



# National Information Exchange Model (NIEM)

## Executive Briefing

August 20, 2007

**Global Justice Information Sharing User's Conference**  
**Chicago, Illinois**



# Agenda



<b>Program Overview &amp; Update</b>	<b><i>Kshemendra Paul</i></b>
NIEM 2.0 Overview	<i>Kshemendra Paul</i>
Business Value of NIEM	<i>Paul Wormeli</i>
Governance	<i>Tom O'Reilly</i>
Adoption and Use Updates	<i>Tom O'Reilly</i>
State of Ohio	<i>Brett Gerke</i>
State of New York	<i>Andrew Owen</i>
NIEM and DHS	<i>Troy Holmes</i>
NIEM and the PM-ISE	<i>Dr. Clark Smith</i>
Tools and Resources	<i>Paul Wormeli</i>
Future of NIEM	<i>Kshemendra Paul</i>

# Program Overview and Update

*Kshemendra Paul*



# NIEM at 50,000 Feet





# NIEM – The National Model



- A **National Standard** that enables the sharing of information of critical relevance to Community of Interest partnerships
- A **Common Vocabulary** providing agreed-upon terms, definitions, and formats - independent of the way information is stored in individual agency systems
- A **Structured Approach** to developing the reference documentation that expresses NIEM information exchange requirements in an implementation ready format – the Information Exchange Package Documentation (IEPD) development process



# NIEM – The National Program



- Addressing the national information sharing imperative embraced by the Departments of Justice and Homeland Security, and the Office of the Director of National Intelligence
- Advancing the development of information exchanges critical to assuring the safety and security of our citizens, property and infrastructure
- Providing the “standard of choice” for federal, state, tribal, and local governments.

- **NIEM 2.0 (Harmony) Release**
  - Major quality and other improvements
  - DOJ, DHS Enterprise Architecture leveraging NIEM internally
  - Special condition language with grants
- **State and Local Adoption of NIEM**
  - Global Justice Participation, NASCIO endorsement
  - New York Law Enforcement Portal, Florida Fusion Center(s)
  - Many adoption policy decisions underway – New York City, California Courts, State of Texas, others
  - Nlets and FBI CJIS – rap sheet pilot, CJIS APD process
- **Sampling of Other Key Initiatives**
  - OneDOJ via R-DEx and N-Dex
  - Federal Information Sharing Environment
  - Suspicious Activity Reporting
  - Prescription Drug Monitoring

# Relating NIEM to Other Information Sharing Mandates and Initiatives



- Intelligence Reform and Terrorism Prevention Act—2004
- Executive Order 13388—Guidelines and Requirements for the Information Sharing Environment (ISE)—2005
- ISE Implementation Plan
- Dec. 2005 Presidential Memorandum
- Law Enforcement Information Sharing Program (LEISP)
- Common Terrorism Information Sharing Standards (CTISS)



# NIEM 2.0 Overview

*Kshemendra Paul*

# Practitioner Driven Change



- NIEM 2.0 was released on July 31, 2007
- NIEM 2.0 release was driven by practitioner requirements through a well defined collaborative process
- PMO, NBAC, NTAC, practitioners, and stakeholders cooperated and applied NIEM governance processes and tools
- NIEM 2.0 is a significant improvement over NIEM 1.0 and includes a simplification of the data model, a data dictionary harmonized across multiple domains, refined data definitions, and enhanced migration and implementation tools



# Significant Changes



- Over 10,000 changes were made from NIEM 1.0 to NIEM 2.0
  - More than 5,000 component changes
  - Over 5,000 code list value changes
- Changes include:
  - Consolidation of Universal and Common namespaces into NIEM Core (Universal and Common identity components still available in metadata)
  - Integration of GJXDM 3.1 (beta)
  - Resolution of approximately 30 issues documented by NIEM users
  - Data object remodeling to remove duplication, complexity, and ambiguity (i.e. revision of building, structure, and facility)
  - Revision of definitions
  - Harmonization of concepts and objects in NIEM Core (i.e. passports)
  - Limited Domain version independence



# More Changes



- Updated and repaired ICE component definition
- Fixed technical concerns from ODNI
- Updated NIEM to utilize Intelligence Community Information Security Markings (IC-ISM)
- Updated code lists
- Addition of code lists for:
  - DOT HAZMAT
  - ATF explosives
  - DEA drugs
  - NGA horizontal datums

# National Priority Exchange Support



- Several of the changes in NIEM 2.0 specifically address the ability of NIEM to support National Priority exchanges
- These changes include:
  - Addition of new components and code lists for National Suspicious Activity Reporting (SAR)
  - Integrated 26 FBI N-Dex issues and components
  - Insertion of ANSI NIST Biometric standards in new namespace

# NIEM Business Value

*Paul Wormeli*

- NIEM is deeply rooted in the GJXDM and Global Justice Community, and committed to maintaining and growing that relationship
- The Global Justice XML Data Model (Global JXDM) has
  - A robust, mature framework that is rich, flexible, and extensible
  - An effective governance mechanism
  - Widespread recognition and use, especially among state and local agencies
- The NIEM builds on the demonstrated success of GJXDM
  - NIEM 1.0 was based on GJXDM 3.0.3
  - The Global JXDM will form the justice domain of NIEM (the JXDM namespace)
  - The GXSTF will continue to represent the Global JXDM within NIEM

# The NIEM Value Proposition



- Agencies and organizations that adopt NIEM will be able to:
  - Gain faster access to critical information from other participating agencies and organizations using NIEM
  - Create automated information exchanges with partners in multiple jurisdictions and disciplines at substantially less cost
  - Leverage existing systems and avoid high costs of system replacement or expensive single interface development
  - Engage additional information exchange partners in the future without incurring substantial new costs
  - Tailor specific exchanges to meet their own needs and the needs of mission critical partners using NIEM and related technologies
  - More easily 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



# The Benefits of NIEM



- Basis for operational exchanges in TWPDES, SAR and N-Dex
- Used to facilitate a joint response by all related parties (Police, Fire, EMS, etc.) to local events
- Basis of the flow of information for fusion centers in the Information Sharing Environment
- NIEM becomes the De facto Information Sharing model within the Justice, Homeland Security (...) domains in that it reaches the critical mass point in the adoption curve
- Facilitates new forms of Information Sharing not yet anticipated
- Used by majority of participants in the ISE related to CTISS implementation
- Supports international information sharing efforts
- Is supported by Commercial-Off-The-Shelf (COTS) products
- Adopted or modified to fit in at least 30 states

# Proof of Concept and Success



- AMBER Alert, built on GJXDM, is a proven success and has helped rescue more than 230 children nationwide.
- Nlets - State owned system connecting all 50 states, territories along with every federal agency with a justice component.
  - Every agency, province many access pts.
  - Currently accepting nearly 90 million transactions per month
  - Rap sheets are one of the highest volume XML transactions
- Any police officer in Ohio can search 600 separate police computer systems with a single GJXDM based query and response
- In Maricopa County, AZ, a Web service sends GJXDM-compliant arrest information from the police to the prosecutor thus eliminating redundant data entry
- In central Florida, 700 offenders were jailed over 12 months due to GJXDM-enabled sharing of data among 150 agencies; these offenders would not have been arrested without this information sharing

# Information Exchanges Help Do the Job



- Exchanges using a national standard will make it easier to:
  - Forward incident and arrest data from police to prosecutors
  - Determine the status of beds, staff, and resources at hospitals
  - Send call data from a 9-1-1 center to multiple dispatch centers
  - Report suspicious activities from field officers to investigators at state and national levels and from one fusion center to another
  - Report the status of emergency response teams and resources
  - Screen persons or cargo entering the country

# What Does it Mean to Me?



- Existing Investment in GJXDM?
  - Don't worry – Support mechanisms for GJXDM will continue to operate
  - GJXDM is the foundation for NIEM and will continue to exist in this new framework
  - Migration support is available
- Starting Now? Build on NIEM 2.0
  - NIEM PMO is putting an emphasis on enhancing and extending tools:
    - IEPD migration
    - Registry/repository
  - Look for documented implementation best practices
  - Utilize training and technology assistance programs
  - Contact National Information Sharing Standards Knowledge Center (Help Desk) for NIEM related inquiries

# Why NIEM?



- Facilitate efficient and effective national information sharing across the justice and public safety, emergency management/disaster management, intelligence and homeland security enterprise at all levels of government (local, state, tribal, federal)
- Identify and promote the implementation of information exchange in support of prevention, detection, response and recovery for all crimes/all hazards across government, industry and international communities of interest.
- Support and facilitate the Information Sharing Environment (ISE) in the development and implementation of common terrorism information sharing standards.



# Why NIEM Now?

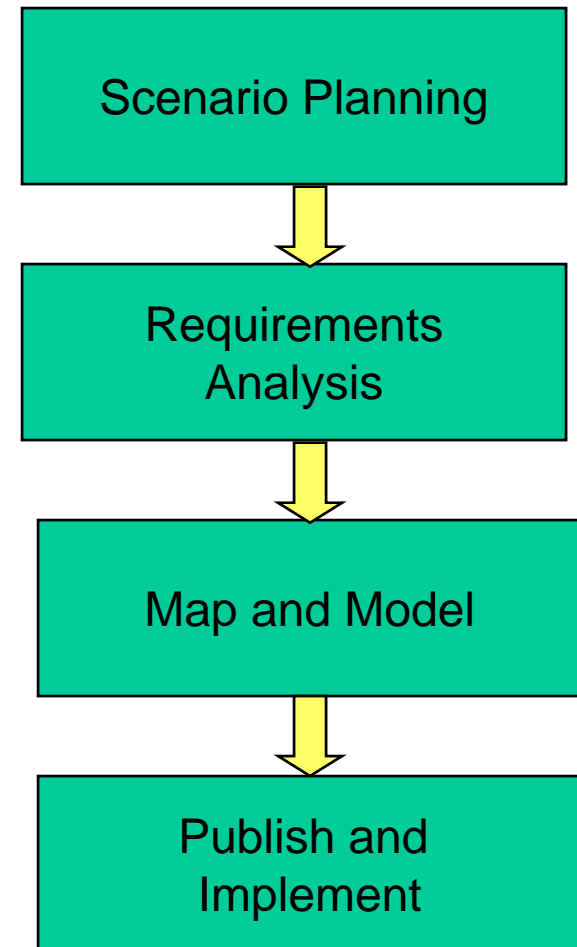


- NIEM Is Tested, Ready, and in Production.
- Documentation and Tools Are Available.
- Training and Technical Assistance Are Available.
- A Release Plan Is in Place.
- Future Grants Will Mandate NIEM Conformance.
- Reference IEPDs Are Being Developed.
- NIEM Is the Means for Intergovernmental Information Sharing.

# How NIEM Works to Support Information Sharing

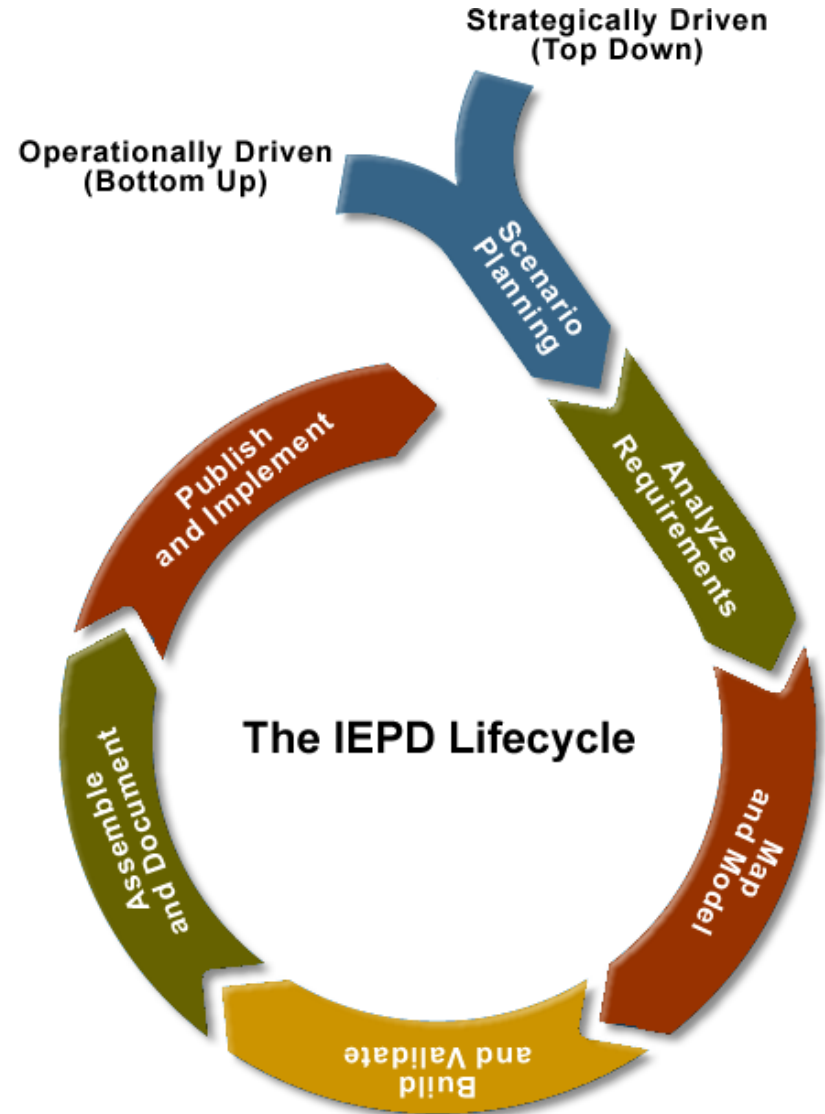


- Create a scenario to define the need for information sharing between organizations
- Define the requirements including the data components that should be included
- Use the data component standards from NIEM to design the exchange, extending them where needed
- Document the exchange using technology standards
- Implement the exchange



# Business Driven Information Exchanges

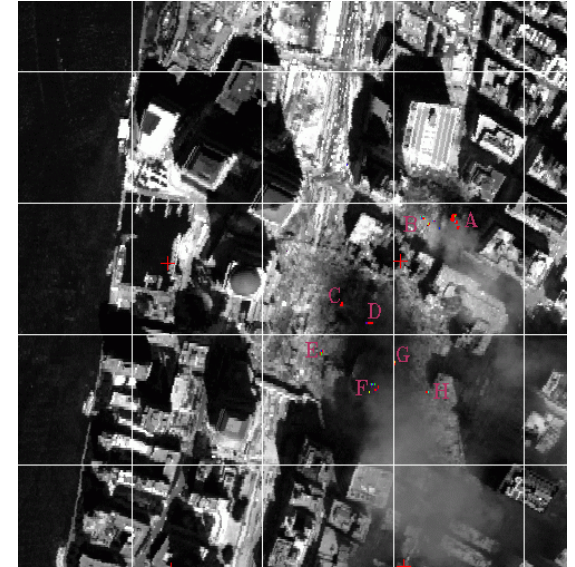
- An Information Exchange Package (IEP) begins with a business need for a particular exchange.
- IEP Documentation (IEPD) describes how that exchange should be expressed using the NIEM.
- The IEPD is a key point for introducing new elements to NIEM and for reusing existing ones.
- An IEPD itself can also be reused in whole or in part to speed development and lower the cost of sharing information.





# 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 many domains:
  - Law Enforcement
  - Fire Services
  - Emergency Medical Services
  - Disaster Management
  - Environmental
  - Public Works
  - Private Industry
  - Etc.



# Identify Information Exchanges

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 9-1-1 Center  
dispatches police, fire  
units, and emergency  
medical personnel.*



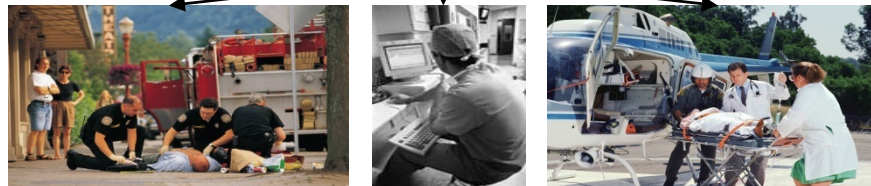
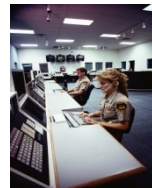
*Exchange 2:*

*First responders arriving on scene begin reporting back to the communications center 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.*



# NIEM Governance

*Tom O'Reilly*

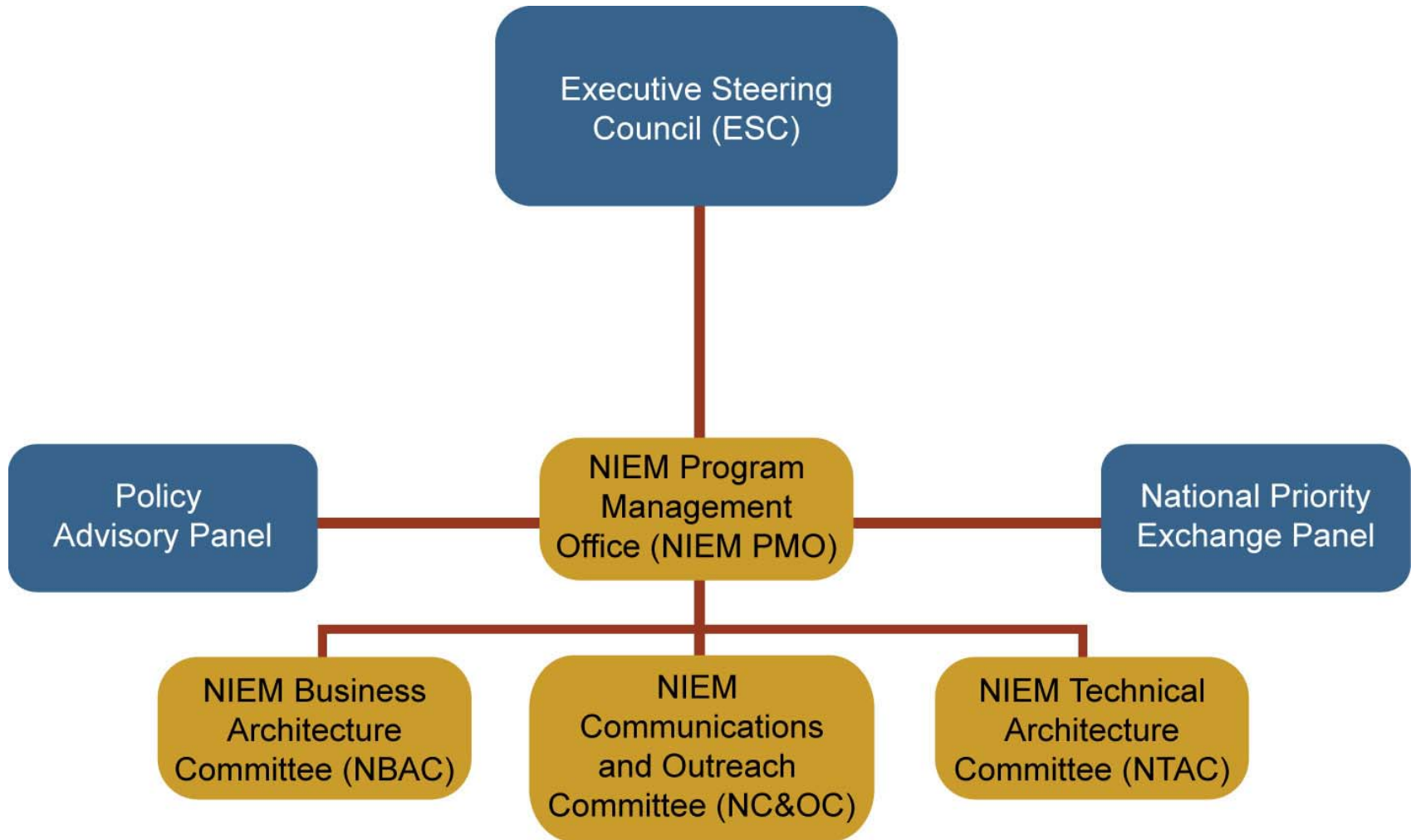


# Governance



- GJXDM User Base and Governance Structure Enables NIEM
- Governance and policy are the critical path, not technology
  - They are both also really hard
  - Process cannot replace relationships and trust
  - Balance between inside/outside the beltway
  - We are making progress – lots more to do
- State and local involvement as first rank partners
  - As practitioners, stakeholders, thought leaders
- Role of Industry, academic partners
- Success = adoption and use

# Governance Structure of NIEM



# How NIEM functions...



## Management

- Executive Steering Committee
- Policy Panel
- Executive Director

### Exchange Specification

#### National Priority Exchanges (NPEP)

- National Priority Exchange Identification & Development
- Coordinate with Authoritative Bodies & Implementing Programs

### Model Development

#### Model Governance & Harmonization (NBAC)

- Top Down, Domain Model Harmonization
- Universal, Common Core Governance
- Model Requirements

#### Technology Development (NTAC)

- Model Repository
- Registries Development
- Tool Development
- Model Development
- Configuration Mgmt & QC

### Exchange Implementation Support

#### Communications and Outreach (NC&OC)

- Training & Technical Assistance
- Meeting & Conference Support
- Knowledge Center (Help Desk) & Knowledge Base
- Develop & Manage Documentation
- Outreach & Communications

Activities

- NIEM Committees

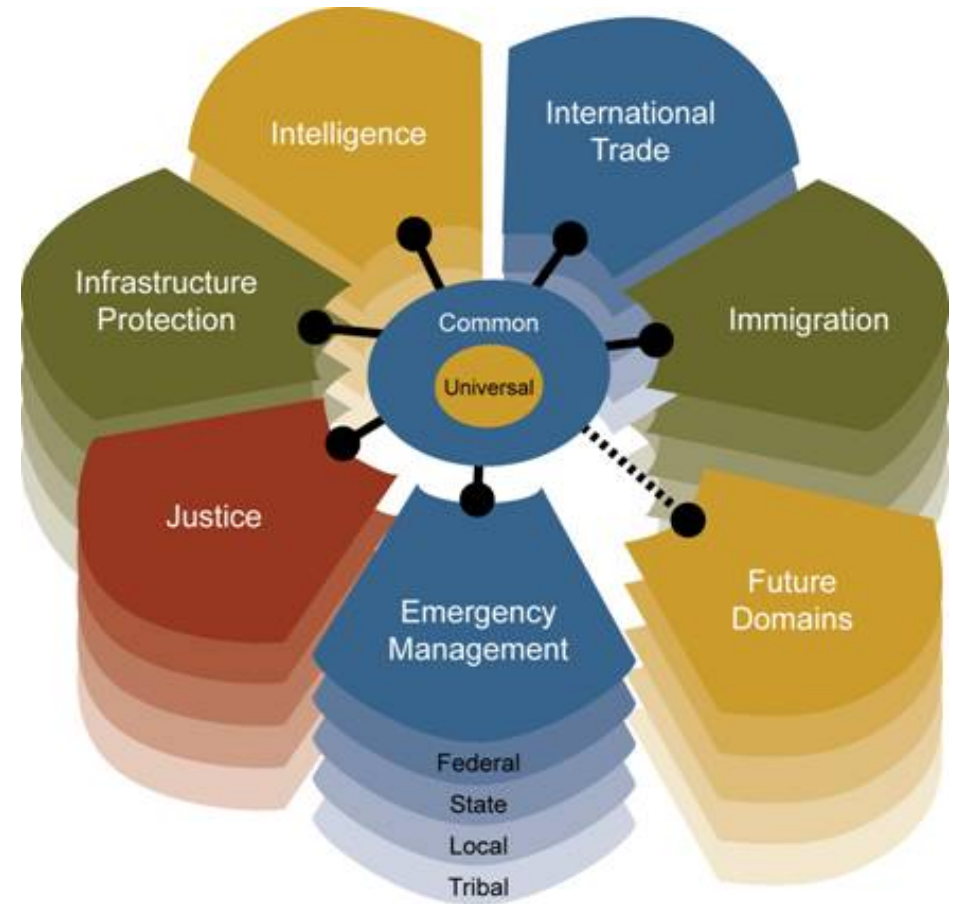
- NIEM Program Director and Executive Director, **Kshemendra Paul**
- NIEM Business and Outreach Director, **Tom O'Reilly**
- Executive Steering Committee (ESC) consists of representatives from **DOJ, DHS, ODNI and Global**
- Policy Advisory Panel is being formed
- NIEM Business Architecture Committee (NBAC) chaired by **Phil Letowt**
- NIEM Technical Architecture Committee (NTAC) chaired by **Jeremy Warren and Thomas Clarke**
- National Priority Exchange Panel (NPEP) chaired by **Donna Roy**
- NIEM Communications and Outreach Committee (NC&OC) chaired by **Paul Wormeli**

# Participating Communities and Governance

## Defining Data Components

Defining data components unique to a domain is done by subject matter experts who are representatives of the domain and follows 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





# Adoption and Use

*Tom O'Reilly*

- **DOJ and DHS** have both adopted NIEM internally
- The **Program Manager-Information Sharing Environment** has designated that NIEM will be the standard for sharing counterterrorism information.
- 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.

# Federal and National Adoption and Use *(cont'd)*



- **DHS** built a Hospital Availability IEPD and is planning or building 10 other NIEM-conformant IEPDs, including Federated Person Query and Terrorist Watchlist.
- **DOJ** programs, such as LCMS and Sentinel, through their system design efforts are ensuring their exchanges will be NIEM-conformant.
- **FBI** has released the preliminary IEPD and schema for N-DEx consistent with release 2.0 of NIEM.
- **Fusion Center support**

# Hospital Availability Pilot IEPD



DHS pilot project  
executed by  
SEARCH and GTRI

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

The screenshot shows a web-based interface for building an exchange. The title is "Exchange" with sub-tabs for "Build Exchange", "Details", and "Relate Exchanges". The "Build Exchange" tab is active. The interface includes several input fields and buttons. The "Exchange Number" field contains "009". The "Label" field contains "Report of Availability and Capacity Status to Transport Unit Leader". The "Sending Agency" dropdown is set to "Hospital/Healthcare Organization (HHO)". The "Receiving Agencies" field contains "EOC" and "Transport Unit Leader". The "Prevailing Process" dropdown is set to "Explosives Attack Response". The "Subsequent Process" dropdown is set to "Explosives Attack Response". The "Triggering Event" dropdown is set to "Emergency Notification". The "Subsequent Event" dropdown is set to "Transport Patients via Ambulance". The "Conditions" field contains the text "if Hospital Availability and Capacity status is required". The "Documents" field contains "DE-HAVE". On the right side, there are buttons for "Add Agency", "Associate Agencies", "Add Process", "Add Event", "Associate Conditions", "Associate Documents", "Data Usage", and "Edit IEPD". At the bottom, there are buttons for "Add", "Update", "Clear", "Display Other Exchange", "Exit", and navigation arrows.

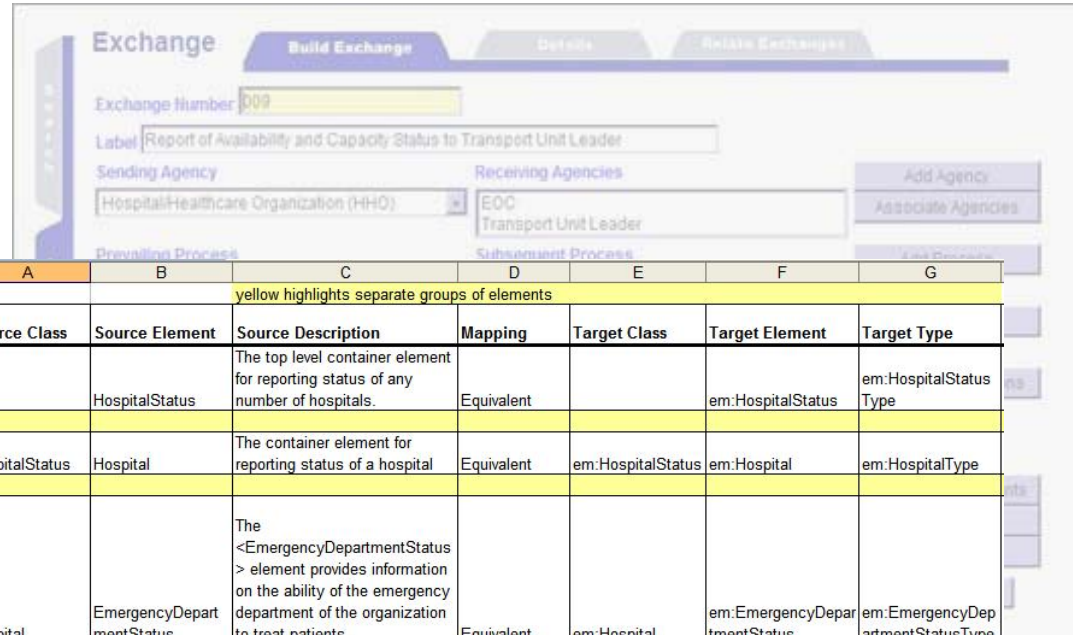
# Hospital Availability Pilot IEPD



DHS pilot project  
executed by  
SEARCH and GTRI

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

2. Mapped to NIEM



	A	B	C	D	E	F	G
1			yellow highlights separate groups of elements				
2	Source Class	Source Element	Source Description	Mapping	Target Class	Target Element	Target Type
3		HospitalStatus	The top level container element for reporting status of any number of hospitals.	Equivalent		em:HospitalStatus	em:HospitalStatusType
4							
5	HospitalStatus	Hospital	The container element for reporting status of a hospital	Equivalent	em:HospitalStatus	em:Hospital	em:HospitalType
6							
7	Hospital	EmergencyDepartmentStatus	The <EmergencyDepartmentStatus> element provides information on the ability of the emergency department of the organization to treat patients.	Equivalent	em:Hospital	em:EmergencyDepartmentStatus	em:EmergencyDepartmentStatusType
8	Hospital	ServiceCoverageStatus	The container element of all the elements of service coverage. This includes both the necessary staff and facilities.	Equivalent	em:Hospital	em:ServiceCoverageStatus	em:ServiceCoverageStatusType
9	Hospital	HospitalFacilityStatus	The container of all of the elements related to the status of the facility.	Equivalent	em:Hospital	itephavepilot:HospitalFacilityStatus	itephavepilot:HospitalFacilityStatusType

# Hospital Availability Pilot IEPD



DHS pilot project executed by SEARCH and GTRI

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.

	A	B	C	D	E	F	G
1			yellow highlights separate groups of elements				
2	Source Class	Source Element	Source Description	Mapping	Target Class	Target Element	Target Type
3		HospitalStatus	The top level container element for reporting status of any number of hospitals.	Equivalent		em.HospitalStatus	em:HospitalStatus Type
4							
5	HospitalStatus	Hospital	The container element for reporting status of a hospital	Equivalent	em.HospitalStatus	em:Hospital	em:HospitalType
6			The				
			<EmergencyDepartmentStatus				

```

itphavepilot-exchange.xsd
1 <?xml version="1.0" encoding="UTF-8"?>
2 <xsd:schema xmlns:u="http://niem.gov/niem/universal/1.0" xmlns:itphavepilot-ex="urn:us:gov:dhs:iepd:em:itphavepilot:exchange"
  xmlns:itphavepilot="urn:us:gov:dhs:iepd:em:itphavepilot:1.0" xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:em="
  http://niem.gov/niem/domains/emergencyManagement/1.0" targetNamespace="urn:us:gov:dhs:iepd:em:itphavepilot:exchange"
3 <xsd:import namespace="urn:us:gov:dhs:iepd:em:itphavepilot:1.0" schemaLocation="itphavepilot-extension.xsd"/>
4 <xsd:import namespace="http://niem.gov/niem/universal/1.0" schemaLocation="niem/universal/1.0/universal.xsd"/>
5 <xsd:import namespace="http://niem.gov/niem/domains/emergencyManagement/1.0" schemaLocation="
  niem/domains/emergencyManagement/1.0/emergencyManagement.xsd"/>
6 <xsd:element name="HAVE" type="itphavepilot-ex:HAVEType" nillable="true"/>
7 <xsd:complexType name="HAVEType">
8 <xsd:complexContent>
9 <xsd:extension base="u:SuperType">
10 <xsd:sequence>
11 <xsd:element ref="em:HospitalStatus"/>
12 <xsd:element ref="u:Metadata" minOccurs="0" maxOccurs="unbounded"/>
13 </xsd:sequence>
14 </xsd:extension>
15 </xsd:complexContent>
16 </xsd:complexType>
17 </xsd:schema>
  
```

# National Exchange Development



- Suspicious Activity Reporting (SAR)
- Terrorist Watchlist Person Data Exchange Standard (TWPDES)
- DHS Person Screening
- DHS Infrastructure Protection
- DHS Emergency Management
- Incident Reporting National Data Exchange System (N-DEx)

# State and Local Adoption and Use



- **New York** Division of Criminal Justice Services is utilizing NIEM to implement all CJIS information exchanges.
- **Florida** is utilizing NIEM for all law enforcement information exchanges.
- **Pennsylvania** JNET project is developing a plan for upgrading its installed GJXDM based information exchanges to NIEM.
- **Texas** has begun to develop a plan for statewide adoption of NIEM as the standard for information exchanges.
- **Maryland** Department of Transportation is exploring the use of NIEM for information exchanges between transportation centers and public safety.
- **California** is planning to convert their court content management system interfaces to NIEM and to map their e-filing standard (2GEFS) to NIEM.
- **New York** state and **NLETS** are developing a NIEM RAP Sheet pilot IEPD.



# State and Local Adoption and Use *(cont'd)*



- **Fairfax County, VA**, and the Homeland Security National Capital Region are using NIEM as a basis for information exchanges about resource availability across public safety agencies and hospitals.
- **Connecticut** is building a metadata repository covering GJXDM and NIEM elements and definitions as a state standard.
- **Ohio** is exploring conversion to NIEM of their CJIS transactions.
- **Mississippi** is converting their CJIS transactions to NIEM.
- **Fusion Centers** are incorporating NIEM compliance in their technology procurements.
- **OASIS** Electronic Court Filing Technical Committee plans a 2008 release of IEPDs conformant with NIEM.

# State and Local IEPD Development



- Transportation
  - Houston TranStar and Houston Metro Police, are working to implement a Field Operation Test (FOT) of the project's Incident Notification exchange. The project's IEPDs will utilize, GJXDM , IEEE 1512, and NIEM 2.0 in an effort to evaluate the different exchange styles and guide their future implementations of cross-domain exchanges
- CJIS Criminal Services
  - New York State has developed approximately 20 NIEM IEPDs for Wanted, Missing, and Unidentified Persons Exchanges
- Prescription Drug Monitoring
  - Ohio, Kentucky, Nevada and New York are developing NIEM 2.0 IEPDs to support prescription drug monitoring information exchanges
- Ohio School Safety
  - Exploring dissemination of school floor plans and evacuation information
- National Association of Peace Officers Standards and Training (POST)
  - POST plans to use NIEM to develop a national first responder registry

# Practitioner Perspectives

*OH, Brett Gerke*

*NY, Andrew Owen*

# NIEM and DHS

*Troy Holmes*

# Law Enforcement Sharing Approaches



- Today there are multiple methods of obtaining law enforcement information
  - LINX – DOD module of sharing DOD and local regional law information
  - RDEX – DOJ module of sharing DOJ regional law enforcement data.
  - NDEX – DOJ National Module for sharing federal information
  - LEO – DOJ portal for sharing alerts and collaboration around law enforcement data
  - HSIN – DHS portal for sharing alerts and collaboration around law enforcement data
- Too Many choices for local communities to determine how to get data

# Law Enforcement Information Sharing Strategy

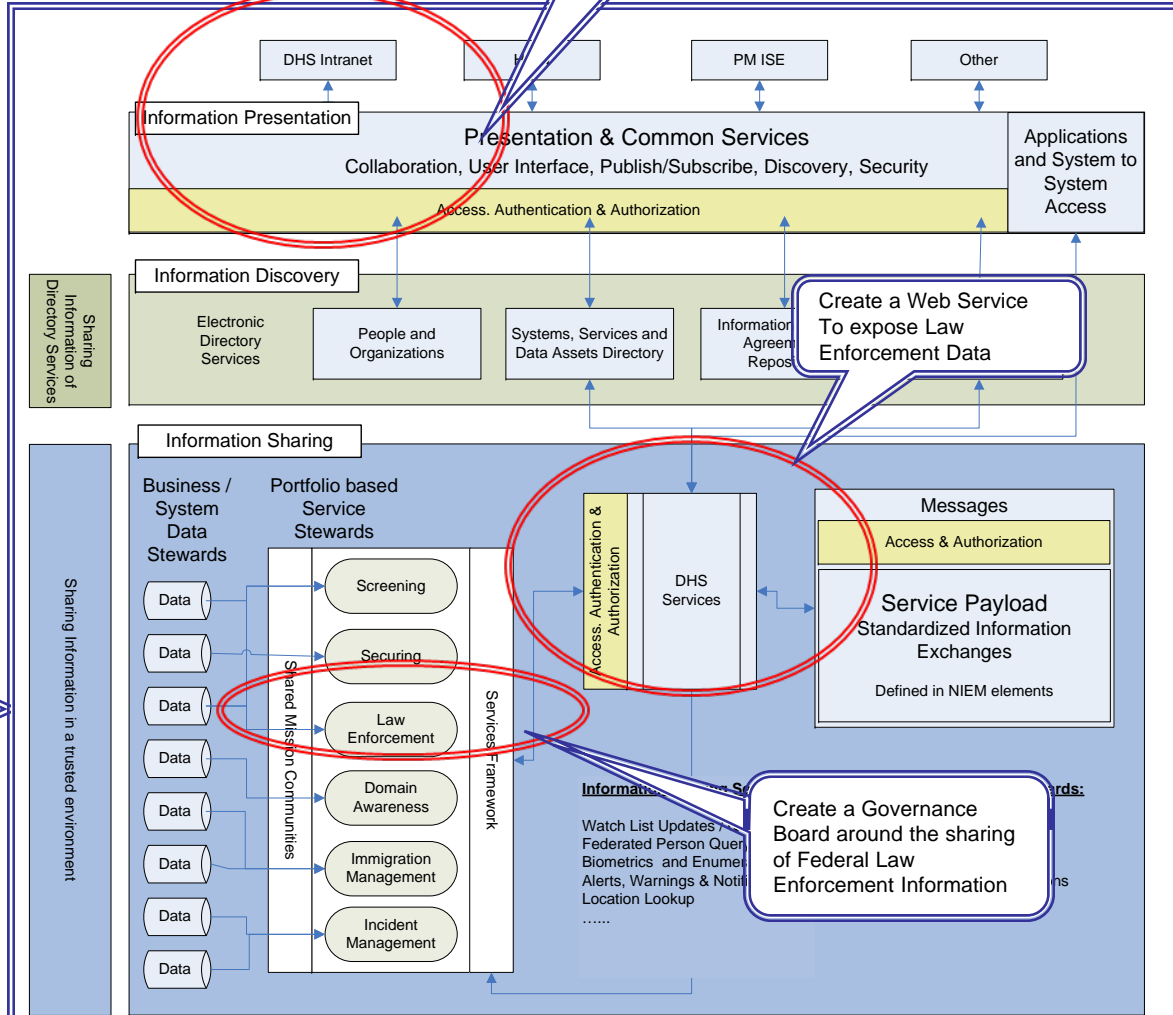
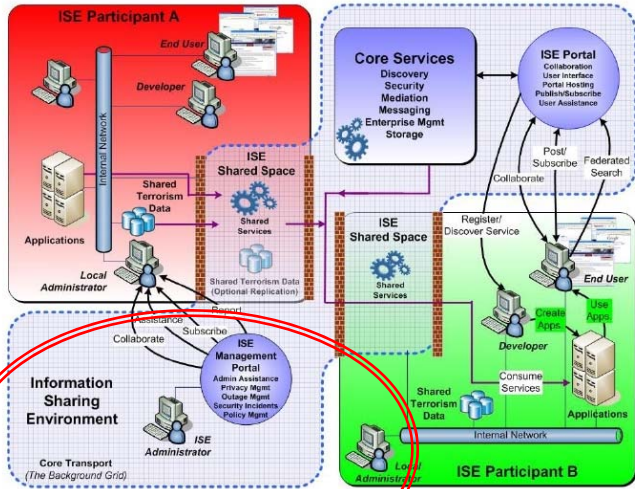


- Establish DHS Law Enforcement Information Sharing Strategy
- Utilize existing Information Sharing Frameworks
  - Information Sharing and Collaboration Branch (IS&C)
  - Information Sharing Coordinating Council (ISCC)
  - Law Enforcement Information Shared Mission Community (LE-SMC)
- Align Strategy with Director of National Intelligence (DNI) Program Manager Information Sharing Environment (PMI-SE)
  - Utilize policies defined in the Information Sharing Environment Implementation Plan
- Requirements
  - Federated Query Model
    - Federal Data will be maintained at a federal agency level and local data will be maintained by local agencies
    - Standard method of communication and format between (DOD,DHS and DOJ) NIEM/LEXS

# Implementation Approach



Utilize DHS Network



Define the SHARED SPACE as shown in the PM ISE Enterprise Architecture

Near term: Discovery through exposing Metadata  
 Long term: Sharing through exposing Services

# Utilize NIEM/LEXS SR – Standard Format



- NIEM is the set of standards for information exchange
  - The model defines a way of describing information so disparate systems can exchange it effectively and consistently
  - It is system-agnostic, so existing IT investments can be leveraged
- DOJ, DOD and DHS have agreed to use NIEM/LEXS as the common protocol for exchanging law enforcement information between agencies
- There are five entities in the LEXS model that will be used by Law Enforcement
  - Person
  - Location
  - Organization
  - Telephone number
  - Property
- LEXS groups entities into logical records, defined by the source system
  - Incident data
  - Document data
  - Inmate record

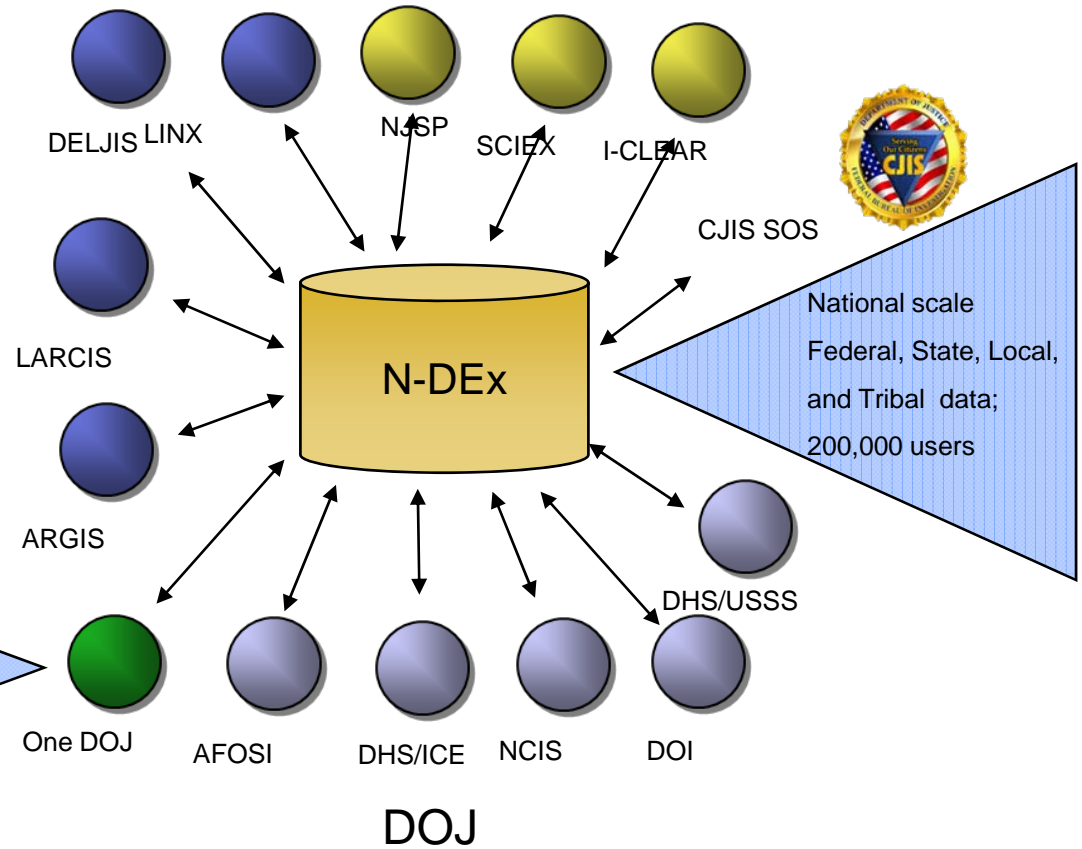


# Utilize the Established Sharing Communities



DOD

R-DEx  
Regional (select)  
DOJ case data;  
5,000 users



DHS will connect to established communities with NIEM/LEXS-SR

# NIEM / LEXS-SR – Use Case Walkthrough

*This is a notional display screen*

**Search**


Name	Last	First	Middle
	<input type="text" value="SANCHEZ"/>	<input type="text" value="GUILLERMO"/>	<input type="text"/>
Address	Street	City	State
	<input type="text" value="123 MAIN ST"/>	<input type="text" value="BELLINGHAM"/>	<input type="text" value="WA"/>
Date of Birth	<input type="text" value="07/07/1973"/>		
Driver's license	<input type="text" value="BA19385407"/>	SSN	<input type="text" value="555394834"/>



# NIEM / LEXS-SR - Use Case Walkthrough

## Summary

Name	Address	Source
<a href="#">SANCHEZ, GUILLERMO</a>	123 MAIN ST BELLINGHAM, WA	BELLINGHAM PD
<a href="#">SANCHEZ, GUILLERMO</a>	123 MAIN ST BELLINGHAM, WA	ICE



*Drill down on this item will  
retrieve ICE data*

# NIEM / LEXS-SR - Use Case Walkthrough

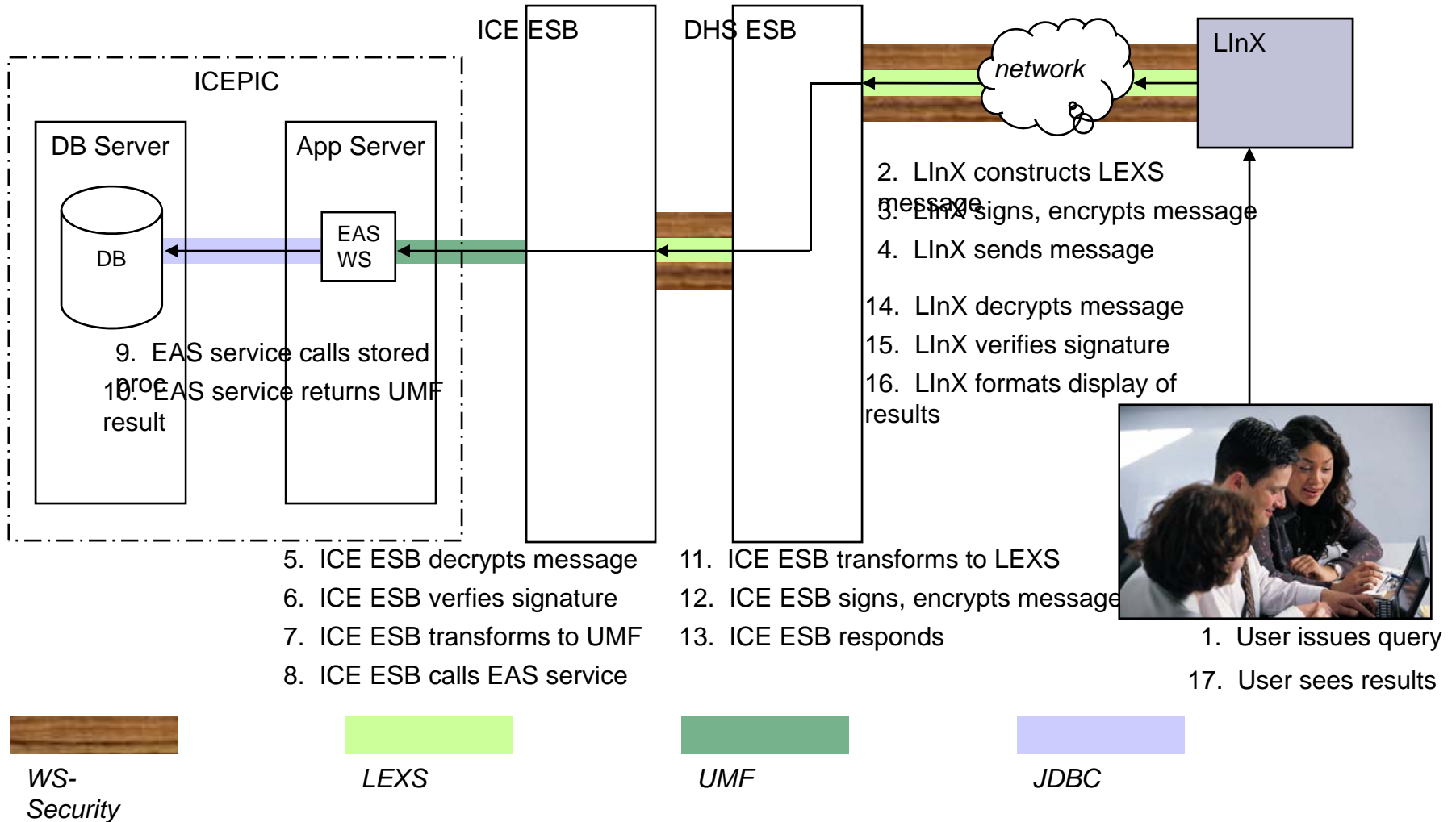


*With case data now shared, local user sees that subject is wanted in connection with robbery.*



Detail		
Name	Address	Birth
SANCHEZ, GUILLERMO	123 MAIN ST BELLINGHAM, WA	7/7/73 TIJUANA, BC
System of Record	TECS	Case No. AB19375903
Case Summary:	Mr. Sanchez is sought in connection with an armed robbery April 17, ...	
ROI No. 14834304	ROI No. 14834334	
Mr. Sanchez was last seen April 19 in the company of ...	Mr. Alvarez reports Mr. Sanchez placed a phone call to his sister ...	

# NIEM / LEXS-SR – Process Walkthrough



# DHS - Single Access to all Federal Law Enforcement

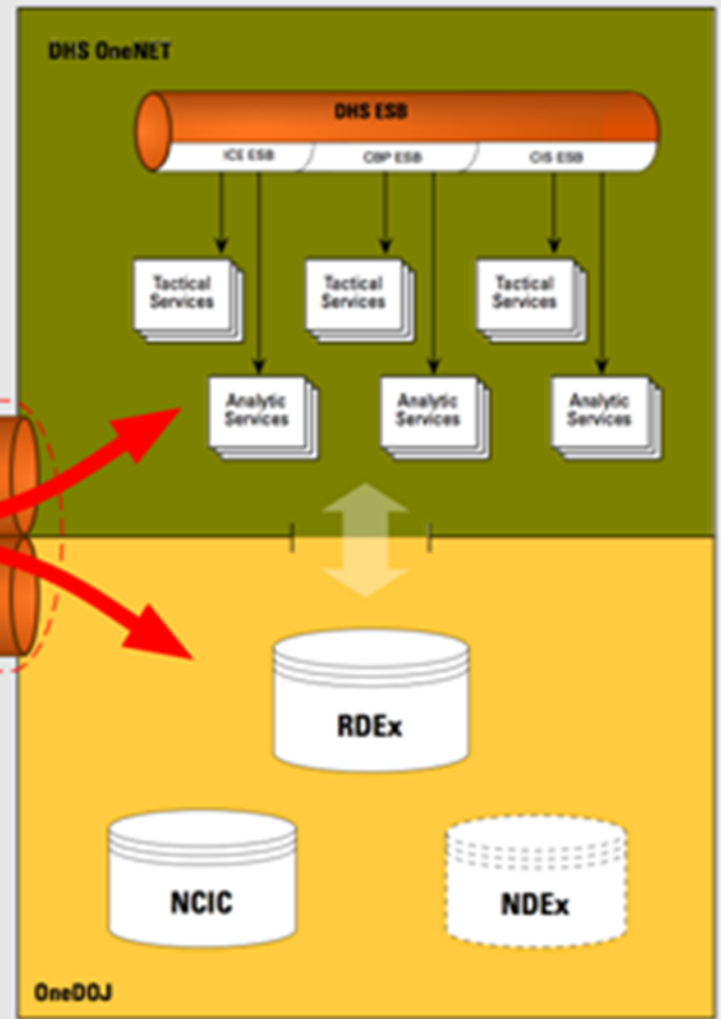


## Visual Key

- OneDOJ
- DHS OneNET
- State & Local Regional Information Sharing Applications
- Future System



**NIEM, LEXS 3.1**  
Search & Retrieve  
Publish & Discover



# LEXS - Search Retrieval - Supported Queries



- Text Search – This is a Google type search that will return results based on unstructured data hits. (Results will be returned in a summary format)
- Structured Search – This is a typical search based on structured elements that will return results based on positive hits within the structured fields (Results will be returned in a summary format)
- Detail Data – Returns the detail record associated with an identified field ( This query would be used to drill down on after a text or structured search was complete)

# LEXS Structured Search Sample



- ```
<search:doStructuredSearch xmlns:search="http://usdoj.gov/leisp/lexs/2.0/searchRetrieval">
  <search:userRequestHeader>
    <com:requestHeader xmlns:com="http://usdoj.gov/leisp/lexs/2.0/common">
      <com:systemHeader>
        <com:systemID>LINXNW</com:systemID>
        <com:version>2.0</com:version>
      </com:systemHeader>
      <com:messageID>9</com:messageID>
    </com:requestHeader>
    <com:userID xmlns:com="http://usdoj.gov/leisp/lexs/2.0/common">NGCMIKEB1</com:userID>
    <com:agencyID xmlns:com="http://usdoj.gov/leisp/lexs/2.0/common">NCIS-NCIS</com:agencyID>
  </search:userRequestHeader>
  <search:purposeCode>LINXQUERY</search:purposeCode>
  <search:maxItemMatches>50</search:maxItemMatches>
  <search:returnStructuredInfoFlag>true</search:returnStructuredInfoFlag>
  <search:structuredQueryList>
    <search:entityObjects>
      <search:entity>
        <com:entityID xmlns:com="http://usdoj.gov/leisp/lexs/2.0/common">P-1</com:entityID>
        <com:person xmlns:com="http://usdoj.gov/leisp/lexs/2.0/common">
          <ns:PersonName xmlns:ns="http://niem.gov/leisp/lexs/2.0">
            <ns1:PersonGivenName xmlns:ns1="http://niem.gov/niem/universal/0.3">STEVEN</ns1:PersonGivenName>
            <ns1:PersonSurName xmlns:ns1="http://niem.gov/niem/universal/0.3">SMITH</ns1:PersonSurName>
          </ns:PersonName>
        </com:person>
      </search:entity>
    </search:entityObjects>
  </search:structuredQueryList>
</search:doStructuredSearch></pre>
```



# Implementation Plan



- Integrate with existing NIEM/LEXS implementations from DOJ and DOD
  - LINX 07'
    - Seattle/Capital Region
  - COPLINK 08'
    - San Diego/LA/Phoenix
  - R-DEX 08'
    - LA/Seattle

# NIEM and the PM-ISE

*Dr. Clark Smith*

## IRTPA Section 1016: Creating the ISE

“The President shall—

- (A) create an **information sharing environment** for the sharing of terrorism information in a manner consistent with national security and with applicable legal standards relating to privacy and civil liberties;
- (B) designate the organizational and management structures that will be used to operate and manage the ISE; and
- (C) **determine and enforce the policies, directives, and rules that will govern the content and usage of the ISE.”**



President George W. Bush on signing the Intelligence Reform and Terrorist Prevention Act  
17 December 2004

## What is Information Sharing?

- A strategy towards a goal of improving performance
  - Belief that better decisions are taken with accurate, timely, complete and relevant information
  - Awareness of impact of decisions (feedback)

# Information Sharing Key Concepts

- **Responsibility to Provide – DNI**
  - Information Sharing Steering Committee (ISSC) – March 2007
- **Ability to “Know to What We Know.” – DOJ**
  - ...and let others know what we know
  - Law Enforcement Information Sharing Program (LEISP) – FY’04
- **Net-Centricity – DOD**
  - DOD Information Sharing Strategy - May 04, 2007
  - Global Information Grid (GIG) – September 19, 2002
- **Global Initiatives**
  - Intelligence-Led Policing
  - Fusion Centers
- **DHS Information Sharing Strategy**

**Many of the communities doing Information Sharing for their own performance improvement**

# Why all the attention on Information Sharing?

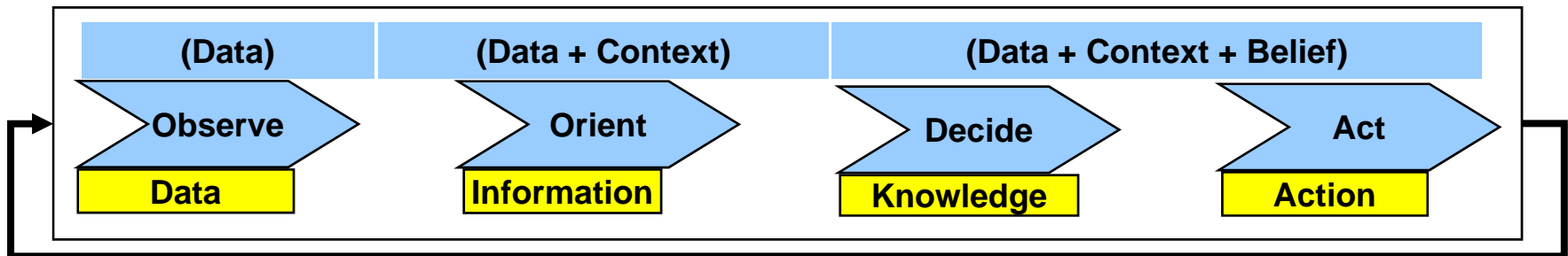
What is the impact on the business of government?

- Belief that better decisions are taken with accurate, timely, complete and relevant information
- Ability to know what we know – expectation that we know what we know
- Directed to do it – IRTPA, EOs
- Better awareness of impact of decisions (feedback)
- Take advantage of information technology advancements
- Increase operational efficiency, increase productivity and effectiveness, and decrease costs

# Why all the attention on Information Sharing?

What is the impact on the business of government?

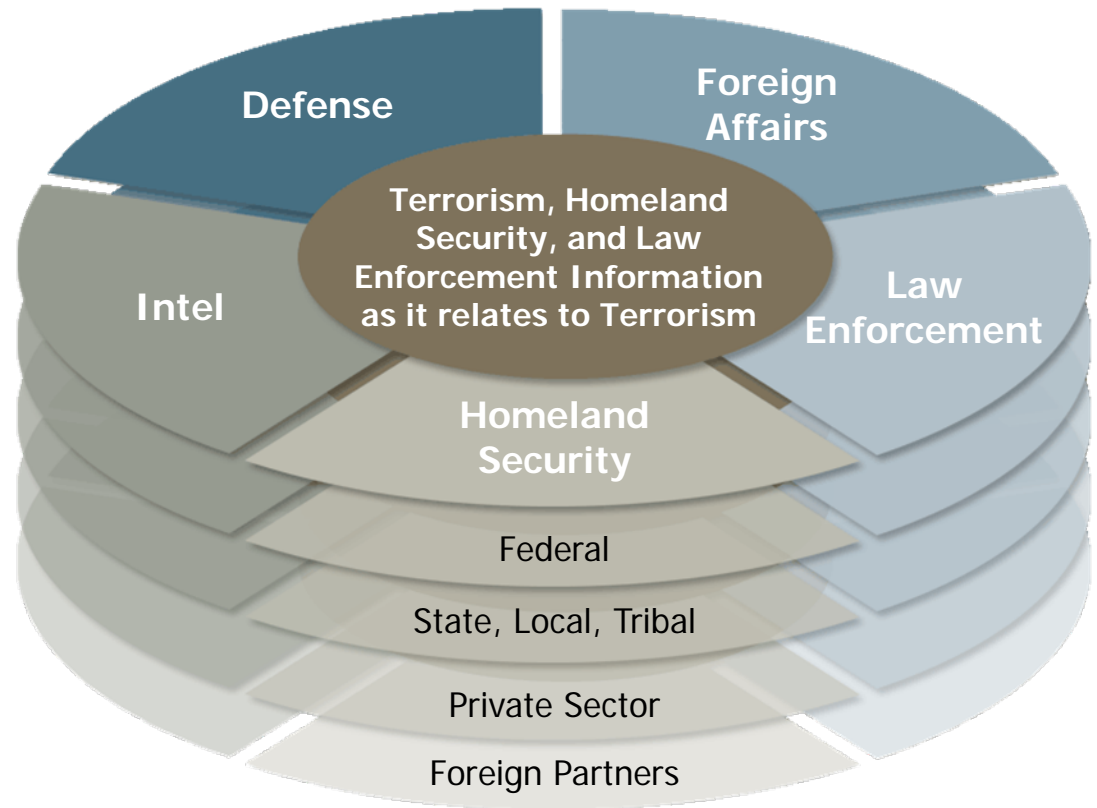
- New Threat Models:
  - Transnational adversary vs. single adversary
  - Weapons of Mass Destruction/Effect
  - Asymmetrical threat
  - Ubiquitous global communications
  - Adversaries use information as a weapon...also
- Compression of operational decision cycle



# Who is the ISE?

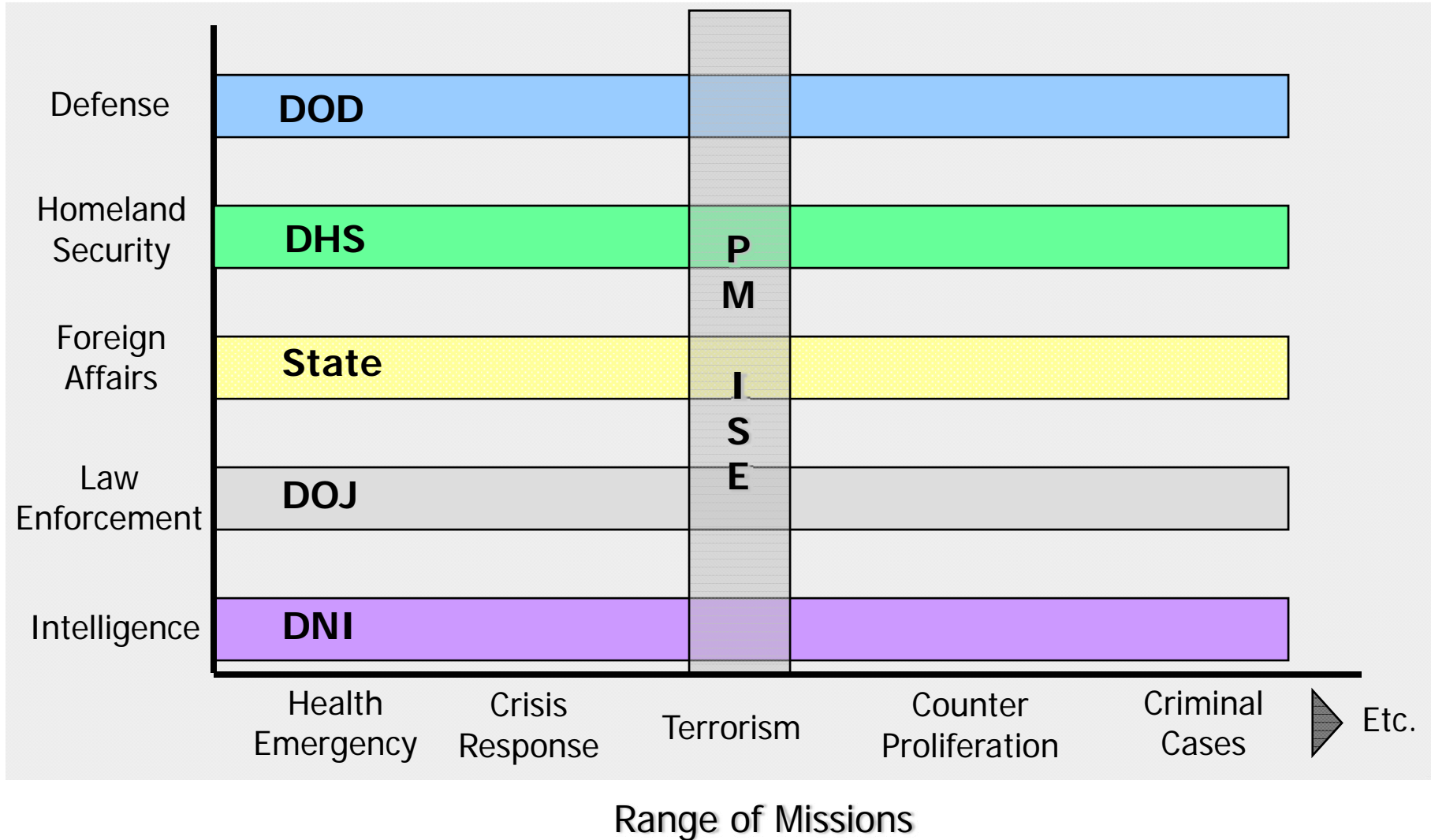
- Multiple Communities of Interest
- Multiple User Types
- Multiple Governmental and Non-governmental Entities

- Investigators
- Command & Control
- Responders
- Operators
- Collectors
- Analysts





# Communities and the PM-ISE



# ISE Implementation: Critical Areas

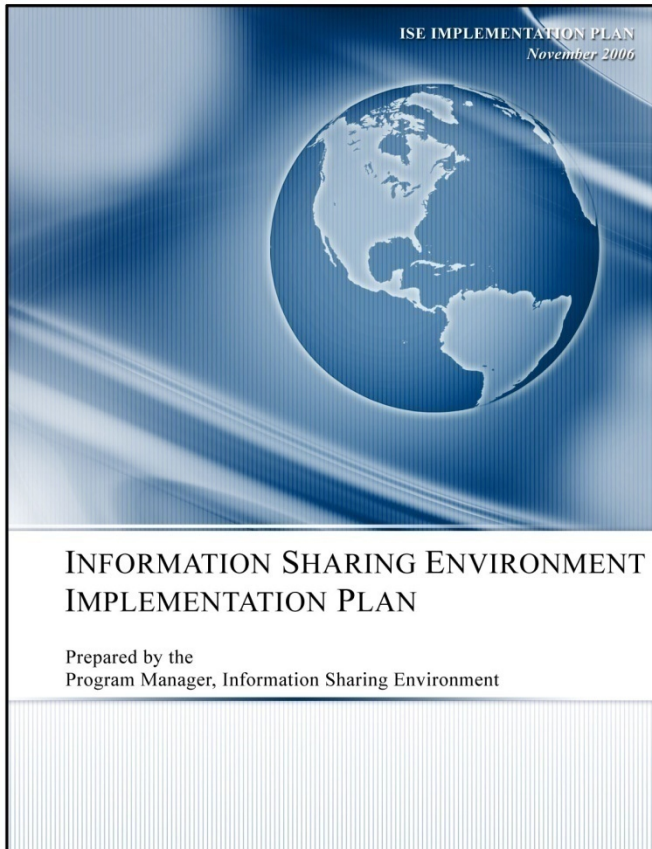
- **Presidential Guidelines and Requirements\*** identified these critical areas
  1. ISE Operational Capabilities (e.g. electronic directory services)
  2. Architecture and Standards (Guideline 1)
  3. Sharing with Partners Outside the Federal Government (Guidelines 2 & 4)
  4. Terrorism Information Handling (Guideline 3)
  5. Protecting Privacy and Civil Liberties in the ISE (Guideline 5)
  6. Promoting a Culture of Sharing
- **Shift from Planning to Implementation**
- **Performance Management and Program/Budget Review**

*\*December 16, 2005 Presidential Memorandum for the Heads of Executive Department and Agencies, "Guidelines and Requirements in Support of the Information Sharing Environment"*

## Guideline 2 Implementation

- **Areas Of Emphasis**
  - Federal Level – “Federally-Coordinated” information
  - State, Local & Tribal Level
    - National integrated network of State and major urban area fusion centers
    - Improved Fed/state/local/tribal integration and coordination on the ground
  - Private Sector – Coordination through Critical Infrastructure Partnership Advisory Council
- **Implementation Activities**
  - GL-2 Senior Level Interagency Advisory Group
  - Interagency Threat Assessment Coordination Group (ITACG) Implementation
  - Fusion Center Coordination Group
  - Critical Infrastructure Partnership Advisory Council
  - Communications and Outreach
  - New Tribal Working Group

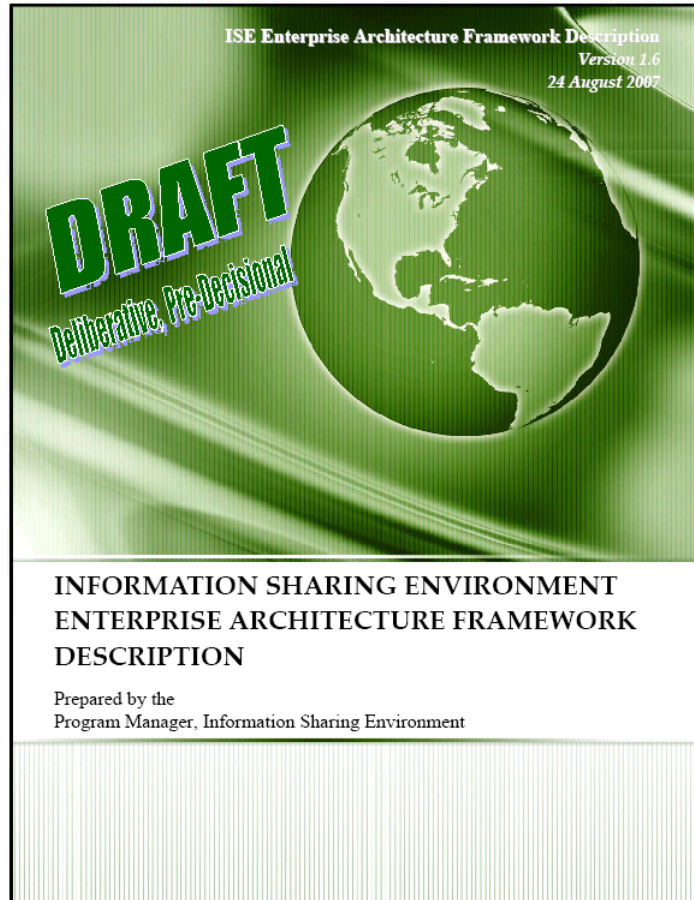
# ISE Implementation Plan ([www.ise.gov](http://www.ise.gov))



[www.ise.gov](http://www.ise.gov)

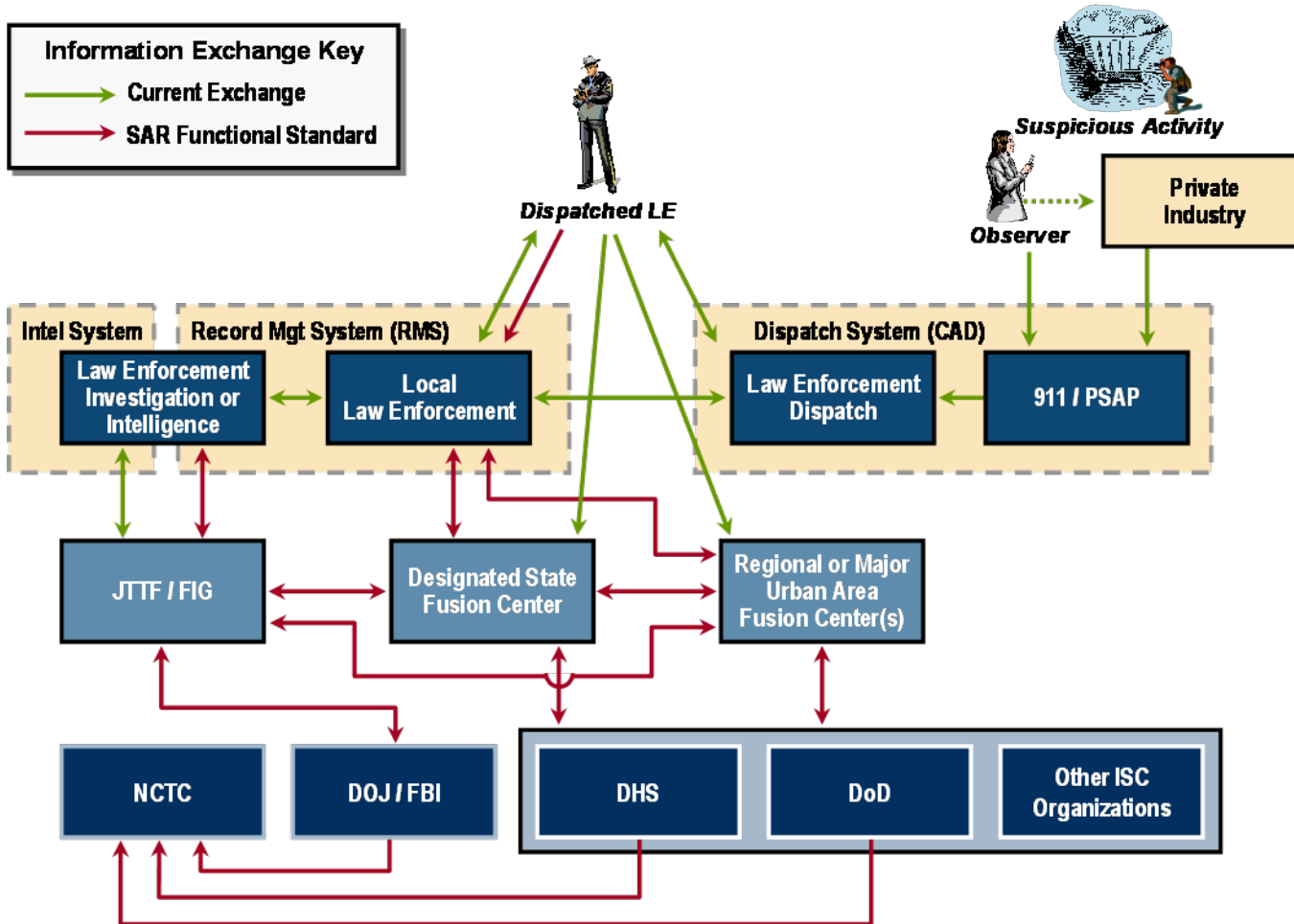
- Responds to 11 specific IRTPA requirements
- DNI sent to Congress - Nov06
- Described the vision and strategic goals for the future ISE
- Laid out two-phase implementation approach
  - Phase 1: Nov 2006 – June 2007
  - Phase 2: July 2007 – June 2009
- Incorporated responses to Presidential Information Sharing Guidelines
- Defines ISE Enterprise Architecture Framework and common standards (chapter 6)

# ISE Enterprise Architecture Framework Description

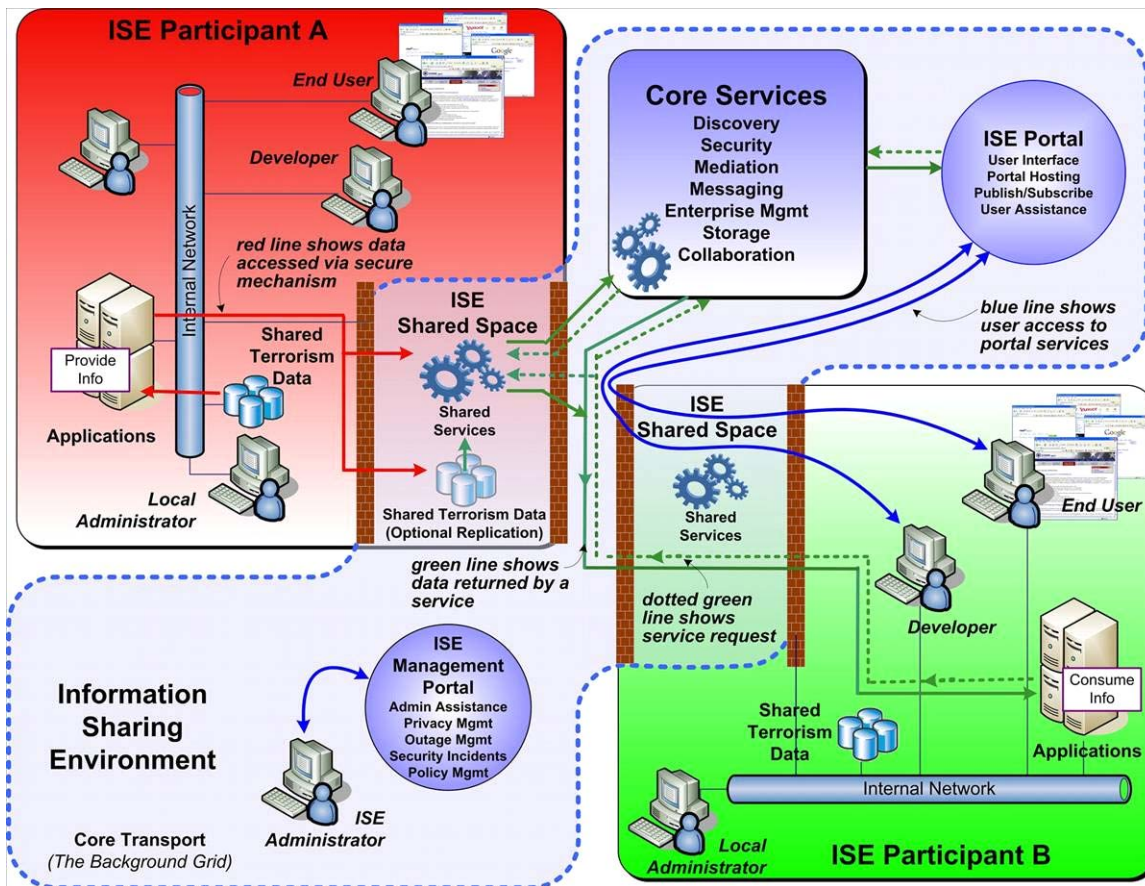


- **Overall Purpose**
  - Provide a terrorism information sharing dimension across civil and national security EAs
  - Meet IRTPA direction to provide guidance and “plan for” the ISE using technology
- **Purpose of Version 1.6**
  - Provide a comprehensive strategic description of the ISE architecture
  - Provide a lexicon of terms and information for implementing ISE capabilities
  - Identify key architectural decisions that have been made or must be made

# SAR Information Flow



# Implementing SAR in the ISE EAF



# NIEM Tools and Resources

*Paul Wormeli*



- Documents

- Introduction to NIEM
- Concept of Operations
- User Guide (in progress)
- Naming and Design Rules
- Value of NIEM
- NIEM Implementation Guidelines
- Executive Message
- Why NIEM Now
- 10 Key Points About NIEM
- NIEM Terms and Definitions
- NIEM FAQs
- IEPD Requirements Specification
- Techniques for Building and Extending NIEM XML Components

All available through  
[www.niem.gov](http://www.niem.gov)

# Tools and Resources *(cont'd)*



- Training and Technical Assistance
  - NIEM website
  - Knowledge Center (Help Desk) & IEPD Clearinghouse
  - National and regional training
- Tools
  - Graphical Browser
  - NIEM Migration Assistance Tool (NMAT)
  - Subset schema generation tool (SSGT)
  - Mapping tool (XMI to NIEM)
  - NIEM XML data dictionary spreadsheet
  - IEPD tool

# Future of NIEM

*Kshemendra Paul*

# Lessons Learned



- All exchanges should be derived from operational needs for information
- Subject matter experts should be used to define the requirements for each information exchange from the beginning
- The right enterprise architecture is critical to success
- Maximize the use and application of existing standards for information sharing, particularly open standards such as XML, web services, etc.
- Build on past successes in comparable jurisdictions
- Seek advice from technical experts to design exchanges once the operational requirements are determined

# The Future of NIEM



- Agencies can now implement information exchanges based on NIEM by involving local, state, tribal and federal agencies and organizations in support of homeland security, justice and public safety missions
- NIEM will continue to be used to facilitate national priority exchanges for suspicious activity reporting, incident reporting, case management, person and cargo screening, disaster management and other critical areas of national significance
- There will be expanded training and technical assistance efforts to help participants implement NIEM-based exchanges
- Eventually, the intent is to expand the participating communities of interest to include health care, transportation, education, and others, creating parallel governance structures to include representation in the expansion of the data model

# XML Special Condition Language



“To support public safety and justice information sharing, OJP requires the grantee to use the National Information Exchange Model specifications and guidelines for this particular grant. Grantee shall publish and make available without restriction all Information Exchange Package Documentation (IEPDs) and related artifacts generated as a result of this grant to the component registry as specified in the guidelines. This information is available at <http://www.niem.gov/implementationguide.php>.”

# Promoting the Future of NIEM



- Choose to make NIEM the basis for information exchanges
- Adopt a service oriented architecture for your information systems
- Arrange for training for your developers
- Identify key exchanges with other organizations
- Use NIEM tools to develop exchange documentation
- Design and implement the exchanges using web services
- Share lessons learned and best practices
- Share IEPDs via IEPD clearinghouse



# How Do You Get Involved?



- Seeking general awareness and information on the program? Visit the NIEM web site at <http://www.niem.gov>
- Exploring NIEM applicability through Training and Technical Assistance? Contact NIEM by email at [information@niem.gov](mailto:information@niem.gov)
- Developing NIEM IEPD's and have a question? Contact the Help Desk at <http://it.ojp.gov/NISS/helpdesk/>
- Ready to develop and deploy NIEM conformant information exchanges? Share your IEPDs to promote reuse by posting them to the IEPD Clearinghouse at <http://it.ojp.gov/iepd/>



# Sign up for NIEM News



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## National Information Exchange Model

Get more information about NIEM  
Learn more about NIEM, how it is being used, and how it can benefit your organization.  
[click here](#)

Find out what a NIEM project involves  
Take a closer look at NIEM and the process of modeling an information exchange.  
[click here](#)

Learn more about working with NIEM  
Find out more about NIEM from the technical perspective.  
[click here](#)

[Download Release 1.0 and documentation \(zip file\)](#)

NIEM, the National Information Exchange Model, is a partnership of the U.S. Department of Justice and the Department of Homeland Security. It is designed to develop, disseminate and support enterprise-wide information exchange standards and processes that can enable jurisdictions to effectively share critical information in

**NIEM newsletter**  
March 7, 2007

- [NIEM Operation Principles](#)
- [The NEIM PMO Welcomes Ms. Donna Roy to the NIEM Executive Team](#)