

Sharing Security Information

Georgia Tech helps provide foundation for new justice information-sharing initiative.

BY JOHN TOON

Georgia Institute of Technology researchers have played a key role in developing the software foundations for a new U.S. Department of Justice initiative designed to facilitate sharing of criminal justice information among local, tribal, state, national and international agencies.

Based on the popular extensible markup language (XML), the Global Justice XML Data Model (GJXDM) was recently released in Version 3.0 for use by software developers and won an Intergovernmental Solutions Award from the American Council for Technology (ACT).

"Incompatible databases and computer systems for many years have limited the ability of federal, state, tribal and local agencies to rapidly and efficiently share justice information," says John Wandelt,

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New software is helping law enforcement agencies share criminal justice information more efficiently at all levels.

senior research scientist with the Georgia Tech Research Institute (GTRI). "The Global Justice XML Data Model initiative is sponsored by the Office of Justice Programs, the agency within the Department of Justice that administers federal funding designed to support justice information-sharing between local, state and tribal jurisdictions. The initiative is designed to provide a way to translate information between different systems, allowing a more efficient flow of data among

agencies that need to share information about potential criminal and terrorist activity."

Wandelt and other researchers in GTRI's Information Technology and Telecommunications Laboratory provided engineering support and technical guidance for the new system as part of a broad-based collaboration involving dozens of agencies and industry partners. Two partners that have played a crucial role in supporting this effort are the XML Structure

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— John Wandelt,

senior research scientist at the Georgia Tech Research Institute, on the Global Justice XML Data Model



“The G8 Summit was a good test, and it confirmed the system's geographic-planning and information-sharing capabilities.”

— Kirk Pennywitt,

Georgia Tech Research Institute senior research engineer, on the deployment of the Geographic Tool for Visualization and Collaboration

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Task Force (XSTF) and the Integrated Justice Information Systems (IJIS) Institute. Both of these groups have helped guide the initiative by focusing the model to meet user requirements from practitioners around the country.

Version 3.0 of GJXDM is being used in more than 50 information-sharing efforts, including the national AMBER Alert program.

The GJXDM initiative involves three major components: an object-oriented data model, a data

dictionary and XML schema specification. The data model and dictionary are part of common "vocabulary" used by different computer systems to describe data objects to be shared. Using these standardized definitions, software scripts automatically translate information as it passes from one system to another.

"By providing a common language and vocabulary, the XML initiative allows agencies to efficiently share data while continuing to maintain their own data and operate their own computer systems," Wandelt

notes. "This avoids the cost and compatibility issues that would be involved in trying to develop a single unified national network. It also provides a foundation that individual agencies can use to develop compatible systems without having to re-invent key elements."

The standardized data objects were chosen by representatives from the agencies and industry partners that have been working together since March 2001. The group, known as the Global Justice Information Sharing Initiative, identified approximately 2,500 common data objects after reviewing more than 20,000 candidate objects, many of which were redundant.

The Department of Justice held a developer's workshop earlier this year at GTRI. More than 300 representatives of justice agencies and industry learned how the data model works and how individual agencies can adapt it to their own needs.

"Emerging technologies like XML are a core component of our strategy to give state and local governments new tactics and methods to help them respond to the security challenges of a post-Sept. 11 era," notes Deborah Daniels, an assistant attorney general in the Office of Justice Programs.

Daniels notes that XML has become widely used in the commercial world, where it facilitates communication among organizations and reduces the cost of creating new applications by allowing re-use of existing data objects.

"Our goal at the Department of Justice is to generate similar advantages for agencies fighting crime and terrorism by encouraging adoption of the Global Justice XML Data Model," Daniels told developers at the workshop. "In the aftermath of Sept. 11, we've seen how critical it is that law enforcement and emergency response officials do a better job of sharing criminal intelligence to prevent terrorism and ensure that our homeland and its people are protected."

A search tool was recently added to Global Justice XML to facilitate the identification and location of appropriate data objects. Plans call for continued improvements in the data model, including addition of a sub-schema generation tool, performance testing and an online database that will allow developers to post information about their applications.

@ Read more at: gtresearchnews.gatech.edu/reshor/rh-f04/sharing.html

Georgia Institute of Technology researchers played a key role in developing the software foundations for the Global Justice XML Data Model (GJXDM), a U.S. Department of Justice initiative to enhance sharing of criminal justice information among various agencies. It has **already helped public safety and criminal justice agencies**, officials say. Two examples are:

- Pennsylvania authorities were able to **quickly capture a bank robbery suspect** by matching his bank surveillance photo with an image on that state's XML-enabled justice information sharing network.
- Minnesota's Department of Public Safety reported **saving more than a million dollars** over three years by using the XML Data Model rather than developing its own statewide standard for information systems.

