Connecticut Information Sharing System (CISS)

Information Exchange

Table of Contents

Introduction

An information exchange is one of the ways that CISS can facilitate the sharing of information in the criminal justice community. The purpose of an information exchange is to send well-formed and unambiguous messages composed of data elements electronically from one criminal justice agency to another.

Before data can be exchanged between agencies, it needs to have a common language. To create a standards-based approach, CJIS is using a custom IEPD structure based on a national Information Exchange Package Documentation (IEPD). Using this IEPD, document instances (messages) are structured with standardized languages and formats that adhere to agreements made by participating partners.

Once messages are constructed and published, CISS Information Exchanges transmit the information based on predetermined routing instructions. In the same way that the United Parcel Service delivers packages sent from one location to another, CISS is a fast, secure, comprehensive and efficient data delivery system. This exchange of information agreed upon by criminal justice agencies will enable them to make better decisions as a result of being more timely, accurate, and complete.

The Flow of Criminal Information

The flow of criminal information starts one-way, but can change direction or end at any point. The original document will always stay the same, but other information may be added to create a new document and other documents may be created that refer to the original document. Incident (public disturbance) information is recorded at the law enforcement level. If an arrest is made, the incident report is next viewed by Prosecution, who then creates a charging document if there is enough information to make a case. If Prosecution creates a charging document, the incident continues on to Court Services for their determination. The determination may result in additional documentation. If the incident merits correctional or rehabilitation service, the information moves to Correction and Rehabilitation. Along the way, modifications may be made to the case and additional information will be passed back down the line, according to agreements between agencies. All of this movement of data will take the form of CISS Information Exchanges.

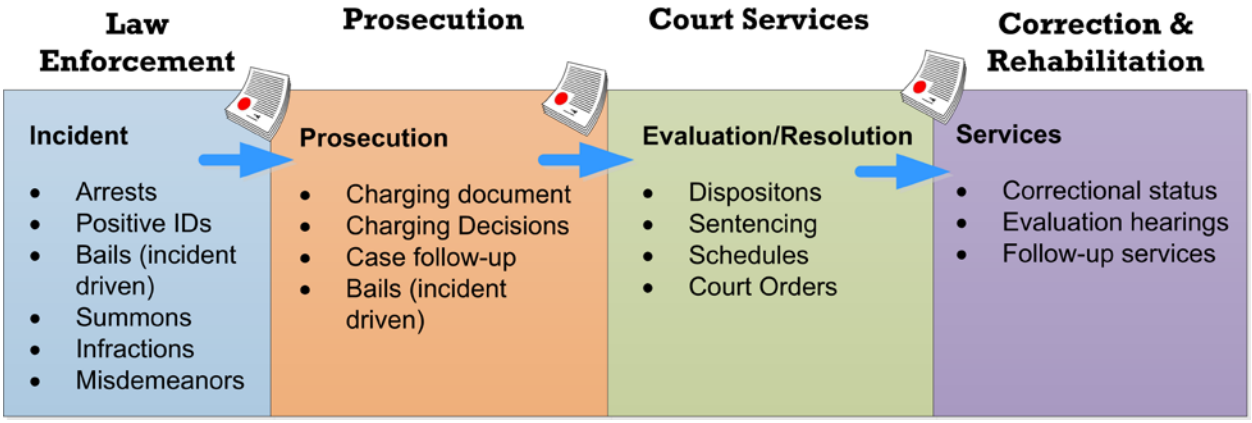


Figure 1. Flow of a criminal incident.

A Standards-Based Approach to a Common Language

A considerable challenge when sharing data between one criminal justice organization and another is that each one often has different names, meanings, and formats for their data elements. Before data can be exchanged between agencies, it needs to have a common language. Essentially, the criminal justice systems speak different languages. While they may be saying the same thing, they are using different words or using different formats to represent the same data. For example, local law enforcement officers may call a person who was arrested as an "arrestee" while a member of the Judicial Branch would label that person a "defendant." To solve this dilemma, CJIS has adapted a conceptual framework using a national information exchange model that can be customized as needed when building the data exchange for CISS.

To create a standards-based approach, CJIS is using as a base a national Information Exchange Package Documentation (IEPD) that contains all that is needed to exchange data between criminal justice agencies. An IEPD is a collection of documents that typically includes required items such as schemas, XML artifacts, samples, documentation of various kinds, and rendering instructions. This collection of documents is based on the agreement that is made with the participating agencies on the specific information that they wish to share.

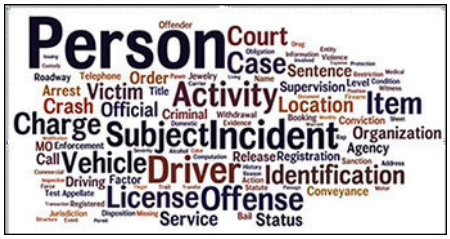


Figure 2. Most commonly used data elements in order of size.

Adhering to a national standard ensures that information is well-understood and carries the same consistent meaning across various communities, allowing interoperability (meaningful information exchange among separately developed systems) to occur. Having a standards-based approach to exchanging information means that criminal justice agencies don't need to change their terminology. Police officers can still call that person an arrestee, but if they want to exchange information with Judicial, both agencies would need to agree on a common term to describe a person who was arrested.

Criminal Justice Messages

The CISS Information Exchange is made up of document messages using a structure that is based on, and adheres to, the standardized national IEPD. A message is made up of components that are related to one another, all stemming from a root activity that has many branches, similar to a tree. For example, a root activity can be a hearing by the Board of Pardons & Paroles (BOPP), an Evaluation conducted by the Department of Correction, or an Incident. It can be any activity that branches off to include related elements.

An Incident Report is one of the most commonly used criminal justice messages. An Incident such as an arrest has a primary person, the individual arrested. The arrest took place at a certain location at a specific time. Other participants will be involved as well including the arresting officer, perhaps one or more victims, witnesses, etc. There could be tangible items like guns, drugs or vehicles. An Incident also includes offense(s), a disposition(s), and possibly a sentence(s), and/or sanction(s).

Figure 3 gives a simple overview on the relationships between people, places, and tangible property, items, offenses and documents in a message. Similar to a tree structure, the Root Activity in this case is an Incident and the branches are the elements related to the Incident.

Much of an agency's data is organized into separate areas in their databases. When information is directed to be published, the data is extracted from the databases and organized with elements related to the root into a document instance (message). In this way, it can be published in one transmission.

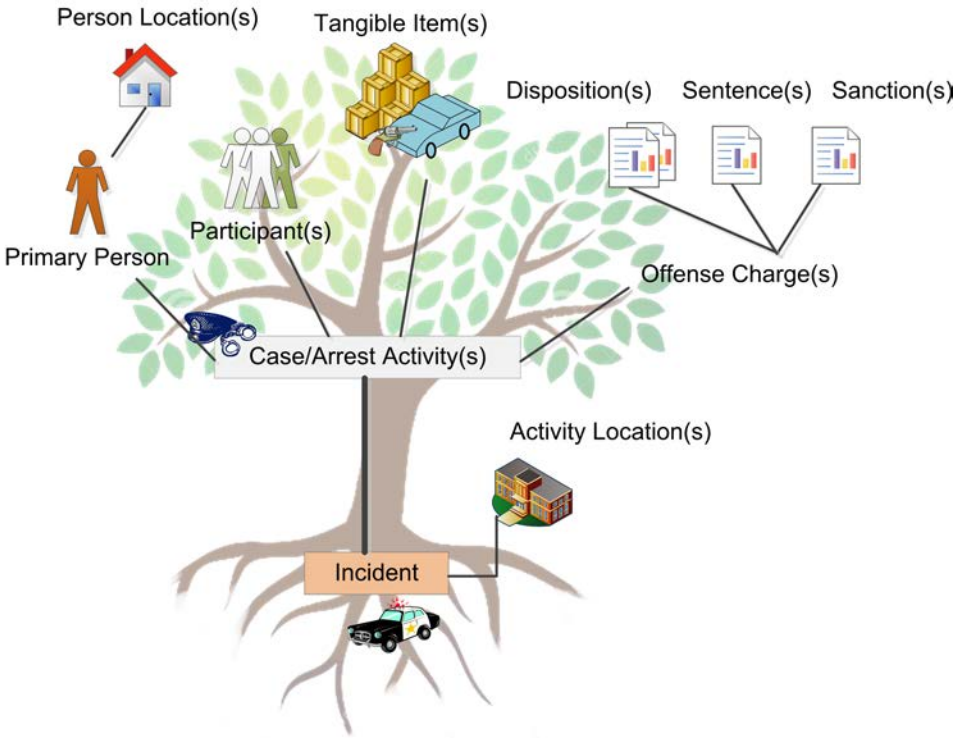


Figure 3. Incident Information Exchange Reference Model.

The Message Structure: Looking Under the Covers

To support information exchanges within the CT Criminal Justice Community, CJIS has adopted a conceptual framework based on constrained versions of national Criminal Justice Reference IEPDs. The IEPDs include **Logical Entity Exchange Specification (LEXS)**, The **National Data Exchange (N-DEx)** and elements **from National Information Exchange Model (NIEM)** that contain schemas and other elements. A *schema* is a cognitive framework that helps organize and interpret information.

LEXS allows interoperability and flexibility by separating documents methodically and providing a structured framework. LEXS helps developers prepare submissions according to standardized specifications.

In the CISS framework, CISS uses N-DEx for the main elements. "N-DEx provides criminal justice agencies with a mechanism for sharing, searching, linking, and analyzing information across jurisdictional boundaries. A national repository of criminal justice records submitted by agencies from around the nation, N-DEx uses those records to 'connect the dots' between data on people, places, and things that may seem unrelated."[11] N-DEx consists of reports that include the details of an incident.

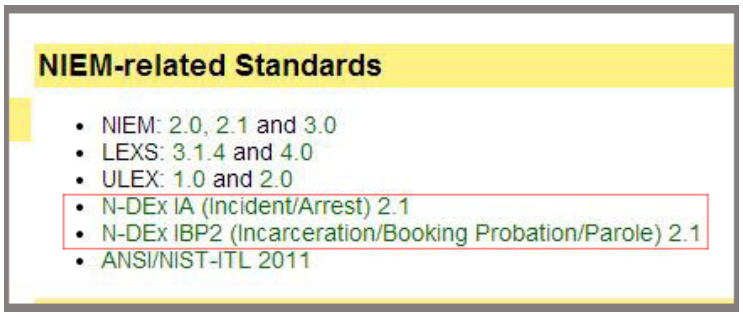


Figure 4. Two schemas to create instances in CISS.

While N-DEx contains the main elements (reports) for the message exchange, LEXS and N-DEx also use NIEM to supply some of the elements for definition. NIEM, a national standard for sharing justice information, was developed as a way of sharing information in the event of a national emergency and in support of daily operations on a national level and now includes other domains.

Using schemas, CJIS builds instances (message types) for CISS Information Exchanges. Two IEPDs with schemas that CJIS is using to create instances for data exchanges in CISS **are N-DEx IA (incident/Arrest) 2.1**, and **N-DEx IBP2 (incarceration/Booking Probation/Parole) 2.1** (see Figure 4). Both can be found on the Schema Central Website. Schema Central is an interactive repository that is used to search XML schemas. CJIS is also extending existing schemas that meet Connecticut's needs. For example, the Connecticut Offense Codes schema is added to the N-DEx schema to ensure that the offender status sent in the message is valid.

[1]N-DEx: Law Enforcement National Data Exchange. FBI. http://www.fbi.gov/about-us/cjis/n-dex/ndex_overview.

In the example of an Incident Report instance (Figure 5), the schema consists of the LEXS Header, which is the information on the content of the submission, the Entities, including persons, activities, physical items, location and offenses of the incident and Attachments, which include additional documentation, photos, etc. For example, the item can be a vehicle or a weapon, the person can be a victim or perpetrator, a location can be a house, an activity can be a disturbance, and an offense can be a burglary. The N-DEx part of the schema includes all of the reports related to the incident.

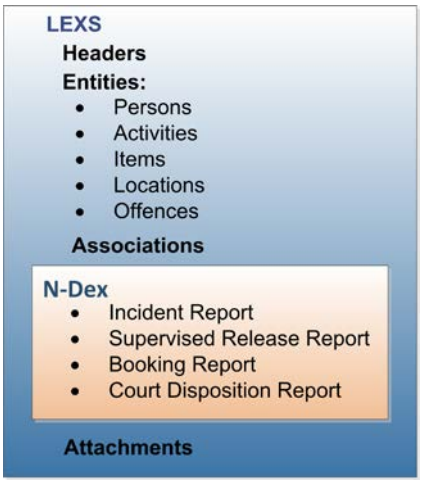
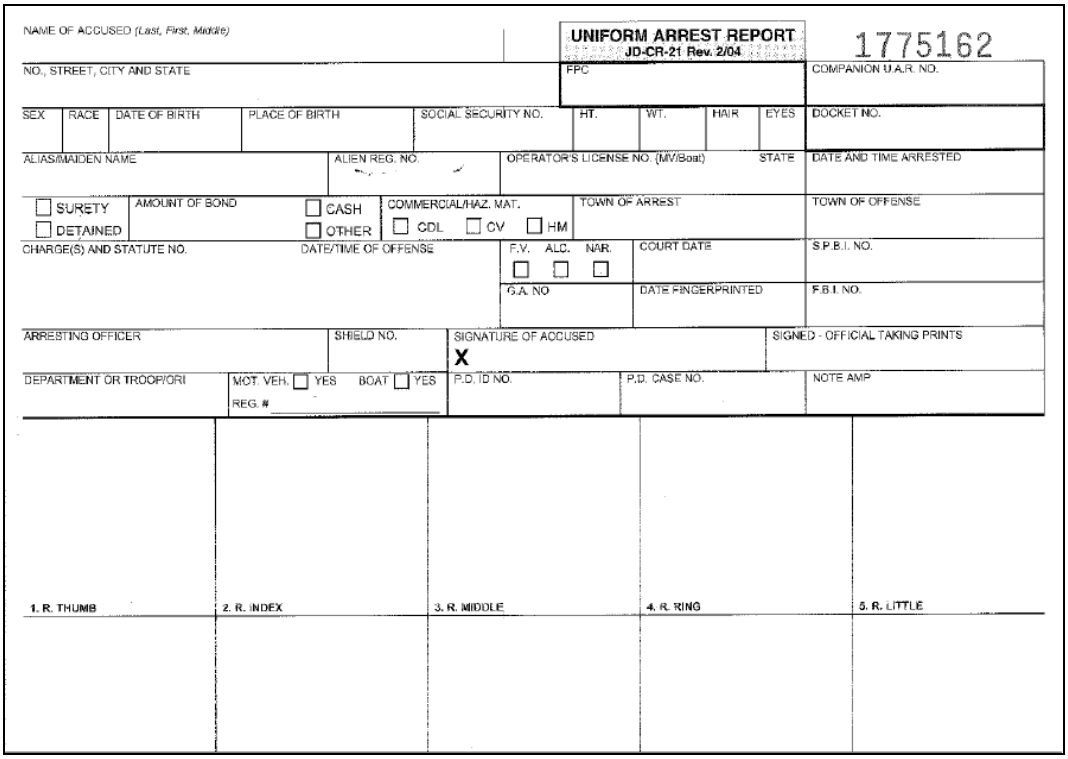


Figure 5. Incident Report instance structure.

Constructing the Incident Report Information Exchange

The Incident Report (Arrest) Information Exchange (see Figure 3) is based on the Uniform Arrest Report (UAR) JD-CR-21 (see Figure 6) and related data and documentation. The UAR is the primarily form for the positive identification of a subject by a biometric reading using fingerprints.

When an officer enters data from the UAR and all associated information and attachments in the booking process into a RMS or comparable system, the information is stored in the local database. When information is ready to be published, this incident report and other information is extracted from the database and directed to populate the Incident document instance (message). All document instances are constructed using supported definitions, rules, and constraints that are contained in the specified schema according to the partnering agency agreement. The instances are published in the form of Information Exchanges.



NAME OF ACCUSED (Last, First, Middle)

UNIFORM ARREST REPORT
JD-CR-21 Rev. 2/04

1775162

NO., STREET, CITY AND STATE | FPC | COMPANION U.A.R. NO.

SEX | RACE | DATE OF BIRTH | PLACE OF BIRTH | SOCIAL SECURITY NO. | HT. | WT. | HAIR | EYES | DOCKET NO.

ALIAS/MAIDEN NAME | ALIEN REG. NO. | OPERATOR'S LICENSE NO. (MV/Boat) | STATE | DATE AND TIME ARRESTED

☐ SURETY ☐ DETAINED | AMOUNT OF BOND | ☐ CASH ☐ OTHER | COMMERCIAL/HAZ. MAT. ☐ CDL ☐ CV ☐ HM | TOWN OF ARREST | TOWN OF OFFENSE

CHARGE(S) AND STATUTE NO. | DATE/TIME OF OFFENSE | F.V. ☐ ALC. ☐ NAR. ☐ | COURT DATE | S.P.B.I. NO.

G.A. NO | DATE FINGERPRINTED | F.B.I. NO.

ARRESTING OFFICER | SHIELD NO. | SIGNATURE OF ACCUSED X | SIGNED - OFFICIAL TAKING PRINTS

DEPARTMENT OR TROOP/ORI | MOT. VEH. ☐ YES BOAT ☐ YES REG. # | P.D. ID NO. | P.D. CASE NO. | NOTE AMP

1. R. THUMB | 2. R. INDEX | 3. R. MIDDLE | 4. R. RING | 5. R. LITTLE

Figure 6. Uniform Arrest Report (UAR) form (front).

The UAR contains information about the subject, some details about the incident and a list of allegations (or charges) as identified by the arresting officer. At the bottom of the UAR, there is space to place the fingerprint fields. Fingerprints will not be included or transmitted within information exchanges.

Publishing and Consuming

As previously noted, a CISS Information Exchange is the delivery service for data submissions or messages. The actions that participating criminal justice agencies take to prepare and validate the submission package for delivery and receipt are known as Publishing and Consuming.

Publishing is making information available to a participating agency in electronic format through an online service. *Consuming* is receiving, validating, and using information from a participating agency through an online service. Both actions require prior agreement between sending and receiving agencies.

The Publishing Process

A publisher can be any agency who is providing information to another agency(s). In Figure 7, a Law Enforcement Agency (LEA) officer fills out an Incident Report (1). The Incident Report data is read into the source database (2). Information obtained from the database is used to construct a document instance that adheres to the agreement (3). The instance is validated according to business rules. If it passes validation, it is published to the consumer agency, the Court (4).

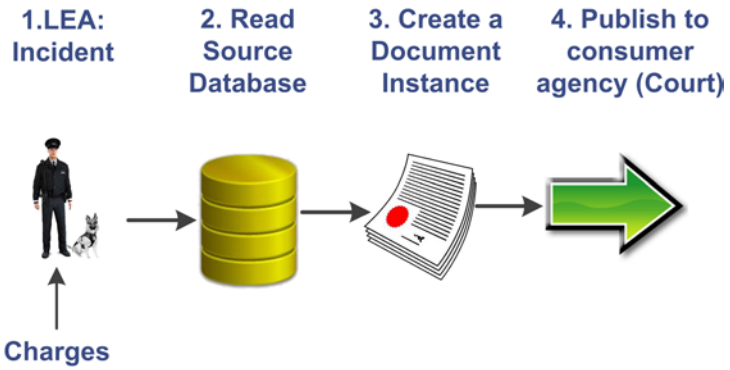


Figure 7. Publishing an Incident Report.

The Consuming Process

When an agency consumes data, they are receiving for their use information that is related to an incident (Figure 8). In this process, an application receives the publication (document instance) (1) The document instance is validated according to business rules (2). If it passes validation (2a), it is written to the receiver's database and acknowledged 3). If it does not pass validation, it is returned with a message of Invalid Response (2b).

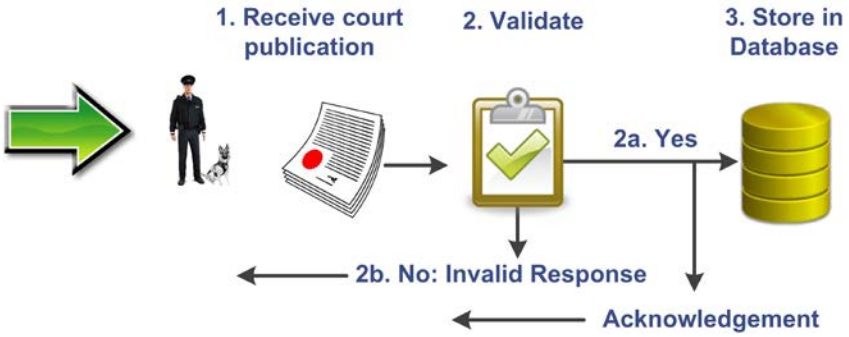


Figure 8. Example of a LEA consuming a Charge Disposition.

Summary

CISS Information Exchanges (IEs) will not only replace much of the manual movement of the paper that occurs today, but will also provide more timely and complete information. CISS IEs consist of sequences of operations that automatically send specific information directly to authorized users based on an agreement between two or more agencies and on predefined business rules and security requirements.

To support information exchanges within the CT Criminal Justice Community and to provide a standardized language and format, CJIS has adopted a conceptual framework based on National Criminal Justice Reference models. These reference models allow interoperability and flexibility by separating documents and information methodically and organizing information into a predefined structure framework using business rules, definitions and constraints. The result is a document instance (message) that adheres to the agreement between agency participants. This document instance can be published or consumed by participating agencies, using CISS Information Exchange as the delivery service.❖