Federal SOA

Introduction

Mission Statement: The Federal SOA CoP is an open community of practice fostered to assist government and commercial organizations in achieving the promise of Service Oriented Architecture (SOA) through collaboration, demonstration and community efforts. The Federal SOA CoP is open to all. Participation is encouraged by users, who want to better understand how SOA may benefit their organization, by academia who may want to discuss research directions, and by standards organizations and vendors who would like to better understand user needs and help users better understand how the SOA approach can benefit their organization.

Demonstrations: The Federal SOA CoP works to show the business value and technical feasibility of SOA that encompasses the full life-cycle of a multi-party SOA solution using multiple participants and multiple technologies collaborating via SOA standards in an architected community. The goals of demonstrations are:

- To provide a concrete example of how the SOA approach provides business value to a community
- To provide confidence that the approach and technologies are real – secure, reliable, performing and practical.
- To validate that independently developed applications can interoperate using SOA standards.

Activities:

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<tr>
<th>Date</th>
<th>Conference</th>
<th>Demo Phase</th>
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<tr>
<td>September 10-11, 2013</td>
<td>Fifteenth</td>
<td>Semantic Medline</td>
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<tr>
<td>October 2, 2012</td>
<td>Forteenth</td>
<td>14 Federation of SOA and Semantic Medline</td>
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<td>April 12, 2011</td>
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<td>September 16, 2010</td>
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<td>NA</td>
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<td>May 6, 2010</td>
<td>Ninth</td>
<td>NA</td>
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<td>October 5, 2009</td>
<td>Eight</td>
<td>NA</td>
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<td>April 28, 2009</td>
<td>Seventh</td>
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<td>September 29-30, 2008</td>
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<td>April 30-May 1, 2008</td>
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<td>October 1-2, 2007</td>
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<td>May 1-2, 2007</td>
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<td>October 30-31, 2006</td>
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<td>May 23-24, 2006</td>
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<tr>
<td>January 26, 2006</td>
<td>Announcement and Launch</td>
<td>NA</td>
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**Results:**

- Special Recognitions
- Main Session Tracks, Breakout Session Topics, and Tutorials (see Activities above)
- Service Oriented Architecture Community of Practice (SOA CoP) Knowledgebase
- Fact Sheet and SOA CoP/IONA Jump Start Kit (Download and Documentation 1 (File Damaged), 2, and 3)
- Predictive Metrics

**Contacts:**

- MITRE Co-Organizers, Rose Tyksinski (rtyksinski@mitre.org) and Gabe Galvan (ggalvan@mitre.org)
- Current Co-Chairs, David Mayo, Everware-CBDI (dmayo@everware-cbdi.com), and AJ Budhraja, (ajbudregister@yahoo.com)
- Former Co-chairs, Greg Lomow, BearingPoint (greg.lomow@bearingpoint.com), and Brand Niemann, (bniemann@cox.net)
- Secretary, Steve Else, Private Consultant (stevenelse@aol.com)

**General Announcements:**

February 8, 2011: Registration Opens for 11th SOA for E-Government Conference at MITRE, McLean, VA.

March 30, 2010, Lessons Learned from the 1st Decade of BPM (File Damaged).
October 24, 2009, The 2nd International SOA Symposium concluded with an important historical achievement: the announcement of the SOA Manifesto. The conference hosted a series of meetings for the "SOA Manifesto Working Group". This group, comprised of SOA industry thought leaders from around the world, came together and produced an official manifesto for service-oriented architecture and service-orientation.

Visit [http://www.soa-manifesto.org](http://www.soa-manifesto.org) to view the manifesto declaration and its guiding principles. We’d like to encourage you to sign up as a signatory in order to voice your support for the the SOA Manifesto (the "Become a Signatory" form can be accessed from the homepage).

The official announcement was video recorded and posted on YouTube: [http://www.youtube.com/watch?v=TCg16oTZSV0](http://www.youtube.com/watch?v=TCg16oTZSV0)

July 20, 2009

Members of OASIS, OMG, and The Open Group announce the publication of a new white paper, "Navigating the SOA Open Standards Landscape Around Architecture." The paper was produced to help the SOA community at large navigate the myriad of overlapping technical products produced by these organizations with specific emphasis on the ‘A’ in SOA; i.e., Architecture.

This joint white paper explains and positions standards for SOA reference models, ontologies, reference architectures, maturity models, modeling languages, and governance. It outlines where the works are similar, highlights the strengths of each body of work, and touches on how the work can be used together in complementary ways. It is also meant as a guide to users of these specifications for selecting the technical products most appropriate for their needs, consistent with where they are today and where they plan to head on their SOA journeys.

"We recognize the value of cooperative, inter-organizational SOA standards development," said Duane Nickull of Adobe, chair of the OASIS SOA Reference Model Technical Committee. "The SOA paradigm is huge, and there is much work to be done. Coordination between groups ensures that related SOA standards will work together without unnecessary overlap, contradiction or redundancy."

"This paper is an excellent start to reducing the confusion about SOA standards that there has been in the market place, by explaining the relative positions of the architecture-related SOA standards of OASIS, the OMG and The Open Group," said Dr. Chris Harding, Forum Director for SOA and Semantic Interoperability, The Open Group. It is the result of excellent and effective co-operation between the three bodies, which we hope and expect will continue."

"SOA is strategic for enabling the agile creation and integration of business applications at IBM." said Jim Amsden of IBM, co-chair of the OMG Analysis and Design Task Force and co-chair of the OMG SoaML Finalization Task Force and one of the authors of the OMG SoaML standard. "Standards provide the foundation for interoperability and integration needed to achieve success with SOA. The positioning of these standards helps minimize fragmentation and confusion in the SOA market. This paper also provides a context in which to collaboratively evolve the standards leading to better supporting products and best practices. We encourage the continuing collaboration between OMG, the Open Group and OASIS to help achieve the SOA value proposition."

The white paper, "Navigating the SOA Open Standards Landscape Around Architecture," is published on the web sites of all three organizations:


March 25-26, 2009, SOA Consortium Meeting, Arlington, VA.


May 12, 2009, Second Annual Service Oriented Architecture (SOA) Case Study Competition. The competition is open to organizations of all sizes, including government agencies, that have successfully delivered business or mission value using an SOA approach. The deadline is June 26, 2009.

May 26, 2009, SOA Consortium Podcast: Cory Casanave, CEO, Model Driven Solutions on Enterprise SOA with the new OMG SoaML UML Profile.


Special Recognitions

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http://semanticommunity.info/Federal_SOA
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4
| Outstanding Service | Sophia Brock, MITRE  
Roy Mabry, Co-Chair  
AIC Governance Subcommittee  
IAC SOA Committee | Chris Gunderson, World-Wide Consortium for the Grid (W2COG)  
and the GIGLite Community  
Eric Newcomer, Robert Kilker, & Michelle Davis, IONA |  |
| Outstanding Leadership | Ron Schmelzer, ZapThink  
Cory Casanave, Data Access Technologies, Inc. | Judith Hurwitz, Hurwitz & Associates, and  
David Linthicum, ZapThink |  |
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<tr>
<th>Best Agency SOA Application</th>
<th>Bob Brown, US Patent &amp; Trademark Office</th>
<th>Avi Bender and Tom Lucas, Internal Revenue Service</th>
<th>Thomas Charuhas, PhaseOne Consulting Group, <a href="http://semanticommunity.info/Federal_SOA">SOA at the National Park Service</a></th>
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<td>Best Organization SOA Application</td>
<td>Alan Harbitter, Nortel Government Solutions and David Webber, AC Technologies</td>
<td>Dr. Jon Siegel, OMG, Dr. Burc Oral, CellExchange, Inc., &amp; Peter Bostrom, BEA Systems, SOA</td>
<td>Frank Stein, Manager, IBM Federal SOA Institute</td>
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Note: The table lists the names of individuals associated with various agency and organization applications, including SOA. The table rows are labeled as 'Best Agency SOA Application' and 'Best Organization SOA Application', with the corresponding details provided.
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<td>Bob Lozano, Appistry, Application Fabrics: A Google-like Approach to Service-Oriented Applications and Enterprise 2.0</td>
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<td>Richard Nicholson, Paremus, Transforming the Way the World Runs Applications</td>
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<td>Best Exhibit</td>
<td>Forum Systems - Web Services &amp; SOA Security</td>
<td>SOA CoP Demo Team</td>
<td>Scott Campbell and Erick Peters, InterSystems COLAB</td>
<td>Chris Ball, CGI Federal and Team, Information Supply Chains COLAB</td>
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<td>Outstanding Contributions to the SICO and the SOA CoP</td>
<td>Parasoft's SOATest - Testing Service-Oriented Architectures</td>
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<td>Arun Majumdar, Cutter Consortium/VivoMind Intelligence</td>
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Predictive Metrics


This Wiki Page contains metrics that are intended as a guide for Chief Architects or Program Managers tasked with building / composing SOA-based systems. They are being developed as part of a NIST effort to identify measures (characteristics of the application and technology) or other indicators early enough in the life cycle to influence success in later stages (Predictive Metrics).

The site contains:

- An **Introduction**: explaining the rationale behind the metrics and some instructions. It also describes “what’s new”.
- A **Data Entry Sheet**: Accepting measures from business and IT managers about characteristics of the technology and it’s application, and computing “Red”, “Yellow”, or “Green” indicators/metrics indicating the likelihood that a particular characteristic may cause problems as development and deployment proceed.
- An **Appendix**: Providing information about how the color codes were determined and making some suggestions about how the metrics might be tailored for different programs.

Glossary


**Agile Methods:**

Lightweight software development methodologies that emphasize close collaboration between the programmer team and business experts; face-to-face communication (as more efficient than written documentation); frequent delivery of new deployable business value; tight, self-organizing teams; and ways to craft the code and the team such that the inevitable requirements churn is not a crisis.

See the Agile Alliance [Website](http://semanticommunity.info/Federal_SOA)

**Component-Based Development:**
An approach to the design and implementation of software applications where systems are assembled using components from one or more sources. The components may be written in different programming languages and run on different platforms. Components exist at different levels of granularity - from a re-usable calendar gadget to fully featured CRM (Customer Relationship Management)) module. What is common is their ability to be composable. A software component is any self-contained, independently viable, and deployable grouping of services whose services can be involved by many different types of clients.

See Componenttechnology.Org Website

Model Driven Architecture (MDA):

An approach to system specification, portability, and interoperability based on the use of formal and semi-formal models. The MDA derives all executable code from models of the system using UML and other associated OMG (Object Management Group) standards.

See the OMG MDA Website

Ontology:

A model of how to specify a subject area of interest in which concepts, their attributes, and relationships (associations between concepts) are explicitly named and distinguished. Constraints stipulate distinctions that differentiate concepts, governing how they participate in relationships, and how implicit knowledge is made explicit through qualifiers that allow inferencing over relationships properties. A standard language for representing an ontology on the web is the W3C standard OWL.

See W3C Semantic Web Website

Semantic Model:

Another way of referring to Ontology, usually used in the context of IT solutions that employ an ontology an execution time.

A semantic model in which relationships (associations between items) are explicitly named and differentiated is call ontology. Because relatiobships are specified, there is no longer a need for strict structure that encompasses or defines the relationships. The model essentially becomes a network of connections with each connection having an association independent from any other connection.

Semantic Web:

An evolution of the Web to a web in which meaning can be exchanged and mediated to provide machine-to-machine and more effective human-to-machine interaction. Described as "a common framework that allows data to be shared and reused across application, enterprise, and community boundaries. It is a collaborative effort lead by W3C with participation from a large number of researchers and industrial partners. It is based on the Resources Description Framework (RDF), which integrates a variety of applications using XML for syntax and URIs for naming.

See W3C Semantic Web Website
Semantic Web Technology:

Semantic Web Technology is the technology that is enabling the Semantic Web and refers to technologies such as RDF, RDFS, and Owl.

See W3C for RDF, RDFS, and OWL

Service-Oriented Architecture (SOA): See Multiple Definitions by Organizations Below.

A Service-Oriented Architecture (SOA) defines how two computing entities interact in such a way as to enable one entity to perform a unit of work on behalf of the another entity. The unit of work is referred to as a service, and the service interactions are defined using a description language. Each interaction is self-contained and loosely coupled, so that each interaction is independent of any other interaction.

Taxonomy:

A tree-like hierarchical structure of information. Taxonomies are often used by Internet portals (such as Yahoo!), online catalogs, and Web stores to categorize information and to offer consistent navigation. Taxonomical hierarchies provide an ordered connection between each item in the structure and the item or items below it.

Unified Modeling Language (UML):

Developed by the Object Management Group, UML is a visual language for specifying and documenting models of software systems, including their structure and design. UML is supported by many development tools.

See the OMG UML Website

Web Service:

A software application whose interfaces and binding are capable of being defined, described, and discovered through industry-standard XML protocols, such as SOAP, WSDL, and UDDI.

SOA Defined by OMG, Oasis, Open Group, W3C, and Wikipedia:

OMG: Service Oriented Architecture is an architectural style for a community of providers and consumers of services to achieve mutual value, that:

- Allows participants in the communities to work together with minimal co-dependence or technology dependence
- Specifies the contracts to which organizations, people and technologies must adhere in order to participate in the community
- Provides for business value and business processes to be realized by the community
- Allows for a variety of technologies to be used to facilitate interactions within the community

Oasis: Service Oriented Architecture (SOA) is a paradigm for organizing and utilizing distributed capabilities that may be under the control of different ownership domains.

- In general, entities (people and organizations) create capabilities to solve or support a solution for the problems they face in the course of their business. It is natural to think of one person’s needs being met by capabilities
offered by someone else; or, in the world of distributed computing, one computer agent’s requirements being met by
a computer agent belonging to a different owner. There is not necessarily a one-to-one correlation between needs
and capabilities; the granularity of needs and capabilities vary from fundamental to complex, and any given need
may require the combining of numerous capabilities while any single capability may address more than one need.
The perceived value of SOA is that it provides a powerful framework for matching needs and capabilities and for
combining capabilities to address those needs.

Open Group: An architectural style that supports service orientation Service orientation.

- A way of a way of thinking in terms of services and service based development and the outcomes that services
  bring Service
- A logical representation of a repeatable business activity that has a specified outcome (e.g., check customer credit;
  provide weather data, consolidate drilling reports), is self-contained and maybe composed of other Services. It is a
  black box to consumers of the
Service Architectural Style
- The combination of distinctive features in which Enterprise Architecture is done, or expressed The SOA
  Architectural style’s distinctive features: Based on the design of the services comprising an enterprise’s (or inter-
  enterprise) business processes. Services mirror real-world business activity
- Service representation utilizes business descriptions. Service representation requires providing its context
  (including business process, goal, rule, policy, service interface and service component) and service orchestration
  to implement service Has unique requirements on infrastructure. Implementations are recommended to use open
  standards, realize interoperability and location transparency. Implementations are environment specific, they are
  constrained or enabled by context and must be described within their context. Requires strong governance of
  service representation and implementation Requires a "Litmus Test", which determined a "good services"

W3C: A Service Oriented Architecture (SOA) is a form of distributed systems architecture that is typically characterized
by the following properties:

- Logical view: The service is an abstracted, logical view of actual programs, databases, business processes, etc.,
defined in terms of what it does, typically carrying out a business-level operation.

- Message orientation: The service is formally defined in terms of the messages exchanged between provider
  agents and requester agents, and not the properties of the agents themselves. The internal structure of an agent,
  including features such as its implementation language, process structure and even database structure, are
  deliberately abstracted away in the SOA: using the SOA discipline one does not and should not need to know how
  an agent implementing a service is constructed. A key benefit of this concerns so-called legacy systems. By
  avoiding any knowledge of the internal structure of an agent, one can incorporate any software component or
  application that can be "wrapped" in message handling code that allows it to adhere to the formal service definition.

- Description orientation: A service is described by machine-processable meta data. The description supports the
  public nature of the SOA: only those details that are exposed to the public and important for the use of the service
  should be included in the description. The semantics of a service should be documented, either directly or indirectly,
  by its description.

- Granularity: Services tend to use a small number of operations with relatively large and complex messages.
  Network orientation: Services tend to be oriented toward use over a network, though this is not an absolute
  requirement.

- Platform neutral: Messages are sent in a platform-neutral, standardized format delivered through the interfaces.
  XML is the most obvious format that meets this constraint.

Wikipedia: