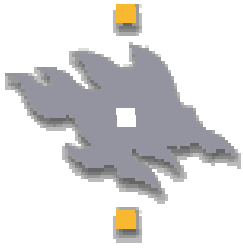


Lecture #12: 11th March 2004

Web Services Standardization

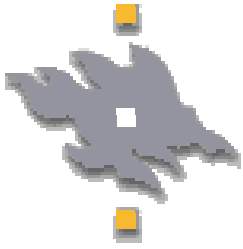
Suresh Chande



Web Service Standardization Efforts

- **W3C:** Core Web Services Technologies
- **OASIS:** Advanced and business Critical Web Services
- **OMA:** Open and Inter-operable Mobile Web Services
- **Liberty:** Single Signon and Web Services federated Identity framework
- **WS-I:** Web Services Inter-operability

- Many Industry coalitions between major IT players
 - IBM, Microsoft, HP, BEA, Oracle, Sun,



W3C Web Services Standardization

Web services activities in W3C are carried out into 3 working groups and 1 interest group:

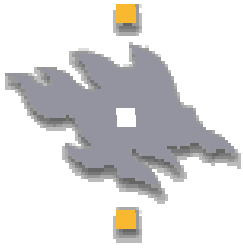
- XML Protocol Working Group.
- Web Services Description Working Group.
- Web Services Choreography Working Group.

- Semantic Web Services Interest Group



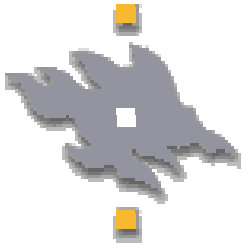
XML Protocol Working group

- Move or renew the principal usage of the Web from human centric to application centric
- The four main topics are :
 - An envelope for XML encapsulation
 - Data serialization based on the datatypes of XML Schema.
 - An optional transportation mechanism over HTTP
 - This working group has delivered the next version of SOAP and at the same time has ceased its operation
 - [SOAP Version 1.2 Part 0: Primer](#) (Recommendation)
 - [SOAP Version 1.2 Part 1: Messaging Framework](#) (Recommendation)
 - [SOAP Version 1.2 Part 2: Adjuncts](#) (Recommendation)
 - [SOAP Version 1.2 Specification Assertions and Test Collection](#) (Recommendation)



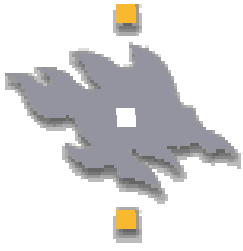
Web Services Description Working Group

- The main aim of this working group is to specify the following:
 - The message along with the definition of the internal structure and data types that are being communicated
 - The different message exchange patterns.
 - The protocol binding to different and give us a free services
- The WSDL is in the Working drafts 2.0 (1.2 older numbering), which is planned to be rushed out as a recommendation by the end of 2004



Web Services Choreography Working group

- Web services will require the ability to compose and describe the relationships between lower-level services
- This working group had begun to ensure that this space of choreography was headed or was leading into a number of non-interoperable sub-networks with several proposals floating around (WSCI, WSCL, BPML, BPSS, WSFL, XLANG, BPEL4WS+WS-Coordination+Transaction)
- This has not been totally successful as similar efforts are being carried out under the OASIS
- This working group will look into the defining the :
 - Composition features
 - Associations between the different services
 - Message Exchange patterns
 - State Management



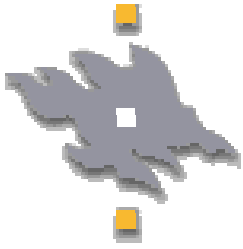
Semantic Web Services Interest group

- Application of Semantics in the discovery, composition, relocatability and other aspects of Web services needs.
- Guidance and advice to the Web services Working Groups on charter requirements for mapping to Semantic Web technologies.
- Ensure that research issues for next-generation Web services, e.g. relationship with autonomous agent technology, distributed query protocols, etc.
- Share experiences with creation and deployment of Web services created using SOAP, WSDL, REST, RDF and



Other relevant Technologies from W3C

- XML(1.0/1.1), XML Schema, XLink, XPath, XForms, XSLT,



OASIS

- OASIS tries to complement the work of standard bodies
- OASIS is participating Web Service standardizations, specifically in the areas of :
 - OASIS Asynchronous Service Access Protocol (ASAP) Technical Committee
 - Web Services Business Process Execution Language TC
 - Web Services Composite Application Framework TC
 - Web Services Notification (WSN) TC
 - Web Services Security
 - Framework for Webservices implementation TC
 - Web Services for Remote Portlets TC
 - Web Services Security TC
 - Web Services Business Process Execution Language TC
 - Web Services Reliable Messaging TC
 - UDDI Specification

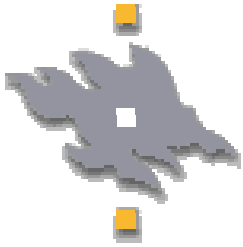
Others being:

- Web Services Distributed Management TC
- Web Services Interactive Applications TC
- Web Services Remote Portal TC



Open Mobile Alliance (OMA)

- **Mission:** Facilitate global user adoption of mobile data services by specifying market driven mobile service enablers that ensure service interoperability across devices, geographies, service providers, operators, and networks, while allowing businesses to compete through innovation and differentiation.
- **Intention:** Develop a specification that defines the application of web services within the OMA architecture. Generation of a recommendation and/or specification and a set of best practices that describe how to apply web services with the OMA Architecture.
- Drives Open standards for inter-operable Mobile Services
- Mobile web services working group within OMA will create guidelines on how the interfaces should be specified
- The Mobile Web Services group is addressing :
 - A specification Suite that will aid developer to apply Web Services :
 - Web Services Discovery
 - Access &
 - Leverage Service enablers with OMA Framework
- OMA mobile Web Services framework standardisation
 - How to use Web Service technologies and specifications in the mobile domain
 - Use existing specifications and work as much as possible (don't re-invent the wheel)
 - Actual specification done in other forums (e.g. WS-I and W3C)

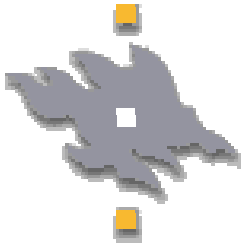


Liberty Alliance Project

- Specifies an Liberty Identity Web Services Framework
- Based on SOAP1.1, WSDL1.1, SAML and WS-Security
- Three distinct Liberty Identity efforts :
 - Federation Framework (ID-FF)
 - Provides core protocols, schemata and profiles. This allows implementers to create standardized, multi-vendor identity federation network.
 - Web Services Framework (ID-WSF)
 - Provides a set of protocols, schemata and profiles to provide a basic framework of identity services, such as: Identity Service discovery and invocation.
 - Service Instance Specification
 - Utilize the ID-FF and ID-WSF to provide network Identity services, such as contacts, presence detection or wallet services that depend on networked identity.

Ref: <http://www.projectliberty.org/specs/draft-lib-idwsf-overview-v1.0-07.pdf>

Department of Computer Science

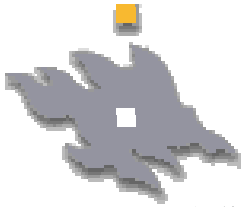


Liberty Alliance Project

- Web Services Framework (ID-WSF)
 - **SOAP Binding**
 - **Security Profiles**
 - **Discovery Services**
 - **Data service template**
 - **Interaction Service**
 - **Liberty Enabled userAgent**
 - **Metadata**
 - **Reverse HTTP**
 - **Authentication services**

Ref: <http://www.projectliberty.org/specs/draft-lib-idwsf-overview-v1.0-07.pdf>

Department of Computer Science



WS-I

- “The Web Services Interoperability Organization is an open industry effort chartered to promote Web Services interoperability across platforms, applications, and programming languages. The organization brings together a diverse community of Web services leaders to respond to customer needs by providing guidance, recommended practices, and supporting resources for developing interoperable Web services.”
- The community actively develop tools, resources, and other guidance to support Web service implementation
- Assist in creations and deployment of inter-operable Web Services
- Development of common best practices for Web Services usage in the development, deployment and integration of business applications
- Deliverables for WS-I being :
 - Interoperability Profile
 - Testing tools
 - Sample Applications
- The Basic Profile1.0 consists of SOAP1.1, WSDL1.1, UDDI2.0
- WS-I and OMA do complementary work in mobile web services IOP area



WS-I

• Tools to make web services simpler:

- Profiles
- Sample implementation
- Implementation Guide Lines ?
- Sniffer
- Analyser