Developing web technologies to share secure information

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Dr. Lalana Kagal and fellow researchers at the Massachusetts Institute of Technology are developing a standard policy language to achieve flexible and dynamic Web security when information is shared between agencies, countries and organizations.

The research, funded under the Air Force Office of Scientific Research Young Investigator Program, supports recent Ph.D. graduates and encourages basic research like that of Kagal and her team members, Fatih Turkmen and Matt Cherian.

This research aims to help the Air Force share resources and data with other agencies, both domestic and international, allowing them to dynamically adapt to new or changed policy on either side without code modifications.

One of the primary tools with which the research is built, is Semantic Web technology. This technology allows the addition of semantics to information; it improves automatic retrieval and facilitates data integration.

"We are creating for the first time a policy interchange language or Interlingua grounded in Semantic Web technologies that will enable a secure exchange of information between entities using different languages to express their security constraints," she said.

The Interlingua will be based on translations that will capture the integral

functions and the key characteristics as well as facilitate the translation of commonly used policy languages.

"We would like to see the interchange language become standardized so that there would be widespread use, development of more tools and protocols around it and also possibly its incorporation into Web browsers, commercial applications and databases," she said.

Everyone has been waiting for a standard policy language to solve security issues associated with cross-domain collaboration, however, it is going to be difficult to develop a language that will meet the requirements of every application, domain and service. However, this research provides an alternate approach that may change that.

"A policy interchange language will allow people to use their own language while still collaborating securely with others," she said.

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