NIEM in Action: Roadmap to Successful Standards-Based Information-Sharing

The National Information Exchange Model (NIEM)

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Making Data Standards Work

- National Information Exchange Model
- Best Practices for Ensuring Governance
- Keys to Ensuring Broad Adoption and Use
- Real-world Success Stories:
  - Florida Department of Law Enforcement
  - Suspicious Activity Report
In detecting, preventing, responding to and investigating crimes, disasters and terrorist acts, the exchange of information among multiple engaged agencies must be timely and accurate and therefore highly automated.

The National Strategy For Information Sharing (NSIS) was developed with the understanding that homeland security information, terrorism information, and law enforcement information related to terrorism can come from multiple sources, from all levels of government, as well as from private sector organizations and foreign sources.
Foundations of the NSIS

Information Sharing

Federal Government
State, Local, and Tribal Governments
Private Sector
Foreign Partners

Protecting Privacy and Other Legal Rights
NIEM Background

- Launched on February 28, 2005, through an agreement between the CIO’s for Justice and Homeland Security
- Leverages and extends the Global Justice XML Data Model
- Chosen by the Program Manager for the Information Sharing Environment (PM-ISE) as the data layer standard for the Information Sharing Environment
- Being widely adopted at local, state and federal levels
- Standard by choice but may be required: the NIEM “Mandates”
  - Adopted for internal use by DHS and DOJ
  - Grants and RFP’s require NIEM conformance
National Information Exchange Model (NIEM)

- What is NIEM?
  - Data Dictionary of agreed-to Terms and Definitions
  - Object Oriented Data Model providing components for creating Information Exchange Packages (IEP)
  - Set of rules for building NIEM components and IEPs
  - Clearinghouse of reusable IEP Documentation (IEPD)
  - Library of supporting documentation
  - Tools, Training, Knowledge Center, and Helpdesk
  - Program providing leadership and governance
  - Partnership of local, state, tribal, and federal organizations
  - Operational practitioner driven
NIEM: 50K Foot View

NIEM Core

- People
  - Person
  - Organization

- Places
  - Location

- Things
  - Property
  - Contact Info
  - MetaData

Edges:
- Infrastructure Protection
- Immigration
- Intelligence
- Screening
- Criminal Justice
- Emergency Management
- International Trade
• Operational Release (Version 2.0) on July 31, 2007

• The NIEM 2.0 release marked the transition from development to adoption and use
  – Many local, state, and federal Information Exchange Packages and their Documentation (IEPD’s) being developed
  – Catalyst for multi-agency collaborative information sharing developments
  – Increasing number of vendors are incorporating NIEM into their products
  – Increasing support structure including government and industry partners
  – Fostering and facilitating IEPD reuse to speed development, reduce costs, and enable higher levels of interoperability
IEPD Development Process

The IEPD Lifecycle

Executive orders, mission statements, business requirements, business context, and policies and procedures

IEPD for reuse library

Specific information exchange, high-level business requirements

Data Requirements, business context, exchange model

NIEM NDR

Submission of candidate NIEM components, component business context

NIEM NDR

Mapping, specifications for new components

Valid IEPD schemas, example instances, documentation, and metadata

IEPD artifacts to share and reuse, metadata for discovery

Complete IEPD

Existing IEPD artifacts

Map and Model

Build and Validate

Assemble and Document

Publish and Implement

Analyze Requirements

Scenario Planning

The IEPD Lifecycle
NIEM Governance Process

• Supports practitioner driven processes and products
• Business Needs Drive the Technology, Not the Other Way Around.
• Governance and policy are the critical path, not technology
  – Governance and policy are both really hard
  – Process must leverage relationships and trust
• Need to strike a balance between
  – Inside and outside the beltway
  – Technical, policy and operational skills sets
  – Homeland Security, Intelligence, Justice, Other Domains
  – Continuous Improvement, and Stability
NIEM Governance Structure

- Justice
- People Screening
- Emergency Management
- Intelligence
- International Trade
- Immigration
- New Domains
- Infrastructure Protection

Diagram showing the governance structure with various committees and task forces.
Measuring Success

• SUCCESS = ADOPTION and USE
• **REUSE!**
  • Cost Reduction, Cost Avoidance
  • Risk Management
  • Safer Communities

• **NEIM Value Proposition**: Why should I adopt this as a standard? How do I sell NIEM to my executives? To the Budget Office?
Examples of Federal Adoption and Use

- **DOJ and DHS** have both adopted NIEM
  - DHS has over 45 NIEM IEPDs completed or in development
- The Program Manager - Information Sharing Environment (**PM-ISE**) designated NIEM as the ISE data partition standard
- The FBI Criminal Justice Information Services (**CJIS**) Advisory Policy Board (APB) voted to migrate the exchanges supported by the National Crime Information Center (**NCIC**) to NIEM
- FBI has released the preliminary IEPD and schema for **N-DEx** consistent with release 2.0 of NIEM and release 3.0 of LEXS (Law Enforcement Information Sharing Program (LEISP) Exchange Specification that includes a family of reusable NIEM-conformant components)
- **SAR:** The recently-released Standard for Suspicious Activity Reporting focuses on counter-terrorism information sharing
NIEM State and Local Adoption and Use

- Many states are engaging NIEM through pilot projects and operational developments. A few examples:
  - California Administrative Office of the Courts project to develop and publish a library of NIEM IEPD’s
  - “Texas Path to NIEM” project developing a blueprint for Texas state and local agencies to cooperatively reach NIEM compliance
  - Consortium for the Exchange of Criminal-Justice Technology (CONNECT) multi-state NIEM-based project (AL, KS, NE, TN WY)
  - National Governor’s Association Policy Academy
    - Alabama
    - New York
    - Pennsylvania
    - Washington
    - Wisconsin
  - Nlets
Case Study

- Florida Department of Law Enforcement
- Sypherlink, Inc.
- Waterhole Software

- FLEX, The Florida Law Enforcement Exchange Project.
Suspicious activity is defined as “observed behavior that may be indicative of intelligence gathering or pre-operational planning related to terrorism, criminal, espionage, or other illicit intention.”

- Surveillance
- Photography of facilities
- Site breach or physical intrusion
- Cyber attacks
- Probing of security

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**Three Current Pilot Sites**
SAR Reporting Process

Information Exchange Key
- Current Exchange
- SAR Functional Standard

Suspicious Activity

Dispatched LE

911 / PSAP

Other ISC Organizations

DHS

DoD

DOJ / FBI

NCTC

Regional or Major Urban Area Fusion Center(s)

Designated State Fusion Center

JTTF / FIG

Law Enforcement Dispatch

Law Enforcement Investigation or Intelligence

Local Law Enforcement

Dispatch System (CAD)

Record Mgt System (RMS)

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Law Enforcement Investigation or Intelligence

Local Law Enforcement

Dispatch System (CAD)

Information Exchange Key
- Current Exchange
- SAR Functional Standard

Observer

Private Industry

612.0x792.0
SAR and Fusion Centers

- State and Major Urban Area Fusion Centers are critical nodes for sharing information related to terrorism.
- Primary focal points at state and local levels for the receipt and sharing of terrorism-related information.
- Suspicious activity reporting links local, state, tribal, and federal law enforcement and intelligence agencies through the state fusion centers, providing a national exchange system for suspicious activities information.
- Fusion centers and their sharing partners can now share SAR information in a universally adopted and reusable manner while fully maximizing their technology, financial, and human resources.
Summary

• Making Data Standards Work – NIEM Example
  – Responsive to operational information sharing priority needs
  – Practitioner driven at local, state, tribal, and federal levels
  – Solid business and technical foundational components
  – Fit within enterprise information sharing architecture
  – Ensure security and privacy rights are protected
  – Well managed, governed, and supported
  – Broad adoption and use
  – Reuse at all levels
Getting Started With NIEM

• Training
  – At least 2x NIEM Trainings monthly, through 2008 -

• User Guides – Available at www.niem.gov/library
  – NIEM User Guide - forthcoming

• Keep Current
  – Subscribe to NIEM News
  – E-mail information@niem.gov

• National Information Sharing Standards (NISS) Helpdesk and Knowledge Center
  – E-mail nisshelp@ijis.org
  – Call 1-877-333-5111 or 1-703-726-1919, 9AM-8PM (EST)
Questions?

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