SMSWG Meeting

26 October 2015
Agenda

• Welcome
• SMSWG Membership Update
• Review Recent Activities:
  – NWC 15
  – INCOSE IS 2015
  – Coupled MBSE-FE Applications Conference (Turin, Italy)
• Discuss Upcoming Activities:
  – INCOSE IW 2016
  – SMS Seminar
  – NAFEMS Americas Conference
• SMSWG Deliverables:
  – Terms & Definitions
  – Article for NAFEMS Benchmark Magazine
  – “What is SMS?” Flyer
• Around the Table
  – Resume SMSWG Strategy & Roadmap Discussions
  – Other Business
• Close
# SMSWG Participation

<table>
<thead>
<tr>
<th>Region</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Americas</td>
<td>70%</td>
</tr>
<tr>
<td>Europe</td>
<td>19%</td>
</tr>
<tr>
<td>Asia / Pacific</td>
<td>8%</td>
</tr>
<tr>
<td>other/undeclared</td>
<td>3%</td>
</tr>
<tr>
<td>aerospace or defense</td>
<td>↓ 22%</td>
</tr>
<tr>
<td>automotive</td>
<td>↑ 16%</td>
</tr>
<tr>
<td>academia</td>
<td>↑ 3%</td>
</tr>
<tr>
<td>consulting</td>
<td>10%</td>
</tr>
<tr>
<td>energy</td>
<td>2%</td>
</tr>
<tr>
<td>medical</td>
<td>1%</td>
</tr>
<tr>
<td>other industry</td>
<td>6%</td>
</tr>
<tr>
<td>solutions &amp; services</td>
<td>↑ 34%</td>
</tr>
<tr>
<td>standards</td>
<td>↑ 4%</td>
</tr>
<tr>
<td>undeclared</td>
<td>↑ 2%</td>
</tr>
</tbody>
</table>

**144 members**

**82 unique member companies**
NWC 15
• San Diego, CA
• June 21-24, 2015

Highlights:
– Four Sessions

1F Systems Engineering 1  Room F
13:30 Chairman Welcome
13:35 Predictive Evaluation of the Fuel Economy vs. NVH Trade-Off using Co-Simulation
M. Feltre, J. Liu (Ford Motor Company, USA); J. Zerna
L. Forasté Gómez (Gamma Technologies, USA); M. Plattner (Rometix Technology, GBR); W. Sun (MSC Software, USA)
13:55 A Primer on Model Based Systems Engineering
B. Brock (Dassault Systems Simulia Corp., USA)
14:15 Determination of Functional Intersections between Multiple Tolerance-Chains by the Use of the Assembly-Graph
F. Lilwa, M. Gotthold, J. Forstreuter (Daimler, GBR); M. Viether (Saarland University, GBR)
S. Klein, M. Krasile (sem engineering methods, GBR)
14:55 State-Aware Calibration for Inferring Systematic Bias in Computer Models of Complex Systems
S. Ahmadzadeh, A. Brown (Clemson University, USA)

2F Systems Engineering 2
16:00 Chairman Welcome
16:05 Model-Learning for Power Consumption Simulation through Control Signals
P. Eberspächer, A. Lechler (University Stuttgart, GERM); A. Verl (Fraunhofer-Gesellschaft, GERM)
C. Bock (National Institute of Standards and Technology, USA); I. Matei (Palo Alto Research Center, USA); R. Bai (Engsys, USA)
16:45 Simulation of Hydraulic Downhole Driller Tool Validated with Experimental Data and Case Studies is used to Optimise Drilling Programme Conduct Design Sensitivity Analysis
I. Mikkelsen, D. Minett-Smith, N. Holmes (Weatherford International, GBR); V. Coveney (University of Bath, GBR)
17:05 Using System Simulation to Generate Validated Loss Coefficients for System Simulation
J. Murray (Mentor Graphics, GBR)
17:25 Discussion

6F Systems Engineering 3
17:20 Chairman Welcome
17:25 Automatic Generation of Standardized System Models from 3D-Simulations in a Systems Engineering Context
D. Hartmann (Siemens, GERM); M. Mahler (Siemens Industry Software, GERM)
17:45 A Platform Approach for Enabling System Engineering – Unmanned Aerial System Use Case
K. Patel, F. Chauvin, G. Fanmuy (Dassault Systems, USA); E. Bolognini (Dassault Systems, USA)
18:05 A Parametric Virtual Prototyping Process for the Conceptual Design of Compliant Systems
S. I. Tricano, A. Ramesh, D. N. Mavri (Georgia Institute of Technology, USA)

7J Simulation & Systems Eng.  Room J
11:00 Discussion Session: Simulation & Systems Engineering: A Roadmap for Future Collaborations between NAFEMS and INCOSE

Three years ago, NAFEMS and the International Council on Systems Engineering (INCOSE) formed the Systems Modeling & Simulation Working Group (SMSWG) to advance engineering simulation and model-based systems engineering. Through this collaboration, the SMSWG has started writing a white paper on the Functional Mock-up Interface, as well as collating an exhaustive list of terms & definitions in an effort to support international standards and develop a joint approach for interfacing with other organizations in related professional areas. Individuals attending this session will have an opportunity to learn more about INCOSE, provide feedback on the SMSWG’s deliverables, as well as influence the roadmap for future SMSWG activities.

Moderated by the NAFEMS SMS Working Group / INCOSE
INC OSE IS 2015

- Seattle, WA
- July 13-16, 2015
- Highlight:
  - 3-year MOU signed!
MBS-FE Conference

- **Title:** Coupled MBS-FE Applications: From Classical Design to System Engineering
- **Dates:** October 20-21, 2015
- **Location:** Turin, Italy
- **Presentations:** 28 Presentations

nafems.org/events/nafems/2015/eur-mbs/
UPCOMING ACTIVITIES
INCSE IW 2016

• Date: January 30th – February 2nd, 2016
• Location: Torrance, CA

http://www.incose.org/newsevents/currentevents/2016/01/30/default-calendar/incose-iw-2016---torrance-ca-usa
2016 NAFEMS Americas Events

- Industry Series
  - Systems Modeling & Simulation
    - Troy, MI | April 27th
  - Automotive
    - Troy, MI | April 28th
  - Oil & Gas
    - Houston, TX | TBD
  - Aerospace
    - TBD | October
2016 Americas Regional Conference

• Dates: June 7th-9th
• Location: Seattle, WA
• Dedicated SMS Track
  – Abstract Submissions
  – Session Support

nafems.org/2016/americas
Terms & Definitions

• Overview:
  – Collection of 530 terms & definitions

• Status: First Draft Complete

• Next Steps:
  – Identify and group T&Ds, and release based on assigned priority level
  – Seeking volunteers for final review committee
Benchmark Article

• Overview:
  – Benchmark is a quarterly magazine published by NAFEMS

• Status: Started

• Next Step:
  – Seeking suggestions/contributions for January 2016 issue
“What is SMS?” Flyer

• Overview:
  – Intended to provide an introduction to a specific method or technology used in the field of engineering analysis and simulation.
  – Three A5 pages in length
• Status: First Draft In-Progress
• Next Step:
  – Complete initial draft and commence review process.
Around the Table

• Resume SMSWG Strategy & Roadmap Discussions
• Other Business