

OWL-S
and
OWL-S Process Models

CS690 – Week 5 Slides

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OWL-S Summary

- An ontology built on top of Web Ontology Language by DARPA DAML, replacing DAML-S
- It is meant to describe Semantic Web Services
- Enables software agents to automatically discover, invoke, compose, and monitor web resources offering web services
- Source: <http://www.w3.org/Submission/OWL-S/>

OWL-S Parts

- OWL-S has three parts:
 - Service Profile: Describes what the service does, primarily for humans
 - Process Model: Describes how a client can interact with the service
 - Service Grounding: Describes details that client needs to interact with the service, like protocols, message formats, etc.
- Source: <http://www.w3.org/Submission/OWL-S/>

OWL-S Process Model Summary

- It is organized as a workflow of processes
- It has the following components:
 - Inputs
 - Outputs
 - Pre-conditions
 - Results

OWL-S Process Model Summary

- Processes in the workflow are related to each other by the following:
 - Data flow
 - Control flow
- Control flow allows specification of the temporal relation between processes. OWL-S allows for sequences, concurrency, synchronization, conditionals, etc.
- Data flow allows specification of the relation between inputs and outputs of processes.
- Source: <http://www.ai.sri.com/SWS2004/final-versions/SWS2004-Ankolekar-Final.pdf>

OWL-S Process Model Example - Congo

- Congo is a business to consumer example that uses an OWL-S Process Model to describe it
- It is a fictional book selling service (i.e. Amazon)
- Two forms of the service: atomic process ExpressCongoBuy and composite process FullCongoBuy

OWL-S Process Model Example - Congo

- [View CongoProcess.owl ...](#)

OWL-S Process Model Example - BravoAir

- BravoAir is an airline example that uses an OWL-S Process Model to describe it
- It is a fictional airline website service (i.e. Southwest)
- One form of the service: BravoAirProcess, which is a composite process composed of GetDesiredFlightDetails, SelectAvailableFlights, and BookFlight (also composite)

OWL-S Process Model Example - BravoAir

- [View BravoAirProcess.owl ...](#)