



DAML May 2004 PI Meeting Kickoff

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DARPA / IXO**

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Taking Stock...



4 years ago, DAML was born by matching a problem and an idea...

Problem: Integration and testing of large-scale heterogeneous information systems and sources is notoriously difficult, error-prone, and time-consuming

Idea: Create an XML and RDF-based web markup language that allows users to provide machine-readable semantic annotations for specific communities, and create tools and applications to validate the feasibility

So, what is the state of the DAML program?

Have the problem and the idea converged, or diverged?

How should we proceed in the program's final year?



Agenda



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- **DAML and the Ongoing DoD Transformation**

 - **2004 Mid Year Status Check**
 - Technology Focus areas: OWL, Services, Rules
 - Measuring our Success: Transitions, Standards, Tools

 - **DAML Programmatic**
 - Funding Status
 - 2004 May PI Meeting Goals



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2000 – 2004: DAML's Context has Changed



- The Revolution in Military Affairs (RMA) is here
 - OEF and OIF demonstrated that DoD can trade *mass* for *information*
 - DoD has seen the military payoff of agile operations and precise information
 - Rapid force synchronization is what we do better than anyone else
 - *Speed* is the DoD's new metric
- New military processes (e.g., Sea Power 21, The Objective Force, JC2, Net-Centric Ops) rely on **flexible, large-scale, totally integrated IT**
 - Current IT restricts commanders by incorporating fixed assumptions about preplanning, force structure, consumption, workflows, roles, data sources...
 - Current IT *constrains commanders* from fighting their chosen fight
 - Future IT must *itself* be be **adaptive** and **agile**: it must dependably support improvisational, flexible, dynamic processes and structures





What Does this Mean for DAML?



■ Who is DAML's customer?

- DAML's initial DoD applications were in coalitions and intelligence
- DAML's current DoD customers are the knowledge integrators
 - Knowledge integrators like the Intelligence Community Joint Staff, AKO
 - Systems integrators like DISA (NCES and GIG-ES) and JFCOM
 - For these customers, standards are a means to an end
- Who are these customers?
 - The contractors who sell IT to DoD (but mainly to others)
 - The IT acquisition organizations in DoD (DISA, IC, PEOs)
 - The larger world of (companies, allies) with whom DoD must integrate
- The **early adopters** in all of these organizations

■ How do we make these customers successful?

■ How do we get these customers to try the semantic web?

- **Standards:** Move the semantic web towards public standardization in the appropriate standards organizations
- **Tool Support:** Deliver a set of high-quality, documented, open source tools to support experimentation and development



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2004 Status: OWL Support and Advocacy



World Wide Web Consortium Issues RDF and OWL Recommendations

Semantic Web emerges as commercial-grade infrastructure for sharing data on the Web

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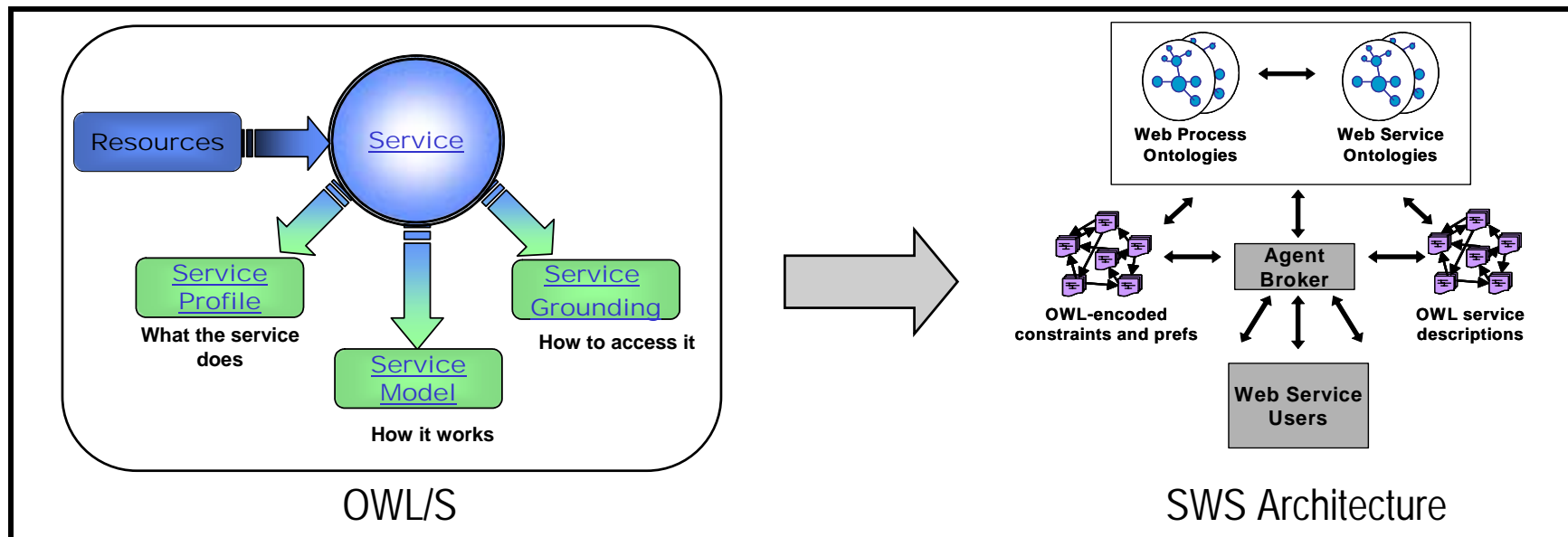
Contact Asia -- Yasuyuki Hirakawa <chibao@w3.org>, +81.466.49.1170



(This press release is also available in [French](#) and [Japanese](#))

<http://www.w3.org/> -- 10 February 2004 -- Today, the World Wide Web Consortium announced final approval of two key Semantic Web technologies, the revised Resource Description Framework (RDF) and the Web Ontology Language (OWL)...

- OWL has gone from a “DARPA-hard” research problem to an international standard in 4 years!
- W3C will host an ontology registry called Ontaria
 - Transition worthy ontologies from www.daml.org, www.semwebcentral.org, and others
- All program-funded software should be fully compliant with OWL
 - As of today, no more program funding should be spent to support the development of software that uses DAML+OIL



- **OWL/S Semantic Web Services Specification v. 1.0 released**
 - Continuing work on rules and use cases for services
 - Work on using PSL for the Service Model
- **W3C Semantic Web Services Interest Group formed**
 - This is the (initial) place where OWL/S will transition from the DAML/S Coalition
- **SWSI will consolidate its work into 2-3 W3C Notes within the next 4 months**
- **Semantic Web Rule Language 0.6 officially submitted to W3C**



2004 Status: Tools for the Revolution



www.semwebcentral.org

- 18 program-developed tools hosted on www.semwebcentral.org
- Divided by type: OWL editors, validators, visualizers, translators, reasoning engines and repositories
- Full open source functionality, ontology library, CVS, bug-tracking, message boards, etc...

- There is new open source website, www.semwebcentral.com, for public access/download of high-quality OWL tools (and it uses OWL!)
 - Designed as a more permanent place than www.daml.org/tools.
- Designed to help the early adopter of semantic web technology
- SemWebCentral will eventually transition from DAML
- Plus some neat new tools in Services and Rules, and Eclipse too!



Measuring Success in DAML



- Success = creating the conditions for early adopters to allow the semantic web revolution to succeed
- I will judge the success of the program (and the performers) by the quality of their tools and the success of their standardization efforts
 - Transition success is via a set of well-crafted tools and public standards that allow early adopters to succeed
 - Better tools and standards should lead to more semantic web adoptions
- Other steps
 - Nurture OWL prototypes and working groups in real user communities
 - Continue to identify transition partners and opportunities in DoD
- Every performer must have a clear account of how their technology will play in the standards process and be made available to early adopters

Public Standards and High-Quality Tools are the Current Best Way to Nurture the Semantic Web Revolution



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2004 Funding and Financials



- Financial POC: Tamera Belvin (tbelvin@snap.org)
- Your agents are here to coordinate any financial or contractual issues
- 2004 DARPA funding for DAML
 - DAML survived the 2004 budget round with only planned-for budget impacts
 - Virtually all 2004 funding is obligated, anyone who doesn't have their 2004 dollars yet see Tamera and/or your agent
 - Ensure sufficient 2004 funding for final reports and one more PI meeting (with demo)
 - Final out-of-funds date for 2004 performers should be around December 2004
- 2005 funding is **not** guaranteed
 - Total 2005 program funding is ~½ of 2004, which was ~½ of 2003
 - Assume you do not have 2005 funding unless you have heard it from me personally
 - I will base funding decisions on excellence in 2004, and potential to wrap up a specific development thread in 6 months in 2005.
 - Any original technology work in FY05 must be rejustified to me
 - 2005 DAML focus is support of DoD transitions and hardening of open-source tools
 - Final out-of-funds date for 2005 performers should be around May 2005



Things I am Thinking About



- **August DARPA Director DAML Program Review**
 - DAML will almost certainly be briefed (for the last time) in August
 - I will need concrete evidence of progress in technology

- **Another DARPA Semantic Web Program – SEE**
 - The Semantic Web is too important for DARPA to declare victory with DAML
 - United States investment in fundamental semantic web technologies must continue
 - The SEE program is tentatively defined around DoD specific EAI integration
 - What if integration was easy?
 - Technology challenges around service composition and ultra high speed integration
 - Better metrics and compelling challenge problems, and military partners from the start
 - More on this on Wednesday

- **Transition Care and Feeding**
 - How do we give away all of our work, and to whom?
 - Intelligence Community has had some tremendous success recently

- **Next PI meeting in November**
 - Everyone will demo their software
 - Demos will be install-and-run from a public web site (bonus for SemWebCentral)
 - Warm location (San Antonio, Santa Fe, Albuquerque...)



Evidence of Semantic Web Uptake...



- The EU will invest €70M over 5 years in semantic web and semantic web services, starting now
 - Includes €12M for DERI from Science Foundation Ireland
 - Three large integrated programs (<http://www.sdk-cluster.org>)
 - Semantically Enabled Knowledge Technologies (SEKT)
 - Data Information Process Integration (DIP)
 - Knowledge Web
 - Industrial partners and unified deliverables

- Web Services Modeling Ontology (<http://www.wsmo.org>)
 - A parallel effort to OWL/S that includes architectural elements
 - Conceptual now, but will rapidly become real

- Implications
 - Funding center of gravity for semantic web is shifting to Europe
 - DAML and SEE **will continue to partner** with all EU efforts for mutual benefit



DAML PI Meeting Goals



- Review program status for OWL, Services, Rules, Tools
 - How are we *consolidating* the program achievements?
 - Do we have a plan to “wrap our successes with a bow?”
 - How are we making all of our products *accessible* to the world?
 - What are the strategies and dates to support the standardization process?
 - How will our tools be distributed and made available to early adopters of the semantic web?
- Define issues and plans for DAML’s exit strategy
 - How far can we get in key research areas of services and rules?
 - What issues should we leave for the new program?
- Set expectations for remainder of 2004 and for 2005
- Showcase FY04 OWL-based tools and technologies
- Keep on time...



2004 DAML PI Meeting Schedule



- May 17-22 – WWW 2004
- May 23-24 – SWSI F2F
- DAML Day 1
 - Major Thrust Updates
 - OWL, Tools, Services
 - 8 Performer Briefs
 - Miscellaneous Presentations
 - Validator, I3CON, Saturn, DIONE
- OWL Capability Demos

- DAML Day 2
 - Rules Extravaganza
 - SWRL 0.5 and 0.6
 - WWW Developer Day Rules on the Web Track
 - SWRL Implementation
 - Tools for Rules
 - SWSI and Rules
 - Future Directions
 - 8 more Performer Briefs
 - Working Groups
 - Services, Tools, Rules
 - WG Outbriefs
 - SEEing the future

What do we still need to do to support early Semantic Web adopters?



Other Workshop Details



- **Enjoy New York!!**
- **802.11 Internet access during the PI meeting**
 - Not on during plenary sessions
 - Before and after, as well as during breaks
- **Demos at 6:30 tonight on the 9th floor**
 - Relax over food and drink and fine company
 - Marvel at the standards-compliant tools that we have wrought
 - BoF meetings are encouraged
- **In case you can't get enough**
 - All presentations will be on the DAML website within 1 week of workshop end
 - I have a limited amount of time for private sidebars; please see me if it is urgent. I would prefer that you devote yourself to the workshop goals and talk to me afterwards.
- **As always: I consider leaving early to be amazingly bad form, and please mute your cellphones**



Last Thoughts



- **Don't let the perfect be the enemy of the good**
 - Do what you can, and let further refinement be done in other venues
 - OWL itself wasn't perfect – that's why there will be an OWL 2.0
 - We are just starting the services/rules standards process with OWL/S and SWRL
 - This process will extend well beyond the life of the DAML program
 - DAML's intellectual thread will have to be carried by other programs and orgs
 - W3C (SWS IG and maybe WG?) is the enduring organization for standards
 - SemWebCentral is the enduring organization for tools

- **Remember the calendar**
 - Don't say "next year I will do..." – all performers must make their mark by the end of this year's funding, and only some will continue in 2005
 - Look for a new SEE BAA in the autumn

- **DAML is transformational for the DoD and the world**
 - OWL is the **only** serious KR technique that is scalable, deployable, web-friendly, and can support the distributed dynamic integration scenarios that DoD and the world demands
 - We have brought semantics to the web!!



Thank You

