Web Services at the United Nations

Case Study - Web Services at the United Nations

United Nations FAO

The Food and Agriculture Organization of the United Nations (FAO) is a specialized agency of the United Nations which leads international efforts to defeat hunger. It helps developing countries modernize and expand agriculture, forestry and fisheries and ensure good nutrition for all.

One of its most important functions is to collect, analyse and disseminate information to assist governments fight hunger and achieve food security. Towards this effort FAO has established the World Agricultural Information Centre (WAICENT) for agricultural information management and dissemination.

The Challenge

Within the WAICENT framework, a large amount of data, represented in various formats and in many different languages, is generated every day and stored in different types of data sources. In all, there are over 200 such data sources. People need to access and manipulate data distributed in the various sources from both inside and outside the organization. It is important to share data between systems quickly and easily, without requiring the systems to be tightly coupled. In simple terms, the existing systems need to "talk" to each other.

One of the other main challenges is related to the fact that within the organisation the use of two different technologies (Microsoft/ASP and J2EE/JSP/Servlets) is widespread and it is, therefore, very difficult to impose a single technology throughout the FAO.

The Solution -The Information Bus

An approach named 'Information Bus', based on web services technology, has been designed and deployed by CSW in the FAO to promote interoperability between various data sources, in a way that can be implemented on multiple vendor platforms, with minimal effort and disruption to existing systems. The approach supports the standard representation and exchange of meta data as well as the multilingual requirements of an institution like FAO, in which documents are expressed in the five official languages (English, French, Spanish, Chinese, and Arabic) as well as Russian and other local variations.

The principle objective of the approach is to create an environment where new web-based information systems can be developed quickly and easily, using any technology platform, by accessing information from any of the existing information systems at the FAO. The Information Bus has been proven and deployed in a system which provides:

- An information architecture to support multilingual information in an extensible and standard way
- Standard XML representations of meta data related to topics, languages and countries
- An application integration structure based on Web Services to allow interoperability of UN FAO systems and information sources for delivery through web portals
- A 'toolkit' approach that can be used to make any information system within the UN FAO available on the information bus with minimal impact on the existing systems
- The facility to integrate external data sources and feeds with information generated by systems internal to the UN FAO
- The ability to create customised views of information, accessed through Web Services, that are configured dynamically as the information sources change
- An environment that supports different Web Services technologies: Microsoft .net and J2EE