Work Package 7

Ontological Infrastructure for Business Processes and Data

25 April 2006

- Offer a means for a semantically rich definition of business processes for the express purposes of overcoming heterogeneity problems
- Concrete goal will be to ontologize a significant subset of the current EDIFACT standard as a basis for business to business process integration
- Look at the relationship between EDIFACT and other standards
- Tool development in WP 6 – Mediator needed
  - Decision made to not create mediator to enable reading actual EDI messages
- Case study in WP 8

WP7 Deliverables

7.1– Analysis of EDIFACT and other standards (T7.1)

- M0-6; 6 staff months; NUIG lead

7.2 – Ontology of EDIFACT syntax (T7.2) & semantics (T7.3)

- M7-24; 30 staff months; NUIG lead

7.3 – Relationships among ontology modules within EDIFACT (T7.4) and with external ontologies (T7.5)

- M19-30; 6 staff months; TID lead

7.4 – Evaluation and refinement of ontologies (T7.6)

- M31-36; 6 staff months; FUB lead

Steps for ontologizing EDIFACT

- Ontologize syntax/format (Task 7.2)
- Ontologize semantics (T 7.3)
- Modularly create DAG of ontologies (T 7.3)
  - Reported by T 7.4
- Select subset of EDIFACT to implement first (T 7.1)
  - EDIFICE is the subset for the electronics & computing industry

Ontologizing EDIFACT Format

- Define ontology/vocabulary for specifying syntax
  - Ontology used for specifying X12 syntax can be adapted
- Use ontology to encode syntax
- Modularly create DAG of ontologies for syntax definition
  - Allows subsetting for different groups of message types
  - Allows specialization for individual industries
  - Allows specialization for individual companies

Ontologizing EDIFACT Semantics

- Define ontology/vocabulary for specifying semantics
  - Ontology used for specifying X12 semantics can be adapted
- Use ontology to encode semantics.
- Modularly create DAG of ontologies for semantics
  - Allows subsetting for different (groups of) message types
  - Allows specialization for individual industries
  - Allows specialization for individual companies

Ontology Size

- 192 Message Types in EDIFACT – 69 in selected subsets
  - 15 to 130+ segment slots per Message Type
- Groups of Segment Slots
- 156 Segment Types – 93 in selected subsets
  - 2 to 20 (Composite) Data Element slots per Segment Type
- 196 Composite Data Element Types – 115 in selection
  - 2 to 10 Data Element slots per Composite Data Element Type
- 648 Data Element Types – 256 in selected subsets
  - Text – Numeric – Code from Code Set
- 300+ Code Sets – 142 in selected subsets
  - 2 to 1000 Codes per Code Set – 1 to 225 in selected subsets
  - Many code sets are external – up to 424 in obtained code sets

WP 7 Task Reorganization?

- Task 7.4 “Definition of internal dependencies of EDIFACT” seems implicit in Task 7.3 “EDIFACT ontology semantics definition”
- Task 7.3 is massive (ontologizing tens of thousands of templates), while 7.4 merely reports the ontology inheritance structure developed during Task 7.3
- Tasks 7.3 and 7.4 are each given 6 calendar months to complete.
- Task 8A.5 depends on Task 7.3
  - Just depends on appropriate EDIFACT part being ontologized
- Recommend:
  - 3 staff months shifted from Task 7.4 to Task 7.3
  - Task 7.3 completion moved from M18 to M24

Initial Work Project 7 Management Team

- NUIG – doug foxvog
- CEFRIEL – Dario Cerizza
- FUB – Elena Paslaru
- TID – Noelia Pérez