Syracuse Police Department Integrates Global Justice XML Data Dictionary (GJXDD) Elements into a Countywide Records Management System

Source: National Law Enforcement and Corrections Technology Center, Northeast (NLECTC-NE)
Technical Memorandum 03-010: Upstate NY Central Records Project (CRP), Project Overview

In 1999, the Onondaga County, New York, Sheriff's Office recognized a need to overhaul and expand their police record management system into a countywide system. To launch this endeavor, the Onondaga County District Attorney's Office (OCDAO) was tasked with the coordination of law enforcement agencies in devising a plan for the countywide initiative. This plan, coined the Central Records Project, would allow for data sharing across the county and eventually throughout the central New York region.

The Syracuse, New York, Police Department stepped in and provided leadership and technical, organizational, and administrative support to the Project. The Syracuse Police Department, which currently manages the model system, was further tasked with researching various record management system solutions that would meet the Project's needs, with an emphasis on Extensible Markup Language (XML) and Web technology.

The National Law Enforcement and Corrections Technology Center - Northeast (NLECTC-NE), Rome, New York, was recruited by the Syracuse Police Department to serve in several roles on behalf of the Central Records Project. NLECTC-NE provided scientific and engineering advice in the planning and design phases, assisted in leveraging ongoing Advanced Generation Interoperability for Law Enforcement (AGILE) program activities in defining standards for interagency information, and evaluated and reported on the results of the overall project. NLECTC-NE paid particular attention to the role of XML interface standards and the utility of evolving standards, the operational utility of the deployed system, and the dissemination of results as lessons learned and best practices.

The Central Records Project embraced the Global Justice Information Sharing Initiative (Global) Justice XML as the standard for storing and sharing information between participating agencies. To assist the Project players in understanding and applying Global Justice XML Data Dictionary (GJXDD), version 3.0, elements, a Justice XML Practitioner Resource Group was selected to provide instruction and guidance. XML is a structured language for describing and facilitating the sharing of information, such as an incident or arrest report. XML is a standard for electronic information exchange, deemed to be stable and ready for widespread deployment by the World Wide Web Consortium (W3C). XML is license-free and platform-independent, hence its flexibility in being supported by existing systems.

The GJXDD, version 3.0, is an object-oriented data model, database, and XML-schema specification that represents the semantics and structure of common data elements and types required for sharing justice information and integrating justice information systems consistently among the justice and public safety communities. It was developed by a working group of the Global Advisory Committee (GAC), Office of Justice Programs, U.S. Department of Justice, who identified data requirements, explored XML concepts, and applied XML best practices in the design and implementation of the GJXDD. These standards guide justice and public safety information systems developers.

After extensive planning efforts, the program evolved into the following logical design: the implementation of a forms-based report and records system accessible via a Web interface with mobile wireless accessibility for officers in the field. The overriding project goal was to have the system first implemented countywide and then progress to use by law enforcement and other criminal justice agencies throughout the rest of the central New York region.

FormStream Enterprises was chosen as the software provider that could best grant the Project's comprehensive wish list. FormStream's NETdelivery product was selected because it is a Web-based secure forms system built on Java and XML technologies, providing data collection, data security, and data management solutions. The interface to the records management system is through the use of Web-based forms, called eForms, that are used to collect data. Each eForm has an associated XML file that contains the eForm data. Using eForms, the FormStream mobile component can file reports from the field.

One of the major advantages of FormStream's system was the ability to "exact" design forms, as well as "exact" design the data elements that populate them. This customizing flexibility gave the Project team the ability to freely assign GJXDD, version 3.0, data elements and types to the eForm data fields, resulting in a major Project accomplishment because it ensured that information could be exchanged at local, state, and Federal levels of justice.

The use of GJXDD data elements meant that participating agencies could retain and use their existing record management systems while still having access to county and regionwide criminal data, such as suspect names, addresses, Social Security Numbers, warrants, vehicles, and criminal associations (i.e., gangs). In addition, secure e-mail and document transfer would be available between participating agencies through the secure system.

The data collected and entered into the eForms will be stored in Global Justice XML format in a master XML repository, where it is converted into a master database. A number of smaller, searchable databases will be created based on primary relationships, such as persons, gangs, or arrests. An added benefit of this system is that data can be imported from an agency's existing record management system into the Global Justice XML repository.

Security issues were easily tackled by the FormStream solution through the application of virtual private networks, firewalls, user authentication (username and password), and user roles. In addition, audit trails, encryption, integrity verification, and trusted time stamping is used for the secure exchange of all documents within the system.

The system is now in its demonstration phase, located at and managed by the Syracuse Police Department. GJXDD, version 3.0, tags were used to define all data elements wherever possible. A secure mobile wireless network is currently in the implementation phase and will be evaluated by NLECTC-NE in the fall of 2003.

The next steps, or milestones, to be accomplished entail mobile access to the central records system, roll-out of additional reports, on-line interface of the first participating agency, central records system integration with Onondaga County's 911 Computer Aided Dispatch System, and the installation of a radius server.

The NLECTC-NE will be providing a final report that will include a walk-through example illustrating interface and system use, a wireless security evaluation and vulnerability assessment, a central records system operational evaluation, examples of record management system data integration and data sharing, system pros and cons with suggested improvements, lessons learned, and a project summary.

For more information on the Central Records Project, contact the project manager, Sergeant Pete Small, Syracuse Police Department, at psmall@syracusepolice.org.