

The Agricultural Ontology Server, A Tool for Facilitating Access to Knowledge

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Abstract

At the Food and Agriculture Organization of the United Nations (FAO), we are committed to helping combat and eradicate world hunger. Information dissemination is an important and necessary tool in furthering this cause - we need to provide consistent, usable access to information for the community of people doing this very work. The wide recognition of FAO as a neutral international centre of excellence for agriculture positions it perfectly to lead in the growth and improvement of knowledge representation systems in the agricultural domain, and to lead in developing more functionality for users looking for information. We propose to develop an Agricultural Ontology Server (AOS) that will function as a reference tool that structures and standardises agricultural terminology in multiple languages for use by any number of different systems. The AOS will serve the following purposes:

- increasing the efficiency and consistency of describing and relating multi-lingual agricultural resources
- decreasing the random nature and increasing the functionality for accessing these resources
- enabling sharing of common descriptions, definitions and relations within the agricultural community

or, stated more simply, the purpose of the AOS is to achieve:

- better indexing of resources,
- better retrieval of resources, and
- increased interaction within the agricultural community.

The goals of the AOS are realised by assisting community partners in building ontologies. An ontology is a system that contains terms, the definitions of those terms, and the specification of relationships among those terms. It can be thought of as an enhanced thesaurus - it provides all the basic relationships inherent in a thesaurus, plus it defines and enables the creation of more formal, more specific and more powerful relationships. An ontology captures and structures the knowledge in a domain, and by doing so captures the meaning of concepts that

are specific to that domain. This meaning is then extended to end-users through the use of tools (e.g., indexing, retrieval) that apply the ontologies.

Our plan is to:

1. Strategise about participation of agricultural community partners.
2. Utilise all possible knowledge organization systems within the agricultural domain.
3. Utilise current and developing state-of-the-art interoperability standards, such as XML, RDF, and XTM.
4. Develop formal ontological relationships among topics.
5. Build in functionality for describing and finding multilingual resources.
6. Create an agriculturally focused biological species micro-ontology.
7. Develop and pilot test development, storage, management and retrieval tools.
8. Test functionality of the server with end-users.

Thus, the AOS will provide terms, definitions and relationship components that can be shared among associated partners, thereby enhancing communication and interaction within the community. Use of these components increases the functionality for indexing and retrieving resources by providing a standard source for terminology and offering richer, more powerful ontological relationships.

1. Complete paper unavailable

This presenter's paper was not received in time to be included in the proceedings.

Biography

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Stephen Katz graduated from the University of Chicago in 1980 with a Bachelor's Degree in Social Science. He has over 20 years of experience in information technology and knowledge management, which has culminated in his current responsibilities as head of the

information dissemination program of the Food and Agriculture Organization of the United Nations (FAO). Under his leadership, over the past four years FAO has devised a new paradigm for electronic publishing based on XML concepts and methodologies, which has led to the development of a digital archive of FAO publications. He is also responsible for the FAO web-site, which has over 20 million hits, and more than 800,000 user sessions per month. At the present time, he is actively engaged in an international initiative to develop a consensus on common metadata standards aiming to increase access to agricultural information and to facilitate information exchange between partners. With the support of a number of important and successful agricultural gateway services, a pilot project will soon be launched, which would provide a single access point with multi-host searching using Dublin Core and XML standards.