



**2013 NASA IV&V Workshop Call for Papers**  
**The Fifth International Workshop on Independent Verification & Validation (IV&V)**  
**of Software**

**West Virginia University's Erickson Alumni Center**  
**Morgantown, West Virginia, USA**  
**September 10-12, 2013**

The NASA IV&V Annual Workshop offers an in-depth understanding of the challenges that V&V organizations face in assuring that system software operates safely and reliably. The goal of the workshop is to generate solutions to these challenges. This year, we will be offering topics in three different tracks, as indicated in the tables below. The workshop abstracts submission deadline has passed, and no new abstracts are being accepted. Further details about the Conference format, content, and registration will be posted when available.

**IMPORTANT DATES**

April 15, 2013 (PASSED) Abstract submission Due  
 May 15, 2013 (PASSED) Notification of Acceptance  
 June 1, 2013 Attendee Registration Opens  
 August 31, 2013 Final Papers/Presentations Due  
 August 31, 2013 Attendee Registration Closes

**CONTACT INFORMATION**

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<http://www.nasa.gov/centers/ivv/workshops/index.html>

We are currently seeking technical paper, poster and demo submissions in the areas noted below.

<b>MANAGEMENT TRACK</b>
Optimizing IV&V Planning and Execution
<i>Analysis Framework Reuse (i.e., developer-specific mission analysis frameworks)</i>
<i>Development and Application of Assurance Case Structures</i>
<i>Efficiency Measurement and Continuous Improvement</i>
<i>Unified IV&amp;V Analysis Process</i>
IV&V Analysis Work Optimization Tips and Techniques

<i>Application of Common Office Tools in Reducing Burden of IV&amp;V Analysis and Evidence Collection</i>
<i>Use of Shared Data Dictionary for Improving Commonality of Terms of Reference Between Projects</i>
IV&V Infrastructure and Stakeholder Community Support
<i>IV&amp;V Education Challenges</i>
<i>IV&amp;V Skills Development and Certification</i>
Efficient Risk Management in IV&V
Computing the Value of IV&V
Integrating NASA Assured Systems with Commercial Assured Systems
Commercial Space Systems IV&V
IV&V Challenges and Opportunities of SDLC Choices and Applicable Lessons Learned
Extending NASA IV&V Methods and Tools Applicability to Other Domains
<i>New York City 911</i>
<i>DOD</i>
<i>FAA</i>
<i>Law Enforcement</i>
<i>Automotive</i>

<b>TECHNICAL TRACK</b>
IV&V Analysis Case Studies
Addressing Security Aspects of System Assurance via IV&V
Development and Application of IV&V Technical Reference Solutions
Assurance of Model-based Development
<i>Automated Software Specification</i>
<i>Automated Software Design and Synthesis</i>
<i>IV&amp;V of Autogenerated Code</i>
Writing a "Good" Assurance Claim

Architecture Frameworks as Applied to NASA Systems
Software Assurance of Complex Algorithms
Criticality Analysis
Data Product IV&V
<i>Data Integrity</i>
<i>Data Visualization</i>
Patterns and Frameworks Applied to IV&V Analysis
Off-nominal Operations
Software-based Hazard Causes, Contributors and Controls

<b>R&amp;D TRACK</b>
Special-Case IV&V Challenges
<i>Challenges of IV&amp;V of Projects Using Other Than Waterfall SDLC</i>
<i>Performing IV&amp;V on an En Route Project</i>
<i>IV&amp;V of Auto-generated Code</i>
<i>Highly Parallel Development Projects</i>
IV&V Test Verification Methodologies
<i>Autonomous Systems IV&amp;V</i>
<i>Robotic Systems IV&amp;V</i>
<i>IV&amp;V of Early Lifecycle Artifacts</i>
<i>Partitioned Systems</i>
<i>Swarm Intelligence</i>
<i>Adaptive Systems</i>
Application of Assurance Case Methodology to Assuring Autonomous Systems
Initiating and Evolving IV&V Methods
<i>Use of Simulations in Performing IV&amp;V</i>
<i>IV&amp;V of Critical Behavior</i>
<i>Improving Effectiveness and Efficiency of IV&amp;V Methods</i>

Evolving Technology Impacts on IV&V Analysis Methodologies
<i>The Future of Software Development and Its Impact on IV&amp;V</i>
Innovative Uses of Non-traditional IV&V Tools to Improve IV&V Analyses
<i>Crowd Sourcing as a Prototype for Code Validation</i>
<i>Towards Content/Context-based and Collaborative IV&amp;V</i>
<i>Application of Data Mining Tools to Support IV&amp;V</i>
<i>Applying Social Media to IV&amp;V</i>
<i>Knowledge Engineering Tools and Techniques</i>
<i>Knowledge Representation and Retrieval</i>
<i>Knowledge Visualization</i>
Integrity, Security and Fault Tolerance Assessments in IV&V
Fault Management Architecture and Implementation IV&V
Team-based Approach to Performing IV&V of Systems
<i>Computer-Supported Cooperative Work</i>
Verifying Scripts
Providing Assurance of Enterprise Software, Middleware and Tools
Performance-based Design Assurance
Formal Methods: Current Tools and Practical Applications