Third NASA Langley

Formal Methods Workshop

NASA Langley

May 10-12, 1995

H. J. E. Reid Conference Center

NASA Langley Research Center

Hampton, Virginia

Sponsored by

Formal Methods Team

Assessment Technology Branch

Information & Electromagnetic Technology Division

Research and Technology Group

Proceedings available on the World-Wide Web at
http://atb-www.larc.nasa.gov/WS95/proceedings.html

Wednesday, May 10, 1995

8:00 – 8:45	**Late Registration**
	Session 1: Introduction to Formal Methods Chaired by Ricky Butler
8:45 – 9:00	**Welcome** *Milton Holt, Chief, Information & Electromagnetic Technology Division*
9:00 – 9:30	**Rationale for Formal Methods** *Ricky Butler, NASA Langley Research Center*
9:30 – 10:30	**An Informal Introduction to Formal Methods** *Michael Holloway, Ricky Butler, and Paul Miner* *NASA Langley Research Center*
10:30 – 11:00	Break
11:00 – 12:00	**An Informal Introduction to Formal Methods (continued)**
12:00 – 12:30	**Overview of NASA Langley's Formal Methods Program** *Ricky Butler, NASA Langley Research Center*
12:30 – 1:30	Lunch in NASA Cafeteria
	Session 2: LaRC-sponsored Industrial Applications Chaired by Ricky Butler
1:30 – 2:00	**The AAMP5/AAMP-FV Project** *Steve Miller, Rockwell-Collins* *Mandayam Srivas, SRI International*
2:00 – 2:30	**Union Switch & Signal Project** *Joe Profeta, Union Switch & Signal* *Doug Hoover, Odyssey Research Associates*
2:30 – 3:00	**Honeywell Software Development Project** *Lance Sherry, Honeywell* *Doug Hoover, Odyssey Research Associates*
3:00 – 3:30	Break
	Session 3: Industry Perspectives on Formal Methods Chaired by Michael Holloway
3:30 – 5:00	**Panel Session** *Scott French, Loral ATC* *Steve Miller, Rockwell-Collins* *Joe Profeta, Union Switch & Signal* *Lance Sherry, Honeywell*
5:00 – 6:00	**Cash Bar Social in Reid Conference Center**

Thursday , May 1 1, 1995

Session 4: Software Systems (1)
Chaired by Ricky Butler

8:30 – 9:30	**Formal Verification for Fault-Tolerant Architectures/PVS Design** *John Rushby, SRI International*
9:30 – 10:30	**Formal Methods Demonstration Project for Space Applications** *Ben DiVito, VÍGYAN, Inc.* *John Kelly, Jet Propulsion Laboratory*
10:30 – 10:45	Break

Session 5: Software Systems (2)
Chaired by Michael Holloway

10:45 – 11:45	**Ada 9X Language Precision Team** *David Guaspari, Odyssey Research Associates*
11:45 – 12:30	**Introduction to Penelope and Its Applications** *David Guaspari, Odyssey Research Associates*
12:30 – 1:30	Lunch in NASA Cafeteria

Session 6: Hardware Systems
Chaired by Paul Miner

1:30 – 2:00	**The Formal Verification Technology Used on AAMP5** *Mandayam Srivas, SRI International*
2:00 – 2:30	**Specification and Verification of VHDL Designs** *Damir Jamsek, Odyssey Research Associates*
2:30 – 3:15	**Derivational Reasoning System** *Bhaskar Bose, Derivation Systems Inc.*
3:15 – 3:30	Break

Session 7: Researcher Perspectives on Formal Methods
Chaired by Jim Caldwell

3:30 – 5:00	**Panel Session** *David Dill, Stanford University* *Doug Hoover, Odyssey Research Associates* *Steve Johnson, Indiana University* *Natarajan Shankar, SRI International*
6:30 – 8:00	**Dinner at Captain George's Seafood Restaurant**

Friday, May 12, 1995

Session 8: Research Issues (1)
Chaired by Michael Holloway

8:30 – 9:15	**Safety Analysis** *John Knight, University of Virginia*
9:15 – 10:00	**Non-standard Analysis and Software** *Richard Platek, Odyssey Research Associates*
10:00 – 10:30	Break

Session 9: Research Issues (2)
Chaired by Victor Carreño

10:30 – 11:15	**Hybrid Fault Algorithms** *Pat Lincoln, SRI International*
11:15 – 12:00	**Model Checking** *David Dill, Stanford University*
12:00 – 1:30	Lunch in NASA Cafeteria

Session 10: Research Issues (3)
Chaired by Ricky Butler

1:30 – 2:00	**The DDD Scheme Machine** *Steve Johnson, Indiana University*
2:00 – 2:30	**Formal Development of a Clock Synchronization Circuit** *Paul Miner, NASA Langley Research Center*
2:30 – 2:40	**Closing Remarks** *Ricky Butler, NASA Langley Research Center*