



DRAFT PROGRAM

A Workshop on Semantic Interoperability

“Semantic Interoperability for Enterprise Engineering – Bridging the Chasms”

26-28 July 2011, San Diego (PLNU Campus) and Washington DC (CMU-SEI)

Purpose: Provide a forum to discuss the higher levels of interoperability within and across domains.

Objective: Through inter-disciplinary dialog, address how to “bridge the chasms” and enable interoperability (e.g. service-level agreements) within and across globally-diverse enterprises and associated disciplines.

Motivation: The legacies and cultures of separate domains and disciplines (aka “stovepipes”) hinder achieving the level of interoperability required for multi-enterprise operations. An initial step towards addressing these challenges requires methods and enterprise services for actively managing the mitigation of otherwise separate concepts, nomenclature, terminology, and jargon. In other words, we consider semantic interoperability to be a key technology enabler for multi-disciplinary integrated product team effectiveness¹.

Focus: New Enterprise Engineering (E2) processes and methodologies are emerging that leverage advances in Model-Based-Systems-Engineering (MBSE), System-Of-Systems-Engineering (SOSE), Cloud Computing, and other practices to help integrate and federate the broad spectrum of interdependent workflows (i.e. business processes, activities, and services) necessary for enterprises to better compete within the globally interconnected ecosystem of such entities. This year’s workshop focuses on leveraging organizational leadership and technical experts from among fourteen E2 disciplines that we consider critical for implementing and sustaining a more mature globally-interdependent ecosystem of Enterprise Architecture (EA) frameworks.

Format: Key technology disciplines have been identified for facilitating end-to-end E2 lifecycle support activities. Keynote speakers and other experts have been invited to participate in panel sessions and “breakout mini-workshops.” Panel participants each provide a 15-30 minute informational brief to provide background and context for their respective area-of-concern. Throughout the panel session, the session topic is addressed from their respective context, domain, and focus of concern. The last 30-45 minutes of the panel session are dedicated to questions, answers, and dialog between panelists and workshop participants/attendees.

The afternoon breakout sessions are “mini-workshops” that provide an opportunity for similar multi-disciplinary dialog across interdependent technical disciplines within the context of an overarching organizational construct (e.g. University, FFRDC, Government, or Industry).

Expected Outcome: For enabling semantic interoperability, the goal of each panel and breakout session is to identify candidate requirements (i.e., needs, use-cases, scenarios), potential enablers (e.g., process threads, SOPs, recommended capabilities), and barriers to success (e.g., regulatory/statutory impediments, technological limitations, lack of validated experimentation repositories). The resulting feedback and recommendations will be incorporated in a workshop outbrief and summary report with prioritized recommendations for the way ahead.

¹ Semantic difficulties exist both among E2 disciplines and between enterprise domains.

PLNU – Point Loma Nazarene University; CMU-SEI – Carnegie Mellon University Software Engineering Institute



Tuesday 26 July 2011

- 0700-0730 Registration
- 0730-0745 Opening Remarks
- 0745-0830 Plenary Presentation: **Mr. Dennis Wisnosky**, CTO, DOD BMA
- 0830-1200 Panel Session: **“Semantic Services for Enterprise Engineering (E2)”**
Note: Morning Break from 1000-1030
Chair: **Mr. Steve Roa**, SSC Pacific, E2C Project Lead
Panel: **Mr. Dennis Wisnosky**, CTO, DOD BMA
Ms. Deedee Akeo, DOD BMA
Mr. Jerry Conrad, Lexicographer, DHS
Mr. Gary Wang, CIO, SPAWAR
Mr. Dan Green, Data Strategy Lead, SPAWAR
- 1200-1300 Lunch Break
- 1300-1730 Breakout Sessions: **“Semantic Interoperability: High-Priority Needs and Recommended Capabilities”**
Note: Afternoon Breaks from 1355-1405, 1450-1510, 1605-1615
- Enterprise Breakout Session: (Chair: Jayson Durham, SSC Pacific)**
Session Focus: Virtual Collabatorium, Portfolio Management & Maturity Models
Location: Bond Hall, Rm. 103
Speakers/Topics: **Mr. Ted Kazmar**, Battlespace Awareness Portfolio Manager, SSC Pacific
Mr. Jayson Durham, SSC Pacific
Mr. Mark Econie, Naval Architecture Repository System (NARS)
- Enterprise Breakout Session: (Chair: Dr. Mark Bergman, MITRE)**
Session Focus: Virtual Collabatorium, Data Strategy, Policy Management, & Composable Services
Location: Bond Hall, Rm. 104
Speakers/Topics: **Dr. Mark Bergman**, MITRE
Dr. Ed Chow, NASA-JPL
Dr. Jyoti Pathak, Enterprise Vocabulary Services (EVS), Mayo Clinic
(Additional speaker pending)
- Enterprise Breakout Session: (Co-Chairs: Mr. Mark Wallace and Mr. Barry Brueseke)**
Session Focus: Virtual Collabatorium, Enterprise Data/Content Management and Harmonization
Location: Bond Hall, Rm. 105
Speakers/Topics: **Mr. Mark Wallace**, DAMA Southern California Chapter
Mr. Barry Brueseke, AIIM San Diego Chapter
Mr. Kevin Ford, Library of Congress (LOC)
Mr. Steve Brown, Joint Capability Area Management System (JCAMS)



Wednesday 27 July 2011

- 0700-0730 Bagels and Coffee
- 0730-0815 Update from Breakout Sessions: **Breakout Session Chairs**
- 0815-0900 Plenary Presentation: **Dr. Douglas Schmidt**, CMU SEI CTO
- 0900-1200 Panel Session: **“Semantically Interoperable SOA-Based E2 Implementations”**
Note: Morning Break from 1000-1030
Chair: **Jayson Durham**, SSC Pacific
Panel: **Dr. Douglas Schmidt**, CTO, CMU SEI
Prof. Cliff Whitcomb, Chair, Systems Engineering Department, NPS
Mr. Rich Volkert, ISR/IO Systems Engineer, SSC Pacific
Mr. Steve Roa, E2C Project Lead, SSC Pacific
- 1200-1300 Lunch Break
- 1300-1730 Breakout Sessions: **“Semantic Interoperability: High-Priority Needs and Recommended Capabilities”**
Note: Afternoon Breaks from 1355-1405, 1450-1510, 1605-1615
- Engineering Breakout Session: (Chair: Ms. Brittany Duncan, NPS/ONR/ASEE NREIP)**
Session Focus: Virtual Collabatorium, X3D-Earth Virtual Environments
Location: Bond Hall, Rm 103
Speakers/Topics: **Prof. Don Brutzman**, NPS
Ms. Brittany Duncan, NPS/ONR/ASEE NREIP
Mr. Benito Hobson, Executive Vice President, AFCEA San Diego
Ms. Melisa Caric Lee, Chair, URISA/GIS Southern California Chapter
- Engineering Breakout Session: (Chair: Mr. William Anderson, CMU-SEI)**
Session Focus: Virtual Collabatorium, Data Clearing House
Location: Bond Hall, Rm 104
Speakers/Topics: **Mr. William Anderson**, CMU-SEI
Mr. Hui Huang, NIST
Mr. Ken Helton, Vitech CORE
Mr. Jeff Waters, SSC Pacific
- Engineering Breakout Session (Chair: Mr. Ron Schuldt, UDEF-IT, LLC)**
Session Focus: Virtual Collabatorium, Open Enterprise Lexicon Services (OpenELS)
Location: Bond Hall, Rm 105
Speakers/Topics: **Mr. Ron Schuldt**, UDEF-IT, LLC
Mr. Brand Niemann, SemanticCommunity.net
Mr. Daniel Gillman, Bureau of Labor Statistics (BLS)
(Additional speaker pending)



Thursday 28 July 2011

- 0700-0730 Bagels and Coffee
- 0730-0745 Update from Breakout Sessions: **Breakout Session Chairs**
- 0745-0815 Plenary Presentation: **Mr. Eric Evans**, I-MEF Science Advisor, ONR
- Session Themes: *“Semantic Interoperability: High-Priority Needs and Recommended Capabilities”*
- 0815-1000 **Topical Session: (Chair: Mr. James Smith, CMU SEI)**
Session Focus: Virtual Collabatorium, Interoperability Research Topics
Location: Solomon Hall
Speakers/Topics: **Mr. James Smith**, CMU SEI
Mr. Eric Evans, I-MEF Science Advisor, ONR
(ISIS Speaker Pending)
(AADL Speaker Pending)
- 1000-1030 Morning Exhibitor Break
- 1030-1200 **Topical Session: (Chair: Mr. Robert A. Pritchard, HPC Coordinator, SSC Pacific)**
Session Focus: Virtual Collabatorium, Open Unified M&S Framework
Location: Solomon Hall
Speakers/Topics: **Dr. Jeffrey Steinman**, President and CEO, WarpIV Technologies
Dr. Michel Sanner, Scripps Research Institute
Mr. Chris Gaughan (TBD), MATREX/ARL/STTC, US Army RDECOM
Mr. Ryan Luley (TBD), U.S. Air Force Research Laboratory, Rome Labs
- 1200-1300 Lunch Break
- 1300-1430 **University ONR/ASEE Session: (Chair: Prof. Lifford McLauchlan, Texas A&M)**
Session Focus: Virtual Collabatorium, Summer Research Results
Location: Solomon Hall
Speakers/Topics: **Prof. Lifford McLauchlan**, Texas A&M
Prof. Ruby Mehrubeoglu, Texas A&M
Ms. Brittany Duncan, Texas A&M
Prof. Gerardo Rosiles, UT El Paso
- 1430-1530 Workshop Outbrief: **Mr. Jayson Durham and Prof. Lifford McLauchlan**, Workshop Co-Chairs
- 1530-1730 Hotwash for finalizing workshop report (e.g. outline, themes, and significant outcomes/results)



Workshop Motivation: There is a growing need to enable and facilitate interagency, inter-program, and joint country collaboration and communication to enhance tactical network-centric Intelligence, Surveillance, Reconnaissance, Targeting, and Information Operations (ISRT/IO) Warfighter and First-Responder operations and capabilities. Within the larger context of military and business operations, net-centric operations play an ever increasing role in improving the overall quality of products and services, while continuously improving productivity.

Day 1 – ENTERPRISE-ORIENTED MORNING PLENARY AND AFTERNOON BREAKOUTS

Morning Session (Crill Hall):

Plenary/Keynote/Panel Session: “Semantic Services for Enterprise Engineering (E2)”

Focus: A number of emerging capabilities, e.g. process/workflow management, web services, network centric operations, and grid/distributed computing are providing an unprecedented infrastructure for connecting otherwise isolated computing resources and commercial activities. Semantic services for enterprise engineering enables better communication of system and operational requirements, data utilization and information exchange between various enterprise components.

Afternoon Sessions (Three Concurrent Breakouts):

“Semantic Interoperability: High-Priority Needs and Recommended Capabilities” Part I

Focus: To meet the ever changing political, logistical, and operational environments in today’s world, capabilities have been identified for successful mission planning, operations and enterprises. These include the creation of effective virtual teaming frameworks, a “virtual collaborium;” the implementation of a comprehensive data and content strategy as well as policy management; the increased utilization of service oriented architectures facilitating reuse and harmonization; and increased portfolio management and utilization of associated maturity models.

Portfolio Management & Maturity Models (Bond Hall, Rm 103)

Furthering enhanced enterprise engineering and model based system of systems engineering, a comprehensive and responsive policy regarding associated procedures for portfolio management and maturity models needs to be maintained.

Data Strategy, Policy Management, & Composeable Services (Bond Hall, Rm 104)

Other capabilities that have been identified in support of open enterprise lexicon services (ELS) and enterprise engineering are the increased utilization of service oriented architectures facilitating reuse and harmonization as well as an accepted and trusted data and content strategy.

Enterprise Data/Content Management and Harmonization (Bond Hall, Rm 105)

The increased utilization of service oriented architectures facilitates reuse and harmonization. This in turn supports higher levels of technology and integration readiness levels for enterprise engineering applications.

Day 2 – ENGINEERING-ORIENTED MORNING PLENARY AND AFTERNOON BREAKOUTS

Morning Session (Crill Hall):

Plenary/Keynote/Panel Session: “*Semantically Interoperable Cloud-Based E2 Implementations*”

Focus: Information sharing and interoperability capabilities are especially critical as MBSE/SOSE methodologies and frameworks continue to incorporate complementary paradigms and technologies, such as Cloud Computing. The increased utilization of service oriented architectures encourages and enables service reuse, data harmonization, and more rapid implementation which in turn supports improved requirements engineering as well as business process and data management.

Afternoon Sessions (Three Concurrent Breakouts):

“*Semantic Interoperability: High-Priority Needs and Recommended Capabilities*” Part II

Focus: Example recommended capabilities include virtual environments and sensor packages in support of mission rehearsal and replay as well as data clearinghouse and open enterprise lexicon services for improved semantic alignment.

X3D-Earth Virtual Environments

X3D Earth and AUV workbench represent an example of open source virtual environment resources that can be utilized in support of mission rehearsals and planning.

Open Enterprise Lexicon Services (OpenELS)

An open ELS further facilitates increased information sharing and interoperability capabilities which are especially critical as MBSE/SOSE methodologies and frameworks continue to incorporate complementary paradigms and technologies.

Data Clearing House

To ensure common and accepted lexicons and associated models, capable, responsible and receptive data clearing procedures must be maintained to support proper data governance and provenance which will enable more aligned federal enterprise architectures.

Day 3 – RESEARCH-ORIENTED MORNING PLENARY

Morning Session:

“*Semantic Interoperability: High-Priority Needs and Recommended Capabilities*” Part III

Focus: To meet the ever changing political, logistical, and operational environments in today’s world, capabilities have been identified for successful mission planning, operations and enterprises. These include the creation of effective virtual teaming frameworks, a “virtual collaborium;” the implementation of a comprehensive data and content strategy as well as policy management; the increased utilization of service oriented architectures facilitating reuse and harmonization; and increased portfolio management and utilization of associated maturity models. Example applications include virtual environments and sensor packages, enterprise lexicon services and semantic alignment, X3D-Earth, and mission rehearsal and replay.

Interoperability Research Topics

With today’s operational environment requirements for rapid and enhanced communication among various federal/business enterprise constituents, there still exist a semantic gap which must be bridged to facilitate increased cooperation and joint mission operations. This session focuses on current and future related interoperability research addressing this important capability.

Summer Research Results

This session demonstrates ongoing research into interoperability and semantic alignment. Examples include the development of sensor models for open source virtual environments, developing taxonomies from related topics using a universally available open resource, and mission rehearsal and replay in virtual environments.



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Registration Form

Please Register NLT July 10th

Name: _____ Title: _____

Email address: _____

Affiliation:

- Government
 - Organization _____
- Industry
 - Company Name: _____

Technical Area of Interest: Please check all that apply.

Day 1 – ENTERPRISE-ORIENTED MORNING PLENARY AND AFTERNOON BREAKOUTS

- Morning Plenary/Keynote/Panel Session: “*Semantic Services for Enterprise Engineering (E2)*”
- Afternoon Breakouts: “*Semantic Interoperability: High-Priority Needs and Capabilities*” Part I
- *Portfolio Management & Maturity Models (Bond Hall, Rm 103)*
- *Data Strategy, Policy Management, & Composeable Services (Bond Hall, Rm 104)*
- *Enterprise Data/Content Management and Harmonization (Bond Hall, Rm 105)*

Day 2 – ENGINEERING-ORIENTED MORNING PLENARY AND AFTERNOON BREAKOUTS

- Morning Plenary/Keynote/Panel Session: “*Semantically Interoperable Cloud-Based E2 Implementations*”
- Afternoon Breakouts: “*Semantic Interoperability: High-Priority Needs and Capabilities*” Part II
- *X3D-Earth Virtual Environments*
- *Open Enterprise Lexicon Services (OpenELS)*
- *Data Clearing House*

Day 3 – RESEARCH-ORIENTED MORNING AND AFTERNOON PLENARY

- Interoperability Research Topics*
- Open Unified M&S Framework*
- Summer Research Results*

You will attend: Please check one

- Virtually (Internet with Audio Dial-in Connectivity)
- East Coast - Washington DC (CMU-SEI Facilities)
- West Coast - San Diego (PLNU Campus)

Lunch Order for \$7.95 per day for the PLNU Food Court – Please check all that apply

- Day 1
- Day 2
- Day 3

For your convenience we have included the following link: *Things to do and places to stay:*
www.Signonsandiego.com

Please register online at the SDIEEE website (<http://www.sdieee.org>)

We look forward to seeing you there!!