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FINAL REPORT
OPEN ANNOTATION - ANNOTATION ONTOLOGY DATA MODEL RECONCILIATION
(A SUPPLEMENT TO THE OPEN ANNOTATION COLLABORATION, PHASE II)

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References (On the Web):

- [W3C Open Annotation Core Data Model](#) (Beta Community Draft 9 May 2012)
- [W3C Open Annotation Extension Specification](#) (Beta Community Draft 9 May 2012)

1. Project Description & Objectives

Following up on a meeting held in September 2011 that focused on the synergisms and common interests spanning both the Annotation Ontology¹ and Open Annotation Collaboration² projects and communities, the projects jointly moved forward in December 2011 to establish a W3C Community Group³ to facilitate the reconciliation and merger of their respective annotation interoperability data models and vocabularies. In January 2012 the Andrew W. Mellon Foundation then awarded the University of Illinois (on behalf of the Open Annotation Collaboration) a grant of \$29,500, providing the additional wherewithal required to realize this goal. We report here on the results of this grant.

The project had three primary objectives:

1. **Establish & foster a Web-based Community to support interoperable scholarly annotations:** To provide a venue for the uptake and continued refinement of the Open Annotation specification. The establishment of such a community of practice will better insure the sustainability of the Open Annotation Data Model specification over the long term beyond the life spans of the Open Annotation Collaboration (OAC) grant projects.
2. **Reconcile the OAC and Annotation Ontology Data Models:** Merge the two existing project-specific data model specifications into a single stable, production-ready Open Annotation Data Model & Ontology specification.
3. **Hold Two Face-to-Face Technical Working Group Meetings:** To achieve complete data model reconciliation and engender community development, the grant provided resources to convene two face-to-face meetings of key community members. (More a means to achieve 1 and 2 than an objective on its own.)

There were no changes in objectives over the course of this project; however, as compared to original plans, the interval between meetings was attenuated and the release of the stable, production-ready Open Annotation Data Model and Ontology specification was delayed beyond 30 September 2012. (Now expected January 2013.)

2. Deliverables

Summary

Deliverable	Planned Completion Date	Actual Completion Date
First Face-to-Face Data Model Technical Working Group Meeting	March 2012	March 15-16, 2012
First draft of reconciled Open Annotation Data Model & Ontology Specification	May 2012	May 9, 2012
Second Face-to-Face Data Model Technical Working Group Meeting	June 2012	September 18-19, 2012
Stable, production-ready release of reconciled specification ⁴	September 2012	Now expected Jan. 2013

¹ <http://code.google.com/p/annotation-ontology/>

² <http://www.openannotation.org/>

³ <http://www.w3.org/community/openannotation/>

⁴ This deliverable will be achieved in conjunction with larger *Open Annotation Collaboration Phase II* project.

Deliverables, Additional Details

In anticipation of this project, the Open Annotation Collaboration and the Annotation Ontology initiatives collaboratively founded the W3C Open Annotation Community Group in December 2011 to provide a more formal framework for collaboration and to facilitate our efforts to reconcile annotation data models and ontologies. The Community Group has proven invaluable, and as hoped, has helped us develop and grow a community of practice around digital scholarly annotation that extends well beyond the previously separate OAC and AO communities. In particular, the W3C Community Group infrastructure, providing us listservs, a Website and Wiki space, has facilitated productive community-based discussions both leading up to and in the wake of technical working group meetings. As of December 2012 the W3C Open Annotation Community Group has grown to over 50 active members and contributors.

As a result, both technical working group meetings were productive and the interim May 2012 specification has proven robust and been well received. Brief highlights of meeting discussions and outcomes are provided below, with detailed notes on issues addressed provided in the attached *Notes and Meeting Summary* documents for each meeting. The first publicly-available draft of the reconciled data model specification is available online (<http://www.openannotation.org/spec/core/20120509.html> and <http://www.openannotation.org/spec/extension/20120509.html>). The final deliverable, i.e., the stable, production-ready specification, is undergoing final review and will be released in January 2013. (Latest draft will be available at <http://www.openannotation.org/spec/future/> until then.) The only drawback of the faster and greater than expected growth in community has been some attenuation in schedule due to the extensive and detailed feedback received.

In sum, the result of this grant project has been to advance the development and broad acceptance of a common, shared data model and ontology supporting scholarly annotation of Web resources and enabling the interoperability of annotation services and tools across disparate repositories of Web content.

3. Accomplishments

As described in more detail in the attached *Notes and Meeting Summary* for Technical Data Modeling Working Group Meeting I (March 2012), the first face-to-face data model reconciliation meeting held in Cambridge, MA USA allowed us to work through several key differences between the OAC and AO data models. In particular, we were able to make substantial progress on accommodating multi-body Semantic Tag Annotations (something not contemplated as such by the OAC data model) and as regards differences in how resource segments (both within annotation targets and bodies) were described in the model. These initial breakthroughs were then refined and improved by online discussions over the summer, culminating in several key model improvements agreed on during the second face-to-face in September 2012. During the September meeting we also resolved issues regarding how best to express annotation styling hints, annotation provenance (i.e., consistent with other emerging standards) and annotation sub-classing (which had been a point of contention in the wake of the March meeting). Additionally during the second face-to-face we dealt with how best to describe annotations of targets in context and how to best address semantic and data annotations. The face-to-face meetings, and the work done in preparation and follow-up to these meetings, have allowed us to not only capture the best of both original data models, but to improve on these data models in significant ways that make the resulting reconciled data model more useful and broadly applicable to more scholarly use cases.

4. Challenges

In hindsight the amount of logistics work and preparation prior to and in follow-up after each of the two meetings was under-estimated in the project proposal. This was mostly due to a greater than anticipated community response. Both technical working group meetings were somewhat larger than originally

anticipated, the number and complexity of issues needing to be addressed was greater than expected, and the volume and sophistication of feedback received was more than planned for. This led to a longer than anticipated time between technical working group meetings, which in turn has delayed release of final data model and ontology. However, the quality and completeness of the work has not suffered, in fact the end result is better than could have been anticipated.

5. Project Personnel Summary / Updates

There was no change in Project PI, nor any changes in project staffing at Illinois, Los Alamos or Queensland. The core participants in the two technical working group meetings from the Open Annotation Collaboration and the Annotation Ontology initiative were as anticipated in the project proposal with the exception that Tim Clark was unable due to last-minute schedule conflict to participate in the September 2012 meeting. The attached *Notes and Meeting Summary* documents enumerates meeting participants in full. There were 17 participants in the March 2012 meeting and 17 participants in the September 2012 meeting, including 6 individuals not at the March 2012 meeting.

6. Dissemination of Results

The reconciled Open Annotation Data Model and Ontology specification, both the initial draft released in May 2012 and the pending January 2013 release, are / will be made available on the Web at the URLs given above. These documents will remain available at persistent URLs for at least 3 years, linked from the W3C Open Annotation Community Group home page (or from subsequent specifications if superseded).

In addition, results from the two technical working group meetings have been disseminated via the publicly accessible W3C Open Annotation Community listserv (public-openannotation@w3.org). Results have also been reported in multiple presentation venues, e.g., at the 2012 DLF Forum⁵ and at the 2012 Fall CNI Membership meeting.⁶

7. Intellectual Property

No prototype tools or software were developed as part of this project. The Open Annotation Data Model and Ontology specification, i.e., the *Open Annotation Core Data Model* (URLs provided above), is published under the W3C Community Contributor License Agreement (CLA)⁷ which allows the user and developer community to share, modify, and implement the data model and ontology freely and without charge or restriction. (The only requirement is attribution when used in derivative works.)

8. Future Plans

The work of this grant is complete; however, we anticipate that the W3C Open Annotation Community Group launched in conjunction with this project will continue to develop the reconciled data model and ontology that was created during this project and will continue to promulgate and promote use of the data model. Towards this end, the Group's listserv and Wiki remain active. Ideas for new Specifier classes (used to describe resource state, segments and/or context relevant to the use of the resource in a particular annotation) and other extensions to the basic Open Annotation Core Data Model semantics are regularly

⁵ Andrew Ashton, Timothy Cole, Jacob Jett & Kevin Livingston. (2102) Using Open Annotation. Session at the 2012 DLF Forum, Denver CO, 4 Nov. <http://www.diglib.org/forums/2012forum/using-open-annotation/>

⁶ Timothy Cole & Paolo Ciccarese. (2012) Open Annotation Update: OAC Experiment Results and Ongoing Work of the W3C OA Community Group. Project Briefing at the CNI Fall 2012 Membership Meeting, Washington, D.C., 10 Dec. <http://www.cni.org/topics/scholarly-communication/open-annotation-update-oac-experiment-results/>

⁷ <https://www.w3.org/community/about/agreements/cla/> and <http://www.w3.org/community/about/agreements/cla-deed/>.

being discussed. Domain-specific supplemental semantics is also a frequent topic of discussion. The Community is continuing to grow as others discover and become interested in its work. New use cases are suggested regularly. Related work is ongoing on the Open Annotation Collaboration Phase II and Phase III projects, taking advantage of the outcomes of this project. .