San Diego, Real-time and Embedded Systems Forum Agenda,
29 January -2 February 2007
Marriott Mission Valley www.opengroup.org/sandiego2007

Architecting to the Edge Agenda

Monday 29 January 2007

0900 – 0930 Introduction, Glen Logan, RTES Forum Chair

0930 -- 1030 Taking the Enterprise to the Edge, Rob Walker, BEA

1030 – 1100 Break

1100 – 1145 Panel Discussion, Architecting to the Edge requirements, Rob Walker, Glen Logan et. al.

1145 – 1230 UML Profile for DoDaF/MODAF (UPDM) Overview, The relevance to Edge Application deployment is derived from a more rigorous model based approach to understanding the operational capabilities and context and the non-realtime and hard-realtime needs and constraints of end users, platforms, avionics, medical systems, intelligent transportation, weapons, sensors, communications and command/control nodes. Ron C Williamson, Raytheon

1230 -- 1400 Lunch

1400 -- 1445 Overview of the Architecture Analysis & Design Language for High Assurance Systems (Bruce Lewis, Chair SAE AADL Subcommittee AS-2C)

1445 -- 1530 Demonstration of AADL Analysis and Tools for High Assurance Systems (Peter Feiler, Software Engineering Institute)

1530 – 1545 Break

1545 – 1615 AADL Avionics Case Study and Concepts for Integrating AADL into System Development (John Mettenburg, Rockwell Collins)

1615 – 1645 High Assurance Embedded Systems Architectural Modeling From a Tooling Perspective – Context SAE AADL: an industry-standard extensible modeling notation for embedded systems and systems of systems. Focus on the XMI-based tool integration strategy and extension mechanisms in language and tools. Examples – AADL error modeling language for dependability analysis, plug-ins for architectural model checking and analysis.

1645 - 1745 TOPCASED/OSATE – TOPCASED is a very large scale industry initiative (greater than 17M Euro) for an open source embedded system engineering tool integration framework for the high assurance embedded systems domains. It integrates multiple modeling notations and high assurance tools, including AADL and UML. Describe open source approach and demonstrate integration of AADL and OSATE.

1745 – 1815 Discussion of TOPCASED approach to open source and qualified or high assurance

"Trust and Traceability: Dependability through Assuredness ™"
Tuesday and Wednesday (30 & 31 January 2007)

The Real-Time and Embedded Systems Forum will host a two-day session addressing the topic of "Trust and Traceability: Dependability through Assuredness". Using this theme, The Open Group will facilitate developing an approach to Software Assurance (medium to high robustness) through the use of certified interoperable tools (based on open standards) to support a distributed real-time test bed for testing, certification and accreditation of systems and components. Various instantiations of assurance testing will support a system or system-of-systems for software quality, security (to include high robustness), information assurance, requirements traceability, interoperability, quality of service, aggregated real-time performance, modeling and simulation, formal methods proof, and artifact generation based on current best practices for mission- and safety-critical systems.

The Open Group has invited experts from the following domains to delineate their Certification and Accreditation (C&A) requirements:

- Aviation
- Supervisory Control and Data Acquisition (SCADA) systems
- Operating Room of the Future (ORF)
- Medical Devices (including Sensors)
- Manufacturing
- Intelligent Transportation Systems
- Critical Infrastructure (Petroleum, Electric, Water, Banking, etc)
- Space Exploration (Flight to Mars and beyond)
- Unmanned Vehicles (e.g., Future Combat Systems, Joint Unmanned Combat Air Systems (J-UCAS))
- Security (medium to high robustness)
- Large weapon systems (e.g., DDG-1000, Littoral Combat Ship (LCS), Joint Strike Fighter, etc.)
- Homeland Security

To achieve consensus on emerging open standards in this domain, we have invited participation from a broad base of stakeholders including:

Technology and/or Tool Vendors

- Kestrel Technology
- Coverity
- Progress Software
- Servoy
- iTKO
- Veriserve

Industry Consensus Standards Bodies and Consortia:

- Institute of Electrical and Electronics Engineers (IEEE)
- National Institute for Standards and Technology (NIST)
- Object Management Group (OMG)
- Society of Automotive Engineers (SAE)
- International Council on Systems Engineering (INCOSE)
- National Defense Industrial Association (NDIA)
- American Institute of Aeronautics and Astronautics (AIAA)
- Software Engineering Institute (SEI)
- Network Centric Industry Consortium (NCOIC)

Formal Methods Experts:

Dr. John Rushby, Stanford Research Institute (SRI)
Dr James Alves-Foss, University of Idaho
Dr John Anton, Kestrel Technology
Dr John Mayer, Jet Propulsion Laboratory.

Dave Lounsbury, Vice President, Government Program & Managing Director, US Research & Technology, The Open Group, will facilitate the process to help the participants reach consensus on the use of Open Standards in this environment and to eventually develop a tool certification process used in testing, certification and accreditation. We expect there will be resources from various organizations like the European Union, US Government and METI in Japan to develop the open standards and reference implementations for the required tools. The Open Group members will contribute their time and effort through the Forum supporting this effort.

Tuesday/Wednesday Detail
Tuesday will be dedicated to gathering the requirements for "Trust and Traceability: Dependability through Assuredness"
Wednesday morning we will hear a number of approaches to the test environment and

identification of the types tools required
Wednesday afternoon will be a series of workshops in parallel sessions to flush out a high level architecture and other themes to be determined -- Concluding with a wrap-up and a way forward. --- see next page

Tuesday January 30, 2007 (US West Coast)
Plenary for "Trust and Traceability: Dependability through Assuredness".
0900-0915 Introduction, Allen Brown
0915-1000 Keynote Speaker, What is Software Assurance? Or Dependability Through Assuredness, Dr Jeffrey Voas, Director of Systems Assurance Technologies at Science Applications International Corporation (SAIC)
1000-1045 A Distributed Systems Integration Lab (DSIL), JPL/NASA, Dr John Mayer
1045-1100 Break
1100-1145 Representatives from Japan

1) "Proposal on Open Best Practices study of Formal methods based Requirement Specification process" by Jack Fujieda ; introduction;15 minutes:
2) "Automotive Industry Requirement" by Mr.Hiroshi Igata, SVP , Toyota Information Technology Center USA; 15 minutes:
3) "Requirement Engineering and Formal Methods" by Hisashi Yoshida, Researcher, Software Engineering Center, IPA: 15 minutes

1145-1230 Homeland Security, Joe Jarzombek, Director Software Assurance
1230-1400 Lunch
1400-1500 Project Constellation, NASA Matt Barry
1500-1530 SCADA, Honeywell Process Solutions, Kevin Staggs
1530-1600 Break
1600-1645 Avionics, John Chilenski, Boeing
1645-1730 Panel Wrap Up with some of speakers from above Facilitator John Anton

Wednesday, 31 January (US West Coast)
"Trust and Traceability: Dependability through Assuredness"
Wednesday morning we will hear a number of approaches to the test environment and identification of the types tools required
Wednesday afternoon will be a series of workshops in parallel sessions to flush out a high level architecture -- Concluding with a wrap-up and a way forward.
0900-0915 Introduction Dr John Anton
0915-0945 Distributed Test Facilities Development, QinetiQ, Paul Haydon (TBC)
0945-1030 Operating Room of the Future, Harvard Medical School, Dr Julian Goldman
1030-1045 Break
1045-1130 High Assurance Application Development, Lynux Works, Joe Wlad
1130-1215 An Approach to System Assurance, SRI, John Rushby

1215-1300 US Government Approach to Software Assurance, DHS Joe Jarzombek
1300-1400 Lunch
1400-1630 Joe Jarzombek et al., Workshop/Workshops Potential Themes – Architecture, Requirements, Tools, Certification of Potential Tools
1630-1730 Joe Jarzombek et al., Reports from Workshops and way forward

Wednesday Afternoon, 31 January (Parallel Session)
1400-1630 Hours MILS Tutorial, Objective Interface Systems, Gordon Uchenick

Wednesday, 31 January (Parallel Session)
0900-1800 JSR 302: Safety Critical Java Technology Expert Group Meeting – detailed agenda via email

Wednesday Evening, 31 January
1900-2000 RTES Forum BOF

Thursday Morning, 1 February
Security for Real-time and High Assurance
0800 – 0900 Michael McEvilley, Mitre
- SKPP Update
- What is MILS? - The need for Precision and Accuracy in "Going Forward" with the MILS Concept definition
0900 - 1000 John Rushby, SRI
- MILS Integration Protection Profile
1000 - 1030 Break
1030 - 1130 Rance DeLong, Lynux Works
- Common Criteria Authoring Environment
1130 – 1145 Gordon Uchenick, Objective Interface Systems
- *High Assurance Middleware Layered Certification Approach Workshop.*
1145 - 1245 – Michael McEvilley et. al.
- Group discussion on topics related to morning presentations
1245 – 1400 Lunch

Thursday Afternoon, 1 February
1400-1800 MILS Demo followed by a reception – see http://www.opengroup.org/comm/press/16jan07.htm

Thursday, 1 February (Parallel Session)
0900-1800 JSR 302: Safety Critical Java Technology Expert Group Meeting – detailed agenda via email

Friday Morning, 2 February
Security for Real-time and High Assurance
0800-0815 Introduction, Edwin Lee, Raytheon
0815-0830 Secure Communications Stack PP Update, Paul Ray, Wind River

0830-0915 Mil-STD- 1553 and MILS, Mark Vanfleet, NSA
0915-1200 Wrap-up Discussion to include use a collaboration tool, Edwin Lee et.al.

Friday Morning, 1 February (Parallel Session)
0900-1200 JSR 302: Safety Critical Java Technology Expert Group Meeting – detailed agenda via email

As of 29 January 2007