

# Nov. 10 2011 (Thursday)

**Breakfast: 7:00 AM – 8:30 AM (Royal Palm Foyer)**

**Conference Opening : 8:30 AM – 8:45 AM (Parlor II & III)**

**Keynote Speech I**  
**8:45 AM – 9:45 AM (Parlor II & III)**  
**Marine Renewable Energy: HASE Challenges**  
**Howard P. Hanson, Ph.D.**

**Coffee Break: 9:45 AM – 10:00 AM (Royal Palm Foyer)**

**Parallel Morning Sessions: 10:00 AM – 12:00 PM**

**Location: Parlor II & III**

**Location: Salon A & B**

**Session A: Software Testing and Validation**

**Chair: Ray Paul**

***Regular: (25 minutes each)***

32: A Testing Service for Lifelong Validation of Dynamic SOA. Andrea Ceccarelli, Andrea Bondavalli and Marco Vieira.

50: Supporting Iterative Development of Robust Operation Contracts in UML Requirements Models. Wuliang Sun, Robert B. France and Indrakshi Ray.

102: Improve the Effectiveness of Test Case Generation on EFSM via Automatic Path Feasibility Analysis. Rui Yang, Zhenyu Chen, Baowen Xu, W. Eric Wong and Jie Zhang.

***Short: (20 minutes each)***

49: Model Driven Validation of System Architectures. Andre Pflüger, Wolfgang Golubski and Stefan Queins

64: Regression Testing of Component-based Software: A Systematic Practise based on State Testing. Chuanqi Tao, Jerry Gao and Bixin Li.

**Session B: Modeling Checking and Verification I**

**Chair: John C. Sloan**

***Regular: (30 minutes each)***

12: A Unifying Approach to Validating Specification-Oriented XML Constraints. Yongxin Zhao, Zheng Wang, Hao Xiao, Jing Ping, Geguang Pu, Jifeng He and Huibiao Zhu.

46: An Event-B Interpretation for SPARDL Model. Jianwen Li, Zheng Wang, Yongxin Zhao, Geguang Pu, Bin Gu and Yanxia Qi.

35: A Behavioral Analysis Approach for Efficient Partial Order Reduction. Yingying Zhang, Emmanuel Rodriguez, Hao Zheng, and Chris Myers.

***Short: (20 minutes each)***

67: Animating the Approach of Deriving Operational Semantics from Algebraic Semantics for Web Services. Qian Wang and Huibiao Zhu.

**Lunch break: 12:15 PM – 13:30PM (Boca Ballroom)**

**Parallel Afternoon Sessions: 1:30 PM – 3:30 PM**

**Location: Parlor II & III**

**Location: Salon A & B**

**Session C: Applications and Technologies**

**Chair: Mladen Vouk**

***Regular: (30 minutes each)***

23: Combining Goal Models, Expert Elicitation, and Probabilistic Simulation for Qualification of New Technology. Mehrdad Sabetzadeh, Davide Falessi, Lionel Briand, Stefano Di Alesio, Dag McGeorge, Vidar Åhjem and Jonas Borg.

105: On High-Assurance Scientific Workflows. Mladen A. Vouk and Pierre A. Mouallem

16: Integrating Legacy Applications for High Availability: a Case Study. Ali Kanso, Anik Mishra, Maria Toeroe and Ferhat Khendek.

***Short: (20 minutes each)***

70: Personal Health Record System and Integration Techniques with Various Electronic Medical Record Systems. Vishesh Ved, Vivek Tyagi, Ankur Agarwal and Dr Abhijit Panday.

**Session D: High Assurance Distributed Systems**

**Chair: Si Liu**

***Regular: (30 minutes each)***

34: The OASIS kernel: a framework for high dependability real-time systems. Stephane Louise, Matthieu Lemerre, Vincent David and Christophe Aussagues.

17: Conflict Detection and Lifecycle Management for Access Control in Publish/Subscribe Systems. Patrick Hein, Debmalya Biswas, Leonardo A. Martucci and Max Mühlhäuser.

58: Discriminatively Fortified Computing with Reconfigurable Digital Fabric. Mingjie Lin, Yu Bai, and John Wawrzynek.

***Short: (20 minutes each)***

24: Enumerating software failures to build dependable distributed applications. Ingrid Buckley and Eduardo B. Fernandez.

10: Leader-Determined Membership Protocol. Wenbing Zhao, Peter Michael Melliar-Smith and Louise E. Moser.

**Coffee Break: 3:30 PM – 4:00 PM (Royal Palm Foyer)**

**Parallel Afternoon Sessions: 4:00 PM – 5:30 PM**

**Location: Parlor II & III**

**Location: Salon A & B**

**Session E: Model Checking and Verification II**

**Chair: Victor Winter**

***Regular: (25 minutes each)***

25: Reducing State Explosion with Context Modeling for Model-Checking. Philippe Dhaussy, Frédéric Boniol and Jean-Charles Roger.

19: Guidelines for Formal Domain Modeling in Event-B. Atif Mashkoo and Jean-Pierre Jacquot.

***Short: (20 minutes each)***

5: Patterns for Representing FMEA in Formal Specification of Control Systems. Ilya Lopatkin, Alexei

**Session F: High Assurance Networked Systems and Services**

**Chair: Michael Melliar-Smith**

***Short: (20 minutes each)***

13: A Calculus for Mobile Ad Hoc Networks from a Group Probabilistic Perspective. Si Liu, Yongxin Zhao, Huibiao Zhu, and Qin Li.

71: A Real Time Window-based Local Call Admission Control Algorithm for IP Networks. Sami Alwakeel and Shaker Alghanmi.

53: Anytime Available Single IP Address Cluster. Hajime Fujita and Yutaka Ishikawa.

Iliasov, Alexander Romanovsky, Yuliya Prokhorova, and Elena Troubitsyna.

4. Monarch: A High-Assurance Java-to-java (J2j) Source-code Migrator. Victor Winter, Jonathan Guerrero, Carl Reinke and James Perry.

**Reception and Poster Presentations: 6:00PM – 8:30PM (Boca Ballroom)**

**Chair: Taghi M. Khoshgoftaar**

3: Autonomous Online Expansion Technology for ZigBee Wireless Sensor Networks. Md. Emdadul Haque, Fan Wei, Takehiro Gouda, Xiaodong Lu and Kinji Mori.

28: A Security Modelling Framework for Systems of Embedded Components. Antonio Maña and Jose Francisco Ruiz.

41: On the Relationship between Preprocessor based Software Variability and Software Defects. Kunming Nie and Li Zhang.

45: Towards a Security Domain Model for Embedded Systems. Simin Nadjm-Tehrani and Maria Vasilevskaya.

48: A Task-Based Code Review Process and Tool to Comply with the DO-278/ED-109 Standard for Air Traffic Management Software Development – A Case Study. Mario Bernhart, Stefan Reiterer, Kilian Matt, Andreas Mauczka and Thomas Grechenig.

57: Self-Healing Data Exchange Process Under Evolving Schemas: a New Mapping Adaptation Approach based on Self-Optimization. Hicham Assoudi and Hakim Lounis.

61: Comparison and Analysis of Cryptographic Algorithms Aiming Performance Improvement in Secure Web Services. Douglas Rodrigues, Daniel Pigatto, Julio Cezar Estrella and Kalinka Regina Castelo Branco.

Nov. 11 2011 (Friday)

**Breakfast: 7:00 AM – 8:30 AM (Royal Palm Foyer)**

**Keynote Speech II**  
**8:30 AM – 9:30 AM (Parlor II & III)**  
**Are High-Assurance Computing Clouds Possible?**  
**Mladen Vouk, PhD**

**Coffee Break: 9:30 AM – 10:00 AM (Royal Palm Foyer)**

**Parallel Morning Sessions: 10:00 AM – 12:00 PM**

**Location: Parlor II & III**

**Location: Salon A & B**

**Session G: Safety-critical Systems**

**Chair: I-Ling Yen**

***Regular: (30 minutes each)***

107: Using SysML for Modeling of Safety-Critical Software-Hardware Interface Drivers: Guidelines and Industry Experience. Mehrdad Sabetzadeh, Shiva Nejati, Lionel Briand Anne-Heidi Evensen Mills.

106: An Early Design Stage UML-Based Safety Analysis Approach for High Assurance Software Systems. Chetan Mutha, Carol Smidts.

54: Worst Case Temporal Consistency in Integrated Modular Avionics Systems. Michaël Lauer, Frédéric Boniol, Jérôme Ermont and Claire Pagetti.

22: High-Assurance Reconfigurable Multicore Processor Based Systems. Manasi Peshave, Farokh Bastani and I-Ling Yen.

**Session H: High Assurance Ocean Systems**

**Chair: John C. Sloan**

***Regular: (30 minutes each)***

20: Ensemble Coordination for Discrete Event Control. John Sloan and Taghi Khoshgoftaar.

38: Using Feature Selection to Determine Optimal Depth for Wavelet Packet Decomposition of Vibration Signals for Ocean System Reliability. Randall Wald, Taghi Khoshgoftaar and John Sloan.

30: A Dynamometer for an Ocean Turbine Prototype - Reliability Through Automated Monitoring. Janell Duhaney, Taghi Khoshgoftaar, John Sloan, Bassem Alhalabi and Pierre-Philippe Beaujean.

51: Smart Vibration Monitoring System for an Ocean Turbine. Mustapha Mjit, Pierre-Philippe J. Beaujean and David J. Vendittis.

**Lunch Break: 12:15 PM – 13:30 PM (Boca Ballroom)**

**Parallel Afternoon Sessions: 1:30 PM – 3:30 PM**

**Location: Parlor II & III**

**Session I: Performance, Reliability and Availability Analysis**

**Chair: Mladen Vouk**

***Regular: (30 minutes each)***

62: An Availability Model of a Virtual TMR System with Applications in Cloud/Cluster Computing. Ricardo Paharsingh and Olivia Das.

108: Efficient System Reliability with Correlated Component Failures. Lance Fiondella, Sanguthevar Rajasekaran, and Swapna S. Gokhale

103: Benchmarking Embedded Software Development Project Performance. Michael F. Siok and Jeff Tian

***Short: (20 minutes each)***

36: Modeling Recovery Strategies in Service-Oriented Architecture Using a Markov Decision Process. Dongeun Lee, Eunjeong Park and Heonshik Shin.

**Location: Salon A & B**

**Session J: Monitoring**

**Chair: Ankur Agarwal**

***Regular: (30 minutes each)***

14: Multi-layer Monitoring for Cloud Computing. Javier Gonzalez, Antonio Muñoz and Antonio Maña.

40: Using Automated Control Charts for the Runtime Evaluation of QoS Attributes. Ayman Amin, Alan Colman, and Lars Grunske.

***Short: (20 minutes each)***

39: VMDetector: A VMM-based Platform to Detect Hidden Process by Multi-view Comparison. Ying Wang, Chunming Hu and Bo Li.

63: Validation of Object Recognition Framework on Android Mobile Platform. Vivek Tyagi, A.S. Pandya, Ankur Agarwal, and Bassem Alhalabi.

**Coffee Break: 3:30 PM – 4:00 PM (Royal Palm Foyer)**

**Panel**

**4:00 PM – 5:30 PM (Parlor II & III)**

**High Assurance Systems: State of the Art and Practice.**

**Moderator:**

**Taghi M. Khoshgoftaar**

**Panelists:**

**Bojan Cukic, Konji Mori, Ray Paul, Carlos Perez, Sahra Sedigh,  
John Sloan, Mladen Vouk, Victor Winter, I-Ling Yen**

**Banquet 6:30PM – 9:00PM (Boca Ballroom)**

# Nov. 12, 2011 (Saturday)

**Breakfast: 7:00 AM – 8:30 AM (Royal Palm Foyer)**

**Keynote Speech III**  
**8:30 AM – 9:30 AM (Parlor II & III)**  
**In Pursuit of Software Faults: Status and Challenges**  
**Bojan Cukic, PhD**  
**Robert C. Byrd Professor**  
**Computer Science and Electrical Engineering**  
**West Virginia University**

**Coffee Break: 9:30 AM – 10:00 AM (Royal Palm Foyer)**

**Parallel Morning Sessions: 10:00 AM – 12:00 PM**

**Location: Parlor II & III**

**Location: Salon A & B**

**Session K: Bugs and Fault Localization I**

**Chair: Sahra Sedigh**

***Regular: (25 minutes each)***

31: On the Effectiveness of the Tarantula Fault Localization Technique for Different Fault Classes. Aritra Bandyopadhyay and Sudipto Ghosh.

101: GUI Software Fault Localization Using N-gram Analysis. Zhongxing Yu, Hai Hu, Chenggang Bai, Kai-Yuan Cai1, and W. Eric Wong

104: Software-Based Instrumentation for Localization of Faults Caused by Electrostatic Discharge. Pratik Maheshwari, Byong-Su Seol, Jong-Sung Lee, Jae-Deok Lim, Sahra Sedigh, and David Pommerenke.

55: Bug Signature Minimization and Fusion. David Lo, Hong Cheng and Xiaoyin Wang.

***Short: (20 minutes each)***

7: So Much to Learn from One Accident Crash of 737 on 25 February 2009. Herbert Hecht.

**Session L: Security and Privacy**

**Chair: Bojan Cukic**

***Regular: (30 minutes each)***

42: Effects of user habituation in keystroke dynamics on password security policy. Zahid Syed, Sean Banerjee, Qi Cheng, and Bojan Cukic.

66: Formal Analysis of the DNS Bandwidth Amplification Attack and its Countermeasures Using Probabilistic Model Checking. Tushar Deshpande, Panagiotis Katsaros, Stylianos Basagiannis and Scott Smolka.

18: Transforming Privacy Policies to Auditing Specifications. Debmalya Biswas and Valteri Niemi.

***Short: (20 minutes each)***

44: Verification of Interoperability Security Policies By Model Checking. Mazen El Maarabani, Ana Cavalli, Iksoon Hwang and Fatiha Zaidi.

**Conference Closing**