JIEM Exchange Modeling and the SAR: Establishing Clear Business Requirements Leads to Successful IEPD Development

The effective and timely sharing of **Suspicious Activity Reports** (SARs) between law enforcement and fusion centers and within the **Information Sharing Environment** (ISE) is a key part of the national strategy to combat terrorism and fight crime. The identification and exchange of suspicious activities information between local, regional, and tribal public safety organizations and state fusion centers is the first step in this process. To accomplish this, the raw data derived from any individual suspicious activity must be shared in a clear and unambiguous manner. The SAR **Information Exchange Package Documentation** (IEPD) was developed to accomplish this.

The first step in defining the SAR IEPD was to gather clear requirements reflecting the business need for this information exchange. SEARCH, The National Consortium for Justice Information and Statistics, participated in this project by conducting the requirements gathering and analysis phase using the **Justice Information Exchange Modeling** (JIEM) Tool and methodology. SEARCH met with a group of subject-matter experts over the course of several meetings to identify and define these business scenarios and requirements. JIEM was used to document this information in a manner that could be used later in the IEPD development process to accurately develop exchange specifications. The success of the SAR development project was premised in large part upon these effective first steps taken to define the requirements of this exchange.

Project Summary

In November 2006, the Program Manager for the Information Sharing Environment (PM-ISE), in consultation with the Information Sharing Council, established a Suspicious Activity Reporting Working Group to review current SAR processes, identify issues and impediments, and develop a common framework for improving the development, distribution, and access of terrorism suspicious activity reports across the ISE. The SAR Working Group included various federal, state, and local subject-matter experts, as well as national organizations such as SEARCH, the Integrated Justice Information Systems (IJIS) Institute, and the Institute for Intergovernmental Research (IIR). The goal of this effort was to develop the technical specifications for sharing SARs between local, state, tribal, and federal agencies.

The result of this project was the development of two SAR IEPDs using version 1.0 of the **National Information Exchange Model** (NIEM 1.0):

- The first IEPD, called the Detailed SAR, defined the complete set of data contained within a Suspicious Activity Report.
- A second IEPD, called a Summary SAR, excluded Personally Identifiable Information (PII) from the SAR in response to restrictions in some jurisdictions that prohibited sharing of this type of information.

The focus group completed work on the SAR project and delivered the results to the PM-ISE in spring 2007. An update of the IEPD to NIEM 2.0 followed in January 2008.

Capturing SAR Exchange Requirements in JIEM

SEARCH participated in this project by facilitating the analysis and requirements definition process used to develop these technical specifications. The JIEM Tool was used to capture the context and business content of the SAR. See Figure 1. Data requirements were then modeled using Uniform Modeling Language (UML) techniques.

Together these two deliverables addressed the first two steps of the IEPD development life cycle, **Scenario Planning** and **Analysis of Requirements**, and were used as input into the final UML diagram contained in the ISE-FS-200 specification. These artifacts were then used by other project participants and staff to complete the IEPD development process. SEARCH continued to participate in later phases of the project by reviewing the final deliverables.
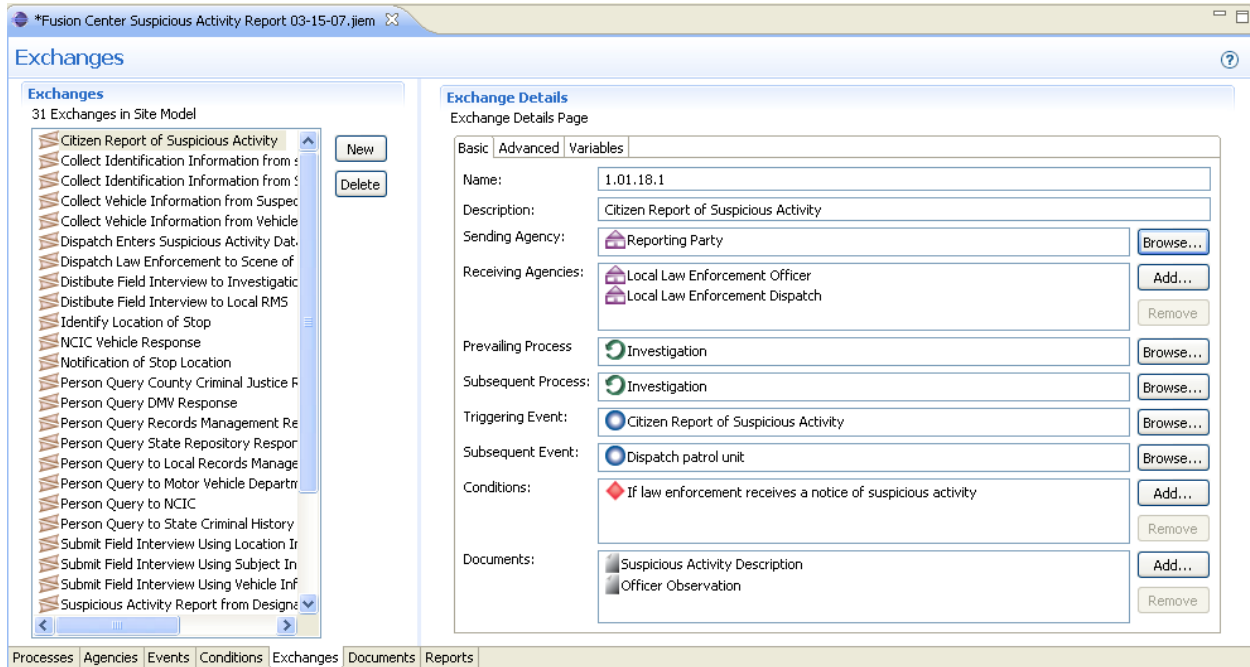

Figure 1: SAR JIEM Site Model Exchange Details in JIEM 4.0

Capturing exchange requirements accurately and completely is essential to the effectiveness and success of subsequent technical development activities. SEARCH played a critical role in this project by using the proven requirements-gathering capabilities of the JIEM Tool and analysis methodology to bring together subject-matter experts and other stakeholders in a facilitated interactive requirements-gathering process.

The JIEM site model developed for the SAR defines both the context and content of the SAR exchange environment. The context is established by defining the exchange participants and the business rules surrounding the need for the exchange. Within JIEM, this context information is captured in four Dimensions of Exchange: 1) Agencies, 2) Processes, 3) Events, and 4) Conditions. This context information is used to define the various business scenarios and use cases in which the SAR would be used. In the JIEM SAR site model, 50 Agencies, 5 Processes, 22 Events, and 24 Conditions were identified to help define the context of when a SAR should be exchanged.

Data content requirements are captured in the fifth JIEM dimension, the Information dimension, and this information is the basis for further IEPD development. JIEM captures data content in business terms understandable by subject-matter experts and can then be used by technologists in the next step of the IEPD lifecycle, **Mapping and Modeling**. In the SAR JIEM site model, 563 data elements were identified and structured into 83 components, which were used as the basis for the classes identified in the UML model.

The SAR JIEM site model fulfills important functions in the information exchange development process. The site model provides users with a business-oriented view toward information exchange that describes when and where information exchanges occur, as well as an easily understood inventory of the actual data contained in the exchange. This higher-level and more approachable representation of exchange information can be used to more readily and fully understand exchange requirements. In turn, these specifications can be re-used to define and develop other exchanges that contain similar scenario and content requirements. Leveraging the JIEM site models developed for the SAR can ease and speed the development of other exchanges.

Web links

JIEM: http://www.search.org/programs/info/jiem.asp

SAR: http://www.ise.gov/pages/ctiss.html

ISE-FS-200 specification: http://www.ise.gov/pages/ctiss.html

Additional information about IEPDs: http://it.ojp.gov/iepd/

NIEM: http://www.niem.gov/