



## **Modeling for Verification and Validation Workshop Tuesday, September 22, 2015**

### **Presenters' Biographies**

**David Allsop** is the senior systems engineer for the Systems Test Capability within Boeing's Test and Evaluation (BT&E) organization. Within BT&E, David is actively working the Shift the Product Validation Paradigm (shift left) initiative and actively supports cross-domain integration to validate and verify systems early. David also manages the Boeing modeling and simulation community of excellence, which is an enterprise-wide core capability to establish and promote modeling and simulation.

Prior to this, David held a number of increasingly responsible positions within the systems and software engineering function. He led a number of F18 projects in engineering and simulation, was the software program manager for F15 training systems, was the KC-46a systems and software proposal manager, and he led the advanced technologies team within Boeing's Virtual Warfare Center.

David holds a bachelor's and master's degree in Aerospace Engineering from Parks College of Saint Louis University and an MBA from Washington University in Saint Louis. David is on the board of directors for the St Louis chapter for INCOSE, is on the NDIA Systems Engineering Modeling and Simulation committee and the Boeing focal for SISO (simulation interoperability standards organization). He is a commercial-rated pilot and advanced ground instructor.

**Simon Daykin** is responsible for the overall design of NATS' operational systems, ensuring that our current and future systems developments are aligned with the business and operational strategy.

NATS (National Air Traffic Services) UK is the main air navigation service provider in the United Kingdom. It provides en-route air traffic control services to 2.2 million flights within the UK Flight Information Regions and the Shanwick Oceanic Control Area, and provides air traffic control services to fourteen UK airports, including Heathrow and Gatwick. In addition, NATS provides Tower services in 10 Spanish airports and Gibraltar, and delivers ATM contracts in over 30 countries around the world.

Simon has a wide-ranging background in systems development and design. Before joining NATS in 2013, Simon was Chief Technology Officer for IT Solutions Company Logicalis UK, where he led the development and design of their Data Centres, Cloud platform and major customer projects. He has also worked as a Systems Integrator at Thales and as an Architect at the Portman Building Society. As well as being a Chartered Engineer, he is passionate about green technologies including heating house with a wood pellet boiler and flushing his toilets with rainwater.



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**Donald Firesmith** is a Principal Engineer at the Software Engineering Institute, where he helps the US Government acquire large, complex, software reliant systems. With over 35 years of experience working as a software and system engineer, he is internationally recognized as an expert in requirements engineering, system and software architecture, object-oriented development, testing, and process engineering. He has written seven technical books including most recently Common System and Software Testing Pitfalls, presented numerous papers and given numerous tutorials at international software and systems engineering conferences, and published widely in technical journals. He is currently writing the book: System and Software Testing: A Taxonomy of Testing Types.

**Mark Flanigan** is a chartered engineer with over 20 years' experience in Air Traffic Management. Mark's current role is GM Customer Solutions, which leads Innovation, R&D, Analytics and commercial Solutions Development in NATS for its UK and global customers. Previously, Mark has had operational leadership roles at the Swanwick Air Traffic Centre -the busiest in Europe- and has run major strategic and international software programmes. Mark also has accountabilities for NATS external product marketing and media.

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**John Frederick** is a graduate from Drexel University (Philadelphia) with a BS in Computer Systems Management. Mr. Frederick has over 30 years of T&E experience with Federal Aviation Administration (FAA) systems. In the early part of his career, as both a support contractor and FAA employee, Mr. Frederick has worked as a National Airspace System (NAS) programmer, test engineer, simulations developer, and Operational Test and Evaluation (OT&E) lead on Air Traffic Control automation systems. Mr. Frederick has supported or led T&E efforts on over 12 major FAA automation programs in the past 26 years. A large portion of his career in the FAA was dedicated to working as an FAA Test Director and Test Program Manager on major FAA acquisitions of En Route Air Traffic Control (ATC) automation systems. As Chief Test Engineer and Subject Matter Expert (SME), Mr. Frederick has consulted with the Department of Defense (DOD) and international agencies on Test and Evaluation (T&E), and provided T&E guidance and consultation to many other FAA T&E programs. In the past 10 years, he has served as the Test



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Standards Board Chairman to establish test standards and provide quality T&E oversight for the FAA. Mr. Frederick is currently leading the way for quality verification and validation methods in the FAA as the Manager for the Verification and Validation Strategies and Practices Branch at the FAA William J. Hughes Technical Center. He is also the International Test and Evaluation Association (ITEA) South Jersey Chapter President and serves as the T&E representative for the FAA William J. Hughes Technical Center on the FAA Acquisition System Advisory Group.

**Jonathan Hammer** is a Senior Advisor for Noblis. Mr. Hammer has had a 33-year career focused on aviation including research and development in radar tracking and surveillance, aircraft avionics, and air-traffic control automation systems from concept through post-operational analysis. He has been a leader in developing industry standards, and has received 3 RTCA Citations for leadership in standards development. Mr. Hammer was instrumental in developing requirements and standards for ADS-B. Mr. Hammer holds 4 US Patents and has published 12 technical papers.

**Natesh Manikoth** is the FAA's Chief Scientist and Technical Advisor for NAS Software within the NextGen organization. As NAS systems become ever more software-centric, it is the responsibility of the Chief Scientist for NAS Software to provide expert technical guidance, advice, and leadership in all software related areas of the FAA system acquisition and development process. As such, his primary focus areas are the sustainable acquisition practices for software intensive systems with an emphasis on improving the time and effort related to software validation and verification.

Prior to joining the FAA in 2012, Natesh was the Chief Technology Officer for the Transportation, Central and Local Government Sector for Xerox services. He has over 25 years of experience with the development and deployment of large scale systems.

Natesh holds a Bachelor's degree in Electrical Engineering and a Master's Degree in Industrial Engineering from the Indian Institute of Technology Kharagpur as well as a MBA from the Robert H. Smith School of Business at the University of Maryland.

**William (Bill) D. Miller** is executive principal analyst with Innovative Decisions, Inc., and adjunct professor at the School of Systems and Enterprises, Stevens Institute of Technology, where he teaches courses in Fundamentals of Systems Engineering, System Architecture & Design, and Systems Integration. Bill is a member of the IEEE and is the past technical director of the International Council on Systems Engineering (INCOSE), a nonprofit membership organization that promotes international collaboration in systems practice, education and research. He is currently editor-in-chief of INCOSE INSIGHT practitioners' magazine. Bill has 42 years of professional



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experience in systems engineering, systems integration, product management and program management for commercial telecommunications services and government systems. He has managed systems integration projects at Bell Labs and a defense contractor. Bill authored Systems Thinking for a Secure Digital World in the September/October 2012 issue of CrossTalk, The Journal of Defense Software Engineering. He presented the June 2013 INCOSE Webinar on "The Need for More Engagement of Systems Engineering with Integration & Test." Bill holds B.S. and M.S. degrees in electrical engineering from the Pennsylvania State University.

**Paul S Miner PhD** is a senior research engineer in the Safety-Critical Avionics Systems Branch at NASA's Langley Research Center. His principal research interests are the development and application of formal methods for the analysis of safety-critical systems with a particular emphasis on the design and analysis of distributed systems. He was the principal architect for the SPIDER family of fault-tolerant architectures developed at NASA Langley. He has been an active participant in the Networking and Information Technology Research and Development High Confidence Software and Systems Coordinating Group since 2003 (<http://nitrd.gov>). He was a member of the RTCA Committees that developed RTCA DO-254 "Design Assurance Guidance for Airborne Electronic Hardware" and RTCA DO-297 "Integrated Modular Avionics (IMA) Development Guidance and Certification Considerations." He holds a Ph.D. in computer science from Indiana University, an M.S. in computer science from the College of William and Mary, and a B.S. in computer science from Old Dominion University.