A Hardware and Network Infrastructure for Open Ontology Community Support

by

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( v 1.08 )
Outline

• Who are we (CIM3)?

• Answering the same 3 questions:
  ▪ What are we doing, that is pertinent to OOR?
  ▪ What can we bring to the table?
  ▪ How would that fit with what everyone else is bringing?
Introducing CIM

- CIM Engineering, Inc. (dba. “CIM3”)  
  - San Mateo, California, USA
- CIM: Computer Integrated Manufacturing (with our origin in manufacturing and manufacturing systems)
- CIM3:
  - now, “Collaboration In huMan-Methodology-Machines”
  - Effectively, we are about optimizing systems of: People, Process & Tools
What Does CIM3 Do?

• Mission: to enable more effective distributed collaboration and virtual enterprise through bootstrapping collective intelligence over the Internet

• Doing business as:
  - “cim3.com”, “cim3.net” and “cim3.org”
    - cim3.com – the business arm of the company
    - cim3.net – the collaborative work environments where client Communities of Practice and distributed team workspaces are hosted
    - cim3.org – the research arm, and holder of the company’s open technology, content and other intellectual properties

• Products/Services: providing an ISP/ASP based Collaborative Work Environment (“CWE”) infrastructure that enables distributed project teams, virtual enterprise partners and communities of practice to work effectively over the Internet.
CIM3 Hosting Facility
CIM3 Hosting Infrastructure

• Collaborative Work Environment (CWE) product Line-up:
  ▪ “Open” CWE & “Community-only” CWE

• Network Facility:
  ▪ Tier-1 IPv4 Internet hosting facility (IPv6 ready)
  ▪ 100Mbps bandwidth into the Internet backbone (upgradable to 1Gbps in short order)
  ▪ Backbone: multiple OC192 & Gige self-healing fiber-ring (among the top 10 networks in the world as measured by connectivity to the rest of the Internet.)

• Linux Servers (mainly on IBM 1u boxes)
  ▪ Triple redundant storage (in 2 locations)
  ▪ Locked-down system environment, with spam-filtering and content filtering capabilities
Ontolog – an open CoP

Caption: John McCarthy having a dialog with Doug Engelbart at a tavern ... with ‘the fishnet’ on the wall
Ontolog (Visitors) Users

Case Examples of Communities on the CIM3.NET Collaborative Work Environments (CWE’s)

- Ontolog / projects
- CWE-dev
- Bootstrap
- Computer History Museum
- Protégé, CODS
- eGov: COLAB
- eGov: FEA-DRM project work & public forum
- NIST
- IMS-US
- Millennium Pro (WFUNA)
- Digital Art Ontology
- Hosting of: SUMO, SigmaKEE

... (more)
Upper Ontology Summit
Ontolog / NIST - 15-Mar-2006

3:00pm - Position statements and overviews by custodians of the principal upper ontologies (10 minutes each)
  - DougLenat - OpenCyc - slides
  - AdamPease - SUMO - Slides
  - NicolaGangemi - DOLCE - Slides
  - AldoGangemi - DOLCE - Description & Situation extensions (remote)
  - MichaelGruninger - PSL / ISO 18629 - slides
  - JohnBateman - Spatial Cognition, Robotics and Natural Language (remote) slides
  - BarrySmith - BFO (remote) - slides
  - MatthewWest - ISO 15926 - slides

4:45pm - Concluding remarks - SteveRay, Summit Chair
The CODS Team Up

- Stanford-BMIR (previously SMI) & CIM3 – (started in Fall 2005) teamed up to develop and host an open Collaborative Ontology Development Service (CODS) and Ontology Repository for all
- the CODS platform is based on the BMIR Protégé tools and CIM3 infrastructure
Software Featured in CODS

- Protégé Multiuser Server
- RDBMS backend (MySQL or Oracle)
- Subversion Repository server & client (w/ ViewVC GUI and TortoiseSVN client for Windows)
- PomptTAB (Protégé plugin)
- Tomcat application server, Apache web server & WebDAV server
- Linux platform
- Augmentation of the team collaboration with the CWE suite of open source collaboration tools (for portal, archived discussion, wiki & file-sharing workspace)
Subversion Repository Access
(via the Web Browser with ViewVC)
Subversion Repository Access (via TortoiseSVN)
Project Example: Ontolog “CCT-Representation”

Suggested Upper Merged Ontology (SUMO)

Mapping the Core Component Types to the Suggested Upper Merged Ontology

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<tr>
<th>Ref# (CCT/SC)</th>
<th>CCT Name</th>
<th>Definition</th>
<th>Promoter data-type</th>
<th>Remarks</th>
<th>SUMO Mapping (AsmanPease - 2004 06 20)</th>
<th>Comments (PeterYim - 2004 06 16 - 20)</th>
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For more information, visit the project webpage.

Sigma knowledge engineering environment

KB Term: TimeMeasure

English Word: TimeMeasure

TimeMeasure (time measure)

appearance as argument number 1

(definition: TimeMeasure English Language: The class of temporal durations (instances of TimeDuration) and positions of TimePoint and TimeInterval) along the universal timeline (instances of TimeDuration)

Gobal: TimeMeasure Constant/Quantity

appearance as argument number 2

(definition: TimeDuration TimeMeasure)

Gobal: TimePosition TimeMeasure)

General: TimeMeasure BaseMeasure)

consequent

(definition: TimeMeasure)

Merged: TimeMeasure

TimeMeasure (time measure)

if a process is an instance of measuring a process and an object is an instrument

then entity is an instance of time measure

an older version of the
What can we bring to the table, for OOR?

• A robust hardware and network infrastructure
• familiarity with community process management and distributed collaboration
• rapport with the Ontology community
CIM3's potential role in OOR

- provide the “plumbing” (the bottom layer of the technology stack) - a robust hosted (hardware and network) infrastructure for OOR
- provide a collaborative work environment for the OOR team
- help facilitate the distributed teamwork - project coordination and management

How does that fit in with what everyone else is bringing to the table? ... that's what we'll discuss in the next segment of this session
Backup Slides
The CIM3 Focus: Communities & Distributed Teams

• People as an integral part of the system
• The Community Spectrum [Kaplan/iCohere]
  ▪ Affinity Networks
  ▪ Learning Communities
  ▪ Communities of Practice (CoP’s)
  ▪ Project Teams
• We optimize our infrastructure, tools and process for CoP’s and Distributed Project Teams
CIM3's Approach

- Augmentation - human-machine interaction - collaboration - communities
- Openness - we use open-source software & comply with open standards as much as we can; we open-source our technology and content, and participate in open standards development
- Capitalizing on the Internet technology: taking it
  - from the research and academic network
  - to the current form as publishing media
  - to Transactions and Web Services
  - onto being its future as knowledge media in the Semantic Web
- Providing Enterprise performance, quality, robustness, security & fault tolerance
- Providing platform neutrality: supporting machines on PC’s, Mac’s, Linux, Unix, …
- System built upon a knowledge architecture optimized for distributed teamwork
- Emphasis on effectiveness and strategic value - not technology
- Supporting entire user spectrum: from the everyday users to the power users
- While we do open-source work, we believe in properly remunerating our contributors, and in helping create a viable economic model for open work
ONTOLOG (aka. Ontolog Forum) est. Apr.2002
our "dialog in ontology"

- Membership - ~500; from over 26 different countries (as at Jan-2008)
- Users - from 150 cities globally, generating ~133K visits and ~1.8 million hits on our site per month
- Hosted on the CIM3 collaborative work environment infrastructure
- Charter - Ontolog is an open, international, virtual community of practice, whose membership will:
  - Discuss practical issues and strategies associated with the development and application of both formal and informal ontologies.
  - Identify ontological engineering approaches that might be applied to the UBL effort, as well as to the broader domain of eBusiness standardization efforts.
  - Strive to advance the field of ontological engineering and semantic technologies, and to help move them into main stream applications.
- Activities:
  - Weekly conference calls of active members
  - Monthly virtual Invited Speaker events
  - Scheduled Technical Discussions
  - Specific Projects: like [CCT-Rep], [Health-Ont], NHIN-RFI response, Upper Ontology Summit, Event podcast, Ontologizing the Ontolog Content, Ontology-driven Applications Inventory, Database & Ontology, Ontology Measurement & Evaluation, [ONION], OKMDS ...
  - Resides on a virtual collaborative work environment which serves as a dynamic knowledge repository to the community's collective intelligence
- We welcome your participation – see: http://ontolog.cim3.net/wiki/
- Questions? talk to any of our 3 co-conveners - PeterYim; LeoObrst & KurtConrad
Ontolog's key Differentiation

Activities are community driven; we are neutral, open, and we are not answerable to any authority or institutional structure, except for (explicitly) our charter & IPR policy, and (implicitly) our professional integrity.

We are adamant about collaboration, sharing and open knowledge ... and are trying to spur organic or emergent behavior in the community and our project teams
An Organizational Form that the CWE aims at
Supporting us toward Open Virtual Enterprises

capitalize on distributed capabilities to achieve specific purposes; when those purposes are achieved (or when the opportunities no longer exist), they disband, and the resources (people, knowledge, skill-sets) are returned to the CoP’s where they come from.

The Fishnet Organization

Source: Institute for the Future: Johansen, R., Swigart, R. Upsizing the Individual in the Downsized Organization