

Using MoSSEC to  
exploit modelling and  
simulation context  
data for overall  
aircraft design

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# GLOBAL PRODUCT DATA INTEROPERABILITY SUMMIT 2018



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# Agenda

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- **Why do I need MoSSEC?**
- **What is MoSSEC?**
- **How is MoSSEC used?**
- **Summary**

# Agenda

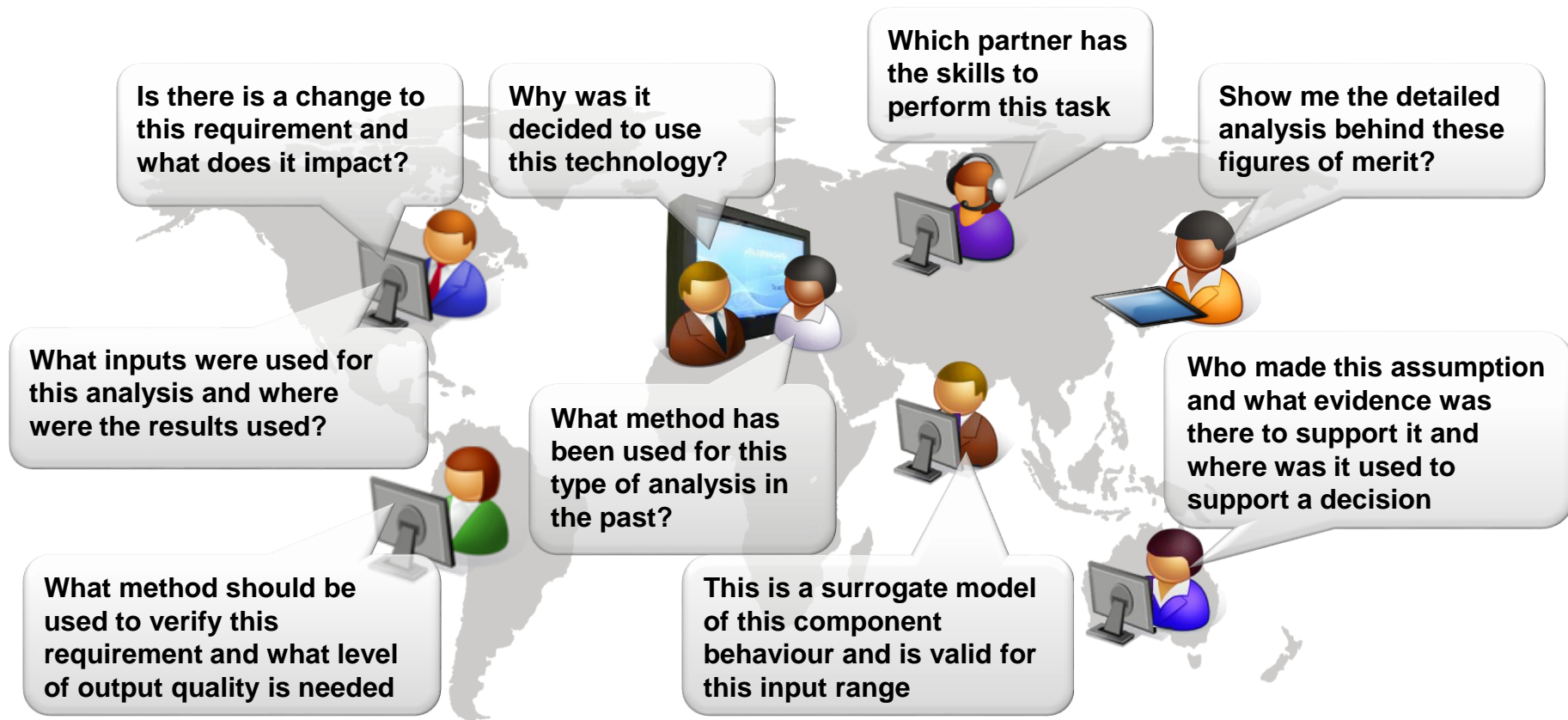
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## Why do I need MoSSEC?

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# Lifecycle Model-Based Enterprises: Typical decision making questions

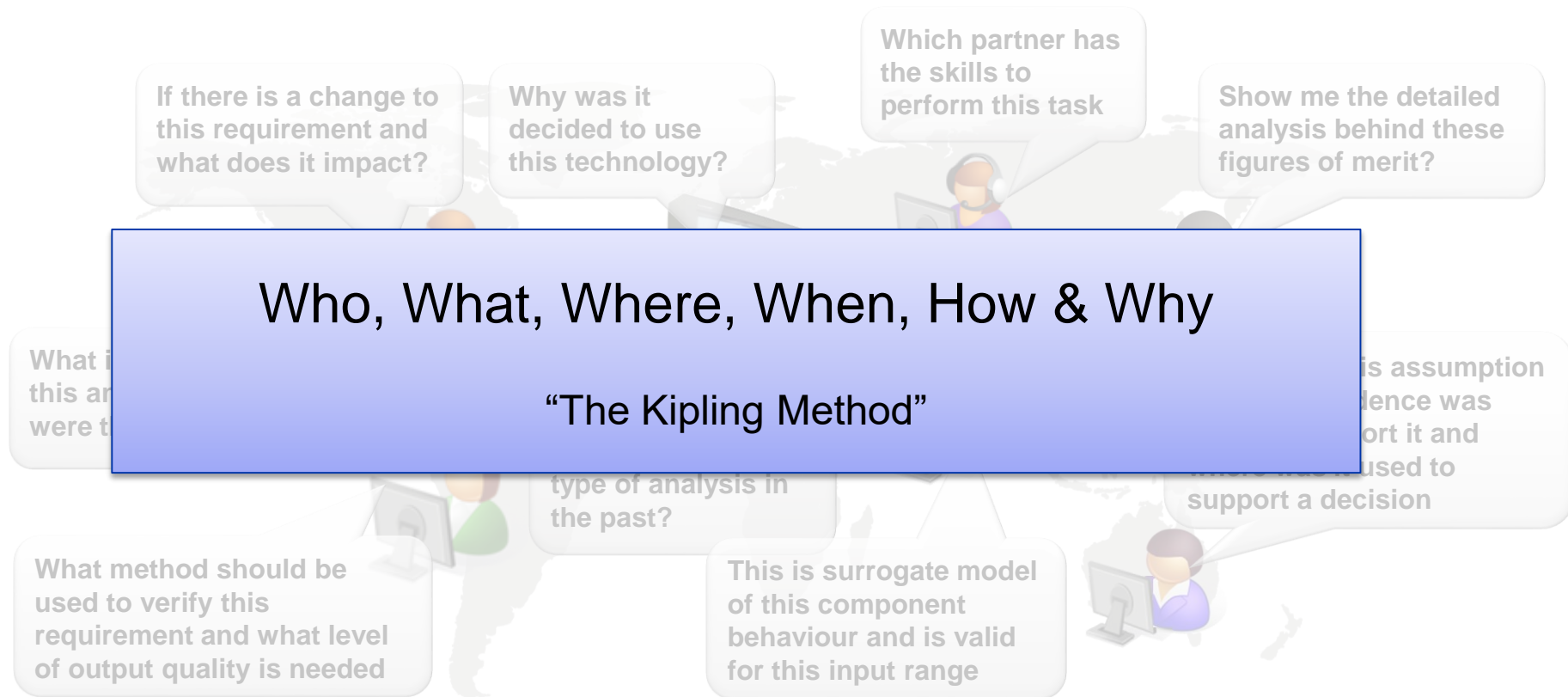
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Page 4

# Lifecycle Model-Based Enterprises: Typical decision making questions

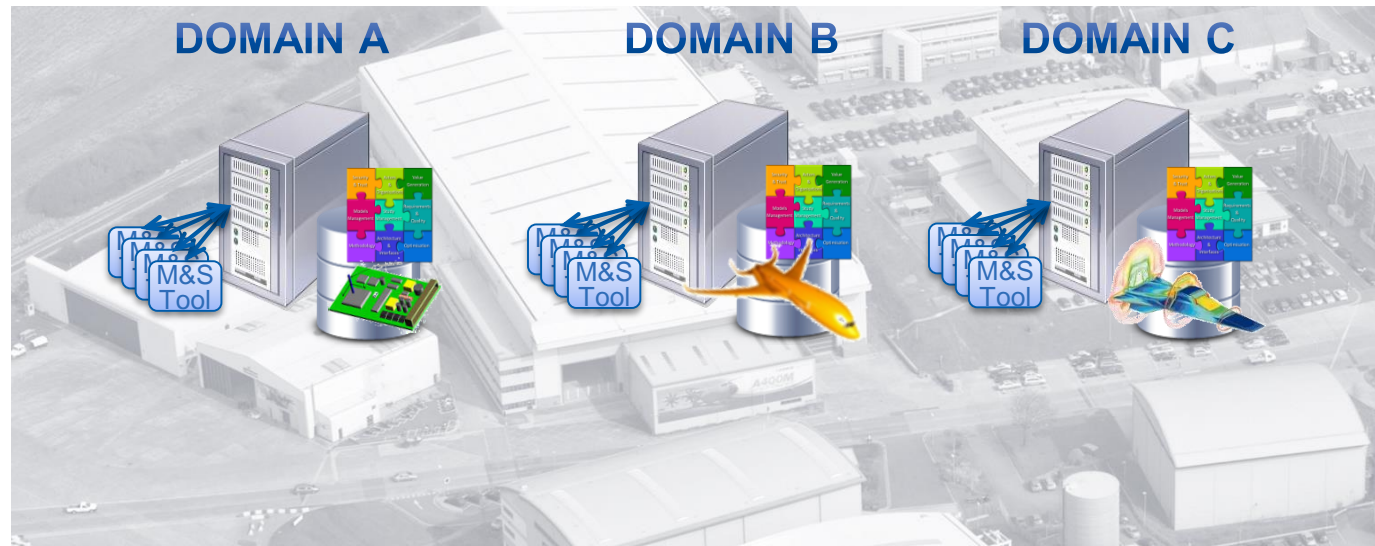
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Page 5

# Lifecycle Model-Based Enterprises: Improving decision making across an organisation

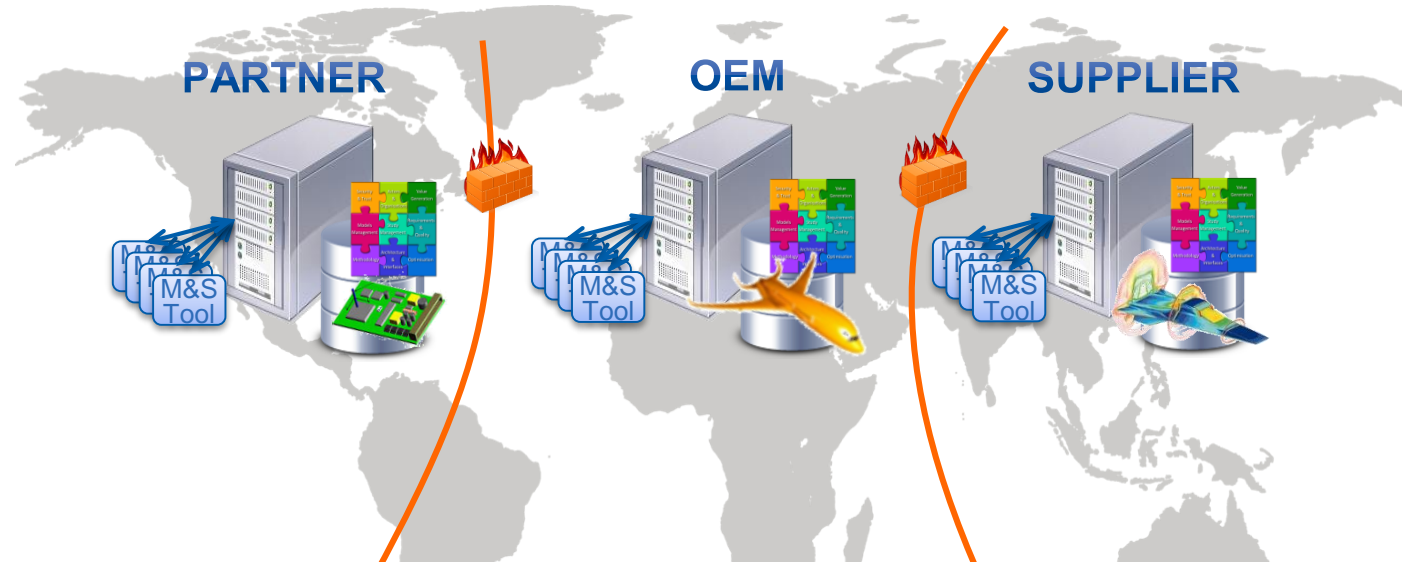
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- Needs efficient distribution and retrieval
  - Of system-of-systems definition
  - Across multiple organisations, platforms and locations
- To facilitate a joined-up “big-picture” view

# Lifecycle Model-Based Enterprises: Improving decision making across an extended enterprise

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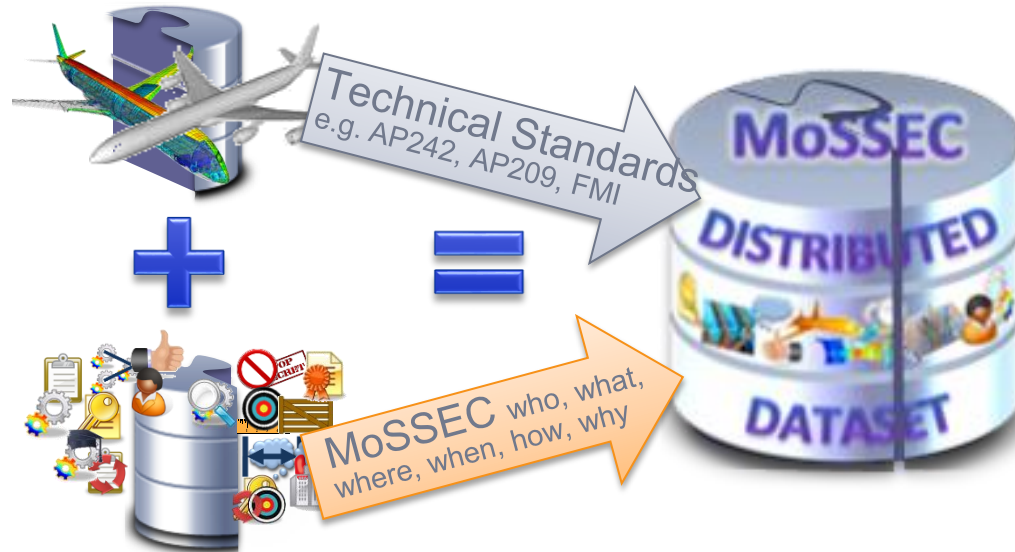
- Needs efficient distribution and retrieval
  - Of system-of-systems definition
  - Across multiple organisations, platforms and locations
- To facilitate a joined-up “big-picture” view

# Combining Modelling and Simulation Data with Collaboration Data

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## Modelling and Simulation data

- Managed by PLM/SPDM tools
- Exchanged with technical standards



Together this supports a lifecycle model-based enterprise

## Collaboration data

- Managed by MoSSEC Compliant Tools
- Exchanged with MoSSEC standard

# Agenda

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- Why do I need MoSSEC?

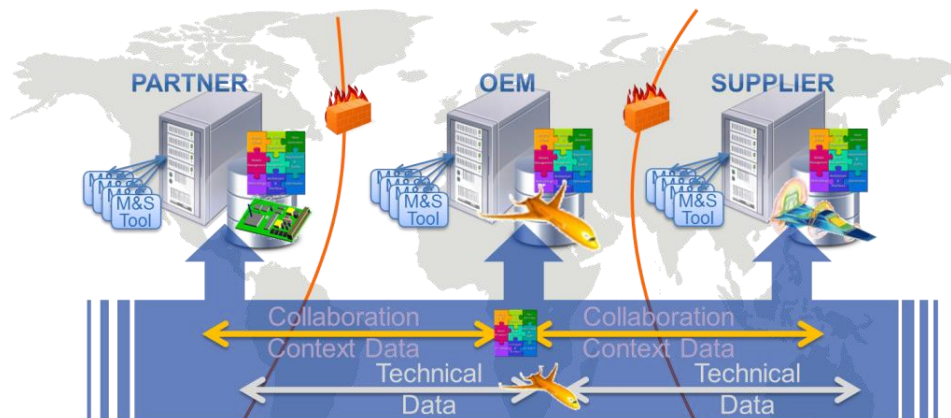
## What is MoSSEC?

- How is MoSSEC used?
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# MoSSEC: A work-in-progress ISO Standard

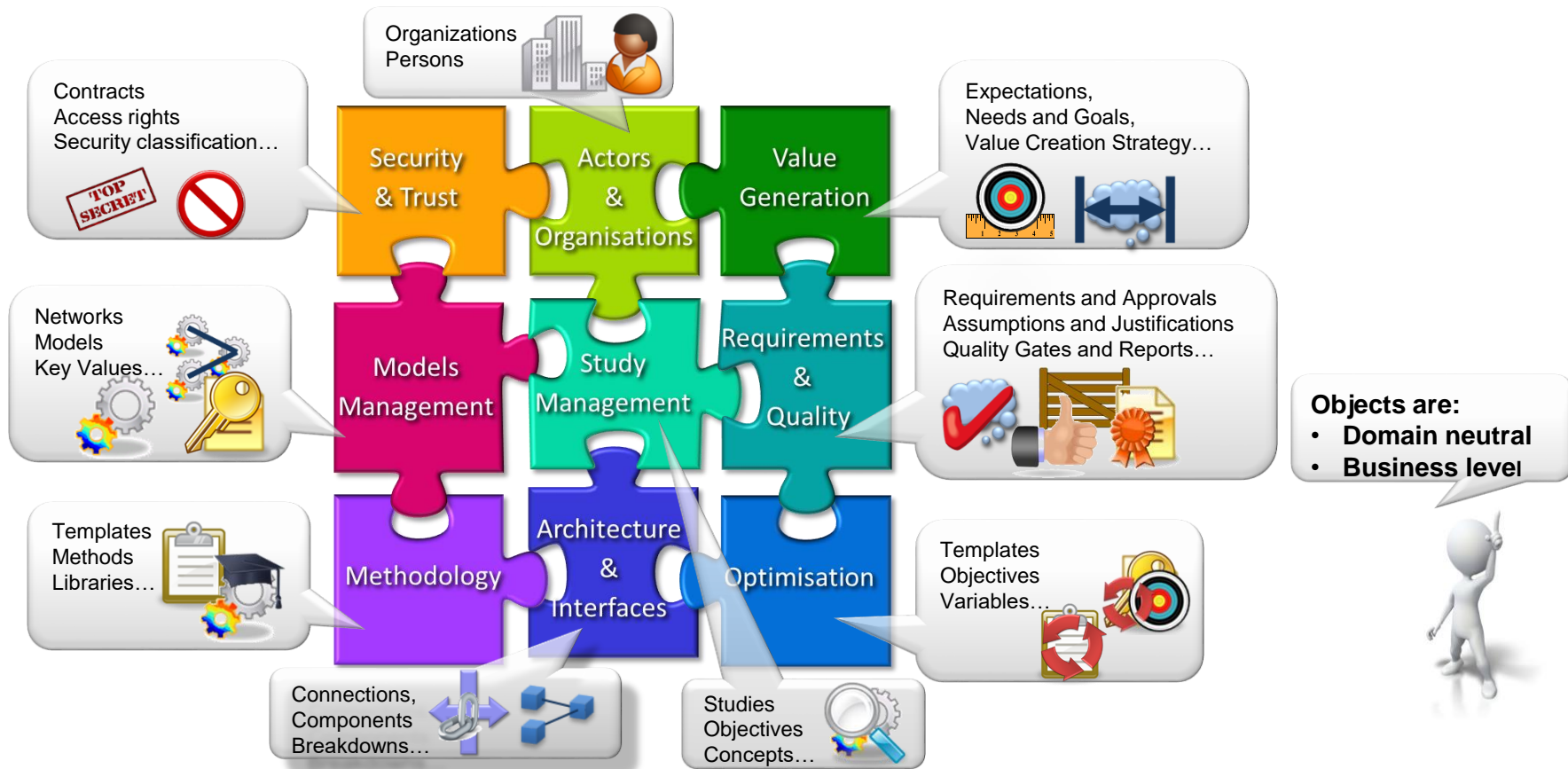
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- ISO Committee Draft approved June 2018 ([ISO/AWI 22071](#), AP243)
  - Draft International Standard planned end of 2018
  - International Standard planned mid 2019
- Contributing web services specification for the STEP Extended Architecture
- Supported by industrial partners (e.g. Airbus, Rockwell Collins, Boeing, BAE Systems)
- Supported by vendors (e.g. Eurostep, Dassault Systèmes, MSC Software, Siemens)

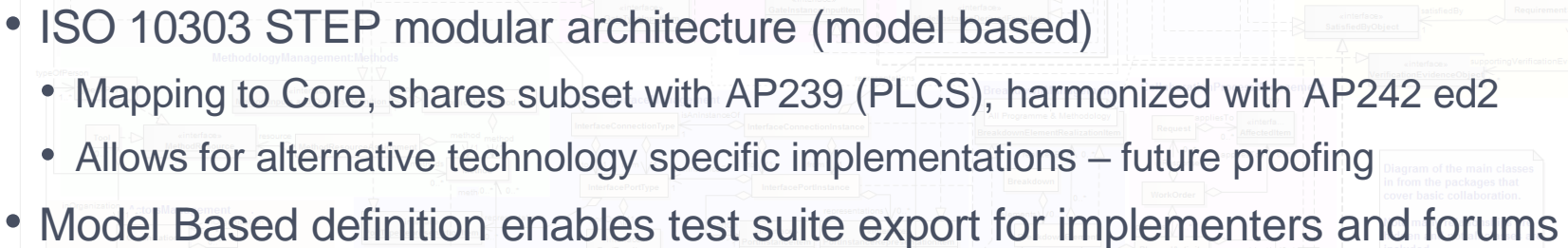


# MoSSEC: Business Object Model coverage

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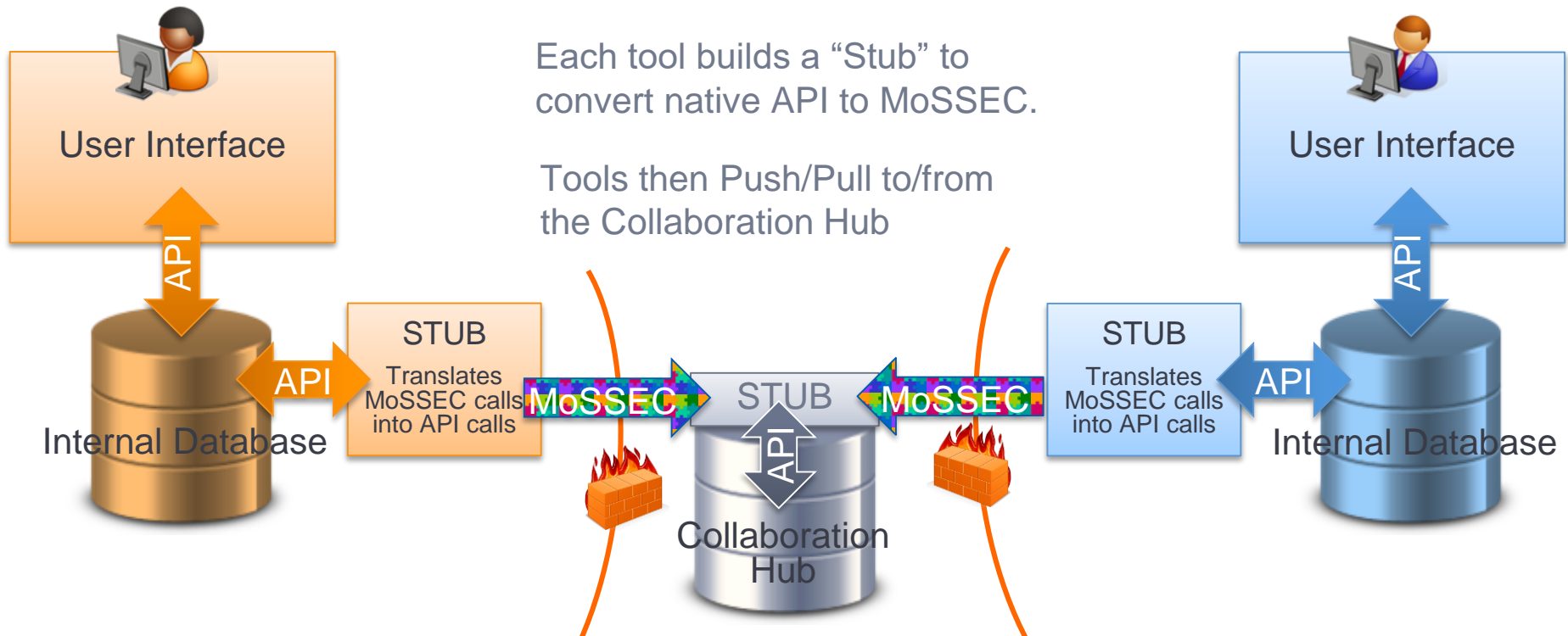
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# Implementation Scenario – Intermediate Collaboration Hub communication

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Windchill (PTC)

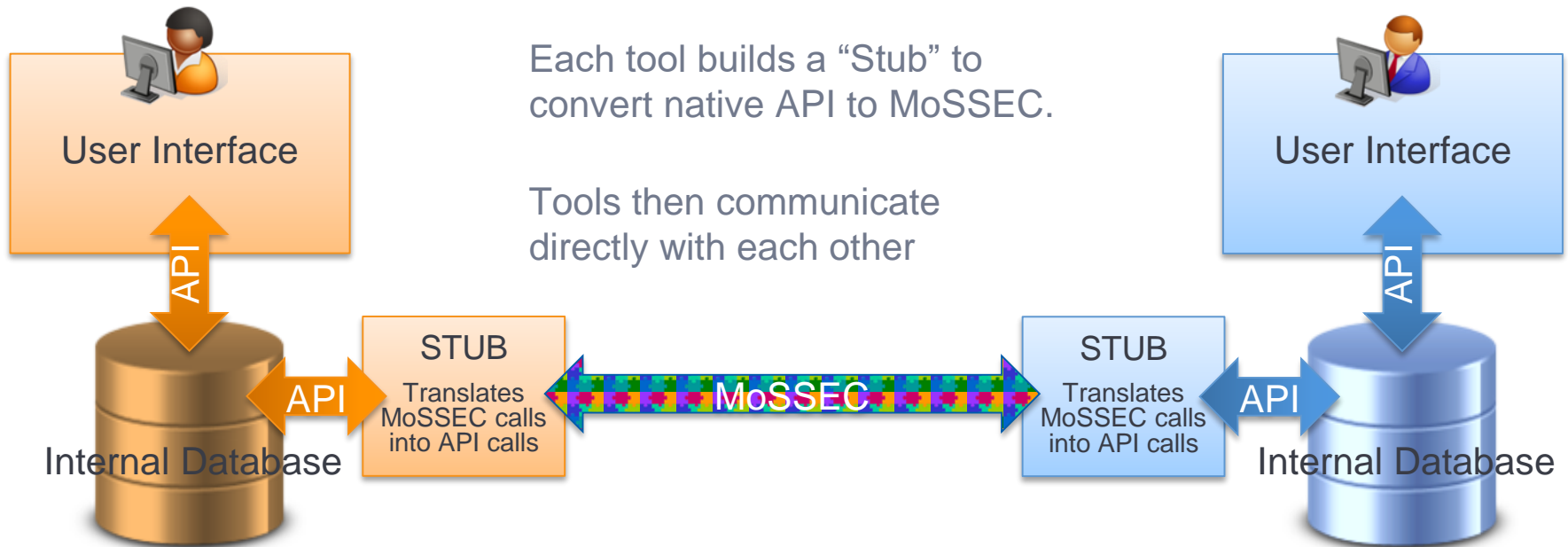
SimManager (MSC)

Non COTS (various)

→ ShareAspace (Eurostep)

# Implementation Scenario – Direct Tool communication

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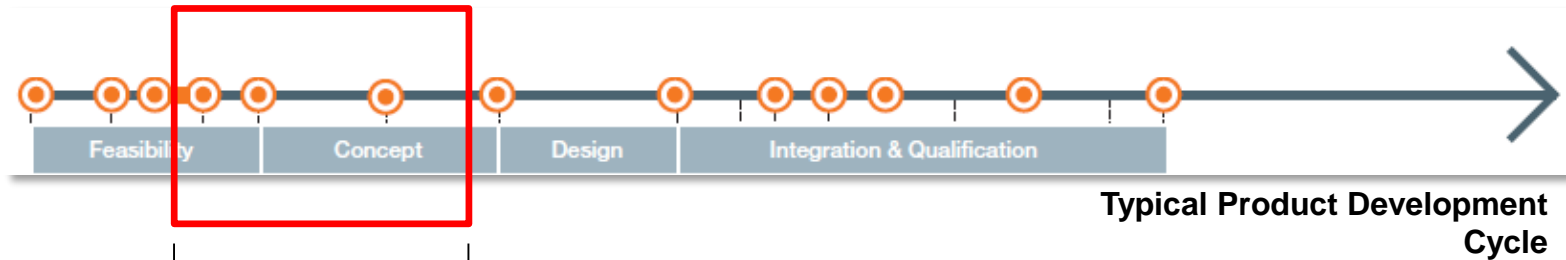


## Implementation Examples:

3DX (Dassault Systemes)	↔	TeamCenter (Siemens)
3DX	↔	SimManager (MSC)
Non COTS (various)	↔	SimManager

# Typical application area – Aircraft Design Trades

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## Single domain

Exploring rapidly loads of concepts



## Multi-domain

Trade-Off analysis across a set of concepts involving rapid domain M&T



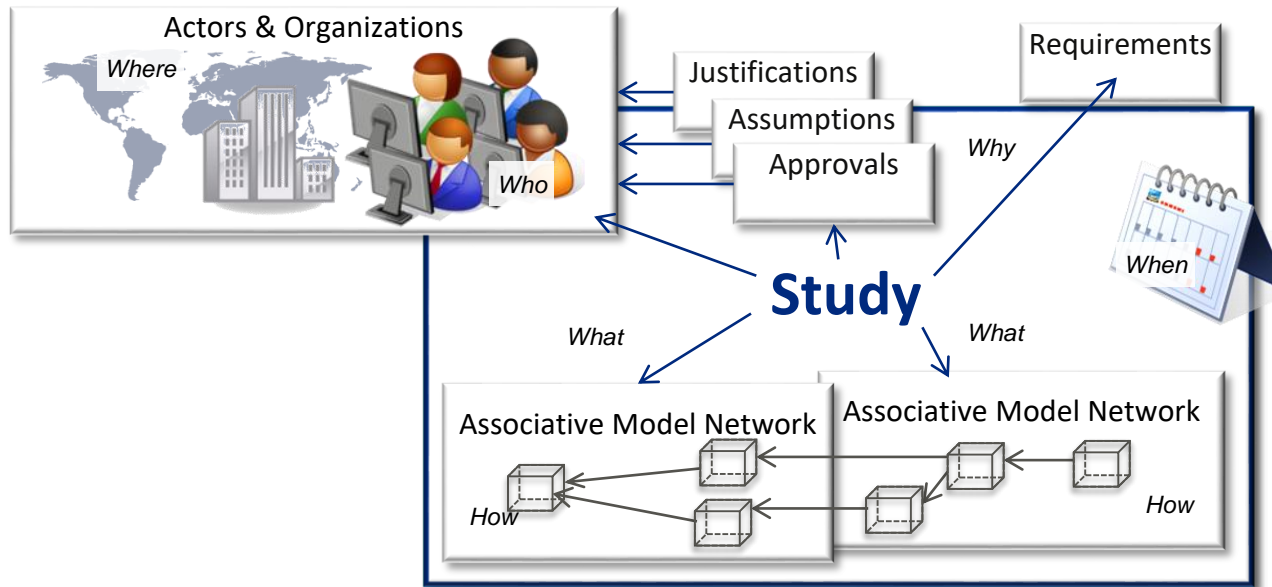
## Multi-domain

Designing one concept in detail

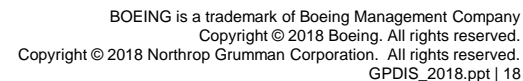


# Fractal Studies and Associative Model Networks - context illustration

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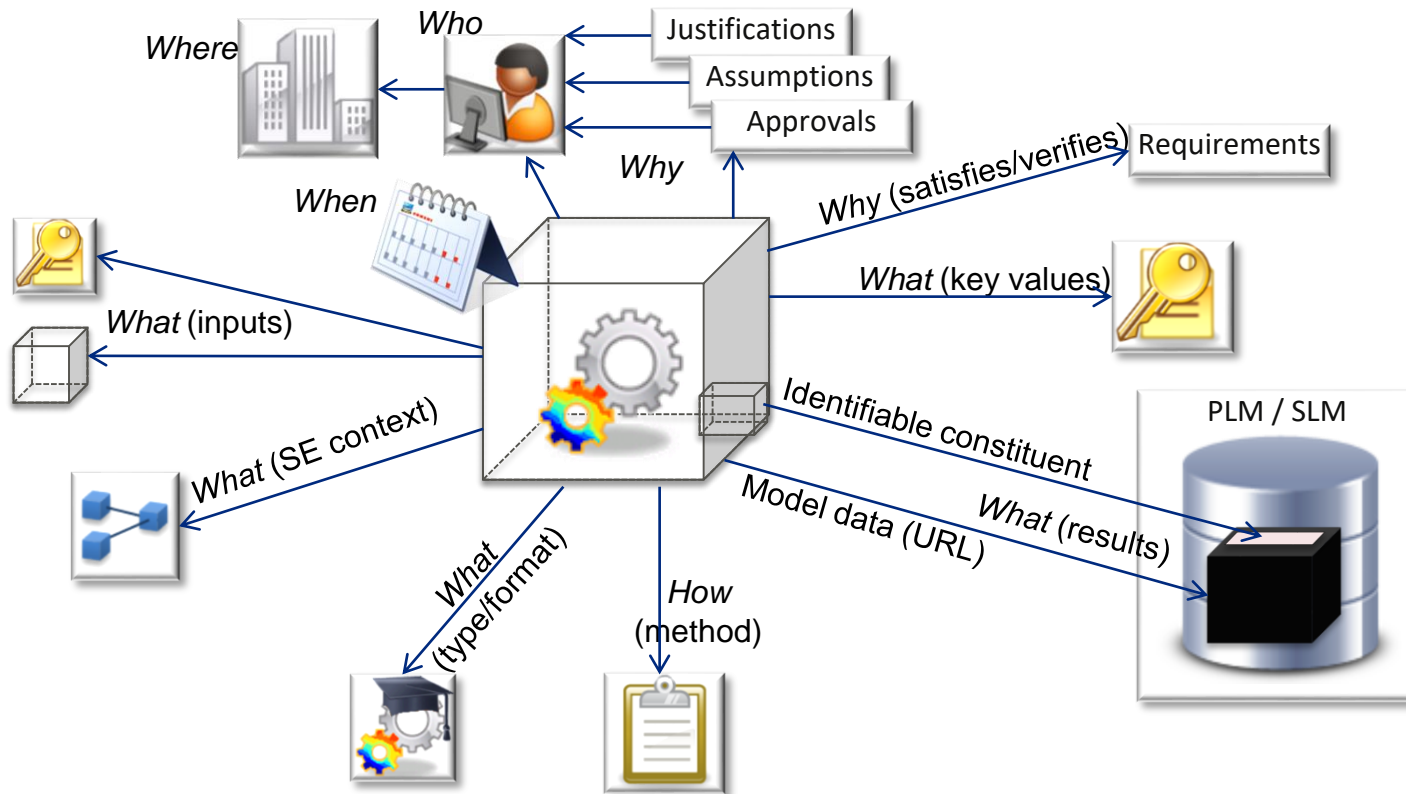


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# “Model Instance” context illustration

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# MoSSEC in use

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## MoSSEC VIDEO

# Benefits/Observations

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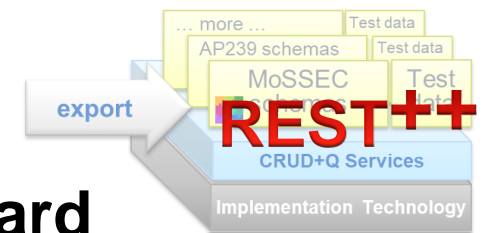
- **Development lifecycle**

- Initial Development
  - Mapping to internal data model
  - Services development
- Subsequent Development
  - Implementation reuse



- **Technology Independent model of Standard**

- E.g. SOAP to REST without changing model



- **Standardized semantics and services**

- Improved Collaboration, Traceability, decision making



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 **Summary**

# MoSSEC: A Unique Combination of Features

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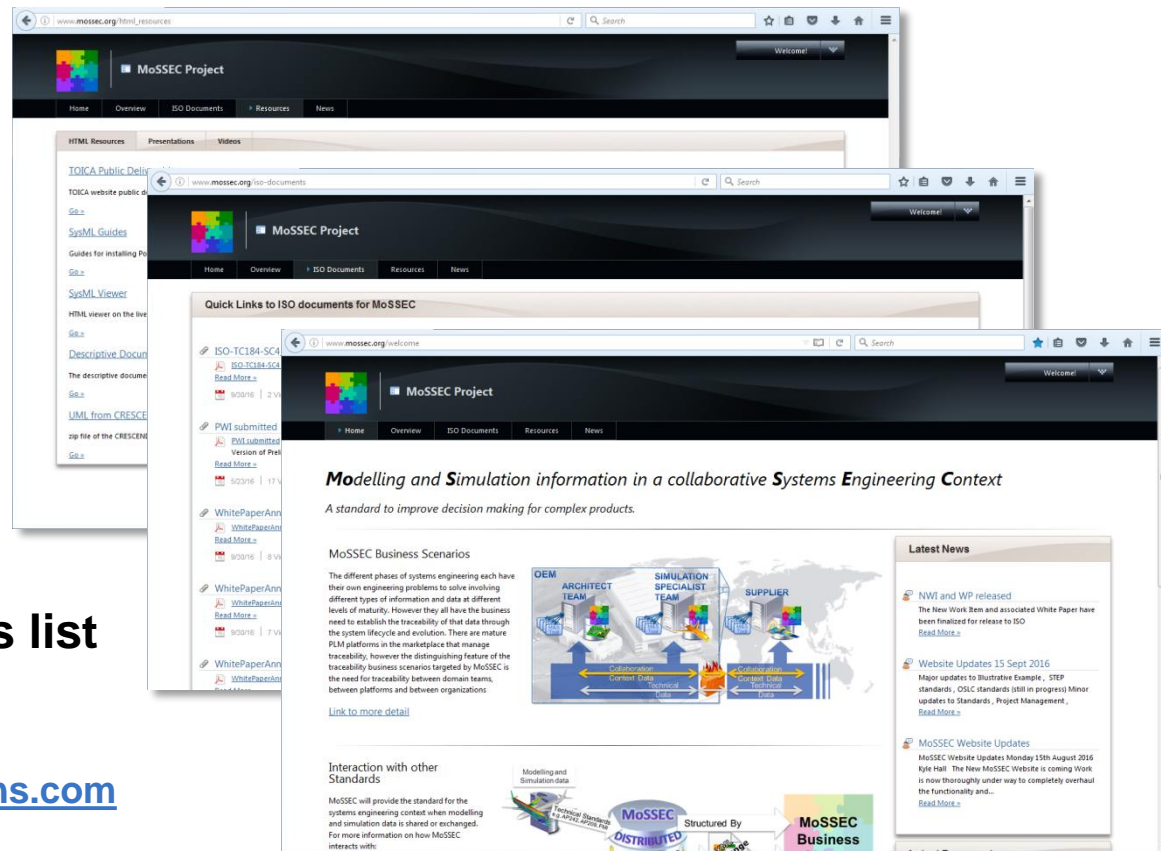
- **Links Modelling and Simulation to the Systems Engineering Context**
  - Uses objects at a business level
- **Efficiently shares context information**
  - Uses web services defined using the business object specification
- **Builds on existing standards**
  - Uses STEP Extended Architecture mapping to ISO 10303 AP239 PLCS and the Core Technical Capabilities
  - Exploits AP239 usages such as Long Term Archiving and Retrieval (LOTAR)
- **Supports Lifecycle Model-Based Enterprises**



# MoSSEC: Further information

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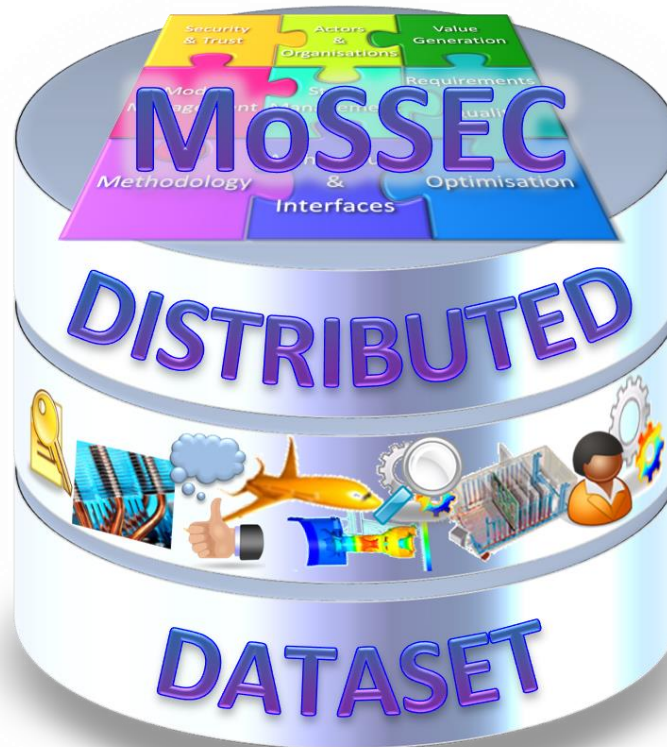
- **MoSSEC website**
  - <http://www.mossec.org/>
  - Overview
  - Resources
  - News
  - Links
- **Members website**
  - <http://private.mossec.org>
- **To be added to the members list contact:**
  - [Adrian.Murton@airbus.com](mailto:Adrian.Murton@airbus.com)
  - [Gregory.Pollari@rockwellcollins.com](mailto:Gregory.Pollari@rockwellcollins.com)



# Join us at the MBSE Workshop on Wednesday!

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# Any Questions?