

OMG Perspective on SOA in Telecom

Hanane Becha,
OMG Telecom PSIG co-chair
Standards Advisor, Nortel

“Adopting SOA for Telecom Workshop”,
Open Standards Forum 2008 (30 September)
Thursday, September 11, 2008

Agenda

- **OMG/Telecom SOA Perspective**
- **OMG/Telecom SOA Roadmap**
 - Current Work Items
 - Future Work Items
- **Potential OASIS work items**

OMG/SOA Perspective

While other organizations have focused on specific standards for web services protocols (e.g., WS-* standards), **OMG complements their efforts by taking a Platform Independent View and applying a Modeling Approach to SOA**

Source and caretaker of:

- Model Driven Architecture (MDA)
- Meta Object Facility (MOF)
- Unified Modeling Language (UML)
- XML Metadata Interchange (XMI)
- Common Warehouse Metamodel (CWM)
- CORBA
- Data Distribution Service (DDS)

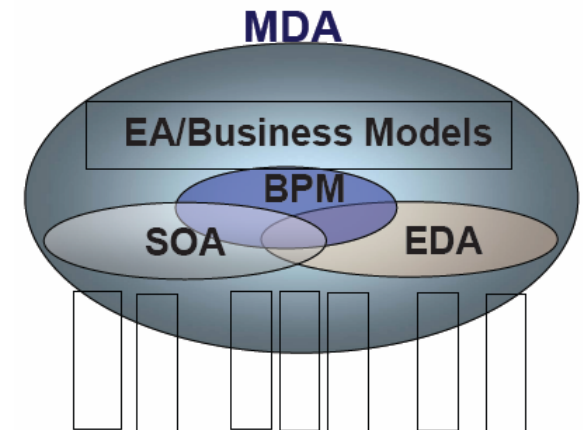


Figure: MDA Implementation Stack

For more info <http://www.omg.org/>

Importance of Modeling

- Model is an executable artifact understood by human and machine that lives throughout the application's lifecycle.
- Modeling offers the capability to design a complete SOA solution without being tied to any specific technology
- Intellectual property documented through models can have a longer lifespan, allowing an organization a choice of the best technical platform for SOA implementation

OMG/SOA Standards - Business Process Focus

- **Business Motivation Model (BMM)**
 - Mission, goals and objectives for an organization linked to external factors
 - **Semantics for Business Vocabulary and Rules (SBVR)**
 - Combines natural language expression with precise logical underpinning
 - **Business Process Modeling Notation (BPMN)**
 - Existing standard from BPMI.org (merged into OMG)
 - **Business Process Definition Metamodel (BPDM)**
 - Notation and platform independent process modeling and interchange
 - **Production Rules Representation (PRR)***
 - Platform independent model for executable rules
 - **Business Process Runtime Interface (BPRI)***
 - Platform independent interfaces to running processes
 - **Organization Structure Metamodel (OSM)***
 - Organizations, relationships, positions and roles
- *in development

OMG/SOA standards: Telecom Related

1. UML Metamodel and Profile for Service (UPMS) Request For Proposal
2. Advanced and Integrated Telecommunication Services Request For Proposal
3. Modeling Approaches for Exposing and Composing Non-Functional Properties in SOA Request For Information
4. Business Process Modeling Notation (BPMN) Request For Proposal
5. Event Driven Architecture (EDA) and its relationship with SOA, BPM Request For Proposal

UML Metamodel and Profile for Service RFP (UPMS) (1/5)

- Submission in progress, Q3-4 08 final submission
- Clarify UML semantics concerned with services modeling; support a service contract describing the collaboration between service participants; provide abstract and platform independent services models, decoupling service design from evolving implementation, deployment and runtime technologies and the ability to exchange services models between tools using XMI.

<http://www.omg.org/cgi-bin/doc?soa/06-09-09>

Advanced and Integrated Telecom Services RFP (2/5)

- RFP has been issued in June 2008; responses pending.
- Customization of the UPMS spec. to allow quick design of telecom services that will be build as a composition of existing IT and Telecom components, that will run over existing telecom infrastructures using domain specific protocols (like SIP), that will be capable to exploit multi-modality (voice, data, video) and adapt to the limited rendering capabilities of phone terminals.

http://www.omg.org/techprocess/meetings/schedule/UML_Profile_for_Advanced_and_Integrated_Telecommunication_Services_RFP.html

Exposing and Composing Non-Functional Properties. in SOA (3/5)

- RFI initiated in September 2008
- In general, non-functional properties are either not handled or are handled in proprietary ways. Applying SOA for telecom services requires the identification, specification, implementation, management composition and verification of the non-functional properties. The development of a standard methods to expose and compose the non-functional properties of SOA

Business Process Modeling Notation (BPMN 2.0) RFP (4/5)

- Reviewing Submissions. The BPMN 2.0 RFP and submissions can be found here:
http://www.omg.org/techprocess/meetings/schedule/BPMN_2.0_RFP.html
- BPMN provides a Business Process Diagram which is designed for use by the people; Formal mapping to an execution language (i.e. BPEL); Standard visualization mechanism for business processes defined in an execution optimized business process language; and the ability to exchange business process models and their diagram layouts among process modeling tools preserving semantic integrity.

Event Driven Architecture (EDA) and its relationship with SOA, BPM RFP (5/5)

Addresses Event vocabulary, relationship between EDA, BPM and SOA

- Event Metamodel and UML Profile
- Event metadata exchange using standard formats like XMI
- Event Traceability and causality in relation to Services

OMG/SOA Roadmap

Future work items

- Mission Critical Systems Modeling approach to SOA
- Service Ontology
- SOA Life Cycle Metrics and Maturity
- Service Traceability to Business Processes
- Service Relationship to Events
- DDS as a SOA Event Service
- Etc.

Potential OASIS work items

- Extend WS protocols to allow the expression of the non-functional properties (NFP) of services and support their discovery based on their NFP, enable testing of composite services, address OMG resulting work to encompass aspects of EDA, BPM and SOA, support SOA “push model”, etc.
- Develop lightweight Process-oriented runtime languages (e.g. BPEL) for composing modern time sensitive, context-aware Telecom services
- Harmonize complementary OMG and OASIS standards such as BPEL with OMG business process specifications including BPMN
- Etc.

FYI

- OMG Telecom SIG (<http://telecom.omg.org/>) meets every Wednesday at the quarterly OMG technical meetings
- Mailing list: telecom@omg.org (to join, please send email to: request@omg.org)
- The main OMG work in progress page is located at <http://www.omg.org/schedule/>
- SOA Consortium: <http://www.soa-consortium.org/index.htm>
 - The SOA Consortium is a ‘SOA advocacy group’ comprised of end users, service providers, and technology vendors, committed to helping the Global 1000 successfully adopt SOA by 2010
 - SOA Consortium is NOT a standards organization

Questions?

SOA Related Technology Modeling Standards

- **UML**
 - Architecture and design of services/internals
 - General purpose modeling language (via UML Profiles)
- **Reusable Asset Specification (RAS)**
 - Packaging of reusable assets for retrieval, usage and deployment
- **CWM and forthcoming Information Management Metamodel (IMM)**
 - Service Payloads (information content) and mapping to enterprise data sources
- **Ontology Definition Metamodel (ODM)**
 - Modeling Ontology of 'Services' and Events'
 - Facilitate development of Semantic Web Services
- **Knowledge Discovery Metamodel (KDM)**
 - Models of the enterprise systems to which services typically map
- **Software Process Engineering Metamodel (SPEM)**
 - Modeling the SOA development process (Service Life cycle)