The Fifth
Layered Assurance Workshop

December 5 – 6, 2011
Buena Vista Palace Hotel & Spa
Orlando, Florida

Welcome and Opening Remarks

Rance DeLong, LynuxWorks, LAW Chair

Gabriela Ciocarlie, Coverity, LAW PC Chair

Gordon Uchenick, Coverity, LAW PC, Chair Emeritus

Overview of LAW 2011 – Rance DeLong
LAW Purpose and Philosophy

• LAW was motivated by outstanding unsolved problems encountered in the pursuit of solutions to real needs discovered in developing and applying approaches, like MILS, that would benefit from compositional assurance.

• LAW should be *Progressive* if it is to deliver value relative to other venues. It should be forward looking and not dwell on current practice. LAW exists because of the shortfalls of current practice.

• LAW should challenge past and current, failed and inadequate approaches.

• LAW should serve as driving force for future solutions by stimulating relevant basic research and providing a conduit for the flow of research results to other researchers, and to vendors and system integrators who are in a position to apply them.
Gabriela Ciocarlie, Coverity Program Chair

Opening Remarks
Gordon Uchenick, Coverity PC, LAW Chair Emeritus

Opening Remarks
Rance DeLong, LynuxWorks
LAW Chair

Overview of LAW 2011
LAW Organizing Committee

Joyce Brookins
Gabriela Ciocarlie
Rance DeLong
George W. Dinolt
Peter G. Neumann
Michael Putney
Gordon Uchenick
5th Layered Assurance Workshop

What we set out to do in 2011

• Objectives
  – Run a self-sustaining workshop - a legacy from AFRL/AF CMPO
  – Focus on the unsolved problems - stimulate pre-competitive research
  – Attract researchers - peer-reviewed submissions, web published proceedings, keep “Workshop” moniker
  – Disseminate knowledge of current state of the art – keynotes, invited talks, contributed papers, works-in-progress
  – Globalize reach – “international” Layered Assurance Workshop

• Evolutionary differences from past LAWs
  – Affiliated again with ACSAC, but without external funding support
  – Registration fee not subsidized (though discounted for ACSAC attendees)
  – More keynote and invited speakers
  – Work-In-Progress Session
LAW Program Summary

• Five distinguished invited speakers:
  Bensalem, Dave, Goodenough, Miner, Shrobe

• Five contributed paper authors:
  Alves-Foss, Bradetich, Greve, Hardin, Heckman

• Five work-in-progress presentations:
  Boggs, DeLong, Giampapa (2), Mildner

• Panel:
  Future of highly trustworthy systems, networks, and clouds
    DeLong, Neumann, Shrobe, Sullivan, Vanfleet
  organized and moderated by Peter G. Neumann

• Discussion session

• BREAK and LUNCH same times as other ASCAC events

• LAW attendees invited to the LAW Business Meeting

• LAW attendees invited to the ACSAC Tuesday Reception
December 5 - 6, 2011

Layered Assurance Workshop

• Pickup at Registration Desk

• Program and Proceedings
  Available online at

• Program Supplement:
  Keynote and Invited Talk
  abstracts and speaker bios

We gratefully acknowledge the efforts of
Michael Putney, and the resources of US AF CMPO,
in the production of the Program Supplement.
Invited Speakers

• Howard Shrobe – DARPA I2O, CRASH PM and MRC PM
  – Supposing we got a “Do over”?
• Paul Miner – NASA, Senior Research Engineer
  – A Layered Assurance Perspective: Lessons from the Formal Analysis of Fault-Tolerant Systems
• John B. Goodenough – CMU SEI Fellow
  – Using eliminative induction and defeasible reasoning to assess assurance case confidence
• Saddek Bensalem – University Joseph Fourier, VERIMAG Laboratory
  – Rigorous Component-based System Design Using the BIP Framework
• Nirav Dave – SRI International, Computer Scientist
  – Bluespec Codesign Language: A Unified Language to Enable HW / SW Codesign

Panel

• Peter G. Neumann (SRI), Howard Shrobe (DARPA), Gregory Sullivan (BAE Systems), Rance DeLong (LynuxWorks), Mark Vanfleet (NSA)
Contributed Papers

1. Introduction to the Guardol Programming Language and Verification System
3. Layered Assurance Scheme for Multicore Architectures
4. Evaluating Multicore Architectures for Application in High-Assurance Systems
5. Composing a High-Assurance Infrastructure out of TCB Components

Work-In-Progress Presentations

1. Multi-layer Defense for Power Grid SCADA Systems
2. High Robustness
3. MILS Research - Accomplishments and Ongoing Work
4. Metric for Layered Defenses
5. Compositional Assurance for Robotic Coordination
Logistics

Breakfast - from 7:30 AM until 8:30 AM
Coffee Breaks - one-half hour at 10 AM and 3 PM
Lunch - from 12 PM until 1:30 PM
Timeliness - Full program, please be punctual!
LAW Business Meeting - Monday from 6:00 PM until 6:45 PM
ACSAC Reception - Tuesday at 6 PM until 8 PM
Keynote:

Supposing we got a “Do over”?

Howard Shrobe

DARPA
Panel:

The Future of Highly Trustworthy Systems, Networks, Apps, and Clouds

Peter G. Neumann, SRI International, moderator
Gregory Sullivan, Rance DeLong, W. Mark Vanfleet, Howard Shrobe
Invited Talk:

A Layered Assurance Perspective: Lessons from the Formal Analysis of Fault-Tolerant Systems

Paul Miner

NASA
Keynote:

Using eliminative induction and defeasible reasoning to assess assurance case confidence

John B. Goodenough
CMU SEI Fellow
Invited Talk:

*Rigorous Component-based System Design Using the BIP Framework*

Saddek Bensalem

University Joseph Fourier, VERIMAG Laboratory
Invited Talk:

*Bluespec Codesign Language: a Unified Language to Enable Hardware/Software Codesign*

Nirav Dave

SRI International
LAW Business Meeting

Planning for LAW 2012
LAW Business Meeting Agenda

• Volunteers needed!
  – 1st volunteer needed: Secretary for this business meeting
  – Workshop Committee, Program Committee
  – LAW Chair - serves on ACSAC committee

• What needs to be done
  – Communications - announcements, Call-For-Papers, updates
  – Workshop Theme, Format and Agenda
  – Speaker invitations – our tradition: Chair’s choice
  – Program: CFP, submissions, reviews, author correspondence

• Corporate sponsorship opportunities
  – Give-aways, registration subsidies, travel expenses