

NASCIO Recognition Award Nomination

Title: Statewide Electronic Collision & Ticket Online Records (SECTOR)

Category: Information Communications Technology (ITC) Innovations category

State: Washington

Executive Summary

The Statewide Electronic Collision & Ticket Online Records (SECTOR) application uses state-of-the-art technology to replace the current paper-based processes for issuing citations and collision reports, while still enabling participating agencies to meet existing business needs and legal requirements. Thousands of traffic citations and collision reports have been successfully created and transmitted to the appropriate agencies via SECTOR since the application went into production. The simplified electronic method of data entry reduces errors, while the rapid transmission of the data reduces the amount of time required by multiple agencies to share and access the information.

Description

Business problem

Each year, nearly 160,000 collision reports and more than one million traffic citations are processed in Washington State. The responsibility to create, collect, and store collision and traffic infraction information is shared by numerous state and local agencies. Washington State's government structure requires that many different agencies process and use this information as a key function of their daily business.

Collaborating agencies desired a data-sharing and messaging infrastructure able to move information where it is needed, when it is needed. Such an application would facilitate prompt processing of interdependent data by the responsible agencies, while generating efficiencies in information delivery and data sharing. Successful deployment of this infrastructure would reduce redundancy, and improve the timeliness, accuracy, and availability of critical public safety information.

Solution

The Statewide Electronic Collision & Ticket Online Records (SECTOR) application was created to provide a seamless, electronic document flow across multiple state agencies for traffic citations and collision reports. The SECTOR application uses the bar codes on the Washington State driver license and vehicle registration information to speed data entry. State and local law enforcement officers are able to generate electronic traffic citations and collision reports in their patrol cars using a scanner and laptop computer. Citation and collision information is then electronically routed and shared with the appropriate agencies.

Once the electronic documents are uploaded to the central Washington State Patrol (WSP) SECTOR server, they are sent to the Justice Information Network Data Exchange (JINDEX). Operated and administered by Washington State's Justice Information Network (JIN) Program and housed at the Department of Information Services (DIS), the JINDEX serves as a messaging integration platform. Once received by the JINDEX, these records are distributed to the Washington State Department of Transportation (WSDOT), the Department of Licensing (DOL), and the Administrative Office of the Courts (AOC) for further processing.

In cases where an exchange of information between agencies is required, the JINDEX eliminates the need for agencies to develop expensive, proprietary interagency data exchanges. The SECTOR application and the JINDEX use the principles of Service Oriented Architecture (SOA), and the Global Justice XML Data Model (GJXDM) in a standardized process that eliminates the requirement for users to modify existing business requirements or processes. SECTOR is a client-server system where the client is the stand-alone, self-updating software on a law enforcement officer's

computer, allowing the creation of electronic citations and collision reports, and supervisory review of submitted collision reports.

One of the biggest benefits achieved using the SECTOR application is the delivery of traffic citations to local courts without the use of paper, or having been touched by human hands. "Electronic ticketing is a common-sense program that will improve accuracy and accountability," said Governor Chris Gregoire. "It allows law enforcement officers to spend more time protecting the public, and less time filling out paperwork."

Because the SECTOR source code was developed and is owned by the SECTOR partnering agencies, it can be provided to law enforcement agencies statewide without licensing fees.

Length of time in operation

SECTOR became fully operational and was deployed in April 2007. Usage rate continues to increase rapidly. Citations and collision reports produced by SECTOR currently account for more than 20 percent of the statewide total. Over half of Washington's large and mid-sized law enforcement agencies are using SECTOR, and nearly 80 percent of our local courts now accept electronic citations.

Current SECTOR metrics

1. Courts:
 - a. Total Washington State Courts of Limited Jurisdiction: 154
 - b. Total accepting electronic citations (e-tickets): 103 (65 percent)
 - i. District Courts accepting e-tickets: 35 of 39 counties and 43 of 48 courts
 - ii. Municipal Courts accepting e-tickets: 60 of 106 Courts
2. Total number of citation/collision creators using SECTOR: 1,878
3. Law enforcement users:
 - a. Total number of law enforcement agencies: 300
 - b. Total number using SECTOR: 115 agencies
 - i. 26 small agencies (with 10 or fewer commissioned officers)
 - ii. 29 medium (with 11-25 commissioned officers)
 - iii. 30 large (with more than 25 commissioned officers)
 - iv. 26 counties of 39 counties
 - a. 2 small counties
 - b. 7 medium counties
 - c. 17 large counties
 - v. Washington State Department of Fish and Wildlife
 - vi. Washington State Patrol (approximately 420 users)
 - vii. Chehalis Tribal Police
4. Medium/Large-sized agency users (with more than 10 commissioned officers):
 - a. Total number of agencies with more than 10 officers: 147

- b. Total number of these agencies using SECTOR: 84 (57 percent)

Significance

SECTOR provides a fully electronic, automated process in place of current paper-based processes for issuing citations and collision reports. SECTOR eliminates the need for multiple agencies to re-enter the same data into separate databases. The Washington State Department of Transportation estimates that approximately 10 percent of all citations and collision reports contain errors. (A nationally-based study found this error percentage to be standard.) The SECTOR program is specifically designed to eliminate data input errors, reduce the time to disseminate and share information, and better use resources.

SECTOR delivers data faster. This critical information helps law enforcement organizations make decisions on roadway improvements, and target efforts aimed at collision and fatality reduction. SECTOR data also improves licensing records and expedites court cases. The time saved by participating agencies can then be focused on providing other vital public services.

Benefit of the project

Implementation and deployment of SECTOR resulted in tangible benefits to state agencies and the public, including:

- Improved officer safety and efficiency through faster event processing
 - Ability to share data among multiple forms
 - Administrative Office of the Courts estimates that County Clerk time processing electronic citations is half that of paper citations
 - Washington State Department of Transportation estimates their analysts can process SECTOR reports twice as fast as paper reports
 - Differing citation types may be issued simultaneously rather than separately (as with paper)
- Reduced processing and data entry costs for agencies throughout the state
 - Eliminates data entry redundancies of the past
- Improved accountability and monitoring of court activity
- Enhanced timeliness and accessibility for analysis and decision making
- More accurate data to determine enforcement levels, as well as guiding road maintenance and construction projects
- Error rates for both citations and collision reports have been dramatically reduced

During 2008, out of 115,616 paper reports submitted, 17,498 of them (15 percent) were returned to the investigating officer for correction. In the same year, out of 10,506 reports electronically submitted via SECTOR, only 74 (0.7 percent) were returned for correction. This significant reduction in errors improves the timeliness and availability of collision information, as well as increasing the amount of time that law enforcement officers are actively working.

Following court settlement, the average delay for a paper citation to be received and processed by the Department of Licensing is 13 days. In addition, the average length of time for a paper collision report to be received and processed by WSDOT is more than sixty days. Using SECTOR, this processing time can be reduced to less than 48 hours total.

The partnering SECTOR agencies and the JIN Program actively promoted the benefits of the JINDEX application across the state. SECTOR was the subject of numerous positive stories in newspapers, on the radio, and on television. As use of the SECTOR application expands over the next two years, partners and program staff are participating in numerous stakeholder conferences, local law and justice consortium focus groups, and national conferences aimed at increasing the level of awareness of SECTOR, and the benefits of Service-Oriented Architecture and the Global Justice XML Data Model (GJXDM). SECTOR was one of the presentations at the Microsoft Worldwide Public Safety Symposium held in April 2009.

In addition, the SECTOR partners hosted the Minister for Justice from Lower Saxony, Germany, in April of 2009 to review the purpose, benefits, and governance of the SECTOR application. These demonstration efforts provided an opportunity for Washington State to showcase the efficiency that is achievable through collaboration at an international level.

Brief narrative on hardware and software

The Justice Information Network Data Exchange (JINDEX) is the central message broker in a systems integration model built on Service Oriented Architecture (SOA). The goal of SOA is to achieve loose coupling among interacting software agents or distinct units. JINDEX acts as a centralized message switch that orchestrates standards-based XML message exchanges across multiple agencies. Configuration and routing tables, audit tracking mechanisms, security-enabled web services, related functions, and other required components enable the exchange of citations, infractions, and collision reports through JINDEX. The JINDEX infrastructure provides an integrated justice application platform that is cost-effective, high-performance, scalable, reliable, and open for use across different computing platforms.

The JINDEX environment currently consists of Compaq servers and Cisco local directors. Microsoft BizTalk was selected as the integration broker, and SQL Server as the database management system. The requirement for being as open as possible led to the adoption of web services (WS-*) standards for communication between the JINDEX and client agencies. As application demands grow, the design provides flexibility to scale by either replacing the existing servers with more powerful servers, adding servers to the environment, or both. Future enhancements may include redesigning how the JINDEX interacts with specific, specialized law enforcement agency applications to provide a more streamlined SOA. Implementation of these changes will help meet future demands for a robust, reliable, service oriented environment.

SECTOR users' equipment must meet the following minimum hardware and software requirements:

- Hardware (Laptop / Desktop)
 - 512 KB or more memory
 - 1-gigahertz (GHz) or faster processor
 - 5 gigabytes (GB) or more available hard-disk space
 - Network Connectivity (Ethernet (LAN), encrypted wireless, or cellular air card)
- Software
 - Microsoft Windows 2000 or XP
- Recommended Hardware Peripherals
 - In-car mounted printer, with either standard letter 8.5"x11" or 4" formats (to print citations and exchange of info.)
 - 2-D barcode scanner/imager (must be USB-HID configurable, and PDF417 symbology compliant)

