National Information Exchange Model (NIEM)

Executive Introduction

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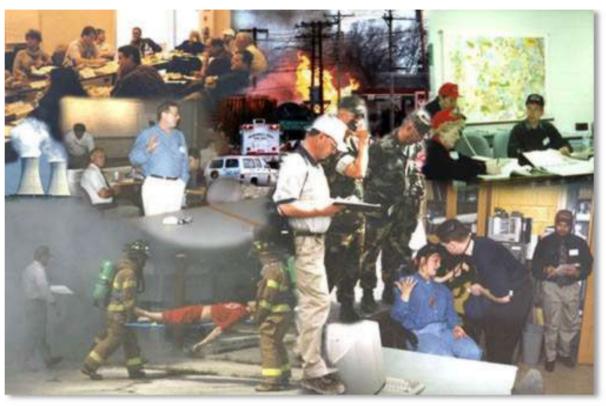**NIEM Program Management Office**

Information sharing is a national imperative

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.**

Most existing computer systems are not designed to facilitate information sharing **across disciplines** and jurisdictions.

Automated information sharing **between agencies** requires the definition of common **standards for linking** disparate systems among federal, state, local and tribal agencies.

- A data **standard**
  - with **agreed-upon terms, definitions**, and **formats.**

- **Independent** of the way data is stored in individual systems.

- A way to achieve **consensus** on the content of specific exchanges

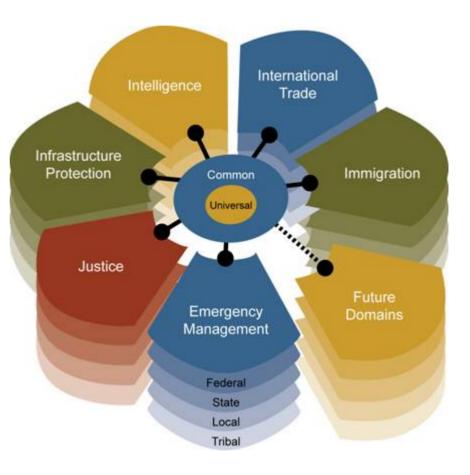- A structured approach to data interoperability
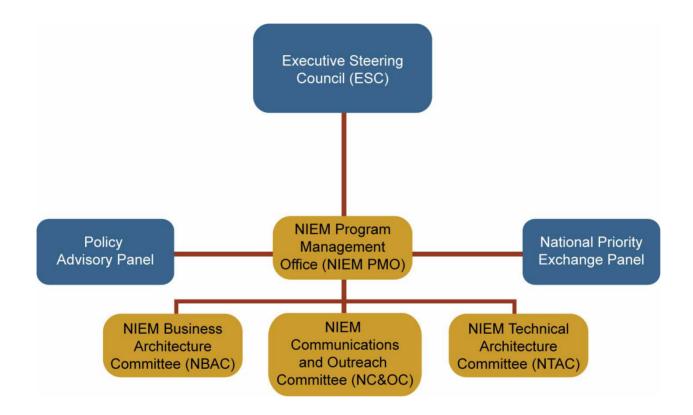
Defining Data Components

Defining data components unique to a domain will be done by subject matter experts who are representatives of the domain following basic rules for definitions and terms

A group representing all participating domains will define those data components that are universal or commonly used by more than one domain again using the same basic rules
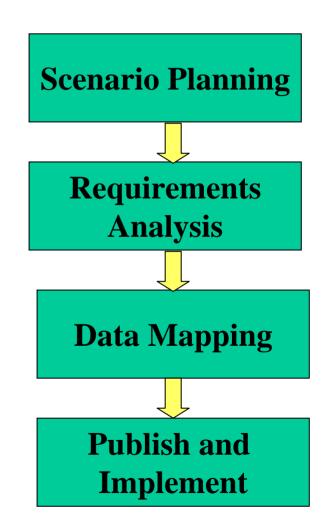
Governance Structure of NIEM

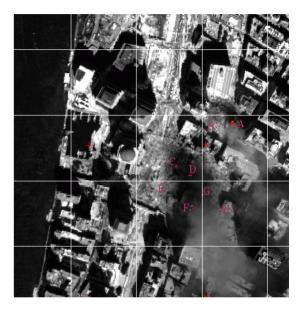# How NIEM Works to Support Information Sharing

- Create a scenario to define the need for information sharing between organizations

- Define the requirements including the data components that should be included

- Use the data component standards from NIEM to design the exchange, extending them where needed

- Document the exchange using technology standards

- Implement the exchange

Scenario Planning

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Requirements Analysis

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Data Mapping

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Publish and Implement

Scenario-Based Planning

- Building Collapse: The result of…
  - Terrorist Incident
  - Natural Disaster
  - Large Scale Criminal Event
  - Catastrophic Structural Failure
- Will trigger a broad range of information exchanges across multiple domains:
  - Law Enforcement
  - Fire Services
  - Emergency Medical Services
  - Disaster Management
  - Environmental
  - Public Works
  - Private Industry

The scenario describes in narrative form an operational situation, business context, legislative, judicial or executive mandate, or other circumstance which must be addressed. From this scenario individual, discrete information exchanges are identified for subsequent analysis.

Exchange 1:
The EOC dispatches police, fire units, and emergency medical personnel.

Exchange 2:
First responders arriving on scene begin reporting back to the EOC on the nature and scope of the damage.

Exchange 3:
Initial injured are assessed, and information is forwarded to area hospitals via devices that are tracking hospital capacities, services available, and patient transports.

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Hospital Availability Pilot IEPD

1. Modeled exchange requirements based on OASIS HAVE specification and National Planning Scenarios

Hospital Availability Pilot IEPD

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2. Mapped to NIEM

Hospital Availability Pilot IEPD

1. Modeled exchange requirements based on OASIS HAVE specification and National Planning Scenarios
2. Mapped to NIEM
3. Resulted in NIEM-conformant IEPD that describes the status of a hospital, its services, and its resources:
   – bed capacity and availability,
   – emergency department status,
   – available service coverage,
   – the status of a hospital's facility and operations.

ISE Goals

- The establishment of trusted partnerships between all levels of government, the private sector, and foreign partners

- Promote an information sharing culture among ISE partners by improving the sharing of timely, validated, protected, and actionable information

- Function in a decentralized, distributed, and coordinated manner

- Develop and deploy incrementally, leveraging existing information sharing capabilities while also creating new core functions and services

How NIEM Enables These Goals

- NIEM is enabling / building CTISS
  - Using NIEM Information Exchange Package Descriptions (IEPD) NIEM bridges from high level ISE to operational activity, from business scenario and process modeling through assembly and documentation
- NIEM is currently focusing on Suspicious Activity Reporting and the Terrorist Watch List

Fusion Center Mission

- Fusion Centers are the hub for local, regional and federal level critical information sharing partnerships

- Supporting the NRP/National Preparedness Goal to "Strengthen Information Sharing and Collaboration Capabilities"

- Implement Presidential Guideline 2 and the Common Terrorism Information Sharing Standards
  - "Information Fusing" across Communities of Interest (COI's)
  - Achieving baseline capabilities to detect, prevent, apprehend, and respond to criminal and terrorist activity

Proof of Concept and Success

- AMBER Alert has helped rescue more than 230 children nationwide.

- NLETS transactions based on Global JXDM and NIEM

- Ohio police officers can search 600 separate police computer systems

- In Maricopa County, AZ, a web service automatically sends arrest information from the police to the prosecutor

- In central Florida, 700 offenders were jailed over 12 months due to automated information sharing of data among 150 agencies

- Hundreds of cases have been solved due to the timely availability of data

NIEM Adoption

- OASIS Electronic Court Filing Technical Committee plans a 2008 release of IEPDs conformant with NIEM

- DHS to develop NIEM IEPDs for hospital availability in response to an incident

- Several RFPs have been released to develop NIEM IEPDs for Fusion Centers

- DOJ and DHS grant language

- California is planning to convert their court CMS interfaces to NIEM

- Connecticut is building a metadata repository covering GJXDM and NIEM elements and definitions as a state standard

- Florida Law Enforcement Exchange (FLEX) is using NIEM for sharing law enforcement information statewide

Cost Savings

- Pennsylvania State Justice Network (JNET) has reduced the message development process from an average of 9 months to approximately 6 weeks, saving millions

- Missouri Courts report having reduced development time by 50 percent, potential savings of $1.6 million over two years.

- Minnesota's Department of Public Safety projects saving over $10 million over a three-year period by using the XML Data Model

- Eurojust reports that the development time and cost to build the initial exchanges to implement an EU official case management system was cut by 50%

The NIEM Value Proposition

- Agencies and organizations that adopt NIEM will be able to:

  - Gain faster access to critical information

  - Reduce cost of automated information exchanges

  - Leverage existing systems

  - Participate in regional, state, and national information sharing systems that are or will be based on NIEM standards

  - Participate in and contribute to shaping national standards for information sharing

  - Contribute to helping solve the national information sharing problem

Why NIEM Now?

1. NIEM Is Tested, Ready, and in Production.

2. Documentation and Tools Are Available.

3. Training and Technical Assistance Are Available.

4. A Release Plan Is in Place.

5. Future Grants Will Mandate NIEM Conformance.

6. Reference IEPDs Are Being Developed.

7. NIEM Is the Means for Intergovernmental Information Sharing.

Tools and Support Services

- Documentation
  - *Introduction to NIEM*
  - *Concept of Operations*
  - *User Guide*
  - *Naming and Design Rules*

- Standards
  - NEIM 1.0
  - Documentation specs

- Training and Technical Assistance
  - NIEM website
  - Training materials
  - Help desk and knowledge base
  - National and regional training

- Tools
  - Automated documentation generator
  - Tools to browse the model
  - IEPD Clearinghouse

All available through
www.niem.gov