Semantically Grounded Briefings

DAML PI Meeting
May 25-26, 2004 New York

Bob Balzer
Neil Goldman
Marcelo Tallis
Tool Development

COTS Markup

Word Markup

Briefing Associate

IE Markup

Semantic Infrastructure

Markup Templates

Ontology Compiler

Graphic Modulation

Deliverables (on SemWebCentral)
Ontology “Compiler”
Produces

- Static typed OO programming language library
- Providing terminology and semantics of a specific ontology
- Library implementation tailored by annotations

Mounted as a Web Service

Ontology Compiler

Ontology
Annotations

Other Libraries and code
Linker
Application

mr.teknowledge.com/ontlibgen
Technology Transition

COTS Markup

Word Markup

Briefing Associate

IE Markup

Semantic Markup

Ontology Compiler

Graphic Modulation

Models Transition Targets

Authors

HORUS/ Saturn

Developers

Semantic Web Services Developers

Service

Software Radio

Continual 1 year in future
Software Radio Code-Synthesis

Briefing Associate

Ensures Consistency

- GUI
- Well-Formedness Analyzer
- Synthesizer

Target Improvement: 10X
Measured Improvement: 100X
2nd Software Radio Transition Success
Rapid Service Development

• Common SubExpression Elimination
  – Analyzer built and debugged in 2 weeks (1 person)
  – Why We Were Able To Do It So Quickly
    => Existing Infrastructure (no changes required)
    1. Ontology for Domain
    2. Type-Safe Development Language for Domain (ontology compiler)
    3. Relational Abstraction
    4. Existing Analysis of Designs in that Domain
       a. logical connections between opblocks (producers/consumers)
       b. Execution order (=> Linear Analyzer)
    5. Comprehensive COTS GUI
  – Embedded Design Analyzer (additional 3 days (over 2 weeks))
  1 Required Infrastructure Upgrade (combine embedded models)
FY04 Plans

• Hibernate
  – Till GFY05 Spring (~ Jan 2005)

• FY05 Plans
  – Saturn Transition: author summary markup (narrow domain)
  – Briefing Associate
    • Import OWL ontology: use enriched type library from Ontology Compiler
  – Word & IE
    • Import Briefing Associate Analyzer Infrastructure
  – Ontology Compiler
    • Imported ontologies as referenced type libraries
    • Performance annotations (e.g. unneeded indexes)
  – Graphic Modulation
    • Annotations based on derived properties
    • Publish graphic annotations in OWL