



Verification and Validation Summit 2015 September 23-24, 2015

Speaker Biographies

Harry Bilicki joined the Federal Aviation Administration William J. Hughes Technical Center in July 1989 and has nearly 30 years of overall test experience. He has in-depth knowledge of the NAS, the FAA acquisition process, and most importantly, the Test and Evaluation arena, where he has performed in numerous engineering, leadership and management roles. He is currently serving on the ATO NextGen & Operations Planning Test Standards Board as a Communication Test Specialist. Prior to joining the FAA, Harry provided senior engineering support to the US Navy's Surveillance, Weapon and Fire Control Systems on the Advanced Electronic Guided-Missile Intercept System (AEGIS) program and as a hardware/software developer of the US Army's Combined Aviation and Artillery training systems.

Harry holds a bachelor's degree in Electrical Engineering from The College of New Jersey (previously known as Trenton State College) graduating cum laude. He received the Outstanding "Engineer of the Year" Award given by the Southern Jersey Section of the Institute of Electrical and Electronic Engineers (IEEE) in 2014. He has been a member of the Air Traffic Control Association (ATCA) since 1993.

Edward L. Bolton Jr. is the Assistant Administrator for NextGen at the Federal Aviation Administration. The Office of NextGen (ANG) is responsible for leading the modernization of the National Airspace System. Bolton leads a workforce of nearly 1,000 employees, and oversees the \$1 billion annual budget of the Next Generation Air Transportation System.

Bolton joined the FAA in September 2013 after a career with the U.S. Air Force, most recently with the rank of Major General and the position of Deputy Assistant Secretary for Budget. He was a three-time commander of operational space units.

Mr. Bolton is a level three program manager and has had extensive experience managing multibillion-dollar Air Force space programs.

He also served as Director for Defense Policy at the White House National Security Council, and was chief of systems engineering and integration at the National Reconnaissance Office. Bolton has a Bachelor of Science degree in Electrical Engineering from the University of New Mexico, a Master of Science in Systems Management from the University of Southern California, and a Master of Science in national security strategy from the National War College.

Guillaume P. Brat has a Ph.D. from The University of Texas at Austin from the ECE Department. Currently, he is a Principal Systems Scientist at Carnegie-Mellon University – Silicon Valley and he is serving as an IPA at the NASA Ames Research Center. He is the Area lead for Robust Software Engineering (RSE) in the Intelligent Systems Division. Dr. Brat is also the Technical lead for



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Foundational V&V Work in the the Safe and Autonomous System Operations (SASO) project and the SMART-NAS project in the NASA Airspace Operations and Safety program. In the past, his research has focused on the static analysis of programs. He has co-designed a static analyzer for C programs called C Global Surveyor (CGS). CGS has been applied to the flight software of several NASA missions such as Mars missions and some ISS payload software. Dr. Brat's other interests include autonomous system technology and human-machine interactions, especially the V&V aspects of these technologies.

Dr. C. David Brown is the Deputy Assistant Secretary of Defense for Developmental Test & Evaluation (DASD[DT&E]) and Director, Test Resource Management Center (TRMC). As the DASD(DT&E), he serves as the principal advisor on developmental test and evaluation to the Secretary of Defense (SECDEF) and the Undersecretary of Defense for Acquisition, Technology and Logistics (USD(AT&L)). Dr. Brown is responsible for DT&E policy and guidance in support of the acquisition of major Department of Defense (DoD) weapons systems, and providing advocacy, oversight, and guidance to the DT&E acquisition workforce.

In Dr. Brown's role as Director, TRMC he advises the SECDEF and USD(AT&L) on matters pertaining to the DoD's Major Range and Test Facility Base (MRTFB), the Nation's critical range infrastructure for conducting effective test and evaluation (T&E). Additionally, he reviews and certifies proposed T&E budgets of Military Departments and Defense Agencies, administers the Central Test and Evaluation Investment Program (CTEIP), and oversees the DoD program for T&E science and technology.

Prior to his appointment in September of 2013, Dr. Brown was a consulting engineer for the MITRE Corporation and the Institute for Defense Analyses in the areas of DoD program management, systems engineering, and test and evaluation. He was also an adjunct professor and still teaches graduate courses in program management and systems engineering for Johns Hopkins University. He previously served as the Director of the Combined Test Organization and Executive Director for Test for the Army Future Combat Systems (FCS) program where he was responsible for planning and overseeing the testing and evaluation for this multi-billion dollar revolutionary development program.

Before working on the FCS program, Dr. Brown was the Director for Test and Technology for the Army Developmental Test Command, where he oversaw the management of more than 1700 tests annually, technical operations at five of the DoD MRTFBs and six associated test sites, and an annual budget of over \$450 million in investment in test support and test technology development. Dr. Brown was also the focal point for the Army's application of modeling and simulation techniques to technical test and evaluation, including the development of the Virtual Proving



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Ground, the Army's multi-million dollar, multi-year virtual testing program. He has also been a test instrumentation engineer, test director, test manager, and an active Army Signal Corps officer in various leadership positions.

Dr. Brown became a member of the Senior Executive Service in 1999, holds two patents, and has authored numerous technical papers. He is a registered Professional Engineer and Certified Test and Evaluation Professional, was a member of the Army Acquisition Corps, and is a retired Army Reserve Colonel. He has a PhD in electrical engineering from the University of Delaware, and a MS in National Resource Strategy from the National Defense University Industrial College of the Armed Forces. He is an active member of the International Council on Systems Engineering and the International Test and Evaluation Association.

Melvin Davis has 27 years of active, front line air traffic control experience. He holds certifications from both VFR and high density air carrier control towers, military ground controlled approach, high density MetroPlex terminal RADAR approach control and a traffic management unit. Along the way he has been involved with National Airspace Redesign and numerous National Airspace System modernization projects. On six different occasions he was elected by his peers as their NATCA facility representative. He is currently the NATCA national representative for NextGen ATC and environmental issues.

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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James N. Elele, PhD is the Department of the Navy's Lead for Verification Validation & Accreditation (VV&A). Dr. Elele was elected into the NAVAIR's Science and Engineering Fellow program in 2014 and he currently serves as a Trusted Agent for VV&A for the Navy's Commander Operational Test Force. He started the NAVAIR's Battlespace Verification and Validation Branch (NAVAIR 5.4.3.7) and served as its Branch Head (from 2007) up until he was selected to lead the Navy's VV&A Program. He has extensive experience in Modeling, Simulation and VV&A, and had worked as Electromagnetic Environmental Effects (E3) engineer for over 10 years. He currently provides VV&A support to various Navy System Commands and acquisition programs, and was the M&S lead for the Marine Corps Heavy Lift Helicopter (CH-53K) Replacement acquisition program during which he invented the NAVAIR Risk- based VV&A process.

He started work as a US Army civilian employee in 1988, and was a member of the technical experts who created the Army's Mobile Subscriber Equipment Performance Model (MSEPAM). He served as data specialist for both the DIS Communications Protocol Committee and the US Army Extended Air Defense Test Bed (EADTB). He was instrumental in defining and creating the Army's Virtual Proving Ground (VPG) under Dr. David Brown of the Army's Test & Evaluation Command. He had also worked as a process engineer for IBM and General Electric (1980 to 1983) prior to joining the US government.

He earned a BS in Chemical Engineering (1980); MS (1985) and PhD (1988) in Applied Mathematics (all from the University of Arizona, Tucson AZ). Dr. Elele has published over 30 papers in Journals and conferences, and is a holder of two US patents.

Monica Farah-Stapleton is currently supporting the U.S. Department of Defense's Health IT initiatives, as the Assistant Program Manager for Interoperability at PM Defense Medical Information Exchange (DMIX). Her focus is on technical and programmatic activities associated with data interoperability between the DoD, public, and private sector partners. Her last position was in the Office of the Chief Engineer for the Assistant Secretary of the Army for Acquisition, Logistics, and Technology ASA(ALT), where she led analyses of complex issues related to software intensive system of systems initiatives.

Previously, she was responsible for executive direction and technical and programmatic leadership of all initiatives associated with an Army Live/Virtual/Constructive experimentation venue, which included organic High Performance Computing assets and both lab and field facilities. She has also led cross-organization, integrated C4ISR modeling and simulation experimentation efforts, and worked with key partners in industry and academia to ensure that standards bodies considered Army requirements in emerging standards.



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Early career activities were focused on: Testing DoD and NATO satellite and earth segment equipment; Leading Army efforts for the development and implementation of an EHF network control architecture in Army tactical satellite earth terminals; and Providing on-site technical assistance to worldwide DSCS operation and maintenance commands, in CONUS and OCONUS facilities.

Monica holds Acquisition Professional Level III certifications in program management and systems engineering, and has completed Lean Six Sigma Blackbelt coursework. She has earned an Executive Masters of Science in Engineering from the University of Pennsylvania (SEAS and Wharton), a BSEE from Rutgers University, and is a Software Engineering PhD candidate at the Naval Postgraduate School.

Dennis L. Filler is the Director of the Federal Aviation Administration's (FAA) William J. Hughes Technical Center (WJHTC) in Egg Harbor Township, N.J. The FAA William J. Hughes Technical Center serves as the nation's premier aviation and air traffic management federal laboratory. The Technical Center's world-class laboratories and top-notch engineering expertise place it at the forefront of the FAA's efforts to modernize the U.S. air transportation system and advance the Next Generation Air Transportation System, NextGen. The WJHTC is the primary agency aviation facility responsible for conducting research, engineering, development, test, and National Airspace System (NAS) integration activities required to support and advance the nation's NextGen systems and our legacy airspace. Mr. Filler also serves as the FAA Director of Research and manages the \$160 million budget of the aviation research program.

Mr. Filler joined the FAA in 1992 after holding a variety of engineering and management positions in both industry and government settings. He has worked in small business environments managing engineering product development and services delivery. He has successfully managed his own small business consulting firm, providing support to all business sizes and the federal government. He also worked for Lockheed Martin before joining the FAA.

Within the FAA, he has served in many roles both at the WJHTC and FAA headquarters. He has worked as an engineer, Human Factors Laboratory Manager, NAS Systems Engineering and Concepts Analysis Division manager, Chief Scientist for Technology, Acting Deputy Center Director, and Chief Information Officer for the Air Traffic Organization.

As a graduate of the United States Military Academy at West Point, he served as a U.S. Army Signal Corps commissioned officer specializing in communications and electronic warfare systems design and implementation.



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As Center Director, he strives to identify barriers to change and fosters the creation of environments where people with the right knowledge, skills and abilities are strategically combined with best practice processes and state of the art technology to deliver data-supported solutions across all elements and domains of our NAS.

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.

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.

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



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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 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.

Jeri Groce has been with the FAA for 24 years. She has been the Program Manager for the SWIM Terminal Data Distribution System (STDDS) since July 2013. Jeri oversees the operations, maintenance, and development work for STDDS which consists of 38 locations throughout the NAS. Prior to moving to this position, Jeri worked as a Budget and Financial Management Lead in the Communications, Information & Network Programs (CINP), AJM-31. Jeri received the 2014 VP Outstanding Achievement Award for her leadership in deploying a new airport surface display capability at Southern California TRACON (SCT).

Jeri Groce has a bachelor's degree in Accounting, a Master's of Business Administration degree from University of Maryland University College, and holds the PMI PMP Certification.

David A. Ingram is the FAA's Director of Acquisition Policy and Oversight. David is responsible for leading agency-wide life-cycle acquisition policy and guidance; investment process management; acquisition workforce planning, development, and certification; and acquisition oversight and evaluation. David chairs the FAA's Acquisition Workforce Council and the Office of Finance and Management's Information Technology Steering Committee. David is also a member of the FAA's Acquisition Executive Board, Enterprise Architecture Board, and the Department of Transportation's Senior Acquisition Committee. David has 20+ years of professional experience in FAA major air traffic control systems acquisition and program management. He previously managed Program Control for the Air Traffic Organization Program Management Organization (PMO) and was a member of the leadership team that established the PMO. David holds a B.A. from Providence College, and a Senior Program Management Certificate from the American University Key Executive Leadership Program.

Kevin Knudsen is the Boeing Enterprise Systems Test Capability Leader, Laboratory Test Value Stream, Boeing Test & Evaluation. In this capacity, Kevin has capability responsibility for Systems Test at all locations within the Boeing Enterprise. The Systems Test Capability is an enterprise



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resource providing Boeing the ability and capacity to design, develop, build, and integrate systems and systems-of-systems products and services as well as Special Test Equipment (STE).

Kevin has 28 years of experience in aerospace. Prior to his current role, Kevin held the position of Department Manager, Satellite Systems Test for the Boeing El Segundo site. Throughout his career, Kevin has served in Test Engineering and Management roles with process and execution responsibility for advanced power and energy technology systems, multiple rocket propulsion test programs, and satellite test programs. Kevin has been responsible for hazardous test activities at both company-owned and government locations.

Kevin's career milestones include leading the testing and development of advanced, high temperature liquid metal systems, hydrogen fuel cells for transportation and distributed power, leading the Delta IV RS-68 engine development testing at the AFRL (Edwards AFB), and leading the Terminal High Altitude Area Defense (THAAD) thruster and system development and qualification testing at the AFRL (Edwards AFB), while serving as the Boeing Test Site Manager at the Air Force Research Laboratory (AFRL) at Edwards Air Force Base.

Kevin holds both a Bachelor and Masters Degree in Mechanical Engineering from California State University at Northridge, and a Masters in Business Administration from the University of Phoenix. Kevin is currently working on a PhD in Systems Engineering from the Stevens Institute of Technology.

Michael Lyman came to the Tech Center in 2012 after spending 27 years as an En Route controller at Boston Center (ZBW) and two years as a contract instructor. Collateral duties at ZBW included extensive on-the-job training of new controllers and selection as one of two controllers in his area of specialty designated an “evaluator” responsible for determining when a trainee had become fully qualified as an air traffic controller. He also participated in one of the first workgroups to facilitate the integration of GPS technology into the NAS.

Prior to joining the FAA, he served 6 years as a Naval Aviator piloting the S-3A Viking Anti-Submarine Warfare aircraft while deployed on USS Dwight D. Eisenhower, accumulating 130 carrier landings and over 1400 hours of jet time. His four man crew became one of two fully qualified in all aspects of the Viking missions including all tactics of anti-submarine warfare, harbor mining and electronic and surface surveillance. Other duties included Squadron Legal Officer and Flight Officer. After leaving his operational squadron, Mike taught Anti-submarine Warfare at the Support Squadron, where he was also the Administrative Officer. He holds Air Transport Pilot, Flight Engineer and Advanced Ground Instructor Certificates.



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Mike is currently employed by Advanced Sciences & Technologies (AS&T) developing and administering tests that thoroughly evaluate the design and functionality of new terminal air traffic control systems and system improvements as a member of the FAA's Terminal Automation Branch Operational Test and Evaluation Team (ANG-E57). ANG-E57 works with field Subject Matter Experts, NATCA and PASS representatives to ensure the successful integration of terminal air traffic control systems, such as STARS and ELITE, prior to deployment to field facilities. ANG-E57 support contractors assist the FAA in determining the operational suitability of new terminal air traffic control systems as the FAA implements NextGen capabilities.

In his spare time, Mike has acted as an Adjunct Professor and taught courses in “Advanced Aircraft Systems” and “Flight Safety” at Daniel Webster College, Nashua, NH. He operated a piano tuning and repair business for six years, and likes to try to play golf.

Mike earned a Bachelor of Science degree in Mechanical Engineering from Purdue University.

Sherri Magyarits is the Project Manager for Unmanned Aircraft Systems (UAS) Concept and Requirements Development within the FAA's Technology Development & Prototyping Division (ANG-C5). She has 23 years of professional experience –focusing earlier on the examination and analysis of human performance, and design and conduct of air traffic control human-in-the-loop simulations in both the en route and terminal domains- and later on operational concept development and validation for the NextGen organization. Sherri architected the FAA's NextGen Mid-Term Concept of Operations for the National Airspace System (NAS), released in 2011, and more recently, the FAA's Integration of UAS into the NAS Concept of Operations, completed in 2012. Sherri has since been maturing the UAS concept, expanding the scope of the effort to address evolving agency priorities, and deriving operational requirements to assist the FAA in preparing for the surge of UAS operations now and into the future. Sherri has a B.A. degree in Experimental Psychology from Rutgers University and an M.S. degree in Aeronautical Science from Embry Riddle Aeronautical University.

Matt McKnight is VP of Solutions Development and Technology Insertion for Noblis NSP, a subsidiary of Noblis, Inc. For 19 years, he has architected, developed, and deployed enterprise software solutions for US government customers. Has introduced customers to agile, lean, and kanban methods and techniques to reduce risk and improve team performance on complex software systems. Prior to working for Noblis, Mr. McKnight co-founded LMN Solutions, which was acquired by National Security Partners in 2012. He has a bachelor's degree in Cognitive Science from the University of Virginia.



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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 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.

Thomas Zaccheo has over 31 years of Air Traffic Control experience serving with the United States Navy and the Federal Aviation Administration. As an Air Traffic Controller, Tom was elected, by his peers, to the position of Vice President, New York Tracon, National Air Traffic Controllers Association (NATCA), where he served two terms. Mr. Zaccheo is currently based at the WJHTC as a Senior Air Traffic Control Specialist. He offers a wealth of knowledge based from his experience of having worked in some of the busiest air traffic control facilities located on the East Coast. In addition, he has been certified in John F. Kennedy Tower, the New York Terminal Radar Approach Control (Newark Area) and the New York Air Traffic Control Center. Tom worked as a specialist on the East Coast Project, Solberg Mitigation and the reorganization of radar positions in the Newark Sector, NY Tracon to accommodate stand-alone final vector positions. During his naval career he worked as an Air Intercept Controller based aboard the USS Davidson (DE-1045) and the USS Farragut (DDG-37) from 1975-1979. He was deployed to the South China Sea in 1975-1976.

Tom is currently employed by Advanced Sciences & Technologies (AS&T) developing and administering tests that thoroughly evaluate the design and functionality of new terminal air traffic control systems and system improvements as a member of the FAA's Terminal Automation Branch Operational Test and Evaluation Team (ANG-E57). ANG-E57 works with field Subject Matter Experts, NATCA and PASS representatives to ensure the successful integration of terminal air traffic control systems, such as STARS and ELITE, prior to deployment to field facilities. ANG-E57 support contractors assist the FAA in determining the operational suitability of new terminal air traffic control systems as the FAA implements NextGen capabilities.



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In March of 1998, Tom was featured in a New York Times Magazine article and his photo was the cover page where he was the subject of the life of an Air Traffic Controller. The NY Times article was the inspiration for the making of the Twentieth Century Fox movie called “Pushing Tin”, where John Cusack (Nick Falzone) acted as a loosely based character of Tom. Tom was the Air Traffic Consultant/Advisor during the filming in Toronto.

Tom attended City University of New York-Brooklyn College where he majored in Education.