MoSSEC
Adrian Murton
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MoSSEC

A standard for sharing
Modelling and **S**imulation information
in a collaborative
Systems **E**ngineering **C**ontext

Agenda

- **Why do I need MoSSEC?**
- **What is MoSSEC?**
- **MoSSEC in use**
- **What is the status of MoSSEC?**
- **Summary**

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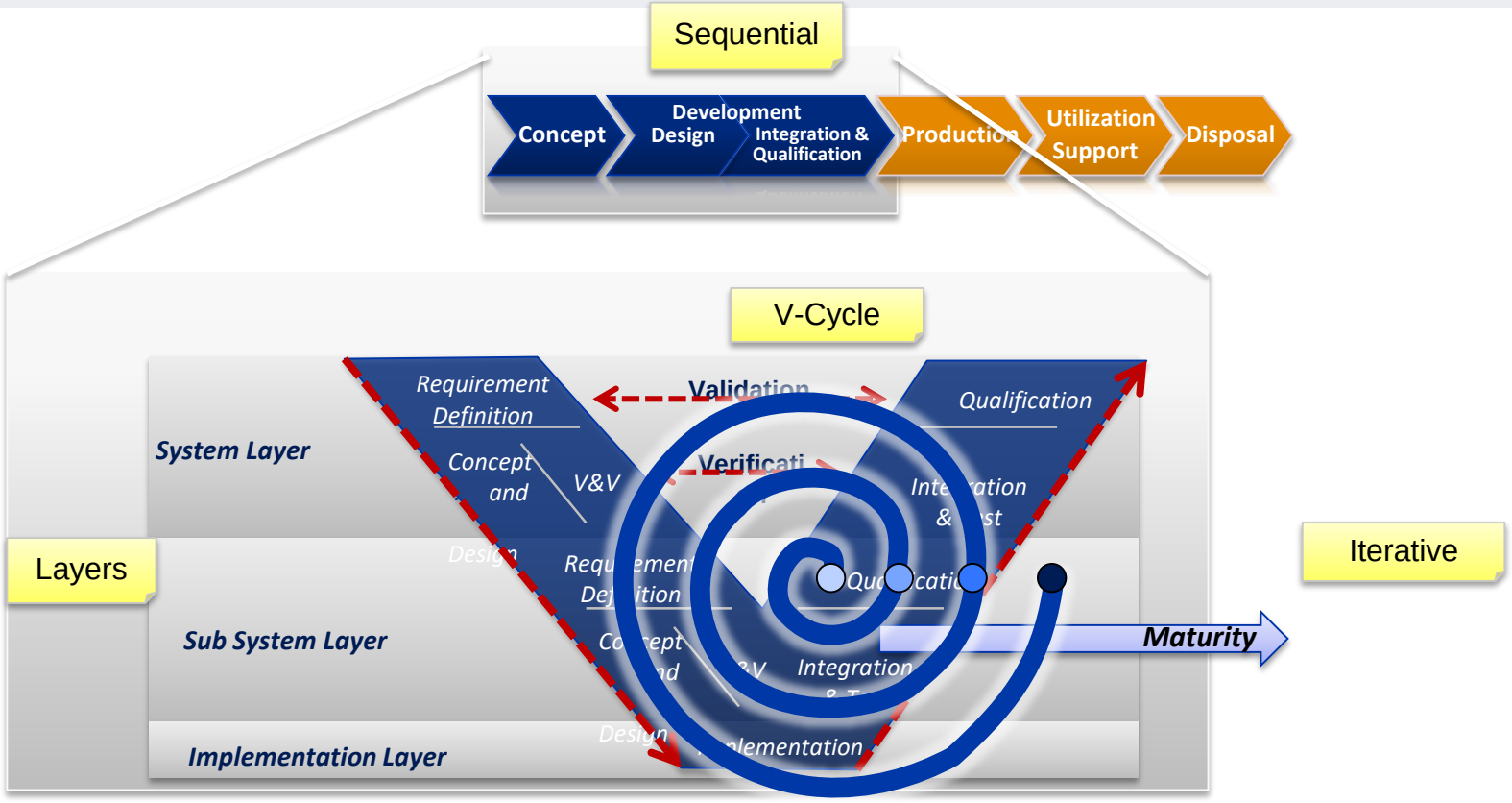
Lifecycle of “System of Interest”



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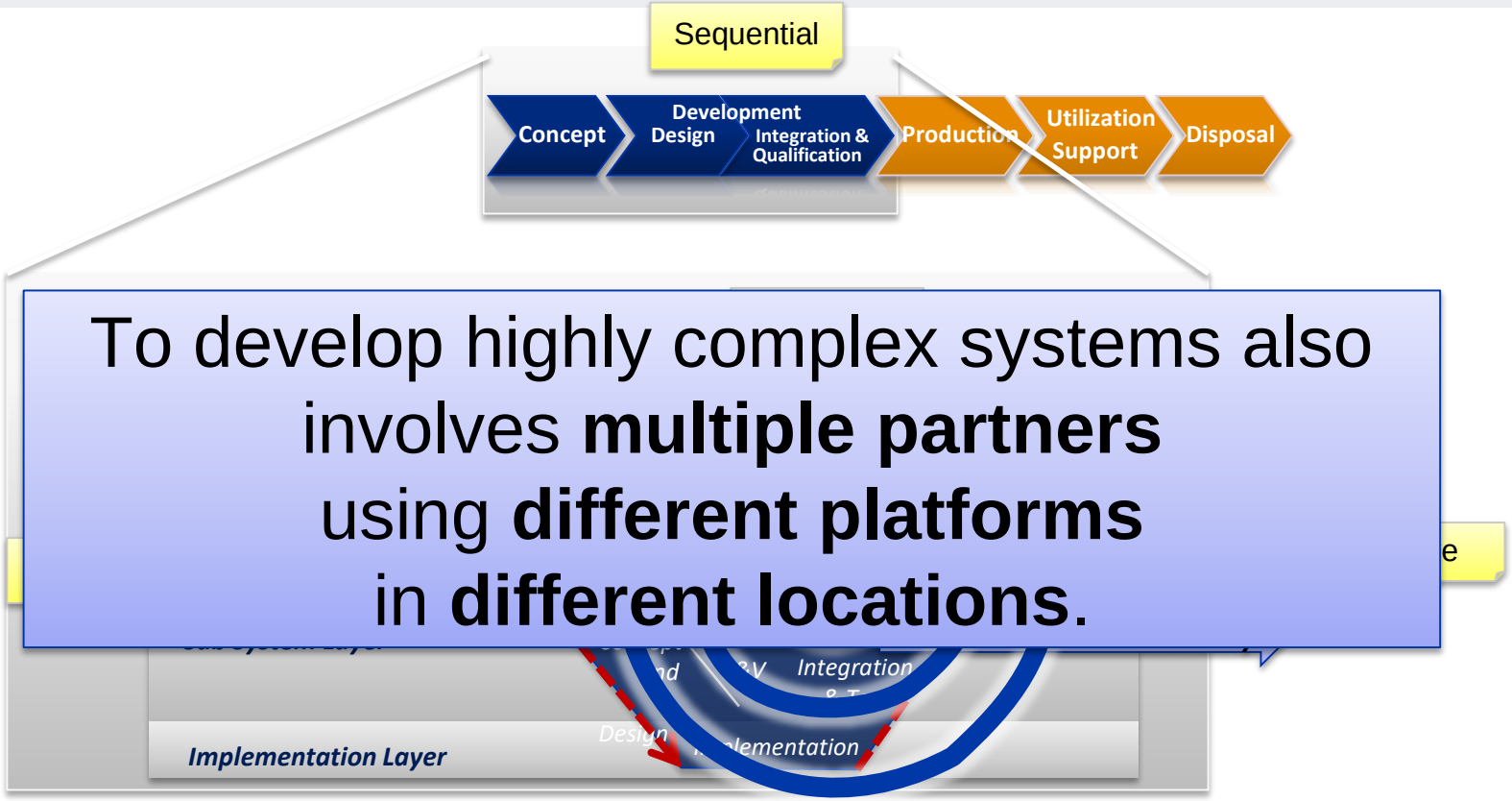
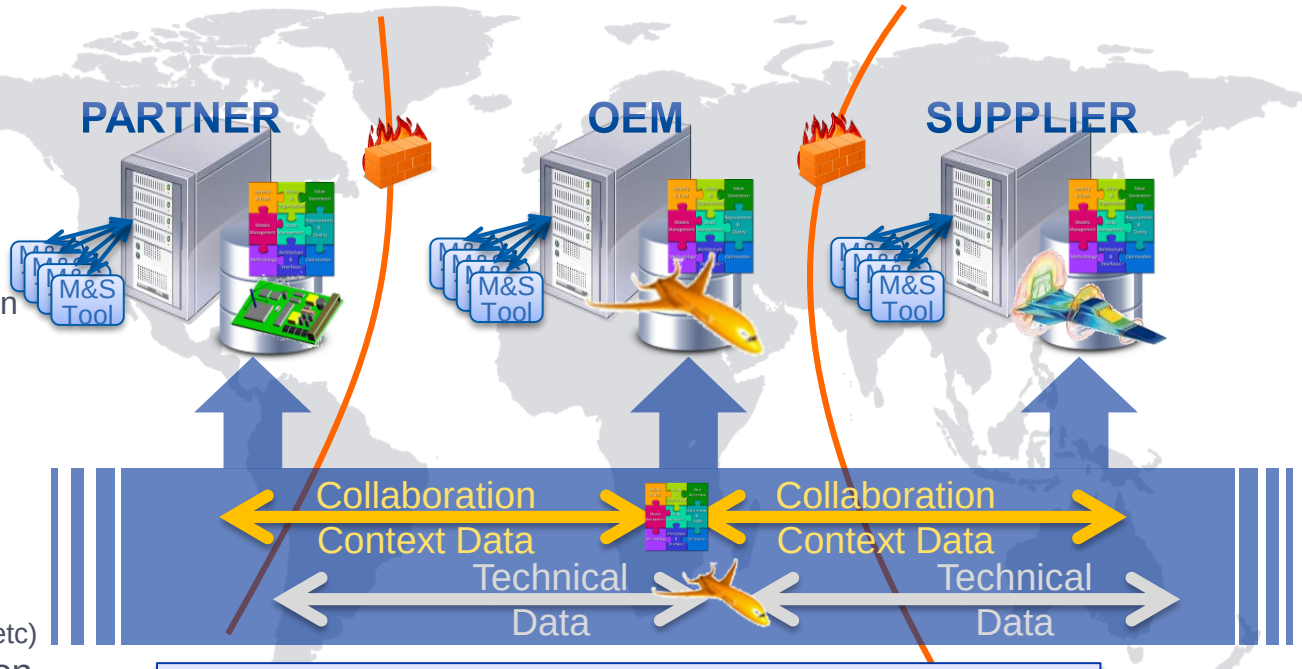


To develop highly complex systems also involves **multiple partners** using **different platforms** in **different locations**.

Challenges for distributed systems engineering

- **Distributed Infrastructure**
  - Secure Collaboration for:
    - Locations
    - Organisations
    - Software Platforms
- **Distributed Processes**
  - Multitude of Modelling and Simulation tools
  - Simulation driven design changes traced and under PLM control
- **Distributed Data**
  - Modelling and Simulation data
  - V-cycle meta-data
    - (who what when where how why etc)
  - Efficient sharing, synchronisation and integration



Remain Compliant with existing Standards (e.g. AP233, AP239, AP242)

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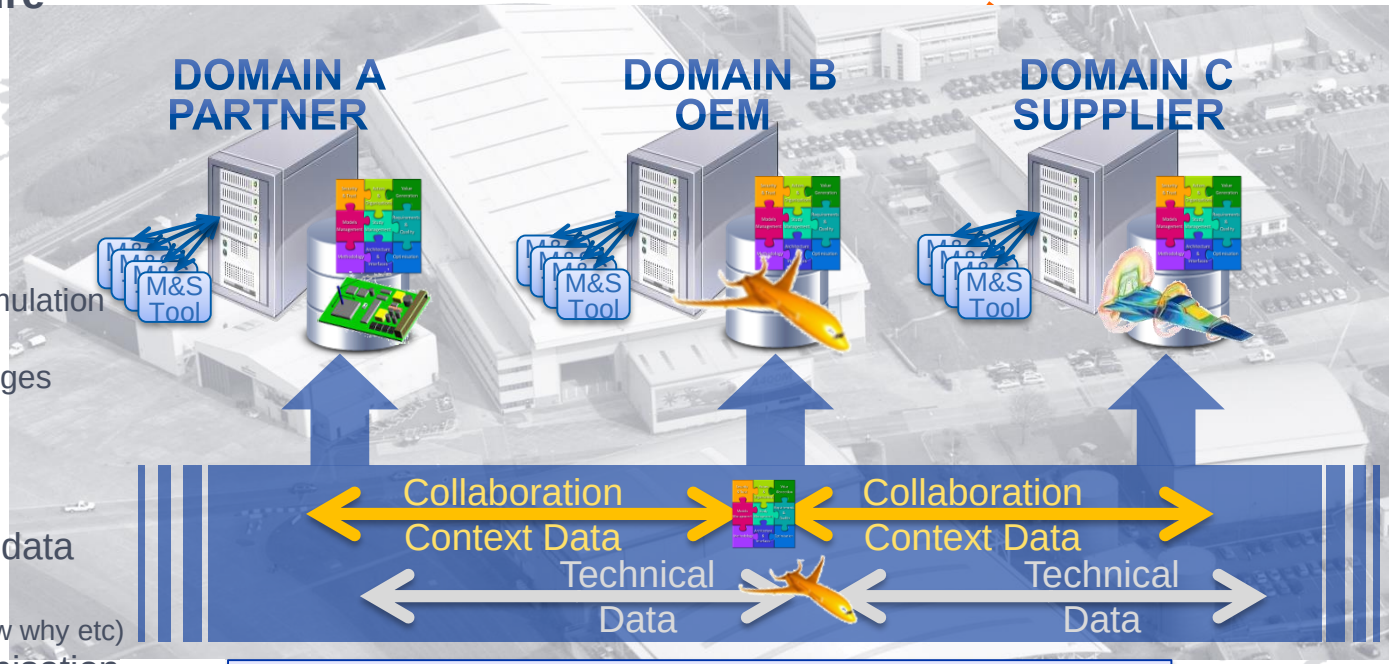
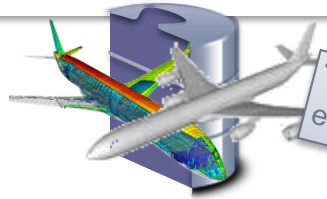


Distributed SE challenges are applicable to in-house organisations

Collaboration vs Modelling & Simulation Data

Modelling and Simulation data

- Managed in the PLM/M&S systems
- Exchanged with technical standards



Technical Standards
e.g. AP242, AP209, FMI

Together they enable the distributed dataset

MoSSEC who, what, where, when, how, why

Collaborative SE context data

- Managed by MoSSEC Compliant Tools
- Exchanged with MoSSEC standard

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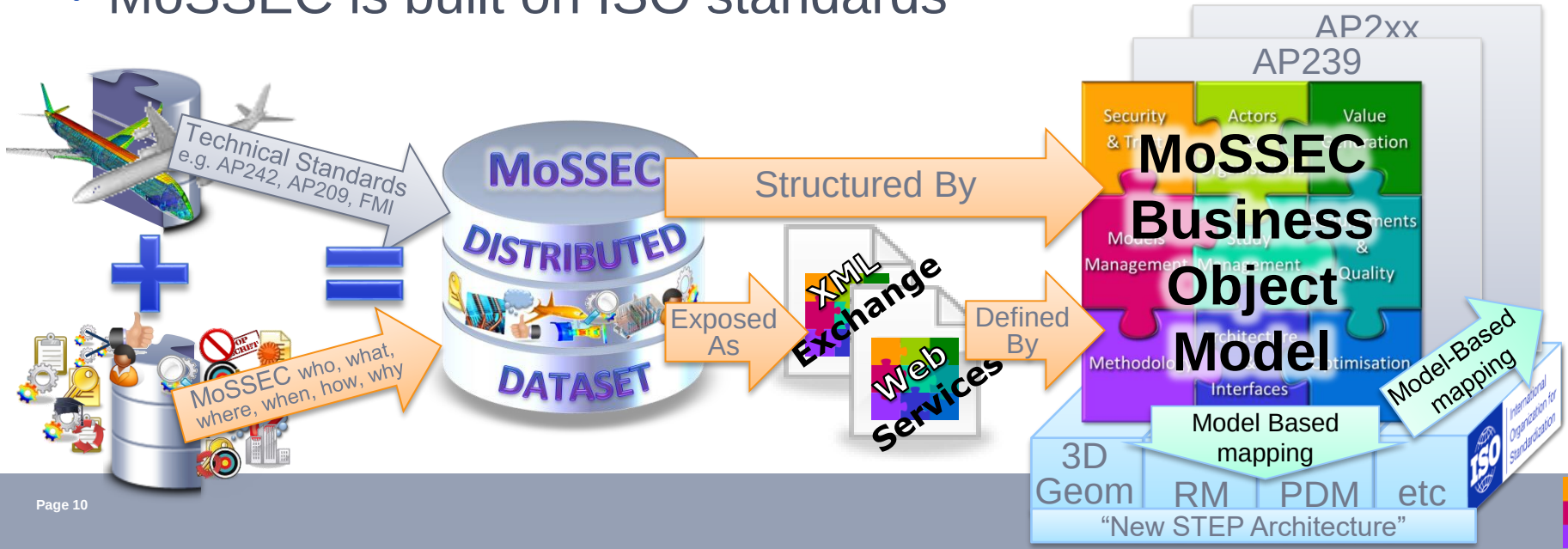
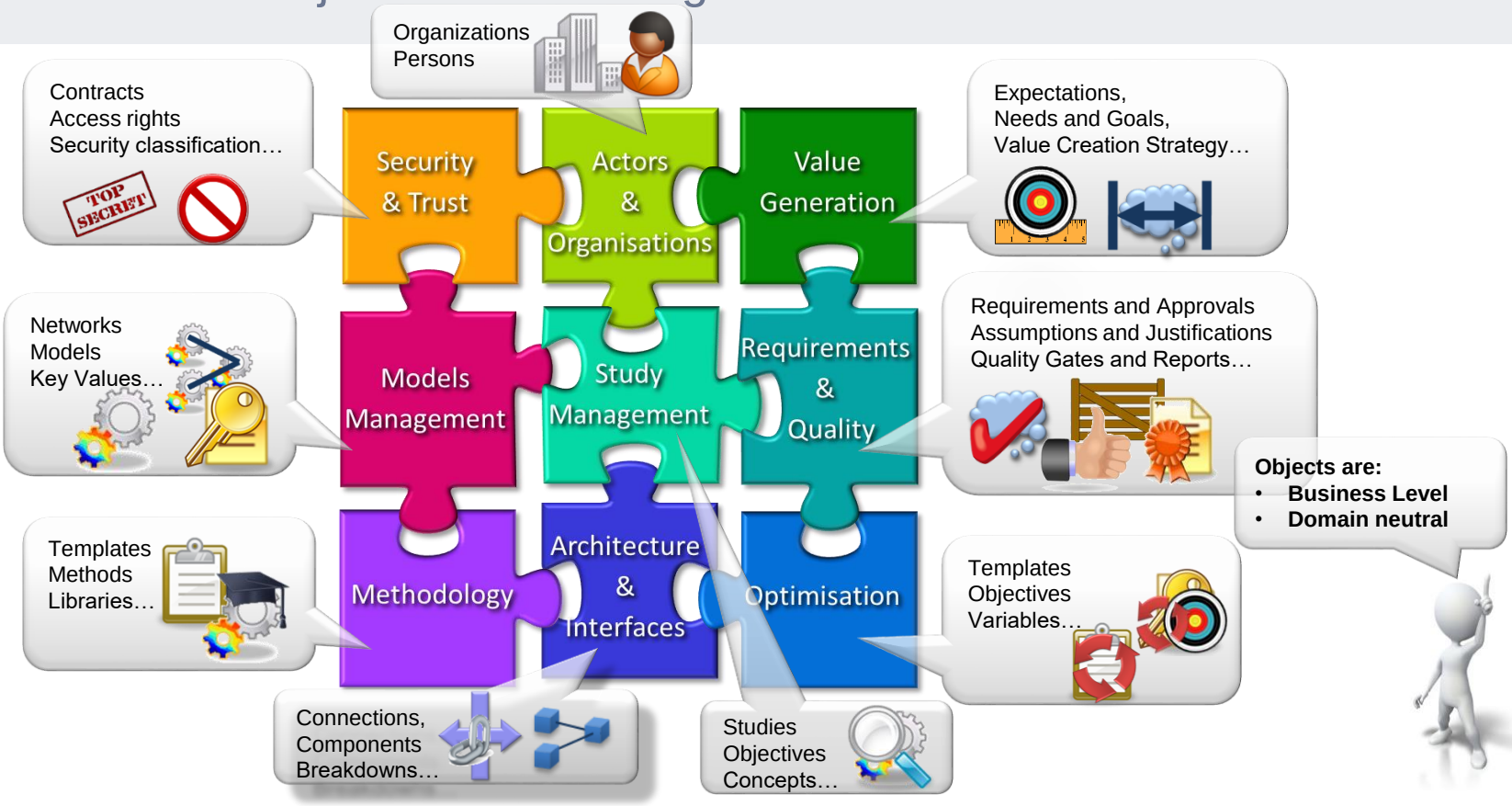
MoSSEC: a common approach based on standards

- MoSSEC provides a common approach for:
  - Structuring the Distributed Dataset
  - Structuring the Information Services for Dataset Management
- MoSSEC is built on ISO standards

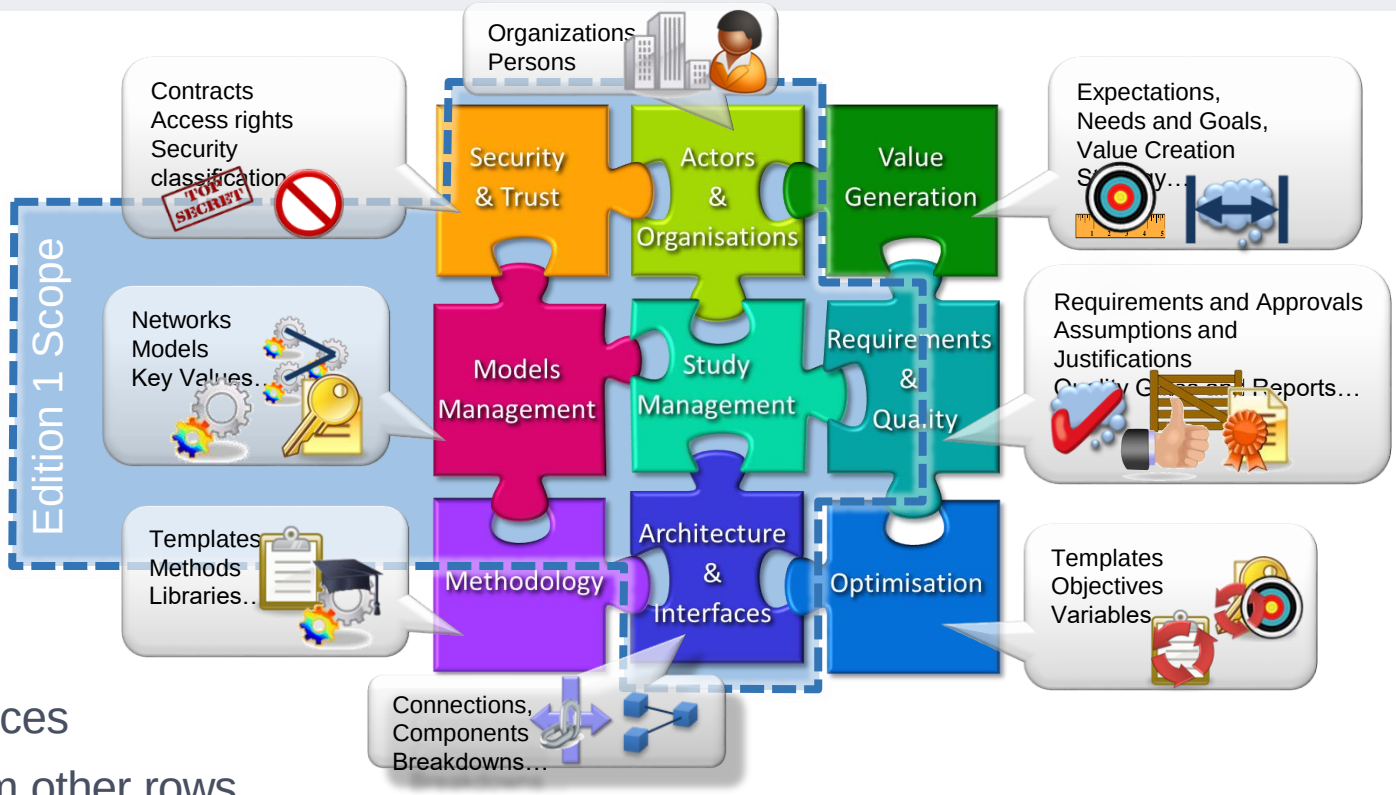


MoSSEC Business Object Model coverage

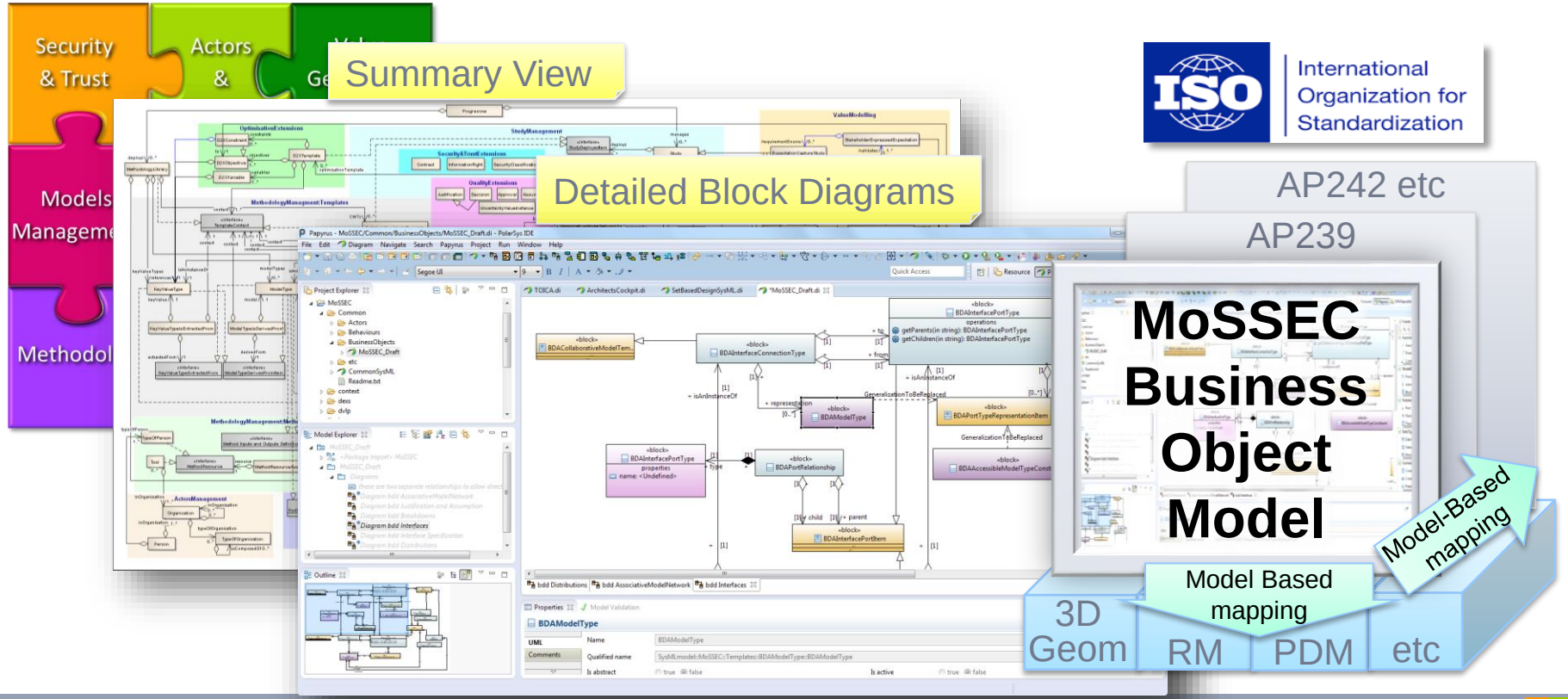


MoSSEC Technical Aspects: Technical Content - Proposed Scope of V1

- ✓Studies
- ✓Models
- ✓Requirements/Quality
- ✓Security & Trust
- ✓Architectures & Interfaces
- +supporting objects from other rows



MoSSEC Business Object Model defined with SysML



MoSSEC Unique Combination of Features

- Links Modelling and Simulation to the Systems Engineering Context
  - Uses objects at a business level
- Efficiently shares context information
  - Uses web services defined using the business object specification
- Builds on existing standards
  - Uses New STEP Architecture mapping to AP239 and the Core Technical Capabilities
  - Exploits AP239 usages such as Long Term Archiving.

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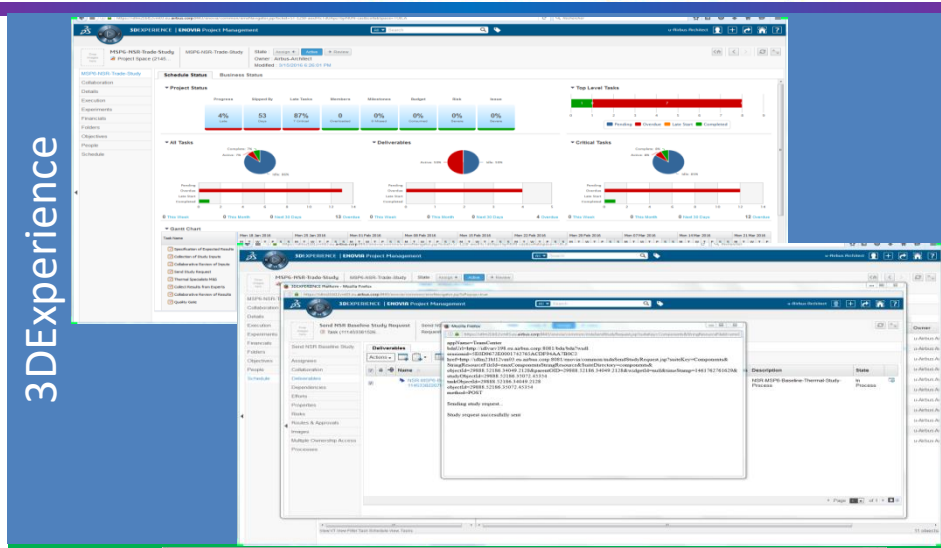
MoSSEC in Use: An example from TOICA

- **What will you see?**
- A study has already been structured and specified in the **Architect's Cockpit**
- The study objects required for Thermal analysis are sent to the TeamCenter platform **with clear context, mapped to TC objects**.
- The thermal analysis is performed and study results are attached to TC structure and sent to DS platform for the Architect to assess.
- **Video sequence:**



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MoSSEC project - participants

- **Project Co-chairs**:
  - Adrian Murton (Airbus Operations Ltd)
  - Greg Pollari (Rockwell Collins)

- **Industrial**:
  - Airbus Group, Boeing, Rockwell Collins, Honeywell, GKN Aerospace, BAE Systems…

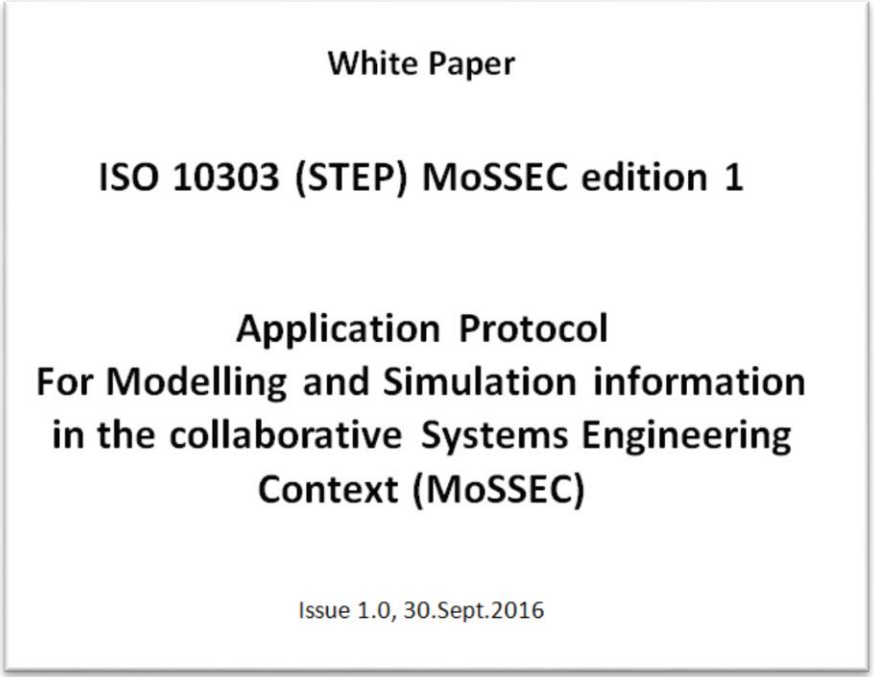
- **Vendors**:
  - Dassault Systèmes, Eurostep, MSC Software, Siemens PLM Software…

MoSSEC – Proposal Stage activities

- Bi-weekly phone calls
- Creation of MoSSEC websites
  - www.mossec.org (Public)
  - private.mossec.org (Private)
- Preliminary Work Item submitted May 24th 2016
- International Workshop (June 13-14 Toulouse)
- New Work Item and White Paper submitted October 4th 2016
- International ballot launched October 14th 2016
- Approval of New Work Item achieved December 9th 2016

MoSSEC White Paper (associated with New Work Item)

- **MoSSEC Business Aspects**
  - Overview of business context
  - Synthesis of business requirements
  - Business use case example
- **MoSSEC Technical Aspects**
  - Definition of technical content
  - Development principles
  - Interdependencies with related standards
- **MoSSEC Project and Risk Management**
  - Deliverables
  - Financial aspects
  - Scheduling


White Paper

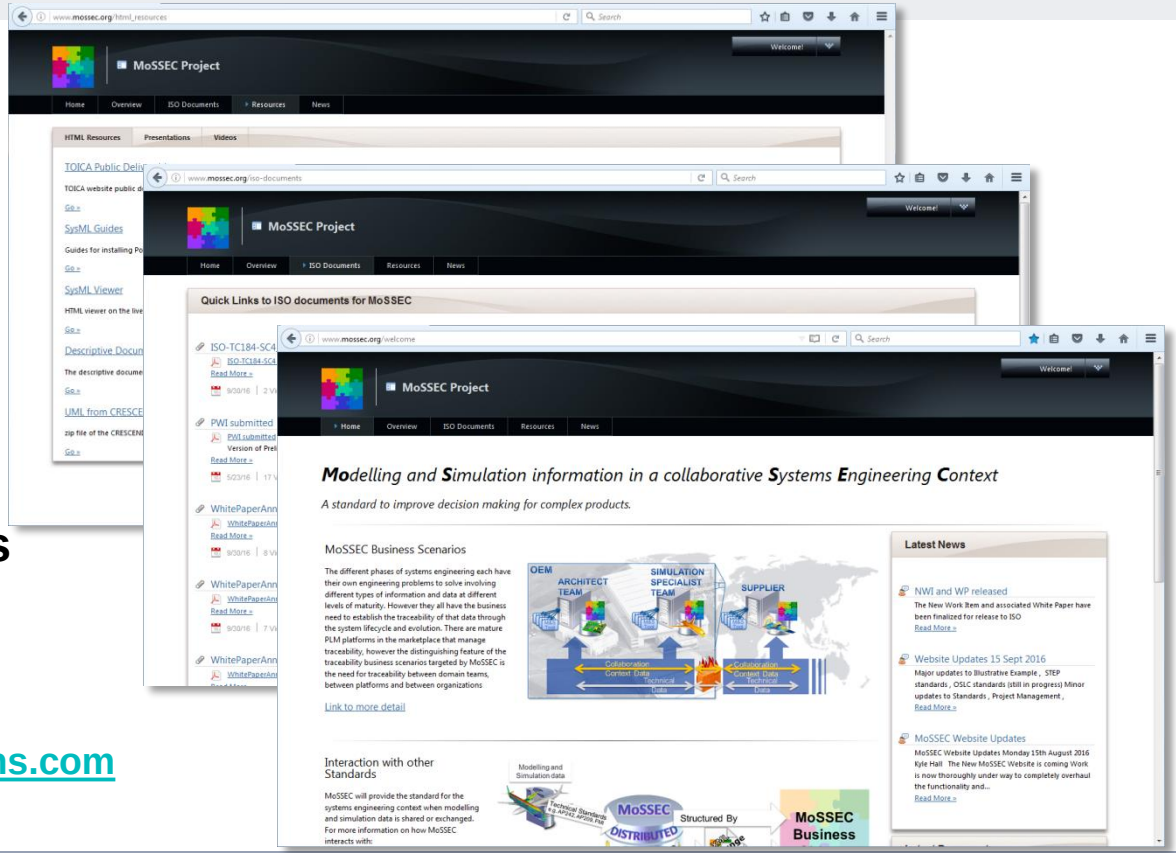
ISO 10303 (STEP) MoSSEC edition 1

Application Protocol
For Modelling and Simulation information in the collaborative Systems Engineering Context (MoSSEC)

Issue 1.0, 30.Sept.2016

MoSSEC: Further information

- **MoSSEC public website**
  - http://www.mossec.org/
  - **Overview**
  - **Resources**
  - **News**
  - **Links**
- **MoSSEC private website**
  - http://private.mossec.org
- **To be added to the members list contact:**
  - Adrian.Murton@airbus.com
  - Gregory.Pollari@rockwellcollins.com



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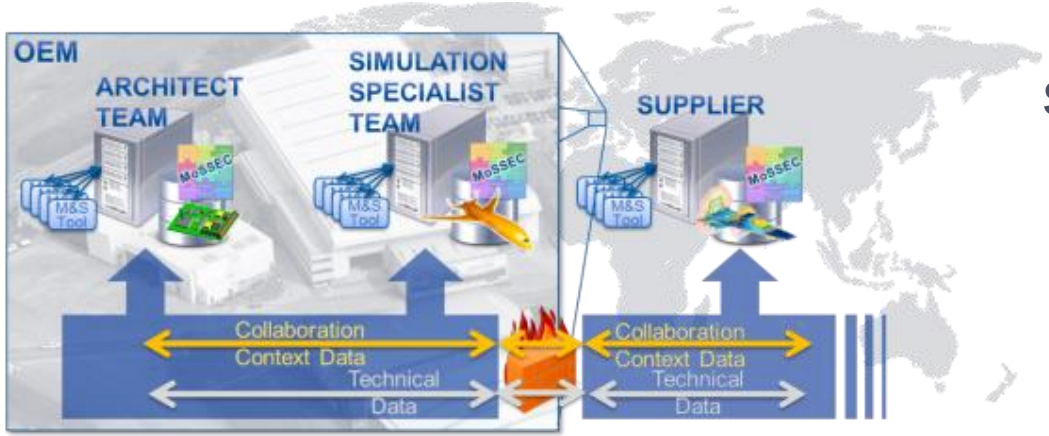
MoSSEC: *Modelling and Simulation information in a collaborative Systems Engineering Context*

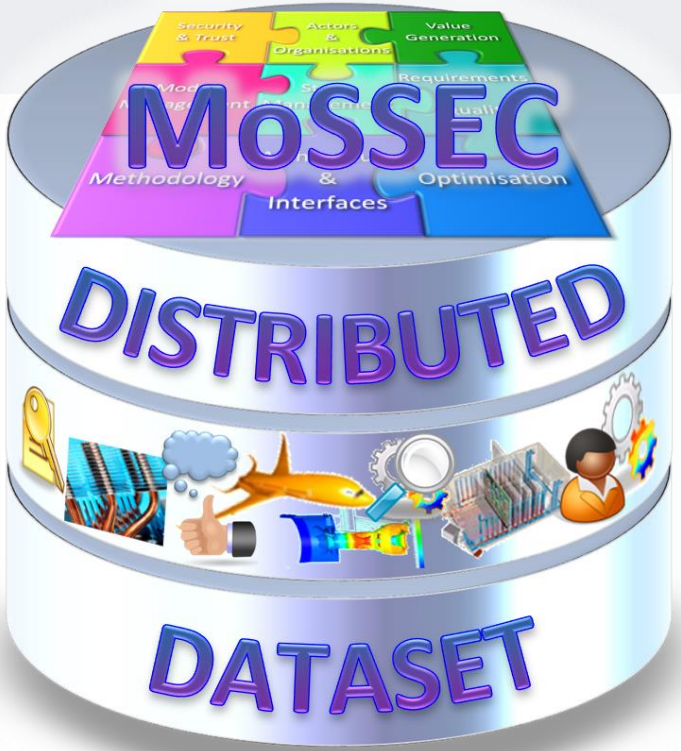
A proposed ISO standard:

- To improve decision making for complex products.
- For sharing the systems engineering context *(Who, What ,Where, When, How, Why)* of modelling and simulation data between Internal teams/domains and Extended Enterprise
- Supported by industrial partners (e.g. Airbus, Rockwell Collins, Boeing, BAE Systems) and vendors (e.g. Eurostep, Dassault Systèmes, MSC Software, Siemens)



Status:

- A first definition used extensively on EU research projects
- ISO New Work Item approved December 2016



Any Questions?