MoSSEC
A standard for sharing Modelling and Simulation information in a collaborative Systems Engineering Context
Agenda

• Why do I need MoSSEC?
• What is MoSSEC?
• How can MoSSEC be used?
• Summary
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Lifecycle Model-Based Enterprises: Typical decision making questions

- Why was it decided to use this technology?
- What method has been used for this type of analysis in the past?
- What inputs were used for this analysis and where were the results used?
- Is there a change to this requirement and what does it impact?
- Which partner has the skills to perform this task?
- Show me the detailed analysis behind these figures of merit?
- What method should be used to verify this requirement and what level of output quality is needed?
- This is a surrogate model of this component behaviour and is valid for this input range.
- Who made this assumption and what evidence was there to support it and where was it used to support a decision?
Lifecycle Model-Based Enterprises: Typical decision making questions

Why was it decided to use this technology?

Show me the detailed analysis behind these figures of merit?

What method has been used for this type of analysis in the past?

If there is a change to this requirement and what does it impact?

Which partner has the skills to perform this task?

What method should be used to verify this requirement and what level of output quality is needed?

Who made this assumption and what evidence was there to support it and where was it used to support a decision?

What is this assumption?

This is surrogate model of this component behaviour and is valid for this input range.


“The Kipling Method”
Lifecycle Model-Based Enterprises: Improving decision making within an organisation

- 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

- 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

**Modelling and Simulation data**
- Managed by PLM/SPDM tools
- Exchanged with technical standards

**Collaboration data**
- Managed by MoSSEC Compliant Tools
- Exchanged with MoSSEC standard

Together this supports a lifecycle model-based enterprise
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MoSSEC: A work-in-progress ISO Standard

- ISO “Approved new Work Item” - Dec 2016 (ISO/AWI 22071, AP243)
  - Committee Draft (CD) planned Q1 2018

- Shares systems engineering context of modelling and simulation data between internal teams/domains and Extended Enterprise

- 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

- Contracts
- Access rights
- Security classification

- Networks
- Models
- Key Values

- Templates
- Methods
- Libraries

- Security & Trust
- Actors & Organisations
- Value Generation

- Models Management
- Study Management
- Requirements & Quality

- Methodology
- Architecture & Interfaces
- Optimisation

- Connections, Components Breakdowns
- Studies Objectives Concepts

- Expectations, Needs and Goals, Value Creation Strategy
- Requirements and Approvals
- Assumptions and Justifications
- Quality Gates and Reports

Objects are:
- Domain neutral
- Business level
MoSSEC: Building on Related Standards

- STEP modular architecture - Mapping to AP239 (PLCS)
- REST/OSLC - Developing implementation methods for services
- Exploitation facilitated by improved implementer guides

Technology independent

Technology specific

AP239 Product Lifecycle Support

MoSSEC Modelling and Simulation information in a collaborative Systems Engineering Context

Implementation methods

Common Services Used by all APs

Implementation Technology

+ISO

REST
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What you will see

1. A study has already been structured and specified in an Architect’s Cockpit
2. The study objects required for thermal analysis are sent to the thermal platform with clear context
3. The thermal analysis is performed and study results are sent to the architect platform
4. The Architect views the results in the Architect’s Cockpit

- All exchanges via MoSSEC web services
- Video sequence
  
  http://www.mossec.org/video_resources
Agenda

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MoSSEC: A 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 STEP Extended Architecture mapping to AP239 and the Core Technical Capabilities
  • Exploits AP239 usages such as Long Term Archiving and Retrieval (LOTAR)

• **Supports Lifecycle Model-Based Enterprises**
MoSSEC: Further information

- **MoSSEC website**
  - [http://www.mossec.org/](http://www.mossec.org/)
  - Overview
  - Resources
  - News
  - Links

- **Members website**
  - [http://private.mossec.org](http://private.mossec.org)

- To be added to the members list
  - Contact:
    - Adrian.Murton@airbus.com
    - Gregory.Pollari@rockwellcollins.com
Any Questions?