

Asynchrony Solutions helps Missouri State Courts implement cutting-edge data-integration program

MISSOURI LEADS NATION WITH STATEWIDE GJXDM CONVERSION

CLIENT CHALLENGE

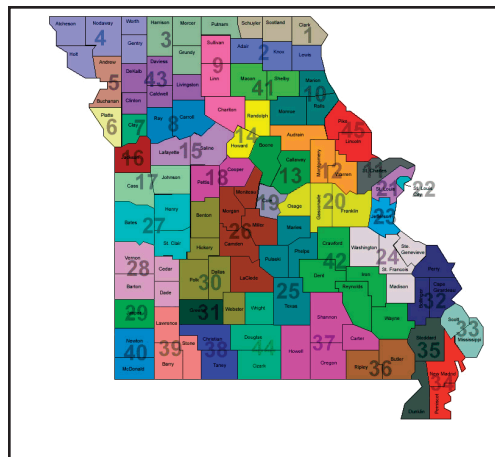
To enable automated data sharing, the Departments of Justice and Homeland Security in 2005 selected the Global Justice XML Data Model (GJXDM) as the first standard for creation of the National Information Exchange Model (NIEM). A project led by the Missouri Office of State Courts Administrator (OSCA) is the largest and most comprehensive state-wide GJXDM-based project to date.

The Missouri Court Automation Initiative was launched in 1994 to update technology in the Missouri courts. Missouri's Judicial Circuits, Appellate Courts and the Supreme Court each had their own proprietary data and court automation systems. OSCA selected the ACS Justice Information System (JIS) to supersede the 49 unique and disconnected court automation systems then in use. In 1997 OSCA's Information Technology Division initiated a project to convert data to the statewide JIS database.

Over the years, each of the court systems had put together its own unique software implementation, data structure and data schema. The result was a motley mix of homegrown systems and off-the-shelf products with any number of different database types. With approximately five hundred data fields per site, the full statewide implementation would even-

tually require analysis and conversion of over twenty-five thousand data fields.

OSCA's initial conversion strategy to import raw, unformatted, flat data files extracted from each proprietary database into Oracle forced developers to start almost from scratch with each court. Each conversion took more than a year to complete, and the project plodded along over the next seven years.



CHALLENGE: INTEGRATE 49 COURTS

Since GJXDM was such a new standard, no other State had completed an implementation of GJXDM on the scale required by Missouri's conversion project. OSCA needed a vendor who had proven experience with large-scale XML-based integration projects and programmers who had

received specialized GJXDM training. After a public RFP process, OSCA chose Asynchrony Solutions to lead the GJXDM-based project. With more than five hundred data fields per court, Missouri's conversion would be the most ambitious GJXDM-based data integration project ever successfully completed.

ASYNCHRONY APPROACH

An essential part of Asynchrony's approach to this huge conversion project was to employ an agile-programming methodology. Instead of designing an entire project at the beginning, agile programming is iterative, breaking pro-

gramming tasks into short, discrete and testable pieces. This methodology uses real-world trial-and-error to progress to a fully vetted system. It allows programmers to prove that each step in the project works in the course of creating the underlying software code. It also allows the client to validate the accuracy of initial requirements and make changes in scope or structure as the project progresses.

Creating the schema involved investigation and testing. Since GJXDM is only a library of tags, the Asynchrony team had to work closely with the OSCA's technical personnel discover and validate the content and meaning of data. The project's iterative approach allowed for ongoing fine-tuning of the system and changes were made almost to the end. For example, requirements changed quickly when, working with real data, the team uncovered new information and data relationships, necessitating changes to the XML document.

Once the schema was created, the transfer of data between XML and the JIS Oracle database was still not a simple process. It was not enough to just create an XML schema. The developers needed to create, manage and enforce business rules to evaluate source data, and place and format it properly based upon its content. Instead of moving data directly from XML to JIS, an intermediate step was necessary to effectively apply business rules. Programmers converted the XML document to Java objects. Business rules could then be applied through an XML document defining each of the more than 200 rules that were ultimately required. The rules fell into three general classes:

- Scrubbing Rules handled moving or formatting data
- Data Cascading Rules allowed inserting a record's unique ID wherever it appeared
- Data Association Rules prevented the duplication of data

Specific combinations of rules could be quickly established to fit the particular requirements. This allowed fine-tuned customization with reusable Java components. The rules code comprised the majority of the custom code created for the project. Once rules were in place, it was a relatively straightforward process to move data from the XML and Java representation, format it, convert it, reorganize it into a database object representation and write it to the database.

PROJECT RESULTS

The GJXDM solution in Missouri potentially saved OSCA \$1,600,000 on the remaining data conversions and reduced the time to conversion completion by 50%, going from 18 to 24 months per court to six to nine months. The acceleration of these critical tasks will enable the completion of all court conversions by the end of 2007.

The unification of Missouri Court data under a single GJXDM-compatible system provides a foundation for a wide range of data integration initiatives. For instance, Asynchrony Solutions recently worked with the Missouri Office of Prosecuting Services (MOPS) to extract data from their legacy software for electronic submission of the initial case filing to the court. Asynchrony also created a secure web service to transmit the information to OSCA's that, in turn, will store the initial filing into the appropriate JIS database utilizing the case file submission interface.

By eliminating the time lag from non-electronic case filing and the duplication of entry into legacy systems, the GJXDM solution will reduce errors and speed up the process of populating the JIS central database. The new system will dramatically improve the timeliness and accuracy of the OSCA database, which is used by all courts in the state.