

## The Semantic Web: Structure & Critical Information Issues Minitrack

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The focus of this minitrack is to explore a broad range of issues involving the Semantic Web and related technologies. Incredible volumes of information, much of it in the form of digital documents, are readily available from virtually any computer in the world. Unfortunately, this increase in information often overwhelms the people it is intending to help. This phenomenon can be seen in business, science, military, and government. The Semantic Web is one proposed solution to this problem.

Before a ubiquitous Semantic Web can be realized, there are a number of issues in a number of divergent disciplines that must be addressed, namely, how will we build a Semantic Web, who will build it and what are the economic drivers, and once built, what will we do with it? This mini-track seeks to explore these and other broad issues in establishing the Semantic Web. Key issues include enabling software agents, fusing heterogeneous data, intelligently retrieving and organizing information, discovering new information, finding new relationships among various information sources, and doing so in a secure, trusted, and reliable environment. In short, we are looking to address how to bring the vision of the Semantic Web to reality.

In *A Probabilistic Extension to Ontology Language OWL* by Zhongli Ding and Yun Peng they discuss support for uncertain ontology representation and ontology reasoning and mapping, they propose to incorporate *Bayesian networks* (BN), a widely used graphic model for knowledge representation under uncertainty and *OWL*, the de facto industry standard ontology language recommended by W3C.

In *Context, Ontology and Portfolio: Key Concepts for a Situational Awareness Knowledge Portal* by Marlène Gauvin, Anne-Claire Boury-Brisset, and Alain Auger present a Situational Awareness Knowledge Portal to support the Canadian National Defence Command Center in monitoring and directing Strategic-level Operations to provide each individual with a customized, mission-oriented knowledge desktop that gives access to the right information from multiple sources in the context of the work and contributes to the building and sharing of the “collective battlespace knowledge”.

In *Agent Approach for Service Discovery and Utilization* by Paul Palathingal and Sandeep Chandra discuss an Agent Approach for Service Discovery and Utilization (AASDU), which focuses on using light weight autonomous agents built into a multi-agent referral community, and Web Service standards (namely UDDI, SOAP, WSDL and XML). The AASDU approach proposes to use agents that interact with end users by accepting their queries to discover services, and efficiently manage service invocation.

In *QuizRDF: Search Technology for the Semantic Web* by John Davies and Richard Weeks present an information-seeking system which combines traditional keyword querying of WWW resources with the ability to browse and query against RDF annotations of those resources. RDF(S) and RDF are used to specify and populate an ontology and the resultant RDF annotations are then indexed along with the full text of the annotated resources. They offer this capability by providing a consensual and formal conceptualisation of a given domain. As such, the use of ontologies and supporting tools offer an opportunity to significantly improve knowledge management capabilities in large organisations and it is their use in this particular area