# AGROVOC Concept Server Workbench

# Workshop Report of MIMOS, Malaysia

# 14-16 April, 2010

## Change Log

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| --- | --- | --- | --- |
| **Version** | **Date** | **Amended by** | **Changes** |
| 0.1 | May 2010 | Ahsan Morshed | Initial draft |
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## Objective and issues :

* Analyzing the state of Agrovoc and the Workbench Developments
* The AOS idea and architecture
* The AGROVOC OWL model: strength and weaknesses
* The workbench architecture: strengths and weaknesses
* Sustainability: how long can we use the systems we created now?
* Should we continue to develop software?

MIMOS Semantic Technology Platform (STP) & Sample Applications

* Brainstorming about the future of Agrovoc and the Workbench
* A model for the AGROVOC concept scheme/server
* Possible tools for maintenance of AGROVOC and other parts of the AOS
* investigating different roles and scenarios:

[web apps vs desktop applications with remote access vs browser plugins]

[end user browsing apps vs administration full-editing apps] ...

* A possible software architecture for version 2
* Migration issues:
  + - * new model (from previous "hijacked" OWL to SKOS (and SKOS-XL?)
      * dedicated vocabulary: extending the SKOS-XL extension points to provide a vocabulary for describing AGROVOC data and linguistic info
* Necessary papers to write or inquiries to do

Review on MIMOS STP components that may be useful for the New Architecture

* Making Working Arrangements for the year
* Production Environment from June 2010
* Roles and Responsibilities
* Hands On exercises

### Agrovoc Current Owl model (Strength and weekness) :

This slide is from a presentation by Tom Baker; see that presentation for a  
thorough survey on evolution of AGROVOC Model in the last seven years

***Limitation of the current OWL model :***

* **The class ag:c\_domain\_concept covers two roles:**
* A root concept for a particular facet of the domain (*note*: logical vs common domain)
* A meta-class (actually it is not), that is, it should *predicate* (higher logical level) over some concepts, telling that they are used to represent objects of the domain
* that is, if a class A is subclass of B, we expect that its instances be instances also of B. This is not true in AGROVOC. If we consider “deer” as a class, an instance of deer is not a domain concept (though deer is subclass of domain\_concept), it is just what it is…an object of the domain
* **Some relationships explode in the number of triples needed to expresses them**
  + - has Translation, with its 400K triples, takes more than one fourth of the whole AGROVOC graph
    - there is no warranty that this translation is really “present” in the original AGROVOC model and not be a redundancy
    - A complete vocabulary for meta-modeling would be welcome

On the basis of Limitation there are some **critical issues for WB**

* **Performance**

Current version of the WB based on Stanford Protégé 3.4.x OWL API (not to be confused with later Manchester OWL API, which are used inside Manchester Protégé 4.0). This API is old frame based. There is no triple (like 3-field relational with wildcards, such as in Sesame oriented methods . It rely on external DB and there is no real memory access.

* **Maintenability**

Average good separation between service and data

In order to solve the problem, there is a need to **modify the model(Proposed ).**

Figure 1 : Proposed Architecture (by Armando)

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***Discuss Issues about User Interface (UI)***

* **Searching**
* **it takes too much time**
  + Action: we’re embedding the new search engine…guru meditation ☺
* **Simple search is …too simple ☺**
  + [Action] Put exact match / exact word / starting with, ending with / contains . .with search box at the beginning
* **Appropriate results are not shown**
  + [Action]: *are existing concepts*? Issue to be verified (high priority)
* Blinking of search string during the processing is very annoying.
  + [Action]: Time based: 2sec / no char limit on suggestion
* It is difficult to go back and forth from screen after searching
  + [Action]: activate a search history

* **Language**
* **It is irritating to see the red empty boxes if we do not have the concept for particular languages.** 
  + [Action]: keeping in client, keeping in server, 3rd passing as parameters 4th (low priority, next version)

* **Image**
* **To hide the unnecessary image results (red box)**
  + [Action] Put those results to the end (this version)
  + [Action] put a checkbox for not seeing them (low priority)
  + [Action] think about how to improve
* **There is no defined size of imported image. (Note: images are just linked from the web)**
  + [Action] just get size to avoid need to show very large images
  + [Action] to write a program that will verify the URI of the image periodically (under discussion)
* **BROWSERS COMPATIBILITY (was: Downloaded image link(Image) from internet explorer are not handled properly).**
  + [Action] check version of IE
  + [Action] check version of Firefox for black background
  + [Action] on the login page, tell the user which versions of which browsers are not supported
  + [Action] for users: write a FAQ list for many cross-platform problems which will not be solved but for which the user may have some solution
* **New Concept**
* **There is no language option along with English language which is taking more time in creation of language variances for new concept**
  + [Action] *add\_more\_concepts* button (medium/low priority)
* **There is no checking for duplicate concepts** 
  + [Action] A warning can be given by the system while adding concepts
  + [Action] check if the test for equality on datatype object is available
    - Use the fast search engine
    - Do a SQL query over the object
* **Relationship**
* **Addition of relationships and changing the relationship is cumbersome as searching of the term is required each and every time**
  + [Action] : already noted on the search/new concept issues
* **Adding new relationship: the window-after-window issue presented by Lavanya it happened on FF3.5.9** 
  + [Action] check if it happens on other platforms
* **Sometimes relationship string is used in place of “relation”**
  + [Action] simply change it ☺
* **Menu**
* **Home should change with Recent Changes menu**
* **Need to add something in Home menu**
* **It is not beautiful to see the changes at the beginning**

Action :

* Change home menu to Recent Change (need to decide the menu name)
* To write something at the home menu
* **Interface for Privilege**

* Need to show the icon for privilege inside the interface even users do not have all the permission.

Action:

* To show only active privilege icons and other will be disable
* **Graphical view**
* It is very slow
* Problem with browser

Action:

* To change the graphical view
* Statistics:
* The data can be represented in histograms or graphical view
* Concept Menu
* Display of concepts on left screen

Action:

* Hierarchy indicator to show the number of terms
* Web services:
* Action: Buttons for different services can be displayed
* RSS feeds:

Action:

* customize changes that were carried out(categorize)
* Export formats:
* Very slow

Action:

* Immediate testing is needed

**Action Plan for release version 1 of AGRVOC Concept Server :**



**Roles and Responsibilities:**

Project Owner= Johannes

Signoff committee= Dickson + Johannes

Project Management= Ahsan Morshed

Developer contact=Sachit

KE1 = Gudrun

P1 = Prashanta

P2=Jeetendra

P3= Sachit

P4=Armando

P5=MIMOS1

P6=MIMOS2 (HW Contact)

KE2=Icrisat team (9 pax) - Lavanya

KE3=Imma

**Future Directions:**

We can divide this into two

* User Interface
* Backend Technology

**User Interface :**

* **Extra resources** need to be added with every concept so that user can check the concept with other resources.

(example.. WordNet link)

* **Mapping Icon** for the populating the mapping files
* **Geo location** need to be added with the concept. Because, some concepts information are very specific. It gets only specific region
* To **integrate graphical** view from MIMOS

**Backend Technology :**

* **Rationale for migrating to SKOS**
* Abandons unique FAO vocabulary model metamodel) in favor of highly standardized model
* Anticipated tool and software library support, so can push Workbench software development further out into the community
* When converted to a SKOS basis, Workbench would be interesting to hundreds of other users for creating SKOS Concept Schemes
* **SKOS-2009 supports Lexicalizations (Labels) as resources**
* **Agrovoc is large, diverse, and multilingual.**
* Does not reflect a strong “point of view”, which is prerequisite for advanced ontological reasoning.
* Better to model Agrovoc entities with a weaker ontological commitment (SKOS concepts) than with a strong ontological commitment (OWL classes).
* Ontologically weaker definitions more apprropriate to multiple ways they are actually used
* **Reusers of OWL classes downstream would inherit ontological baggage of OWL sub-class relationships**
* **SKOS Concepts does not preclude use of refined relationships (e.g., can also be transitive, inverse, symmetric)**
* **SKOS concepts can be upgraded to OWL classes in specialized, local ontologies**
* **SKOS concepts are easier to teach (capacity-building)**
* **Proposed SKOS Model**

**Figure : SKOS Model**

**References**

**1.** **http://aims.fao.org/community/group/agrovoc-concept-server-group**

**Appendix**

* **URIs (Use for Conversion routine)**
* Agrovoc Concept Server

Main URI for concept:

<http://aims.fao.org/aos/agrovoc/c_xxx>

* Classes:

<http://aims.fao.org/aos/common/c_domain_concept>

<http://aims.fao.org/aos/common/c_noun>

* Properties:

<http://aims.fao.org/aos/common/hasLexicalization>

<http://aims.fao.org/aos/common/hasRelatedConcept>

<http://aims.fao.org/aos/common/hasPest>

* Authority Control File

<http://aims.fao.org/aos/corporate/c_xxx>

<http://aims.fao.org/aos/conference/c_xxx>

<http://aims.fao.org/aos/journal/c_xxx>

<http://aims.fao.org/aos/series/c_xxx>

<http://aims.fao.org/aos/fao_project/c_xxx>

* Geopolitical Ontology

<http://aims.fao.org/aos/geopolitical.owl#Africa>

* **Other information**

<http://202.73.13.50:55234/agrovocdevv10> and select respective ontology.

Other Links:

AOS OWL file: <http://naist.cpe.ku.ac.th/agrovoc/owls/aos.owl>

OWL file for AGROVOC: <http://naist.cpe.ku.ac.th/agrovoc/owls/agrovoc_wb_20100427_owl.zip>

SQL file for AGROVOC OWL DB: <http://naist.cpe.ku.ac.th/agrovoc/sqls/agrovoc_wb_new_20100426> 1619\_ complete.rar SQL file for Projects OWL DB: <http://naist.cpe.ku.ac.th/agrovoc/sqls/agrovoc_ac_projects_v_1_0> 20100428 1120.sql SQL file for Journals OWL DB: <http://naist.cpe.ku.ac.th/agrovoc/sqls/agrovoc_ac_journals_v_1_0> 20100428 1134.sql SQL file for Conferences OWL DB: <http://naist.cpe.ku.ac.th/agrovoc/sqls/agrovocwb_ac_conferences_v_1_0_2010-04-28_15.11.21.sql>

**SKOS-XL extension: labels as resources**

**triples:**

**skosxl:Label owl:disjointWith skos:ConceptScheme.   
skosxl:Label owl:disjointWith skos:Concept.  
skosxl:Label owl:disjointWith skos:Collection.  
skosxl:Label rdf:type owl:Class.   
skosxl:altLabel rdf:type owl:ObjectProperty.   
skosxl:altLabel rdfs:range skosxl:Label.   
skosxl:hiddenLabel rdf:type owl:ObjectProperty.   
skosxl:hiddenLabel rdfs:range skosxl:Label.   
skosxl:labelRelation rdf:type owl:ObjectProperty.  
skosxl:labelRelation rdf:type owl:SymmetricProperty.   
skosxl:labelRelation rdfs:domain skosxl:Label.   
skosxl:labelRelation rdfs:range skosxl:Label.   
skosxl:literalForm rdf:type owl:DatatypeProperty.   
skosxl:literalForm rdfs:domain skosxl:Label.   
skosxl:prefLabel rdf:type owl:ObjectProperty.   
skosxl:prefLabel rdfs:range skosxl:Label.**