

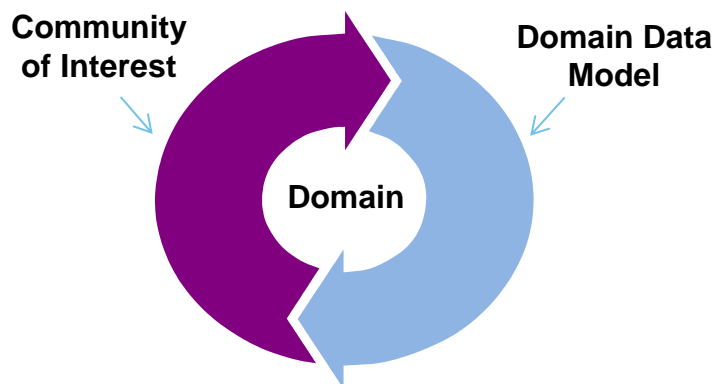


DOMAIN ON-BOARDING

ESTABLISHING A NIEM DOMAIN

What does it mean to establish a new NIEM domain?

- Creating a **data model** focused around a mission space that is not already addressed by NIEM.
The new domain's data model will contain data elements that do not already exist in NIEM core or in other domains data models.
- Forming a **community of interest (COI)** comprised of stakeholders that are aligned to the domain's mission space by virtue of affiliation, interest, or responsibilities.



What are the criteria for deciding whether a new domain is needed?

New Data Elements

At least one third* of the data elements required for the planned data exchange(s) do not already exist in NIEM.

Large & Diverse COI

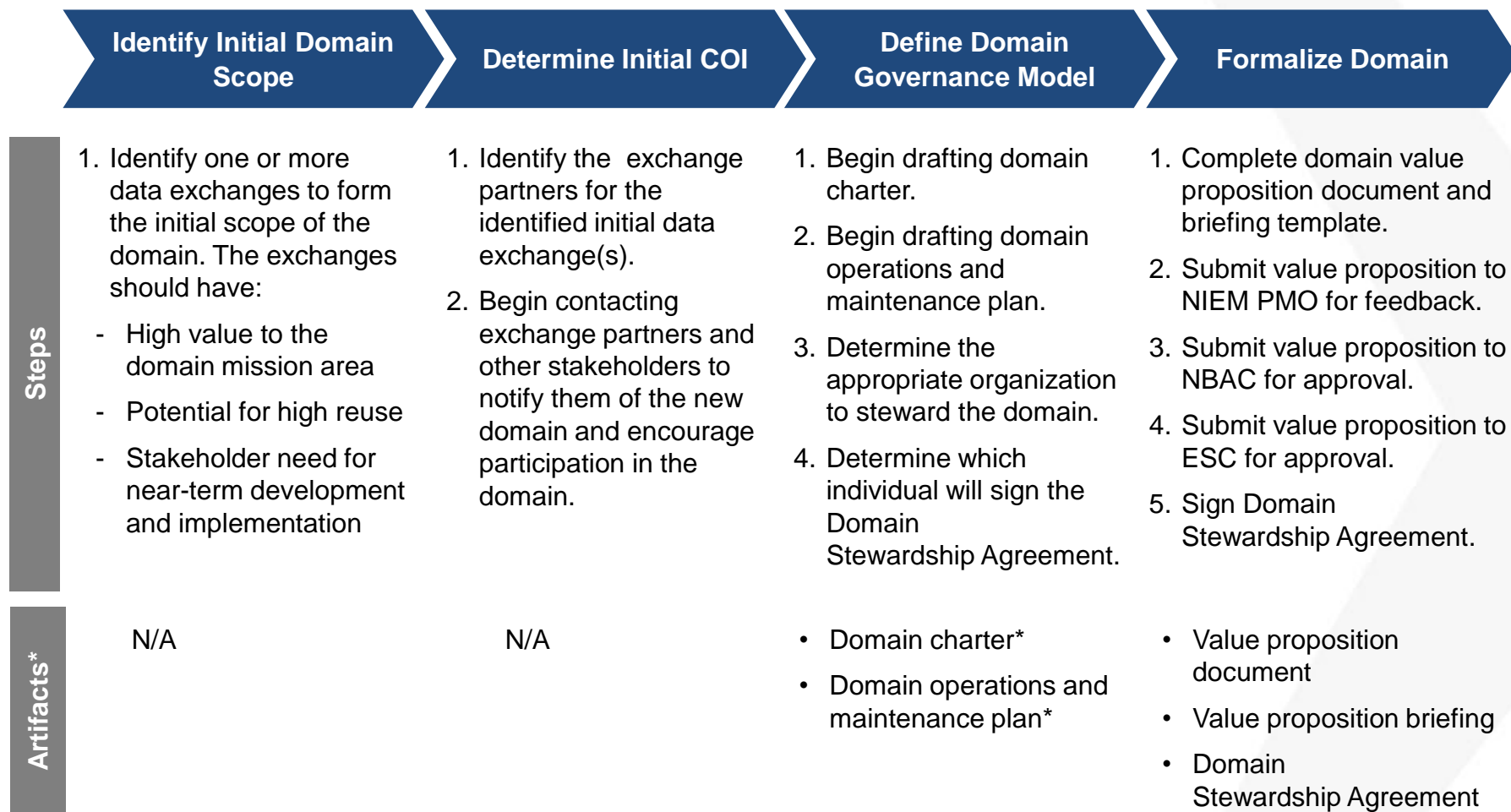
The community of interest for the mission space is comprised of diverse and numerous stakeholder groups.

Type of Organization

The domain sponsor is a Federal entity.

*This is not a strict rule, but a guideline intended to guide decision making.

DOMAIN ESTABLISHMENT PROCESS



*These document do not need to be completed before the domain is formally established, but provide an important foundation for the domain.

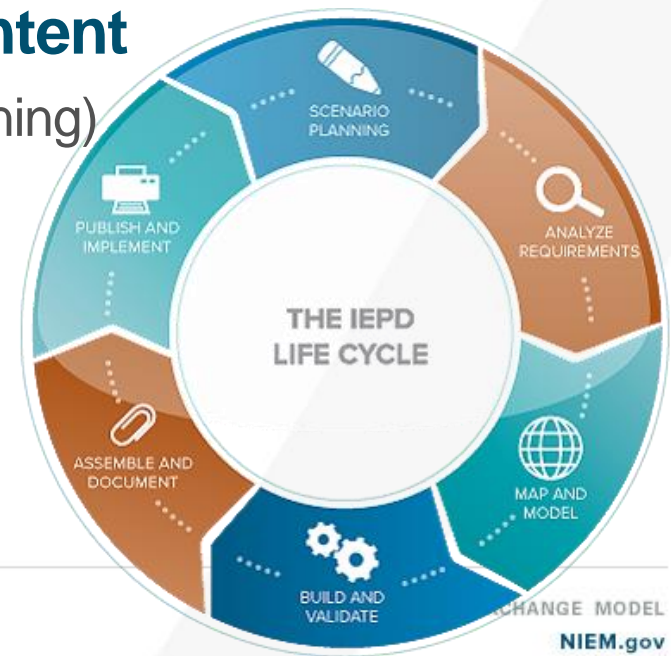
NIEM DOMAIN STEWARD NEXT STEPS

Establish Domain Governance Structure & Procedures

- Domain Charter
- Domain governance processes
- Domain reference model configuration management processes
- Domain Operation & Maintenance plan
- Participate in monthly NBAC & NTAC meetings
- Recruit external stakeholders (outside organizational community)

Develop Domain Reference Model Content

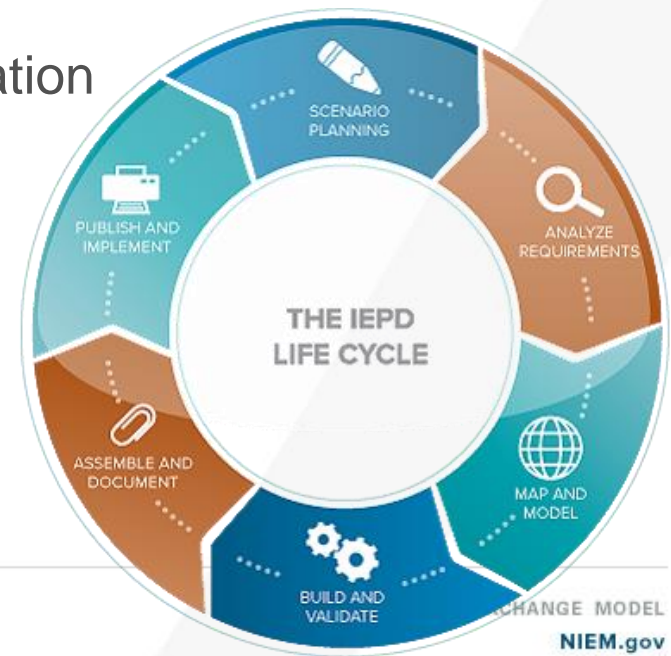
- Develop data sharing use cases (scenario planning)
- Identify data exchange requirements
- Map and model data element needs
- Build schemas and extension schemas
- Submit Domain content to NMO



NIEM DOMAIN STEWARD WORK AREAS

Piloting Opportunities

- Assist early implementers with piloting activity
- Provide content and content change recommendations
- Share lessons learned across the Domain community
- Refine Domain Operation & Maintenance procedures
- Define domain relationship to community standards and architecture stakeholders
- Promote outside of DOD-community participation



POST-ESTABLISHMENT DOMAIN STAND-UP

Within six months of formally establishing the domain, the domain steward should ensure that the following activities are completed:

Governance

- Complete domain charter*.
- Complete domain operations and maintenance plan*.
- Assign individuals to carry out governance and operations responsibilities.
- Hold initial governance group meetings.

Stakeholder Engagement

- Notify the initially identified domain stakeholders that the domain has been established and inform them of any upcoming domain activities.
- Work with the NIEM PMO to create a domain collaboration zone on NIEM.gov.

Data Model

- After the IEPDs for the initially identified data exchanges have been developed, create the domain data model using the data elements that did not already exist within NIEM core or other domains.
- Publish the data model to publication.niem.gov.

*The NIEM PMO will provide templates for these documents.

Prepare for NIEM

Phase	Description
Develop Community of Interest	Identify information sharing and exchange activity stakeholders to develop and understanding of NIEM use and agree on exchange process enhancements.
NIEM Training and Tools	Participate in available training (e.g., web-based, classroom) that is role based for each attendee. See Appendix A.
NIEM Requirements	Define requirements needed for developing a common exchange for all stakeholders involved in the exchange process.

Adopt NIEM

Phase	Description
Communication of implementation strategy to relevant stakeholders	Communicate to stakeholders NIEM implementation strategy that includes design and execution of a common and reusable information exchange format.
Map and model information exchange	Identify elements required to develop information exchange package documentation. All elements will be mapped to specific data components for information exchange execution.
Publish information exchange package	Publish information exchange package in a NIEM repository (e.g., IEPD Clearinghouse) for other stakeholders to search and discover for reuse.

Engage and Stand-Up NIEM

Phase	Description
Encourage NIEM reuse for stakeholder groups	Develop an understanding/agreement (e.g., Memorandum of Understanding) with current and/or potential exchange partners that define usage agreements, sharing agreements and or minimum security requirements to assist with attaining common exchange format reuse.
Continuous communication with NIEM community	Engage with NIEM community and continuously communicate NIEM process execution to leverage lessons learned and implementation best practices.

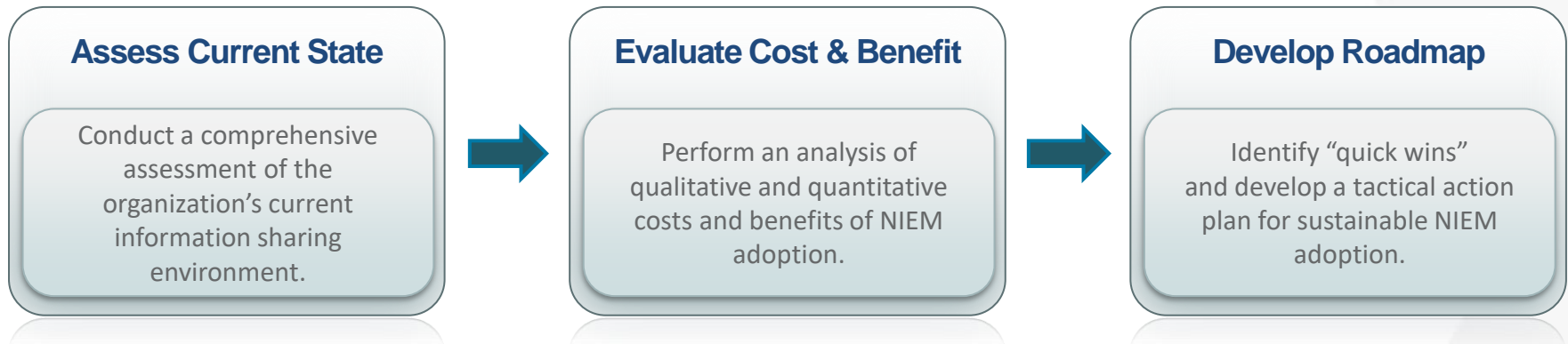
Communications Channels for Outreach

Communications Channel	Description	Communication Use
Email	Directory of agencies currently in communication via email.	Targeted distribution to select recipients
Organization Website	The organization website serves as the information center for all information exchange initiatives.	Broad, public distribution
Live Meetings	Live presentations to discuss updates and enhances for information exchange activities.	In-person high contact communication
NIEM Website	The NIEM.gov website serves as the primary communications mechanism for the NIEM PMO to store and share NIEM knowledge and connects those interested in using NIEM.	Broad, public distribution
NIEM Social Media Outlets	Outputs for NIEM processes and engagements to increase community awareness.	Broad, public distribution

ROADMAP TO ADOPTION

NIEM Engagement Process

The engagement process is a self-service model that includes tools and methods for organizations to:



Results

- Identify information exchanges where NIEM can provide the most value to the organization.
- Develop a tailored action plan outlining how the organization can adopt and sustainably use NIEM for information exchange.

NIEM Engagement Process

Step #	1	2	3	4	5
Step	Perform Research	Conduct Stakeholder Interviews	Complete NIEM Readiness Assessment	Quantify and Qualify the Value of NIEM	Adoption Plan
Duration	2 weeks	4 weeks	1 week	3 weeks	2 weeks
Key Activities	<ol style="list-style-type: none"> 1) Conduct research regarding the program's mission priorities and current information sharing and exchange activities. 2) If appropriate, note any additional programs that could potentially benefit from NIEM. 	<ol style="list-style-type: none"> 1) Hold interviews with the program points of contact (POCs) identified by the sponsor. During the interview, draw upon initial research to discuss current and potential information exchange(s). 	<ol style="list-style-type: none"> 1) Compile the interview results and initial research to complete the NIEM Readiness Assessment. 	<ol style="list-style-type: none"> 1) Complete the Cost Model by inputting cost variables, values from the NIEM Readiness Assessment, and other data gathered through stakeholder interviews and research. 2) Define performance metrics for the exchange. 	<ol style="list-style-type: none"> 1) Summarize key findings. 2) Design a tactical implementation plan. 3) Validate the Adoption Plan with participants.
Tools and Templates	NIEM Interview Framework	NIEM Interview Framework	NIEM Readiness Assessment Tool	NIEM Cost Model	Road to NIEM Adoption
Expected Outcomes	Organizational research	Interview responses	Completed NIEM Readiness Assessment	Estimated costs Performance metrics	NIEM Adoption Plan

NIEM Adoption Activity	Description
Monitor Exchange Performance	The organization should periodically assess progress toward meeting goals and objectives for the exchange using the performance metrics identified during the NIEM Engagement Process. By tracking and monitoring performance, both the organization and the NIEM PMO can evaluate and report on NIEM adoption success. A tracking log is provided in the Recommendation Roadmap for recording metric progress.
Hold Check-ins	On a periodic basis, the NIEM PMO and the organization should hold check-ins to discuss NIEM adoption successes, challenges, and progress toward meeting performance goals. During check-ins, the NIEM PMO can offer advice and help address any challenges.
Engage in the NIEM Community	Organizations are encouraged to get involved in the NIEM community as appropriate based on their needs and interests. Stakeholder engagement is key to the success of NIEM – active stakeholder involvement promotes cross-domain coordination and enables NIEM to adapt to changing business needs. Community involvement may range from attending NIEM events to participating in NIEM domain governance activities. The NIEM PMO can help the organization to identify opportunities for involvement.
Develop a Long-Term NIEM Strategy	The organization should consider developing a long-term NIEM strategy that explores how current/future business needs might be addressed using NIEM. This may also include plans for engaging with the NIEM community. The strategy should be revised as business needs change over time.

		Month						
		Jan	Feb	Mar	Apr	May	Jun	Jul
Domain Adoption Tasks								
Phase 1: Stakeholder Engmt								
- <i>Getting Started</i>								
- <i>Plan & develop</i>								
- <i>Launch & operate</i>								
- <i>Monitor & measure</i>								
Phase 2: Business Exchange								
Phase 3: Domain Creation								
- <i>Develop NIEM Domain Value Proposition</i>								
- <i>Discuss & Revise NIEM Domain Value Prop</i>								
- <i>Present to NBAC & NTAC</i>								
- <i>Gain ESC approval</i>								

NOTIONAL SCHEDULE

	Oct 2011	Nov 2011	Dec 2011	Jan 2012	Feb 2012	Mar 2012	Apr 2012	May 2012	Jun 2012	July 2012	Aug 2012	Sep 2012
NIEM Domain Stakeholder Engagement												
Perform Stakeholder Analysis	100 hrs.											
Establish Core Community Team and Champion(s)			100 hrs.									
Plan and Launch Community				200 hrs.								
Meeting Facilitation and Collateral Development												
NIEM Training and Technical Assistance												
Train Core Team and Executives			100 hrs.									
Train the Trainers				100 hrs.								
Train Implementers					100hrs.							
ACRSI Pilot Assistance					100hrs.							
Training Facilitation												
Business Exchanges (IEPDs)												
Identify Potential NIEM Exchanges									100 hrs.			
Evaluate and Select Exchanges										100 hrs.		
Conduct Impact Analysis											100 hrs.	
Build Exchanges												
Tool Investment												
NIEM Agriculture Domain Adoption & Rollout												
Review Exchanges												
Identify Common Elements												
Build and Charter Domain												
Complete Domain Value Proposition												
Meeting Support												

NOTIONAL SCHEDULE CONT.

	FY 12	FY 13	FY 14
NIEM Domain Stakeholder Engagement			
Perform Stakeholder Analysis	100 hrs.		
Establish Core Community Team and NIEM Champion(s)	100 hrs.		
Plan and Launch Community		600 hrs.	
Meeting Facilitation and Collateral Development			
Training and Technical Assistance			
Train Core Team and Executives	100 hrs.		
Train the Trainers	100 hrs.		
Train Implementers	100 hrs.		
ACRSI Pilot Assistance		500 hrs.	
Training Facilitation			
Business Exchanges (IEPDs)			
Identify Potential NIEM exchanges	100 hrs.		
Evaluate and Select Exchanges		100hrs.	
Conduct Impact Analysis		100 hrs	
Build Exchanges		800 hrs.	
Tool Investments			
NIEM Agriculture Domain Adoption and Rollout			
Review Exchanges		100 hrs.	
Identify Common Elements		100 hrs.	
Build and Charter Domain		100hrs.	
Complete Domain Value Proposition		100 hrs.	
Domain Maintenance			400 hrs.
Meeting Support			

NOTIONAL SCHEDULE CONT.

	FY 15	FY 16
NIEM Domain Stakeholder Engagement		
Perform Stakeholder Analysis		
Establish Core Community Team and NIEM Champion(s)		
Support and Expand Community	900 hrs.	
Meeting Facilitation and Collateral Development		
Training and Technical Assistance		
Train Core Team and Executives		
Train the Trainers		
Train Implementers		
ACRSI Implementation Assistance	900 hrs.	
Training Facilitation		
Business Exchanges (IEPDs)		
Identify Potential NIEM exchanges		
Evaluate and Select Exchanges		
Conduct Impact Analysis		
Build Exchanges	1300 hrs.	
Tool Investments		
NIEM Agriculture Domain Adoption and Rollout		
Review Exchanges		
Identify Common Elements		
Build and Charter Domain		
Complete Domain Value Proposition		
Domain Maintenance	800 hrs.	
Meeting Support		

NIEM RESOURCES



www.NIEM.gov



GitHub

NIEM.github.io



LinkedIn

<http://www.linkedin.com/groups?gid=1903175>



Twitter

www.twitter.com/NIEMConnects



YouTube

www.YouTube.com/NIEMConnects

NIEM RESOURCES

Websites:

- **NIEM Overview** - <https://www.niem.gov/getting-started>
- **Training** - <https://www.niem.gov/training>
- **Technical Roadmap** - <http://niem.github.io/reference/>
 - **IEPD Introduction:**
<https://niem.github.io/reference/artifacts/messages/iepd/>
 - **IEPD Development Support:**
<https://niem.github.io/reference/artifacts/messages/iepd/iepd-starter-kit/>
- **Developer Resources** - <https://niem.github.io/training/iepd-developer/>
- **Outreach Resources** - <https://www.niem.gov/about-niem/outreach-resources>
- **Wikipedia** - https://en.wikipedia.org/wiki/National_Information_Exchange_Model

Social Media:



<https://www.linkedin.com/groups/1903175/profile>



<https://twitter.com/niemconnects>



<https://www.youtube.com/user/NIEMconnects>



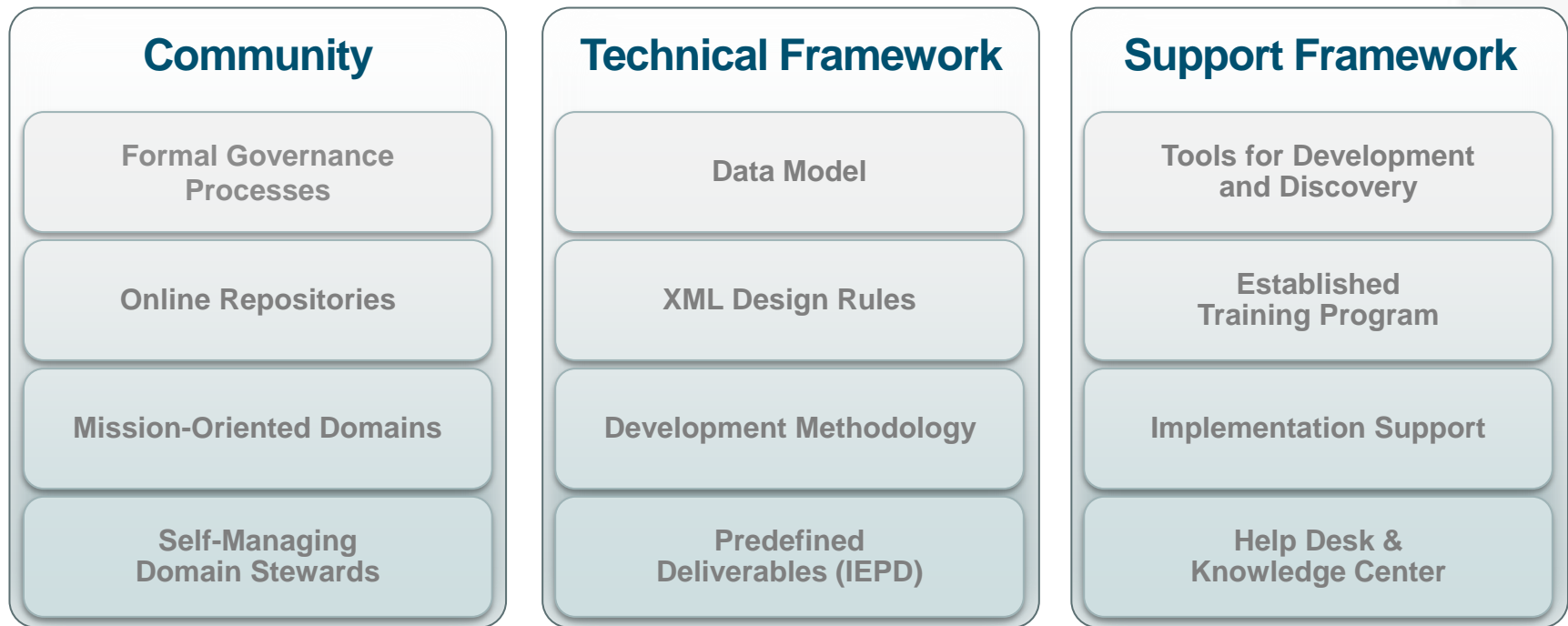
<https://niem.github.io/>

Backup Slides

NIEM IS...

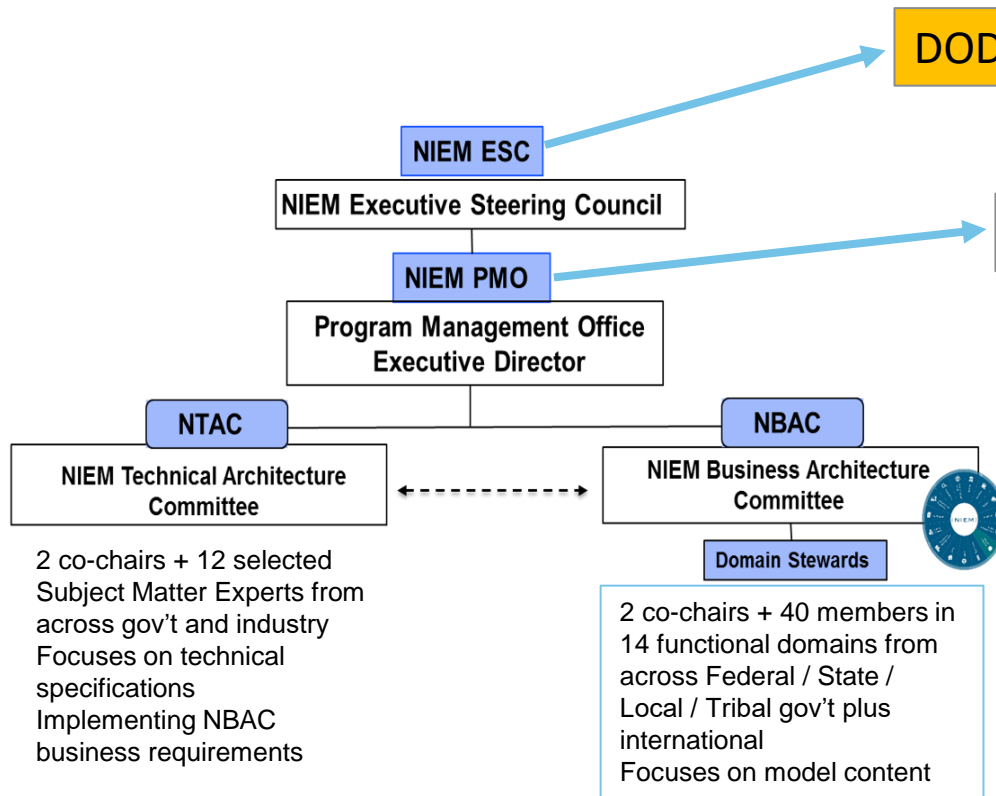
NIEM is a community-driven, government-wide, standards-based approach to exchanging information. Diverse communities can collectively leverage **NIEM to increase interoperability** and improves decision-making.

NIEM is available to everyone, (i.e. state, local, government, public, and private organizations). NIEM includes a data model, governance, training, tools, technical support services, and an active community to assist users in adopting a standards-based approach to exchanging data.

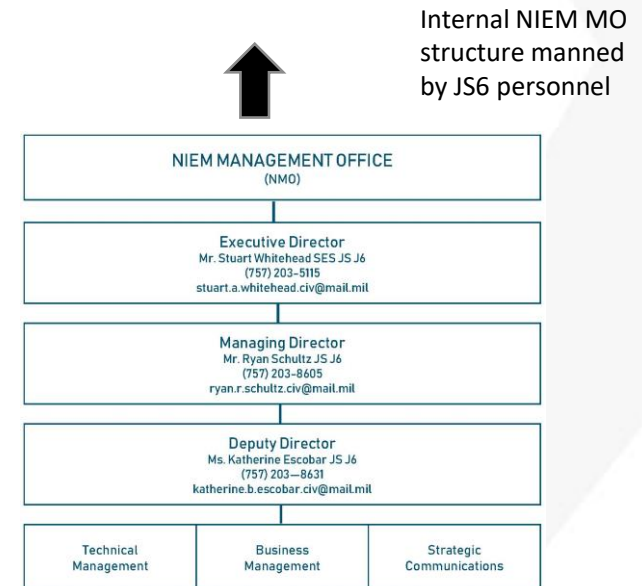


NIEM MANAGEMENT OFFICE (NMO)

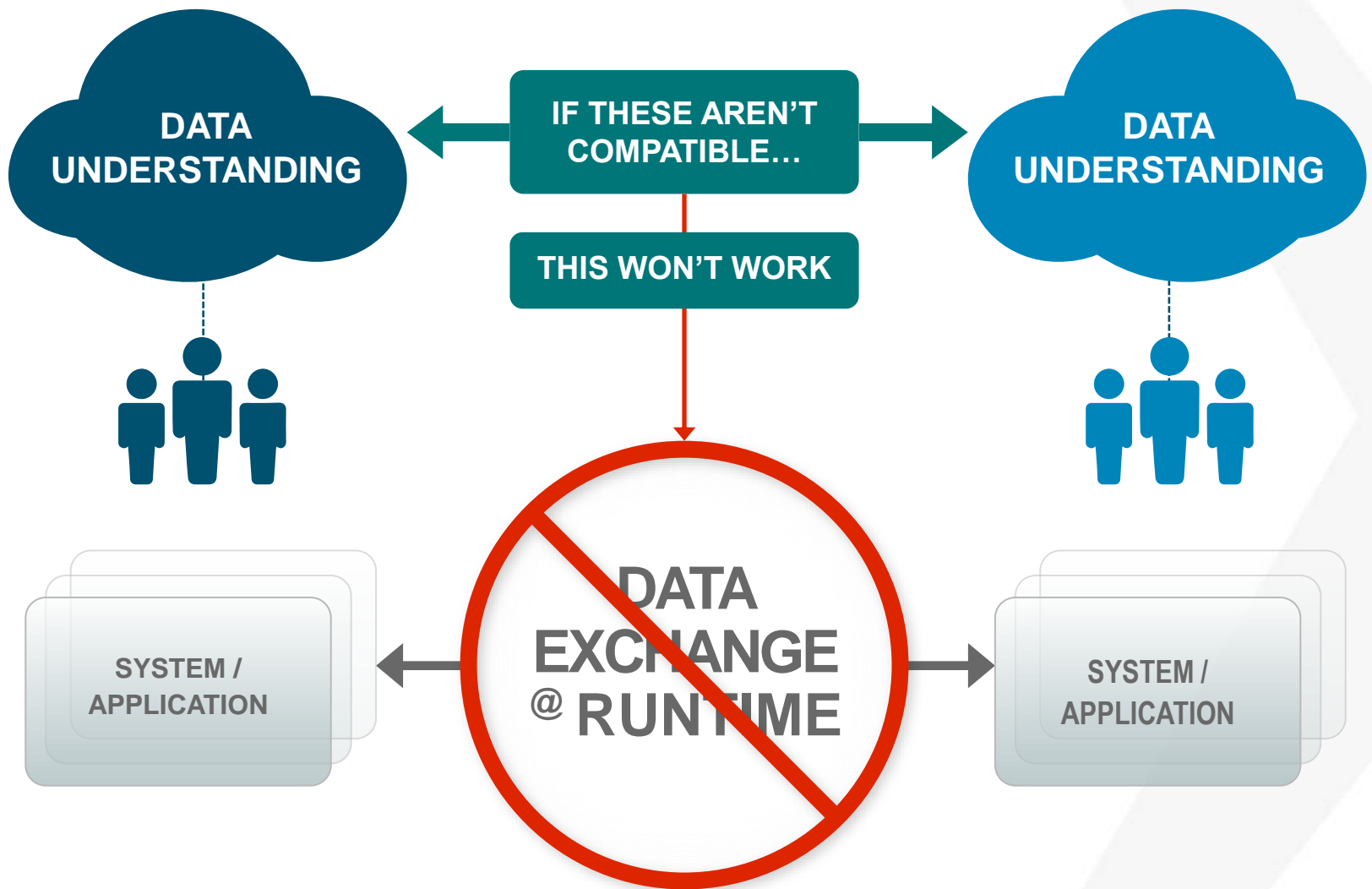
Provides standardized enterprise-level information exchange
across Joint, Coalition and Interagency domains



- Chaired by DOD CIO SES
 - Quarterly or every 6 months
- Led by JS J6 SES
 - Conducts day-to-day management
 - JS6 provides NTAC and NBAC LNO
 - Oversees face-to-face stakeholder sessions

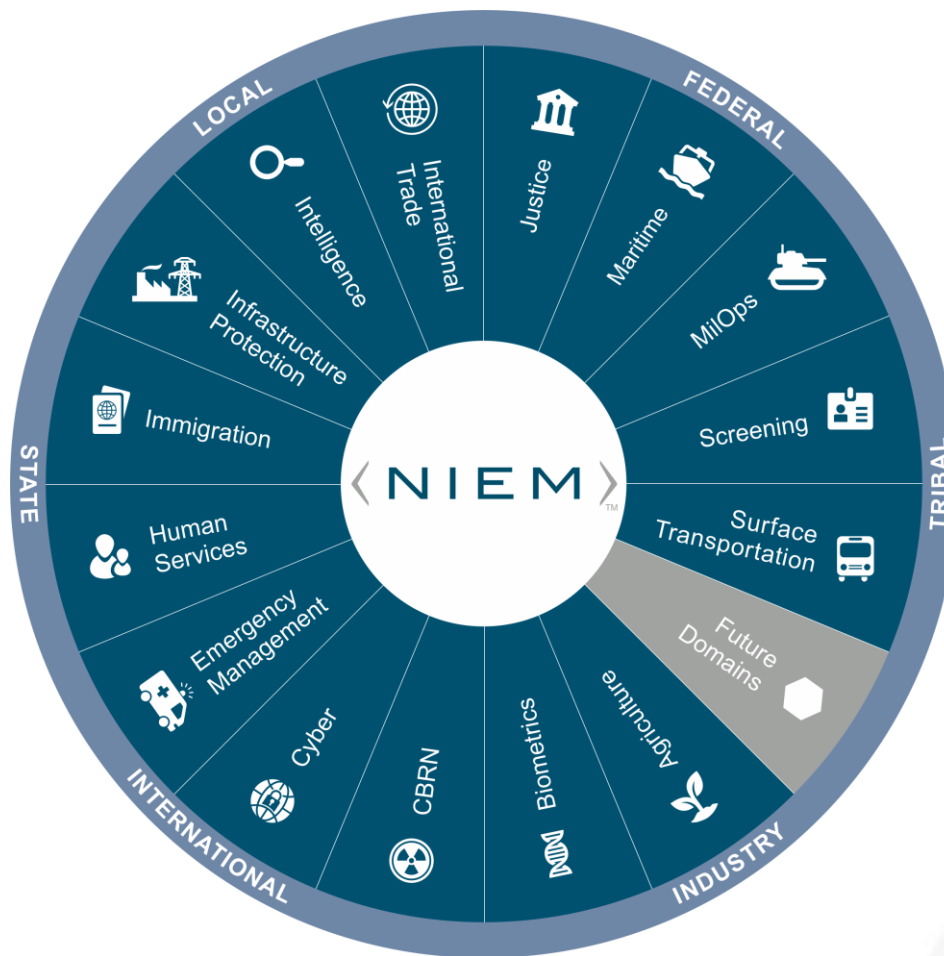


DATA INTEROPERABILITY PROBLEM



NIEM DOMAINS

Agriculture
 Biometrics
 CBRN
 Cyber
 Emergency Management
 Human Services
 Immigration
 Intelligence
 International Trade
 Justice
 Maritime
 Military Operations
 Screening
 Surface Transportation



Emerging Domains & Communities of Interest

- Statistics
- Health
- METOC
- Logistics
- Humanitarian Aid

NIEM SIMPLIFIED

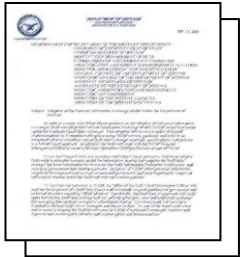


Please click *play* to begin

<https://www.youtube.com/watch?v=BA1jY8LJ8tM>

DoD INFORMATION SHARING POLICY & GUIDANCE

28 March 2013

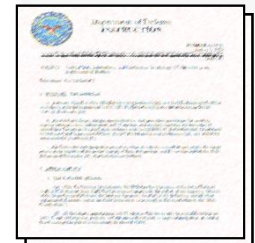


DoD CIO NIEM Adoption Memo states:

“ ... DOD will adopt the National Information Exchange Model (NIEM) as best suited for standards-based data exchanges.” “DOD organizations shall first consider NIEM for their information sharing solutions...”

August 2015

DoDI 8320.07:



“ ... the use of NIEM-based exchanges must be considered for all new Extensible Markup Language (XML) information exchanges created and for all XML information exchanges being modernized as part of the normal lifecycle management for these information exchanges.”

January 2017



DepSecDef Memo Improvements to DoD Unclass Shared Situational Awareness:

“ ... Commander, NORTHCOM and PACOM will use NIEM in accordance DoDI 8320.07 leveraging existing DoD capabilities, to provide DoD mission partners with a clear and concise DoD central authoritative data source for the sharing of unclassified information related to disasters....”

December 2018

CNO Message R 261805Z DEC 18 Transforming Our End-to-End Information Environment – Compile To Combat In 24 Hours Implementation Framework:

References the DoD CIO Memo and directs “... Adoption of the National Information Exchange Model (NIEM) with the DoD, and establishing that model as the DoD mandated data sharing model..”



NATIONAL INFORMATION EXCHANGE MODEL

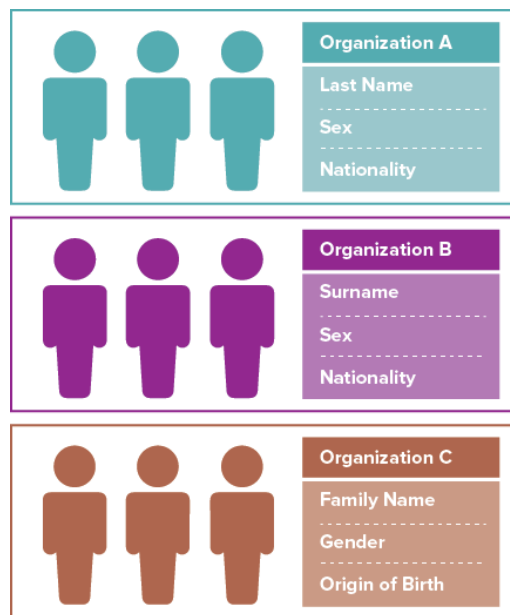
NIEM.gov

NIEM IN ACTION

HOW NIEM EXCHANGES DATA COMPONENTS AND DATA ELEMENTS

NIEM IS

a common vocabulary that enables efficient information exchange across diverse public and private organizations.

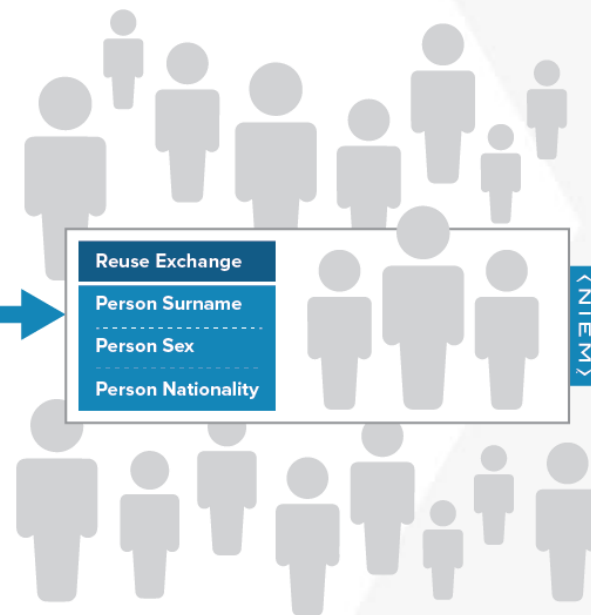


<NIEM>
DATA MODEL ELEMENTS

Person Type
Person Surname
Person Sex
Person Nationality

NIEM IS NOT

a system or database; it does not specify how to transmit or store data.



Using NIEM, organizations come together to agree on a common vocabulary. When additional organizations need to be added to the information exchange, the initial NIEM exchange can be reused, saving time and money.

NIEM IS ...

A Community

Federal, State, Local,
International, Non-Govt.

Self-Managing
Domain Stewards

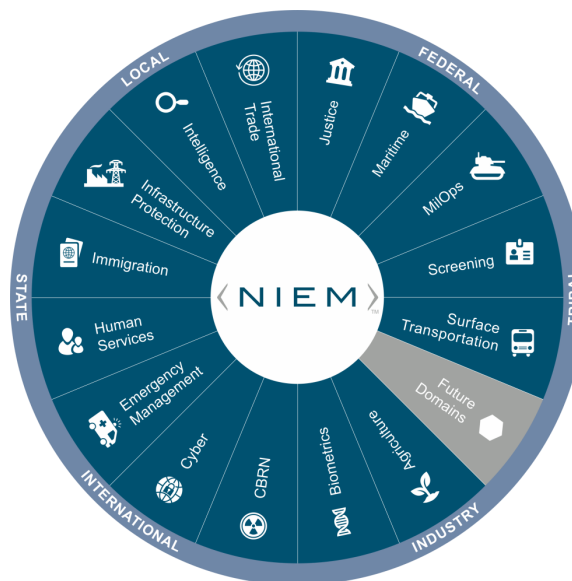
Voluntary Consensus
Standards

Help Desk &
Knowledge Center

Established
Training Program

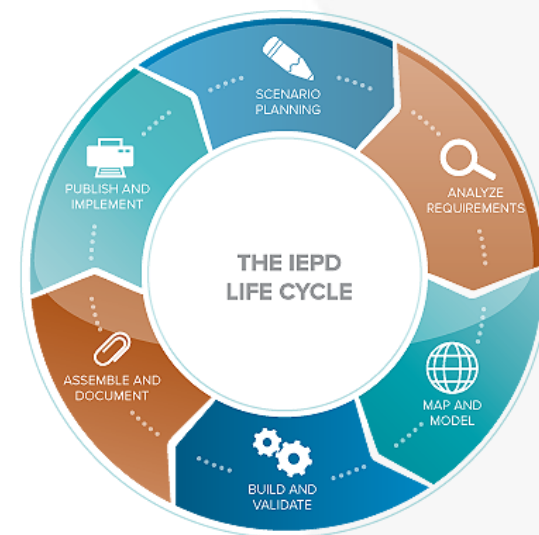
Technical
Specifications

A Data Model



Organized as a core with
subject-area domains,
expressed as reusable
XML Schema components

A Reusable Process



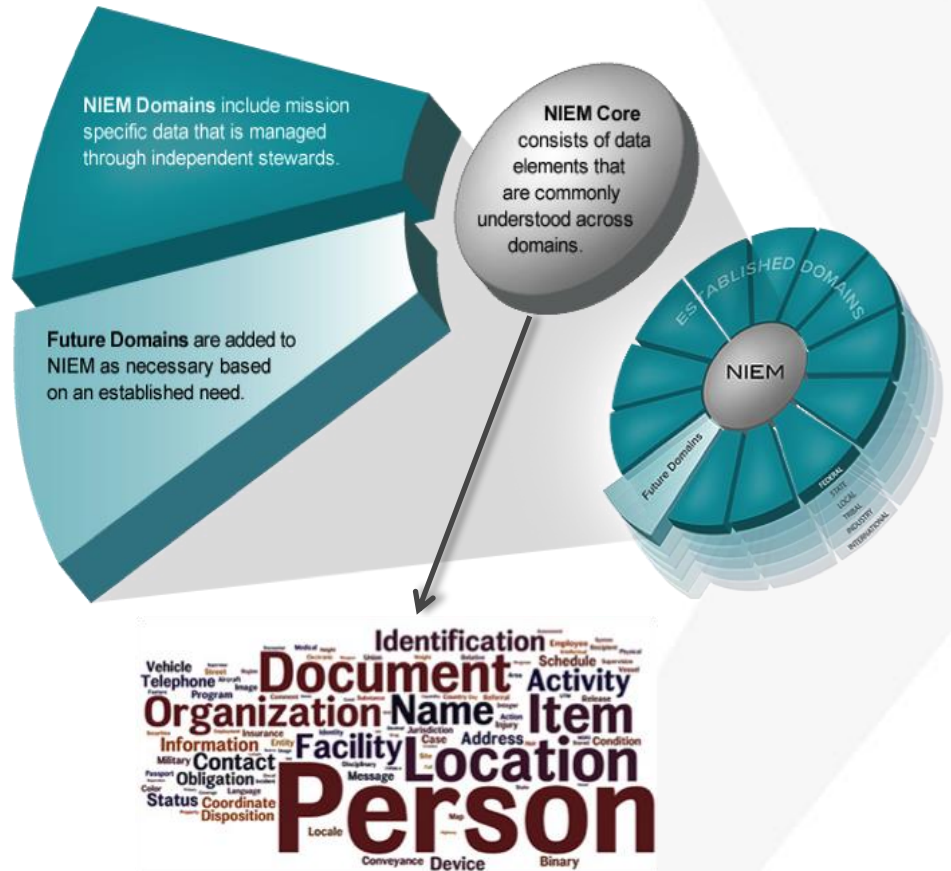
A template for designing
information exchange
specifications by reusing
XML Schema components

MODEL OVERVIEW

Think of the NIEM data model as a mature, stable data dictionary which consists of agreed-upon terms, definitions, relationships, and formats which are independent of how information is stored in individual agency systems

The NIEM data model consists of two sets of closely related vocabularies:

- **Core vocabulary**
- **Domain-specific vocabularies**



NIEM STAKEHOLDERS

The NIEM community continuously communicates with six distinct stakeholder types. Each are interested in NIEM and how it can help their organization or project.



Executives

NIEM minimizes the time-to-market while allowing maximum flexibility



Program Managers

NIEM can make a job easier by helping teams build exchanges in less time, for less money time



Architects

NIEM offers a better way to exchange data and is adaptable; it can be modified, or new capabilities added to an existing exchange



Developers

Available tools and support make exchange development easier and faster



Implementers

NIEM can lower the cost of maintenance in comparison to legacy formats



Tool Providers

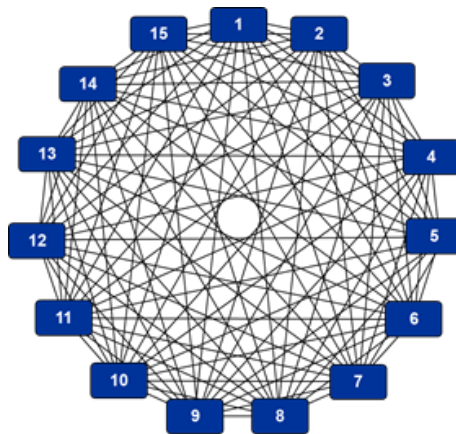
NIEM can be an avenue to connect with clients who have an interest in information-sharing capabilities

THE NIEM VALUE PROPOSITION

When using NIEM, you only need to “speak” two languages —
your own and NIEM

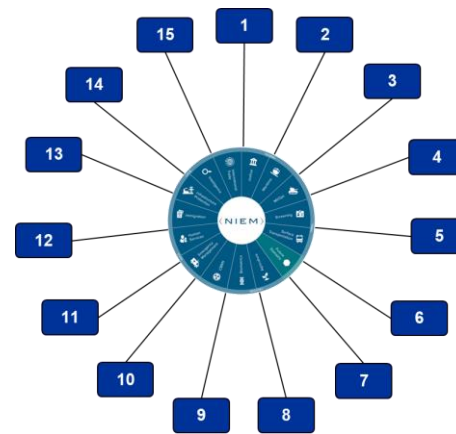
NIEM allows your system and my system speak to and understand each other,
even if they’ve never spoken before.

NIEM ensures that information carries the same consistent meaning,
allowing interoperability.



15 Systems
210 Total Interface Mappings
Total Mapping Level of Effort: LoE(210)
Single Program Mapping: LoE(14)

VS.



15 Systems
15 Total Interface Mappings
Total Mapping Level of Effort: LoE(15)
Single Program Mapping: LoE(1)

DoD ADOPTION OF NIEM

“NIEM First” policy codified in DoD CIO issuance 8320.07

- Promulgated 3 Aug 2015
- Requires “NIEM First” for new IT initiatives and programs updating interfaces

Some Successes

- Military standards adoption (US MTF, Link 16)
- Alignment with NATO and FVEY
- Security sensors Best of NIEM 2018
- Special Operations Command adoption
- Adoption in all four Services

Challenges

- Governance mechanism
 - Policy relies on “good citizen” approach
 - Waiver process implementation
 - Individual programs not driven by enterprise interoperability
 - No enterprise information exchange requirements (IER)
- Long lead time from coding to implementation

MILOPS PARTICIPANTS

Combatant Commands



USCYBERCOM



USPACOM



USSOCOM



USTRANSCOM

Military Departments



USCG



USA



USMC



USN



USAF



JS
(J3, J4, J6, J7, J8)

OSD /Agencies

- CIO
- DISA
- DLA
- Joint Non-Kinetic Effects (JNKE)
- Missile Defense Agency (MDA)



NORAD



DHS



SELECT NIEM DOD ENGAGEMENTS (1/3)

ADOPTION & GOVERNANCE

Effort	Partner ORGs	Overview	Engagement
NATO Core Data Framework (NCDF)	JS J6, NATO ACT / NCI Agency, IERHWG	NATO version of the NIEM framework (standards, specifications, tools, policies, and procedures) to advance Multinational Partner Environment (MPE) information sharing	Multinational
MILSTD 6016 Tactical Data Link (Link-16) J-series messages XML standardization	Joint Multi-TDL CCB	Approved Draft Interface Change Proposal to develop Appendix to provide guidelines for generation of J-Series message data as NIEM conformant XML	DOD
MILSTD 6017 Variable Message Format (VMF)	JMSWG XMLSG	Development of a NIEM Conformant variant of VML	DOD
SOF, DOD, IC Data Enterprise	USSOCOM/NAVS PECWARCOM/IN SCOM/JS J6	Advance data interoperability using NIEM for cross security domain information exchanges, data conditioning and tagging to enable artificial intelligence and machine learning	Interagency
Joint Integrated Air Missile Defense	MDA	Adopt NIEM to improve missile defense design planning information exchanges between HHQs and Components	DOD
United States Transportation Command (USTRANSCOM)	USTRANSCOM	Adopt NIEM to improve mobility operations interoperability for the Joint Deployment and Distribution Enterprise (17,000 data objects)	DOD
Government of Canada	GCEARB	Support the Government of Canada Enterprise Architecture Review Board (GCEARB) adoption of NIEM as their standard for national information exchanges	International
National Institute of Standards and Technology (NIST) Big Data Framework	NIST	Incorporated NIEM into the NIST Big Data Interoperability Framework: Volume 7, Standards Roadmap	U.S. Government
Defense Forensics and Biometrics Agency (DFBA)	Defense Bio-Forensic Enterprise	Technical support: Forensic and Biometric semantic vocabularies shall re-use elements of the NIEM information exchange schema, in order to facilitate interoperability	DOD
Unmanned Control Segment (UCS) Architecture	SAE / AT&L	Incorporate NIEM conformant XML standard to UCS architecture	DOD

SELECT NIEM DOD ENGAGEMENTS (2/3)

IEPD DEVELOPMENT & IMPLEMENTATION

Effort	Partner ORGs	Overview	Engagement
Cyber	OSD DOT&E, DHS CISA, CYBERCOM	DHS stewards Cyber Domain; DoD developed Joint Technical Coordinating Group for Munitions Effectiveness (JTTCG/ME) Joint Non-Kinetic Effectiveness (JNKE) cyber content	Interagency
US Navy (Maritime Domain)	Navy	IPEDs for maritime vessel information	Interagency
MILSTD 6040 U.S. Message Text Format (USMTF)	USMTF CCB	Developing IEPDs to transform the 20,000 MIL-STD-6040 USMTF XML data components into a NIEM conformant standard	DOD
Security Equipment Integration Working Group (SEIWG)	Physical Security Enterprise & Analysis Group	Tech Support to implement NIEM IEPDs supporting Force Protection Systems Sensor Information message exchanges	DOD
Warfighter Mission Area Architecture Federation and Integration Portal	JS J6 AID USA/TRADOC	Tech Support WMA AFIP NIEM IEPD supporting exchanging DoDAF artifacts across a Service level federation (ArCADIE)	DOD
Defense Security Service (DSS) Enterprise Data Management Strategy (EDMS)	DITMAC, DMDC	DSS incorporated NIEM Into its EDMS and exercised NIEM in developing two IEPDs: Contract Security Classification information (e.g., DD-254) and Joint Personnel Adjudication System (JPAS) personnel and facility data.	DOD
Navy Authoritative Data Environment (ADE) 2.0 NIEM IEPD Pilot	Navy	Pilot effort to develop and demonstrate a NIEM IEPD in support of larger Navy Manpower, Personnel, Training, and Education (MPTE) effort to adopt NIEM for ADE 2.0.	DOD
Air Force GPS Next Generation Operational Control System (OCX)	AF SMC	Implement NIEM IEPDs in support of next generation GPS information exchanges with the user community. Using NIEM 2.1 due to use of MagicDraw.	DOD
USAF Cursor on Target (CoT)	AFSOC, AFLCMC	Implement NIEM v3.0 conformant representation of CoT ver 2 0	DOD
Antisubmarine Warfare (ASW) Community of Interest (COI)	ASW COI	Map ASW COI data model (ACM) UML track information to allow NIEM conformant information exchanges	DOD

SELECT NIEM DOD ENGAGEMENTS (3/3)

IEPD DEVELOPMENT & IMPLEMENTATION

Effort	Partner ORGs	Overview	Engagement
CWIX 2019 NCDF Data Lake Demonstration	ACT/NATO, Canada, DOD	Demonstrate NCDF conformant data lake at Coalition Warrior Interoperability eXploration, eXperimentation, eXamination, eXercise (CWIX) 2019	Multinational
GCCS-JE Experiment Demonstration	DOD CIO, DISA, JS J6	Demonstrate NIEM conformant information exchanges in the GCCS-JE experiment	DOD
Trident Spectre 2020 Demonstration	SOCOM, IC, DOD	Demonstrate NIEM conformant JSON information exchanges between sensor systems and decision support applications in the Common Interoperability Layer (CIL) with XML cross security domain information exchanges between NIPR, SIPR, and JWICS	Interagency
Simulated Interactive Robotic Initiative (SIRI)	JS J6, ACT/NATO USMC/MCTSSA	Establish uniform data standards and services implementation processes; codify data standardization in NATO policy	Multinational
Tactical Infrastructure Enterprise Services (TIES) Coalition Warfare Program (CWP)	JS J6, ACT/NATO, FRA, DEU, ITA, NOR, Army/PM MC	Implement C-COP IEPD; NATO's (NCIA) NIEM conformant information exchanges for secure web service access control	Multinational
US NAVY – Robotic and Autonomous Systems Information Interoperability	NAVAIR PMA 281	Demonstrate standardized data interfaces uses in Advanced C2 NIOP. Demonstrate manned-unmanned capabilities	DOD
USAF – Robotic and Autonomous Systems Information Interoperability Line of Effort	USA RCO	Apply NIEM construct to USAF unmanned systems messaging standard (UCI) to improve configuration management and ability to share information with non-USAF partners	DOD
DHS HSIN and MPE alignment	DHS, JS J6	Interface standardization between Homeland Security Information Network and DOD Mission Partner Environment	Interagency
CCMD Data Storage Access and Use	JS J6; PACOM	Prototype CCMD access to multiple data storage capabilities through NIEM conformant information exchanges	DOD

INTERNATIONAL ENGAGEMENTS

- NATO Core Data Framework (NCDF)
- Federated Mission Networking (FMN)
- Five Eyes Combined Communications-Electronics Board (CCEB)
- Data Management Capability Team (DMCAT)
- Country of Canada