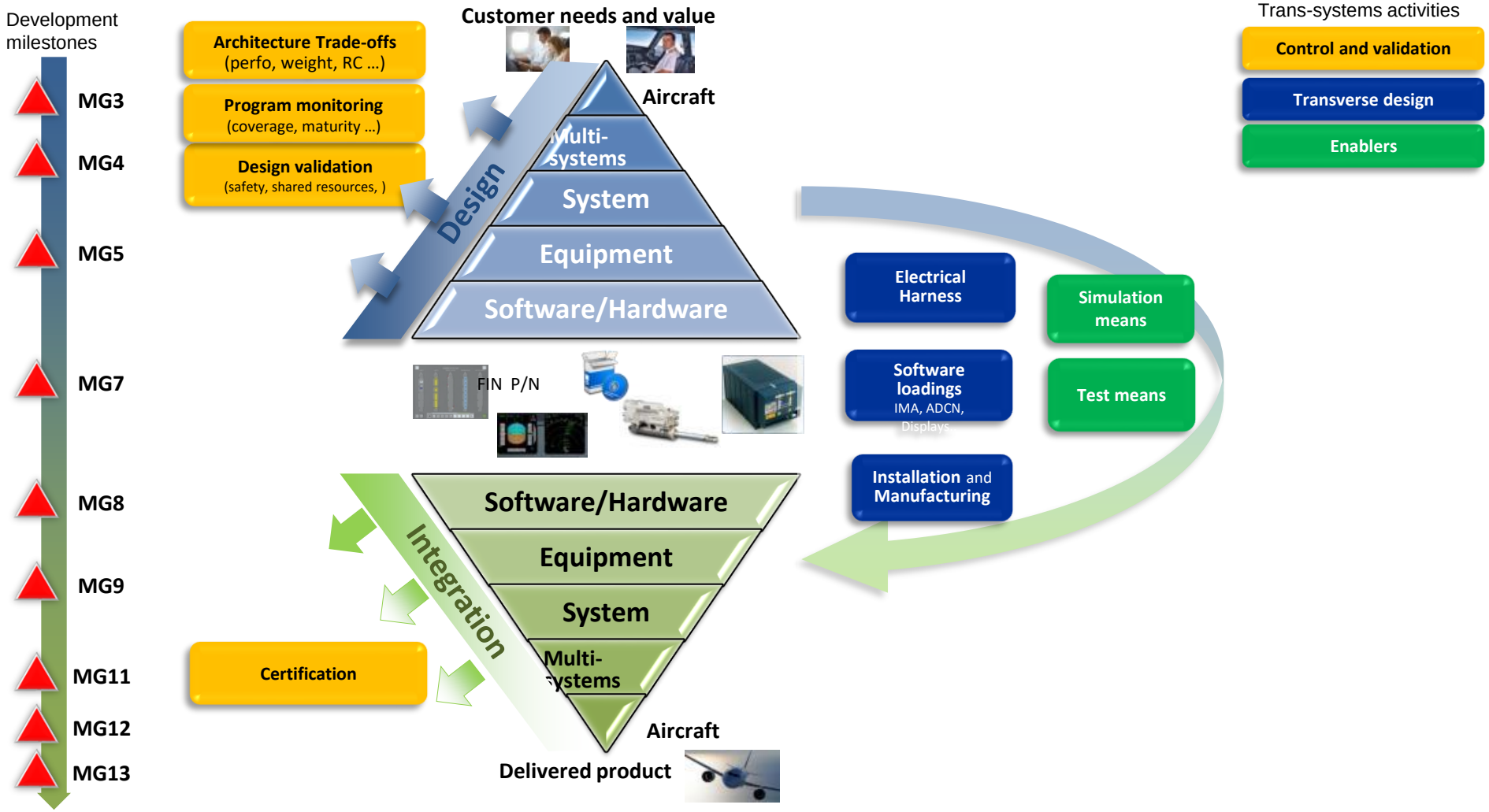

Role of MBSE for Boeing

Boeing SE Statement: Business motivation & benefits

prostep ivip: Realizing Digitalization

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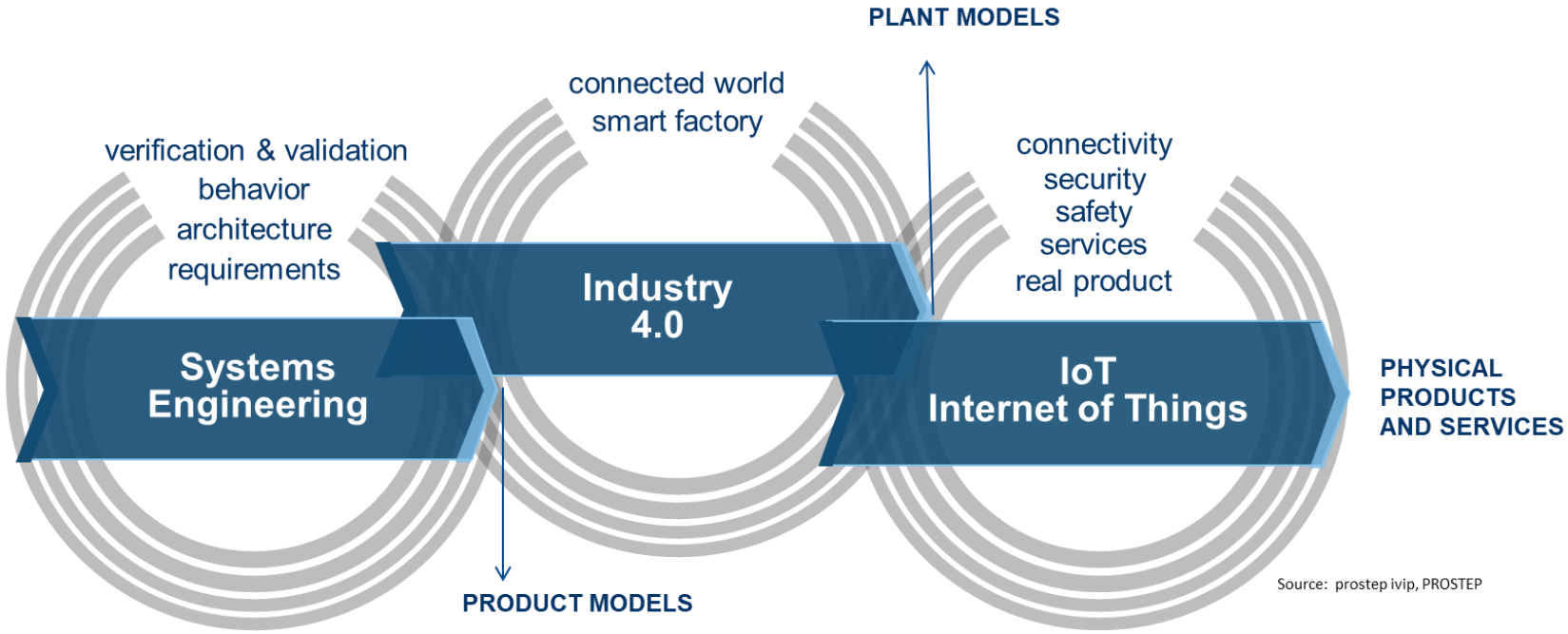

Enabling Digital Transformation based on Standards

Engineering IT Standards for
Product Properties

Manufacturing Standards for
Structure Plants, Control Logic & Shop Floor

General IT Standards for
Safety, Interoperability & Communication

Recap of 2018th Presentation

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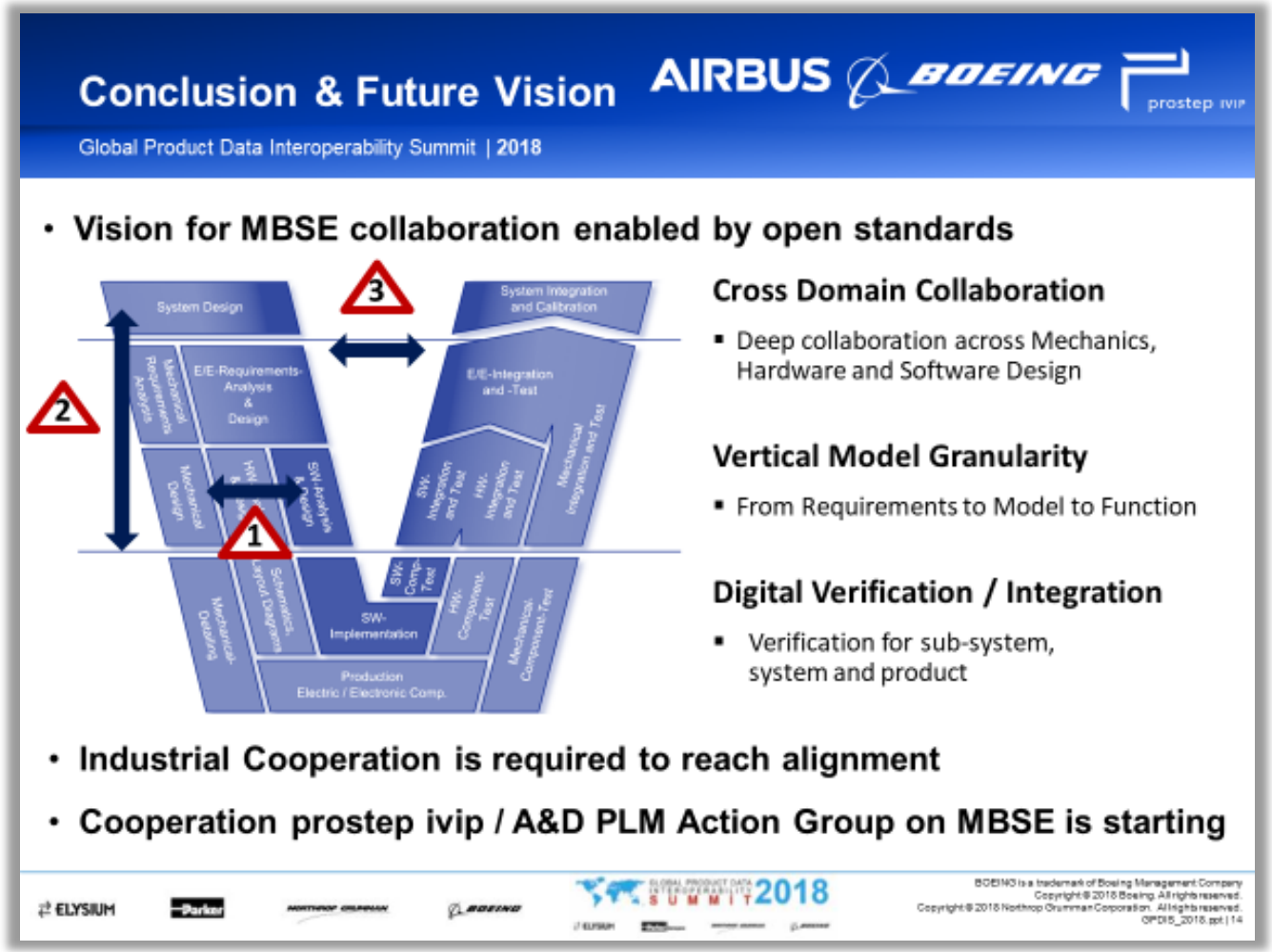

Business Need for Digital Twins

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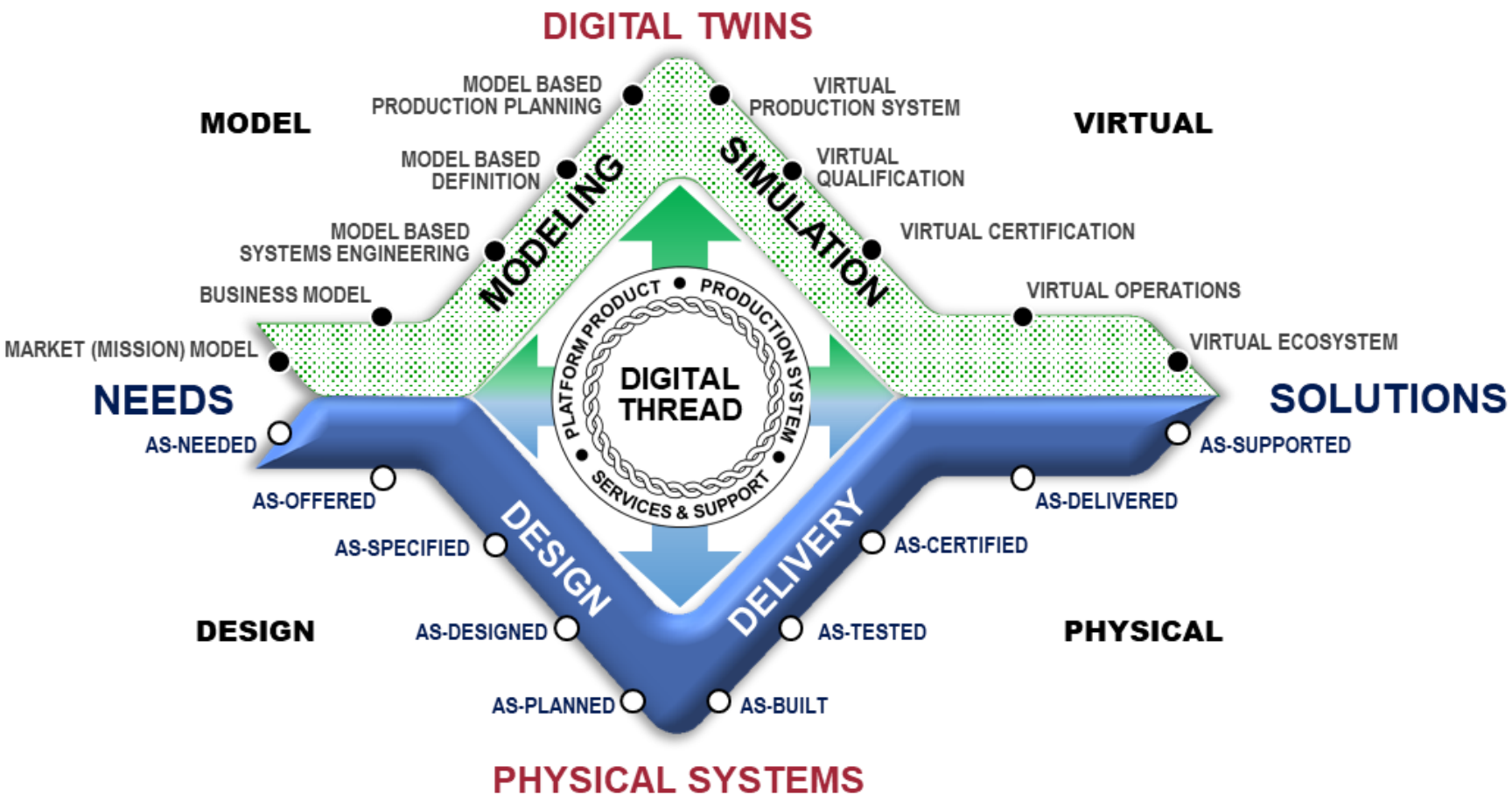

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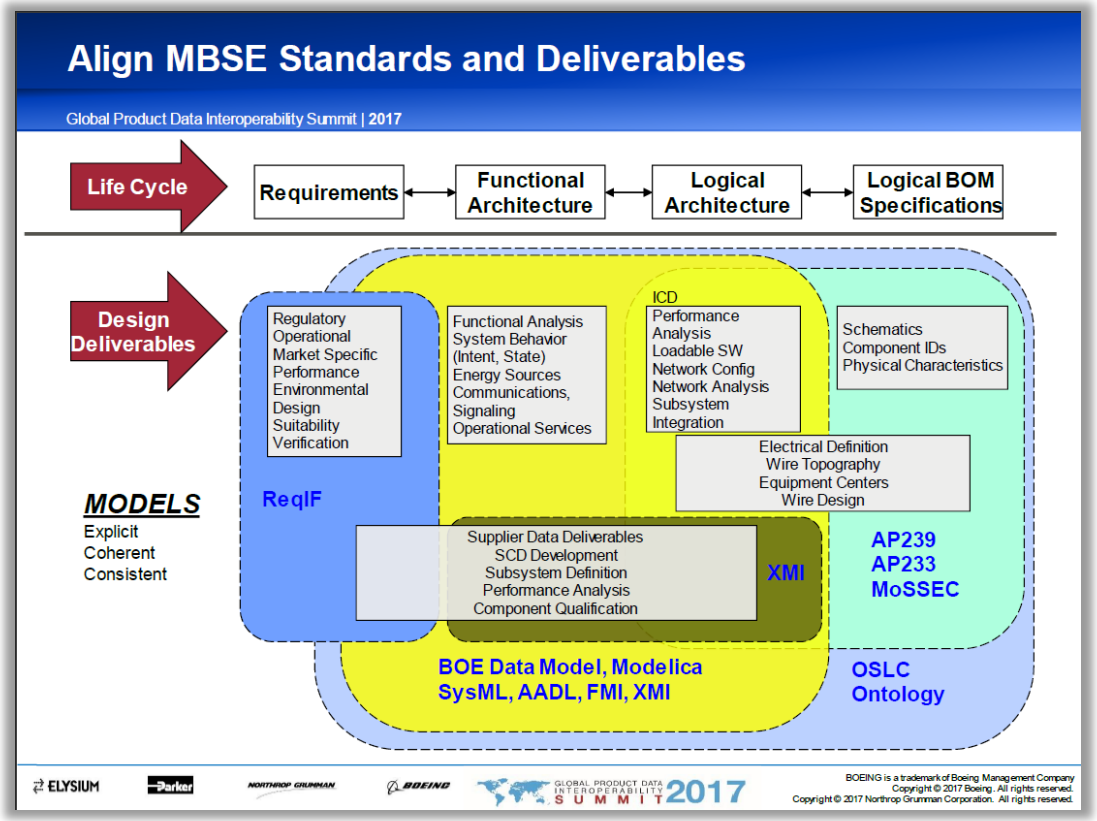
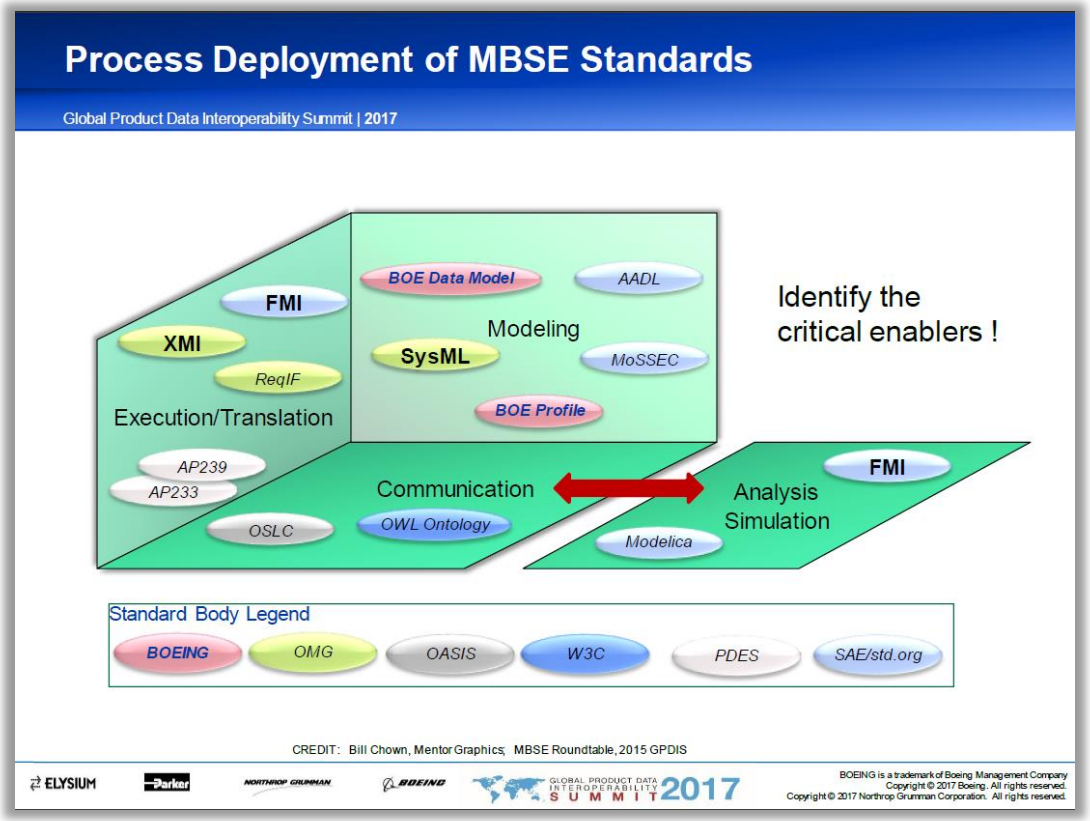
Minimum Digital Thread for MBSE - based on Standards

Example topic areas to inform the modeling





Building the Digital Thread

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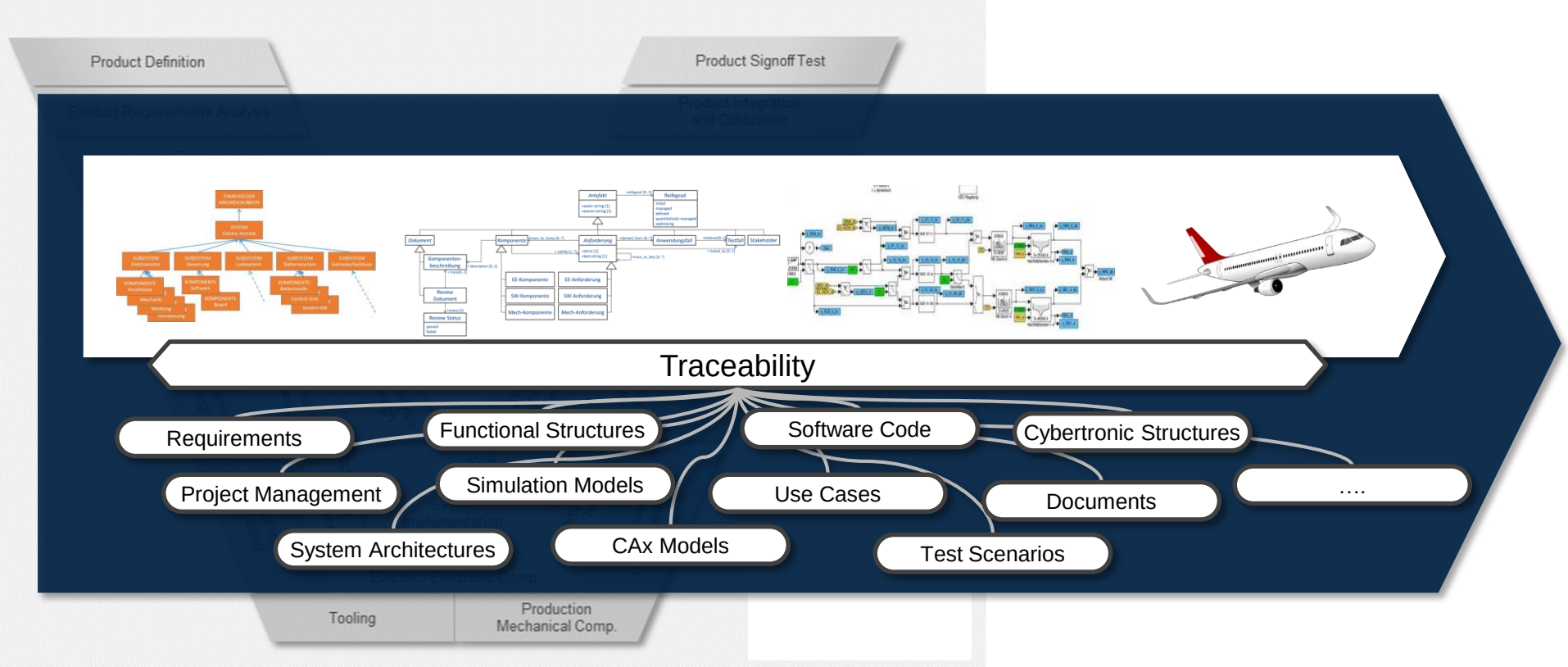

Mastering System Configuration / Safety / Verification & Validation

Joining Forces: Kickoff 10/2018

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Cooperation: prostep ivip / A&D PLM Action Group

Motivation:

- Aerospace - Unifying technical design requirements with physical architectures and behavior models, enable validation and verification.
- Automotive – Reducing cost pressures associated physical testing, prepare for significant growth in regulations for autonomous vehicles.

Mission:

- Create a road map for merging the complementary points of view
- Use a minimum viable product approach
- Focus on standards, processes, requirements
- Implementation best practices
- Ease IT vendor’s life, by providing cross-branch requirements

Collaboration between CIMdata and prostep ivip

The MoU, signed by CIMdata President Peter Bilello and prostep ivip CEO Armin I bundle know-how in the collaboration of Industrial customers from the aerospace industries, especially in the area of Model Based System Engineering (MBSE).

https://www.prostep.org/en/medialibrary/news/detail/article/collaboration-between-cimdata-and-prostep-ivip-associatio/

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CIMdata A&D PLM Action Group

Founded in 2014, the Aerospace & Defense PLM Action Group is an association of aerospace & defense companies within CIMdata's globally recognized PLM Community Program, which functions as a PLM advocacy group.

CIMdata has assembled a group of leading aerospace and defense companies into an action group to help address PLM-related challenges in that industry. CIMdata's Aerospace & Defense PLM Action Group (A&D PAG) provides a unique opportunity for Aerospace & Defense Industry leaders to maximize the benefits they receive from their Product Lifecycle Management (PLM) investments. The A&D PAG is an association of major aerospace and defense OEMs and aircraft engine providers.

Workgroups:

- Obsolescence
- Multi View BOM
- Standards
- Global Collaboration

http://www.ad-pag.com/

Approach

1. Company-specific Key Topics

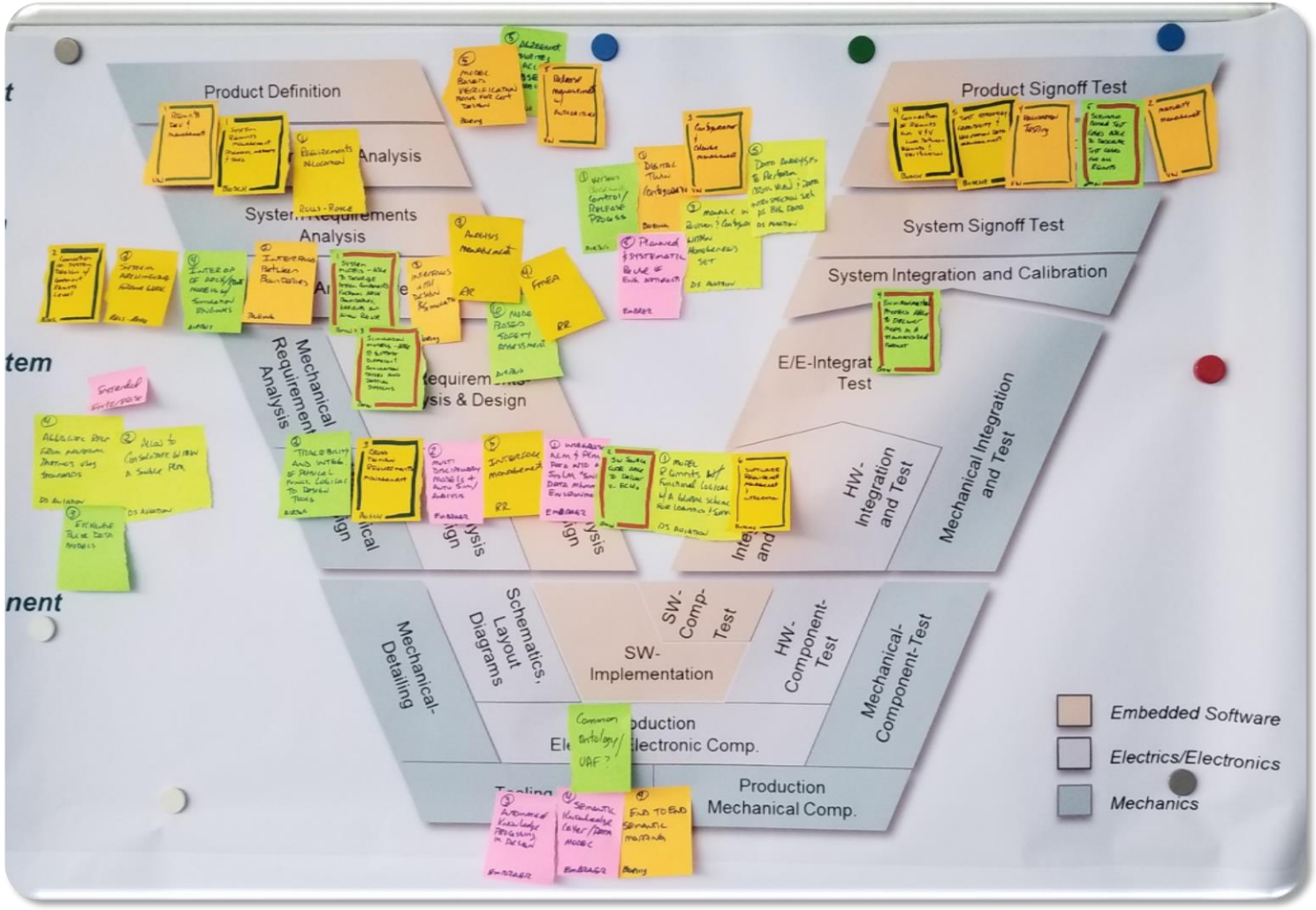
- Area of focus
- Opportunity for improvement
- MBSE concepts

2. Common Interests

- Grouped into the V

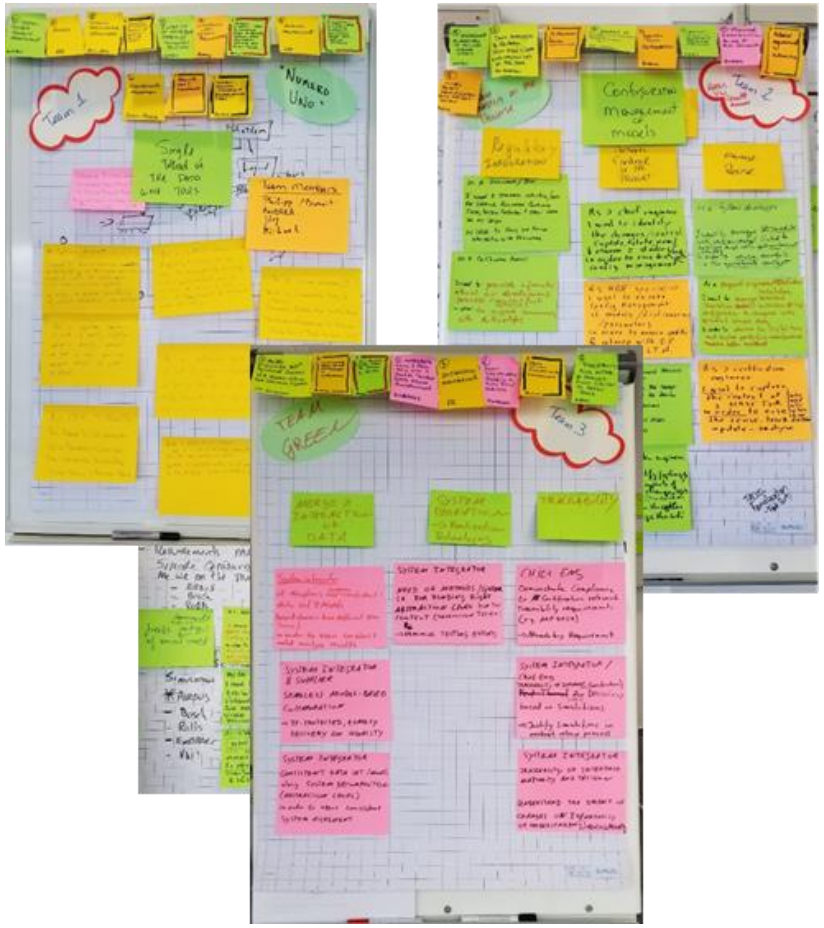
3. Epics & User Stories

- Outcome focused
- Actor oriented



Derived Epics & User Stories

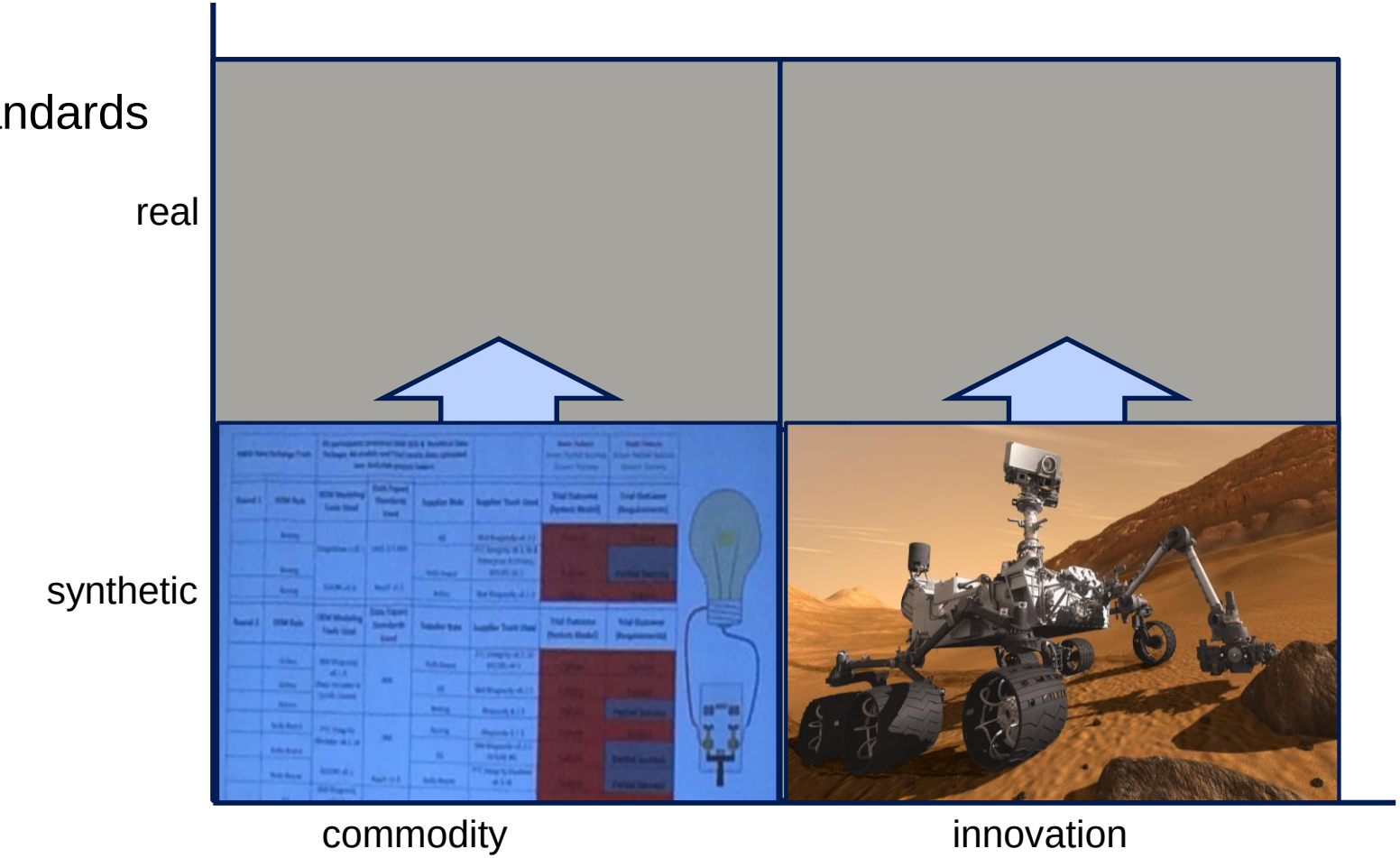
- **Single Thread of the Data with Tools**
  - Requirements - Verification
- **Configuration Management of models**
  - Business Process Design & Efficiency
  - Regulatory Integration
  - Design Control of the Baseline
  - Manage Reuse
- **Data model interoperability between realization technologies**
  - Merge & Interaction of Data
  - Realization Technologies
  - Traceability



Next Step: Driving IT - Cornerstones

Defining Measures:

- Concrete Aims & KPIs
- Scenario, incl. data/info/models/standards
- Participants
- Timelines
- Deliverables



Next Step: Driving IT - Responsibilities

User Group	**Show Casing**	**Implementor Forum**	**Benchmark**
Gather Scenarios, Use Cases, Standards, Best Practices, Requirements	IT Vendors demonstrate how they support scenarios - in real environments	IT vendors address user requirements and realize interoperability, self-governed	User-defined tests, accepted by vendors, conducted by neutral instance
→ Guidelines	→ Experiences	→ Mission-completed statements	→ Test Reports

Conclusion & Future Vision

Accomplished:

- Collaboration Aero/Auto established (Memorandum of Understanding: prostep ivip + AEROSPACE & DEFENSE PLM ACTION GROUP + CIMdata)
- Kickoff: Relevant Epics & User Stories defined

Next Steps:

- Publishing Guidelines for practical MBSE
- Driving IT Interoperability based on Standards
  - Ease IT vendor's life, by providing cross-branch requirements
  - Show Casing, guided by User Group
  - Preparing Interoperability/Implementor Forums (assuring quality interoperability)

Save the date
prostep ivip Symposium
12/13 May 2020
Stuttgart, Germany
https://www.prostep-ivip-symposium.org
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