Web Services Architecture

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An overview of

- David Booth, Hugo Haas, Francis McCabe, Eric Newcomer, Michael Champion, Chris Ferris, and David Orchard. Web Services Architecture[1]. W3C Working Group Note 11. 2004.
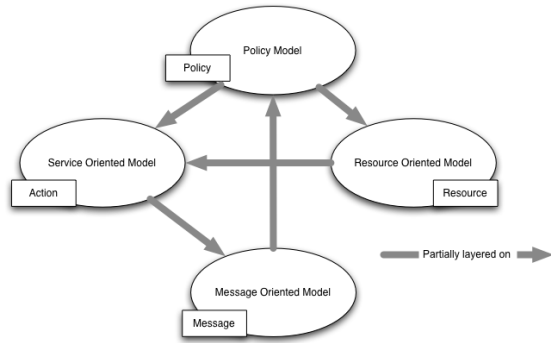
1 Web Services Architecture

- A W3C document.

- Working towards a standard.

- Summarizes prevailing thought on Web Services

  - What are the important parts?
  - How to build them?
  - How to fit parts together.

- It provides a model (set of models) that describes how to build a web service architecture.
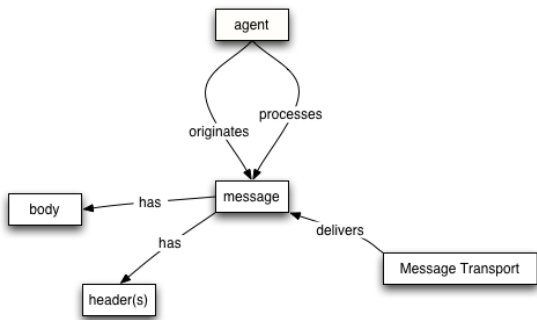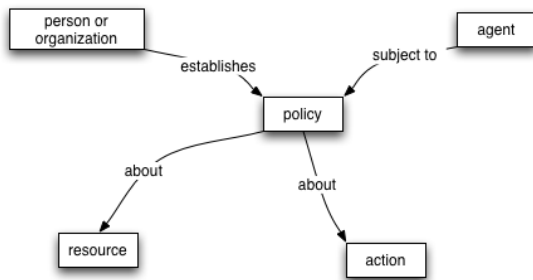
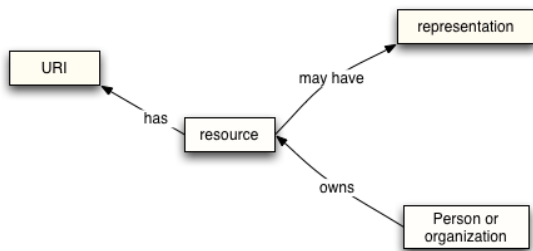## 1.1 Standard Web Service
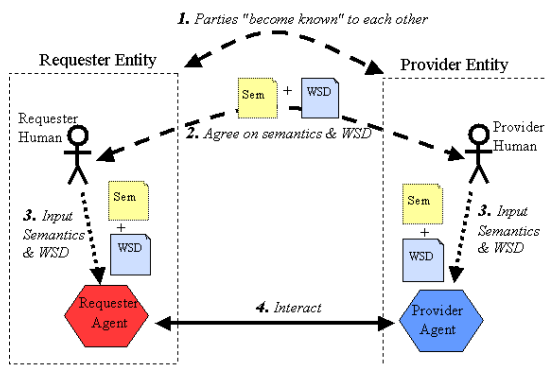
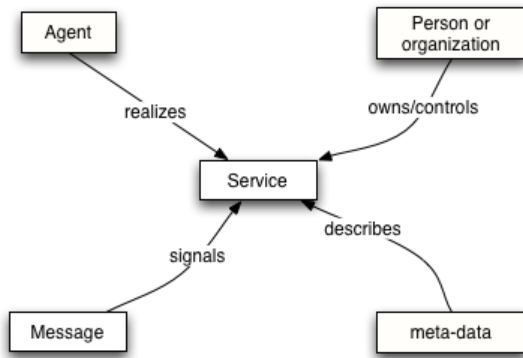# 2 MetaModel

2.1 MetaModel Details
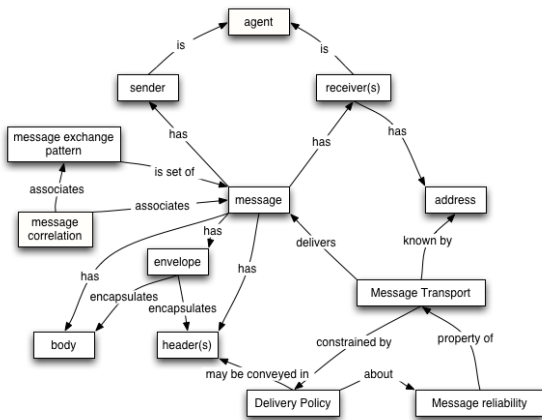

- Message model.

- Policy model.

- Resource model.

- Service model.

3   Message Oriented Model

- **Message Exchange Pattern** is a template that describes a generic patter for the exchange of message, akin to a FIPA IP.

- **Message Correlation** associates a message with a context.

- **Message Header** contains information that might have seperate semantics from the message body.

- **Message Reliability** is likelihood that both sender and receiver will have the same understanding of the delivery status.

4 Service Oriented Model
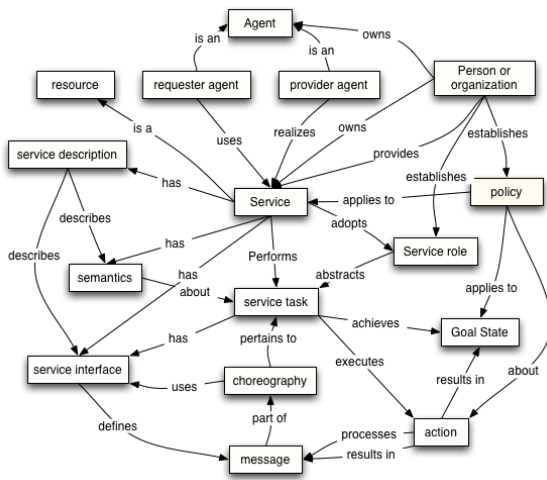
- **Choreography** defines the sequence and conditions under which multiple cooperating independent agents exchange messages in order to perform a task to achieve a goal state.

- **Service** represents a capability of performing tasks that represents a coherent functionality.

- A **service role** is an intermediate abstraction between service and task. A given message that is received by a service may involve processing associated with several service roles.

- A **service task** is an abstraction that encapsulates some intended effect of invoking a service.

5 Resource Oriented Model
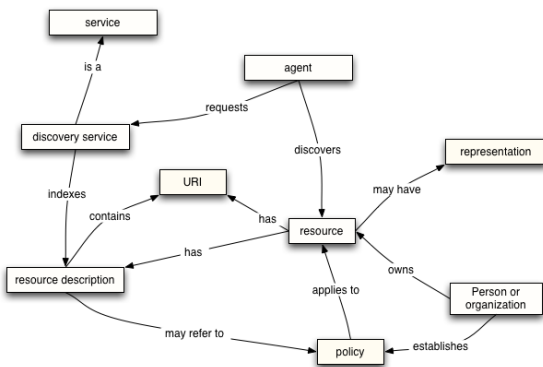
- **Discovery** is the act of locating a machine-processable description of a Web service-related resource

- A **discovery service** is used to publish and search for descriptions meeting certain functional or semantic criteria.

- **Representations** are data objects that reflect the state of a resource.

- A **resource description** is a machine-processable description of a resource. Resource descriptions are used by and within discovery services to permit agents to discover the resource.

4

6   Policy Model
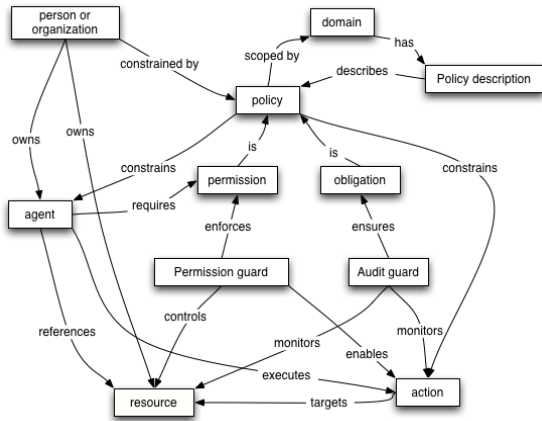
- An **audit guard** is a mechanism used on behalf of an owner that monitors actions and agents to verify the satisfaction of obligations.

- A **domain** defines the scope of applicability of policies.

- A **policy** is a constraint on the behavior of agents as they perform actions or access resources. There are two kinds:

  - When an agent has an **obligation** to perform some action, then it is required to do so.
  - When an agent has **permission** to perform some action then it is expected that any attempt to perform the action will be successful.

Notes

[1]http://www.w3.org/TR/ws-arch/

This talk is available at `http://jmvidal.cse.sc.edu/talks/webservicesarch`