

1. Core Data Elements

- Do your systems currently use any specific data standards-based approach to collect and share data with other State programs and/or agencies?

Unisys is uniquely positioned to identify issues, pitfalls, and best practices to integrate exchange standards into legacy and new eligibility and enrollment systems at state and local governments. Specifically:

- *Unisys was a founding member of the Global XML Structure Task Force, guiding the development of the GJXDM (the predecessor to NIEM) and has been developing and implementing XML information exchanges for 10 years.*
- *Unisys is a founding member of the NIEM Technical Architecture Committee (NTAC), guiding the development of NIEM.*
- *Unisys is a contributing member of the Object Management Group (OMG), developing standards such as the UML to support NIEM information exchange package documentation.*
- *Unisys built 28 NIEM Information Exchange Package Documentations (IEPDs) for exchanges between state and local agencies in Texas.*

Through collaborative effort of state and local agencies, the state of Texas has taken a leadership role by developing a path to creation of an information sharing model based on the National Information Exchange Model (NIEM). By working closely with local government and state-level agencies, the state of Texas developed a path to a NIEM-compliant update to the State of Texas Justice Information Exchange Strategic Plan – a roadmap to promote statewide information sharing and achieve NIEM compliance in a way that meets the needs of all stakeholders and leverages previously deployed integration efforts.

- If so, what advantages and disadvantages have you found to this approach?

As a part of the project to define "The Texas Path to NIEM," Unisys consultants built Information Exchange Package Documentations (IEPDs) that define the information content and structure for 28 common messages exchanged between state and local justice and non-justice agencies in the state of Texas.

These 28 IEPDs form the foundation to begin to achieve outcomes that will improve business process efficiencies, provide better and more timely service to citizens, and improve the quality of information upon which justice decisions are made. Because of

this important collaborative effort, Texas is poised to begin providing the right information to the right individuals at the right time.

For most of our clients, NIEM provides the foundation for information sharing by establishing a framework focused on the standards-based exchange of information among justice, public safety, homeland security and other organizations. Through compliance with NIEM standards, our clients realize the benefits and value of standards-based information sharing among justice, public safety and homeland security entities and their disparate data systems. NIEM compliant information sharing translates into faster access to and a better understanding of data that crosses the many disparate systems and agencies.

Overall, we see many common themes and requirements from our clients as they seek to implement standards-based exchanges:

- 1. Agencies should retain the right to design, operate, and maintain systems to meet their own operational requirements.*
- 2. Each agency must be responsible for the maintenance of "their" data.*
- 3. The investment in the existing technology and systems can be maximized.*
- 4. Access to information across the various systems and platforms should be transparent to the users.*
- 5. Information that has already been captured electronically should not be re-keyed downstream in the process.*
- 6. Security and privacy are the highest priority.*
- 7. Establishing and confirming the positive identity of individuals is crucial.*
- 8. Improve accuracy and timeliness.*

We have been able to meet and exceed these requirements through the use of an integrated, standards-based framework using mainstream tools and technologies and following nationally recognized and managed standards such as NIEM. We are able to:

- Connect Disparate Systems,*
- Provide Extensibility - to national and international agencies in support of information sharing efforts,*
- Present a Common Interface,*
- Capture data once, at the originating point,*
- Tie Information from Related Agencies,*

- Facilitate collaboration through Push, Pull, Query, Subscribe, and Publish capabilities
 - Assist in establishing and confirming positive identification of persons,
- What would it take to integrate the NIEM guidelines into your data collection and data transmission approach?

Creating NIEM IEPDs for enrollment and eligibility systems is a complex activity and include documentation and specification for describing NIEM information exchanges. Specifically:

1. *Set of NIEM conforming XML schemas that*
 - *(Re)use or correctly extend NIEM components.*
 - *Define a class of XML exchange instances.*
2. *Documentation detailing*
 - *How to implement the IEP with the schemas.*
 - *Exchange model, business rules, use cases, etc.*
 - *Example instances, style-sheets*
3. *Metadata for indexing, search, discovery, maintenance, registration, etc.*

Recommendation #1

One mechanism by which agencies and entities can implement a NIEM-compliant exchange is to utilize a framework, similar to the Unisys ISM Framework. The Unisys ISM Framework is a classic implementation of “hub-and-spoke” architecture. It places the Unisys ISM Broker at the center as a hub and various justice and other agencies at its spokes. This architecture allows for a pragmatic and flexible approach to integrated justice. The ISM Hub serves as the central “traffic cop” for transactions and access of information through the criminal justice enterprise. The ISM Hub maintains security authorizations and auditing information for the entire system. The ISM Hub also stores the business rules on routing and transformation for exchange among the agencies.

One important distinction is that the ISM Framework is not a data warehouse system—it is a distributed transactional system that will leverage operational justice systems in the County. Information will stay at the originating agency’s system and be retrieved when requested by a user or dictated by a business process.

The Unisys ISM Framework centers on Microsoft BizTalk Server as the integration broker that enables real-time, GJXDM/NIEM-compliant information exchange between the agency solutions. The solution complements BizTalk with Microsoft Message Queue (MSMQ) to maintain reliable message delivery. BizTalk Server is built on a powerful messaging infrastructure that promotes loosely coupled messaging interactions across heterogeneous applications, whereas MSMQ allows guaranteed, asynchronous, disconnected, reliable, secure communication among collaborating applications.

The solution's disconnected nature allows a sending party to determine the triggering event and conditions under which it will send the agreed-on information and thereby allow the ISM Hub to transform, validate, and distribute the data according to agency-defined workflow, business rules, and standard data definitions.

Through BizTalk Server, the ISM Framework maintains agency-defined business rules. Microsoft BizTalk Server orchestration schedules will facilitate the coordination of information through workflow and event notification messages. The solution will enable tracking of the complete life cycle of a criminal case throughout the whole justice enterprise, from inception through disposition and final discharge.

Recommendation #2

An exchange framework and the information it facilitates is only as good as the systems that use it. Thanks to the leadership of the Judicial Committee on Information Technology and the Office of Court Administration, TexReg 5693 was adopted. This rule, which is effective for projects starting on or after September 1, 2009, requires that justice agencies comply with the IEPDs when they implement, upgrade, or create new information systems or justice information data exchanges among courts and justice agencies, among justice agencies, and among courts.

Recommendation #3

Build reference exchanges that will assist in the design and implementation of state/jurisdiction specific exchanges and provide training specific to these models and the domain. The NIEM XML standards and methods are complex and require developers to have a thorough knowledge of XML. The tools that have been developed will provide significant benefit, but nothing can replace a thorough understanding of the goals, definitions, and business rules of the specific domain.