CONCERT HALL

FUTURE CORE ELEMENT OF SPDM SYSTEMS?

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VIRTUAL WOST 2020
Motivation

Invitation NAFEMS SPDM Conference 2018

The European NAFEMS SPDM Conference will offer a unique forum where experts from different industries, academia, consultancies and software vendors will share their knowledge regarding Simulation Process and Data Management concepts and solutions covering the following topics:

- Deployment of SDM solutions
- Analysis planning and reporting
- Business processes implemented in SDM
- Digital threads and digital twins implemented in SDM
- Business value of SDM solutions
- Standards-based approaches in SDM
- Open source approaches to SDM
- Essential components of an SDM solution
- Data and process integration tools
- Platforms for the deployment of industrialised/democratised simulation processes
- SDM strategy

Governance Questions

- Why is the focus in the SPDM community set on Simulation Data Management (SDM)?
- Why does nobody care about the purpose of all SDM activities – the simulation process itself?
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Digital Transformation in CAE Engineering

Web-based provision of CAE Engineering workflows

Task Node(s): Pool

Workflow Setup: “Data flow”

App Definition

Web-based User Interface

outstanding Efficiency

by consequent baselining and reuse of CAE engineering processes

Strong focus on workflows and processes with tailorble user Interfaces
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Simulation Process Management (SPM)

Concert Hall hosts optiSLang projects that may consist of any CAE tool nodes.
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Concert Hall Example in about 5 minutes

WOST 2020 Simple Math Demonstrator
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Digital Transformation in CAE Engineering

How to tailor user interfaces?

Template-based user interface is provided by optiSLang

JavaScript-based user interface is individually programmed

Frontend is key user interface is core element and generates Value-add
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Front-Ends, Process Automation & Back-Ends

SPM I: Front-End

SPM II: Process Automation

SDM: Back-End
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Simulation Process & Data Management

Front-Ends, Process Automation & Back-Ends

SPM I: Front-End  
SPM II: Process Automation  
SDM: Back-End

SDM: Back-End

Start

Data

Client
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Simulation Process & Data Management

Front-Ends, Process Automation & Back-Ends

**Horizontal Integration** w.r.t. MCAD, ECAD, Hardware Information, ...

**Targets**
- Simulation and simulation meta data is centrally available
- Simulation Data is traceably connected to further databases (CAD, Material, PLM, SAP)
- Management of huge amount of heterogeneous data with short lifecycle
- Vertical and horizontal integration of processes

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Halpern, M.: [...] SPDM is Long-Term [...]
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Front-Ends, Process Automation & Back-Ends

Focus on Simulation Data Management is long-term, but Simulation Process Management?

Targets
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SPM II: Process Automation

Halpern, M.: [...] SPDM is Long-Term [...]
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Simulation Process Management

WOST 2020 Simple Math Demonstrator

Real-world workflows are not developed in 5 min but SPM definitely is short-term ROI

Targets

- Process Automation of simple but also complex workflows connecting different CAE tools
- Attractive UI easy to generate & to extend
- Easy-to-offer via Web Service
- Easy to connect to Simulation Data Management Systems or Repositories / Databases
- Focus: Vertical Integration
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Simulation Process Management

Excerpt of today's Real-World Applications at Bosch

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IT infrastructure

Web-based provision of CAE Engineering workflows

- NT user
  - Data Handling
  - Admin Settings
  - File Share
  - SDM PLM
  - License (flexLM)
  - SDM PLM

Central IT

- Backend- API
- Concert Hall
- Workstation

For vertical integrations / apps:
SPM & UI is Core Element

...connects SDM / PLM
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Summary

- Concert Hall / optiSLang web Service serves as a central framework to host CAE workflows based on optiSLang projects.
- Vertical Integration: Concert Hall as a SPM framework representative addresses use cases and engineering business models encapsulated in “App” with tailorable user interfaces and views to generate Value-Add.
- Simulation Data Management (SDM) focuses on Data Handling, Connectivity and Traceability.
- SPM connects central IT, workstations, high performance clusters, databases & repositories, PLM and SDM systems.
- For vertical integrations Concert Hall is both “Master” & Core Element for Simulation Process and Data Management (SPDM) systems.

Focus on SPM nearly guarantees immediate ROI.
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Summary

Any Questions?

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