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Intelink, the U.S. Intelligence's Community's classified intranet, shares many of the challenges of the World Wide Web. Users of Intelink are diverse (e.g., analysts, warfighters, policymakers) and distributed over the world. Information is still largely in English text (and HTML) documents on web servers with keyword-based search tools and browsers being the primary user applications. Security issues are paramount in a community that has traditionally lacked the culture and the infrastructure to share information widely beyond those who have a demonstrated "need to know". Despite the existence of community standards, Intelink producers are in the nascent stages of using HTML metadata tags and content-based markup languages such as XML. The latter presents an additional challenge of gaining agreement among user communities on sets of tags whose meaning is explicit and exploitable by human users *and* software agents.

The Horus Project is a joint effort by the Dept. of Defense Advanced Research Projects Agency (DARPA) and the Intelink Management Office (IMO) to bring semantic web technologies to Intelink and the Intelligence Community. In its third year, Horus is currently refining a toolkit to bring semantic web tools to user sites on Intelink. This will support users in building enhanced, web-based knowledge portals that provide access to both structured data in databases and unstructured data extracted from web sources. Horus is applying the DARPA Agent Markup Language (DAML).

The focus of Horus is to enable and exploit *semantic*-based markup of sources to promote information discovery and integration – ultimately by software agents as well as humans. Users and agents will access, manipulate, and create knowledge that is organized as Horus "knowledge objects". These (conceptual) objects represent real-world entities such as military units, terrorist organizations, and geopolitical events. Information in knowledge objects is linked to its source (i.e., a database or web page). This supports the maintenance of information pedigrees and drilldown to the original sources. User sites will build portals to provide access to these objects, resident in a Horus Knowledge Base (KB), currently based on Oracle and the Parka KBMS.

Using DAML, we have constructed over two dozen domain ontologies for the Horus project, the Effects-Based Operations (EBO) project (sponsored by AFRL/Rome Labs), and the Vigilant Advisor project (sponsored by Lockheed and US Army CECOM's Agile Commander program). Prior to that we built ontologies for Horus in the Simple HTML Ontology Extensions (SHOE) language. We have experimented with ontology authoring and validation tools from the DAML project, and commercial tools such as Altova's XML Spy and Sandpiper's Visual Ontology Modeler, a UML-based tool (Rational Rose add-on) with DAML support. We are very much focused on issues of maintaining ontologies in use in real-world operations. The evolution of ontologies, without invalidating previous markup, is crucial to our customers.