

# Carnegie Mellon University Software Engineering Institute (SEI)

## Systems and Software Engineering Lunch and Learn Series

Session 6 of 12

Wed Oct 19, 2022  
12:00 – 1:30 PM EDT



Dionisio de Niz



Sam Procter



Jerome Hugues

# Model-Based Systems Engineering (MBSE): An Architectural Perspective



A FREE Virtual Event – Registration Required

1 PDU / CEU

**Abstract.** Model-Based Development has found application in a range of engineering disciplines, including systems engineering, where it enables rigorous analysis of systems before they are fully specified and implemented. In Lunch ‘n Learn Session 6 we will provide an overview of recent and ongoing work in Model-Based Systems Engineering, and describe its suitability for use in a number of application domains. We will focus primarily on architecture-centric modeling and its role in different system development tasks, such as requirements specification and virtual integration, as well as different analyses in safety, scheduling, and other areas. [Speaker Bios on Page 2.](#)

Watch Recordings of Sessions 1, 2, 3, 4 and 5

INCOSE GLNC  YouTube Channel

### Session 6

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No Cost – Attendance is FREE

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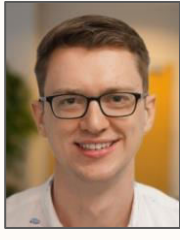
1 PDU / CEU



**Dioniso de Niz** is a Principal Researcher and the Technical Director of the Assuring Cyber-Physical Systems directorate at the Software Engineering Institute at Carnegie Mellon University. He received a Master of Science in Information Networking from the Information Networking Institute and a Ph.D. in Electrical and Computer Engineering both from Carnegie Mellon University. His research interest includes Cyber-Physical Systems, Real-Time Systems, Model-Based Engineering, and Security of CPS. In the Real-time arena he has recently focused on multi-core processors and mixed-criticality scheduling and more recently in real-time mixed-trust computing. Dr. de Niz co-edited and co-authored the book “Cyber-Physical Systems” where the authors discuss different application areas of CPS and the different foundational domains including real-time scheduling, logical verification, and CPS security.



**Jerome Hugues** is Senior Researcher at the Software Engineering Institute on the Assuring Cyber-Physical Systems team. He received a PhD (2005), two MSc from Telecom ParisTech (2002) and UPMC (2002) in applied and theoretical computer science. His research interests focus on Model-Based Systems Engineering, Architecture modeling and the application of formal methods to analyze these models. He is a member of the SAE AS-2C committee working on the AADL since 2005, and technical lead since 2020. Prior to joining the CMU/SEI, he was full professor at the Department of Engineering of Complex Systems of the Institute for Space and Aeronautics Engineering (ISAE), in charge of teaching curriculum on systems engineering, safety-critical systems and real-time systems. He contributes to the OSATE, Ocarina and TASTE projects AADL tool chains.



**Sam Procter** is a Senior Architecture Researcher and the Initiative Lead of the Model Based Engineering team at Carnegie Mellon University’s Software Engineering Institute. He received a MS and PhD in Computer Science from Kansas State University where he studied architecture-centric safety analysis. This work continues at the SEI, where his research focus has broadened to include tool support for a range of architecture-centric, model-based engineering challenges.

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