

NAFEMS Technical Working Group Overview

Simulation Governance and Management (SGMWG)
2019

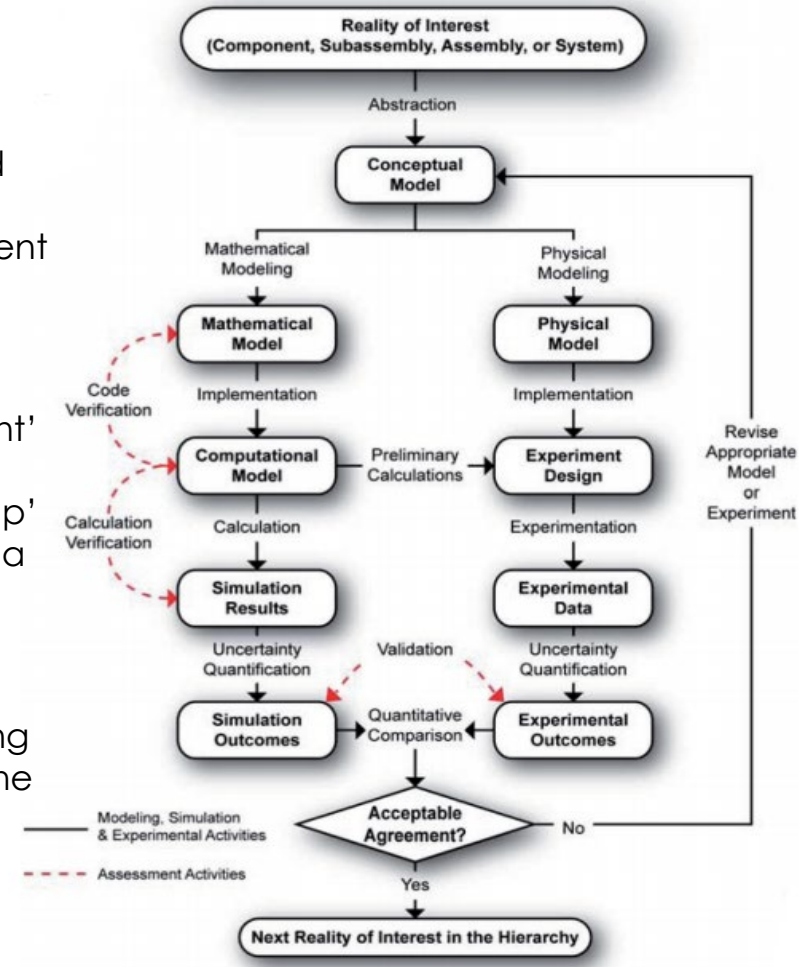
Simulation Governance & Management (SGMWG)

- The focus of the Simulation Governance and Management Working Group (SGMWG) is to champion and improve best practices that relate to engineering analysis and simulation. It will promote and enrich simulation management practices aligned with the rapidly-developing technologies in advancing the productivity and quality of virtual product development processes. This includes the development and promotion of requirements and standards that will have general benefits to the international engineering analysis and simulation community.
- The group meets on a fortnightly basis online via WebEx.
- **SGMWG Chair** – Chris Rogers, CREA Consultants.
- The group includes representatives of Abercus Limited, ASME, CIMdata, Inc., CREA Consultants Ltd, Dynamic Design Solutions, IEAC, International Nuclear Services, J W Analysis, Knorr-Bremse SfS GmbH, Office for Nuclear Regulation, RISE Research Institutes of Sweden, Rolls-Royce Corporation, SIMconcept Consulting, The SDM Consultancy, Tor Engineering Ltd., US Nuclear Regulatory Commission, WLO Consulting.
- Information about the Simulation Governance and Management Working Group can be found on the NAFEMS website at www.nafems.org/community/working-groups/simulation-governance-management
- To enquire about joining this working group complete the online form at www.nafems.org/community/working-groups/simulation-governance-management/get_involved

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Current Areas of Activity:

- The Simulation Governance and Management Working Group are currently developing two documents which provide guidance on how the ISO 9001 standard, which specifies the requirements for a quality management system, can be implemented for Engineering Analysis and Simulation activities. These documents are anticipated to have the titles “Engineering Simulation Quality Management Standard” and “Engineering Simulation Quality Management Guidelines”.
- While the SGMWG is a long-standing NAFEMS Working Group, the name ‘Simulation Governance & Management’ is a recent adoption. In 2018 the working group decided revise its name from ‘Analysis Management Working Group’ to ‘Simulation Governance & Management’ to represent a change in focus for the group.
- The foundational components of Simulation Governance are the executive management policies and procedures assuring that the business benefits of engineering modelling and simulation across the product lines are aligned with the strategic vision and goals of the company.
- A document describing how to implement simulation governance is in production.
- The group is also working of a publication describing different validation methods.



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A Selection of Recent Outputs

- The SGMWG recently published a short introductory flyer on 'What is Simulation Governance and Management?' which describes the principals of simulation governance. This document is freely available on the NAFEMS website.
- The SGMWG were also responsible for the introductory document 'What is Verification & Validation?'. This document is also freely available and was co-published with ASME (The America Society of Mechanical Engineers).
- The working group recently published a document aimed at managers helping them understand the concepts of verification, validation and uncertainty quantification. The intent behind this publication was to help managers and decision-makers who are using simulation results to understand the confidence level of their results as well as the potential risks.
- Generating confidence in the results produced by simulation has been a priority topic for NAFEMS for over thirty years. With this in mind, the Simulation Governance and Management Working Group agreed to helm an issue of our quarterly 'Benchmark' magazine on this topic.
- SGMWG members were responsible for leading a recent webinar presenting introductory information on verification, validation and predictive capability. 'Verification, Validation and Predictive Capability: What's What?' sketches a framework for incorporating a wide range of error and uncertainty sources that are identified during mathematical modelling, verification and validation processes with the aim being to estimate the total predictive uncertainty of the simulation.

Chair Bio

Chris Rogers is a Chartered Structural Engineer and Information Technology Professional with a strong leaning towards engineering analysis/simulation and the analysis interface with design.

Since 1982 Chris' experience has been in the safety-related and defence industries, mainly related to nuclear power generation, nuclear reprocessing and petrochemical industries. His principal activities have revolved around the analysis of structures, plant and equipment to survive extreme and hazard loads, such as wind, seismic/earthquake, fire, explosion and impact. Chris also has a strong background in structural dynamics and non-linear static and dynamic response, plus experience in many other fields including general industry and the leisure industry.

Specialties: Structural and mechanical engineering analysis, Finite Element Analysis (FEA), dynamic/seismic Soil Structure Interaction (SSI), non-linear response, advanced design, hazard and extreme loading, fire, explosion, blast, seismic, earthquake, vibration, impact, thermal, forensic analysis, expert witness support, design and analysis troubleshooting, peer review, independent technical assessment, programming for analysis.

