



## 2012 Verification and Validation Summit Event Record

The 8th Annual Verification & Validation (V&V) Summit was held at the Clarion Hotel and Convention Center in Egg Harbor Township, NJ on October 10-11, 2012. Over 200 participants attended a record high for the annual summit. There were 20 individual speakers who addressed and promoted this year's theme: "Focus on the Future". A video entitled *3 Things I Learned while my Plane Crashed* and a video entitled, *The Happy Secret to Better Work* were also presented to provide additional perspectives on how to address future V&V challenges.

John Frederick from the FAA William J. Hughes Technical Center (WJHTC) Verification & Validation Strategies & Practices Branch facilitated the event. The 20 expert speakers from FAA, DOD, Software Engineering Institute (SEI), and Quantitative Software Management Incorporated addressed V&V from many perspectives. The following topics were presented:

- John Frederick - Test Standards Board Chair, V&V Strategies & Practices Branch, and Summit Facilitator, FAA: Presented an overview of V&V and future implications.
- Dr. Wilson Felder - WJHTC Director, FAA: Discussed three key areas: a structure now exists around V&V, sustaining an effort can be done by "pushing the discipline" back through the front end of the lifecycle, and a new theory of test is needed for distributed, complex systems.
- The Keynote Speaker: Rear Admiral Jeffrey R. Penfield - Commander, Navy's Operational Test and Evaluation Force: The Admiral provided the Navy's perspective on testing Systems of Systems (SoS) and walked through the journey the Navy has taken to address V&V in SoS programs. He stated that "seams matter" in implementing interoperable systems – understanding and testing the interfaces/links between systems.
- Michele Merkle - Acting Director, NAS Systems Engineering Services Division, FAA: Briefed on the reasons for the Ideas to In-Service (I2I) Process, which will improve governance, capabilities, processes, and culture. She mentioned that the I2I process will assign accountability, authority and responsibility throughout the process. It would create upfront vigor, traceability and institutionalize portfolio management.
- Kimberly Gill - Manager, NAS Requirements Services Division, FAA: Discussed requirements management – baselining program requirements, traceability and the role of the DOORS tool.
- Maureen Molz - Manager, Concept Development and Validation Branch, FAA: Discussed operational requirements versus NAS requirements with emphasis on NAS midterm ConOps development and NAS ConOps development. She also discussed the Concept Steering Group (CSG) and their responsibilities.
- Harry Bilicki and Wanda Lopez-LaBarbera - V&V Strategies & Practices Branch, FAA: Presented the I2I V&V process, specifically the fundamentals of how a new idea is generated and progresses through the lifecycle as well as the framework developed to create the I2I V&V process.
- John Peace - V&V Lead, V&V Strategies & Practices Branch, FAA and Rich Bormann - Director of Engineering, R4 Incorporated: Presented a video that demonstrated how a SoS

Assessment Platform (SoSAP) could evaluate and test new concepts, ideas and environments. The SoSAP could also test existing FAA systems and environments using scalable, dynamic models and FAA environments such as the target generation facility (TGF), and DESIREE an emulation tool within the NIEC.

- Donald Firesmith - Senior Member of Technical Staff, Software Engineering Institute: Briefed on different types of common test problems. He discussed requirement issues - ambiguous, incomplete, unstable, poorly derived and SoS issues.
- Vincent Lasewicz Jr. - Laboratory Integration Lead, Laboratory Services Division, FAA: Briefed on the distributed simulation demonstration conducted in August 2012. The demonstration used multiple aircraft simulators, five individual cockpit simulators, and multiple tools and protocols to share voice and data communications.
- James Daum - Safety Manager, NextGen and Operations Planning, FAA: Briefed the safety risk management (SRM) process and the safety requirements process. He discussed the safety hazard V&V gaps and the critical role of T&E services and NAS requirements management in addressing these gaps.
- Scott Altman - Vice President, Strategic Planning ASRC Research and Technology Solutions (Retired NASA Astronaut): Presented his perspective on V&V during his tenure as a United States Navy pilot and as a veteran of four space flight missions aboard the Space Shuttle Atlantis and Colombia.
- Andres Zelleweger - Briefed on the JPDO perspective on safety assurance. He discussed the trajectory based operations (TBO) safety study. He mentioned that improvements are still needed in respect to safety assurance, namely: more safety assurance in early part of the lifecycle and more system level safety assessments.
- Vincent Capezzuto - Director, Air Traffic Systems, Program Management Organization, FAA: Briefed on the importance of doing the right thing, getting involved early, and focusing on integration. He encouraged V&V practitioners to lead from where you are and be part of the solution.
- Mark Walden - Manager, Program Evaluation and Performance Management, FAA: Briefed the PMO Program Control roles and responsibilities. He mentioned that FY13 initiatives will focus on quality management, business planning, and measurement and analysis. He emphasized the importance of the formal review process, transparency, assessment of program performance and good planning.
- Valerie Outlaw-Lee - Engineering Lead, Acquisition Career Management Group, FAA: Briefed on the results of the T&E certification pilot program for the FAA Acquisition Workforce. She also detailed the application process for T&E certification.
- Joseph Madden - Vice President, Quantitative Software Management Incorporated: Discussed using quantitative software estimation to support V&V and provided example of uses of quantitative estimation techniques at the FAA.
- Harry Bilicki - V&V Strategies and Practices Branch: Presented how storyboarding can be easily utilized to V&V NAS concepts and system functions.

The need for a disciplined V&V focus, now and in the future, was the common thread during this two-day event. Speakers echoed the importance of V&V and the knowledge gained from V&V to make more informed decisions, manage risk, and deploy quality products. The cross-organizational participation and positive participant feedback emphasized the importance of a disciplined V&V approach.

V&V Summit feedback forms were collected at the end of each day and will be assessed to improve future summits. The 2012 V&V Summit presentations, final agenda, video links, and pictures can be found on the internet at: <http://actlibrary.tc.faa.gov>.