NIEM MILOPS

STAKEHOLDER ENGAGEMENT

Wednesday, 11 May 2022

AGENDA

Time	Topic	Presenter
1000-1010	Opening Remarks	Mrs. Katherine Escobar
1010-1020	Domain Way Forward	Mrs. Katherine Escobar
1020-1030	NMO Status	Mrs. Katherine Escobar
1030-1040	NBAC Status	Mr. Kamran Atri & Mr. Thomas Krul
1040-1050	NTAC Status	Mr. Tom Carlson
1050-1110	Demo – Restricted Repository	Mr. Chuck Chipman
1110-1125	Open Discussion	All
1125-1130	Closing Remarks	Mrs. Katherine Escobar

OPENING REMARKS / INTRODUCTIONS

Katherine Escobar

DOMAIN UPDATES

- Minimum Essential Metadata (MEM)
- Restricted Releases in WMA Portal

DOD

MINIMUM ESSENTIAL METADATA
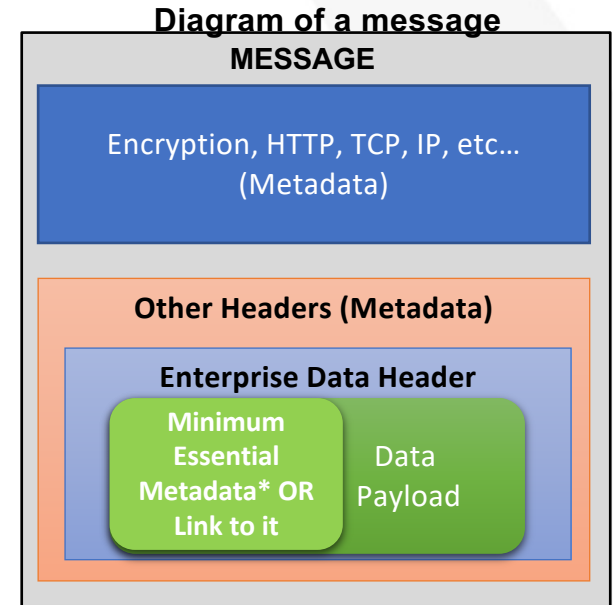
(MEM)

Chuck Chipman, JS J6 DSD (GTRI)

DOD MEM

Key Considerations:

- "Minimum Essential Metadata (MEM)" is a <u>limited</u> set of metadata necessary to support the 'must have' functions for any data across *DoD, joint, interagency, and coalition* at the time of 'creation' that will be exchanged. The 'must have' functions are:

- **Access**	- **Audit (*multiple types*)**
- **Correlation**	- **Records Management**
- **Discovery**	- **Protection**

- Applies to any DoD data that is exchanged (excludes raw, unprocessed data)
- Applies at the time of creation, as close as is technically feasible to the time of creation for some data assets (e.g. sensor data, etc.), or when DoD acquired the data asset
- MEM is not dependent upon how long a piece of data or information lives (i.e. one day or 20 years)

Diagram of a message

MESSAGE

Encryption, HTTP, TCP, IP, etc...
(Metadata)

Other Headers (Metadata)

Enterprise Data Header

Minimum Essential Metadata* OR Link to it

Data Payload

* Plus any additional function or mission specific metadata applied to the payload beyond the MEM

Any organization or community can add more than the minimum essential at the time of creation not less

MEM REQUIREMENTS SOURCES

- **Program Management – Information Sharing Environment (PM-ISE) Priority Objective 3 (PO3)**, v1 – Data Tagging Functional Requirements, Dec 2014 – *based upon Dublin Core*

- **National Archives and Records Administration (NARA)** Code of Federal Regulations
  - NARA Bulletin 2015-04: Metadata Guidance *based on Dublin Core*
  - Universal Electronic Records Management Requirements, Version 2 developed by the National Archives and Records Administration's (NARA) Requirements Working Group (RWG)

    https://www.archives.gov/records-mgmt/policy/universalrmrequirements

- **NATO/International**- *based on Dublin Core*

- **FIPS & NIST Policies**

- **DoD & Director of National Intelligence Policies**

DRAFT MINIMUM ESSENTIAL METADATA

<u>**Resource Description:**</u>

- **Unique Identifier** - *an unambiguous (unique) reference to the resource (PO#3, NARA, & NATO)*
- **Legal Authority** - *The particular documented legal basis for mission activities associated with the creation, retention and use of a resource. (PO#3)*
- **Creator**– *An organizational entity primarily responsible for generating the resource. For DoD, creator is synonymous with author, originator, and collector. (PO#3, NARA, & NATO)*
- **Office of Record** - *Organizational element that is legally responsible for the data asset (e.g. records management, classification, eDiscovery, FOIA search). (Modified from NARA)*
- **Date & Time Created** – *Date and time on which the data resource was created to include when a data resource came under government control (i.e. acquisition of third party data, etc.) (modified from NATO)*
- **Description (Subject)** - *A brief account of the resource. (PO#3, NARA, & NATO)*
- **Format** - *Information about the file format, physical medium, or dimensions of the resource. (NATO)*

<u>**Safe Guarding & Sharing – (Entitlements Management)**</u>

- **Security Classification** - *A single indicator identifying the highest level of classification contained within a resource (NARA, & NATO)*
- **Disclosure & Releasability** - *Information pertaining to countries, organizations, or communities approved to receive the resource (PO#3, NARA, & NATO)*
- **Handling Restrictions** - *Limitations not related to classification or releasability, such as Controlled Unclassified Information designations.(PO#3 & NARA)*

Note: Using the PO#3 terminology with some exceptions (Office of Record, Date & Time Created, and Format)

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PROPOSED MEM TECHNICAL PATTERN

```xml
<xs:element name="MinimumEssentialMetadata" type="mo:MinimumEssentialMetadataType" nillable="true">
  <xs:annotation>
    <xs:documentation>Metadata about a data resource necessary to support the 'must have' functions for any data across DoD, joint, interagency, and coalition at the time of 'creation' that will be exchanged.</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="MinimumEssentialMetadataType">
  <xs:annotation>
    <xs:documentation>A data type for metadata about a data resource necessary to support the 'must have' functions for any data across DoD, joint, interagency, and coalition at the time of 'creation' that will be exchanged.</xs:documentation>
  </xs:annotation>
  <xs:complexContent>
    <xs:extension base="structures:MetadataType">
      <xs:sequence>
        <xs:element ref="mo:ResourceGlobalIdentification">                              [4 lines]
        <xs:element ref="mo:ResourceDomainIdentification" minOccurs="0" maxOccurs="unbounded"> [4 lines]
        <xs:element ref="mo:LegalAuthority">                                           [4 lines]
        <xs:element ref="mo:Creator">                                                  [4 lines]
        <xs:element ref="mo:OfficeOfRecord">                                           [4 lines]
        <xs:element ref="hs:CreationDate">                                             [4 lines]
        <xs:element ref="nc:DescriptionText">                                          [4 lines]
        <xs:element ref="mo:ResourceFormat">                                           [4 lines]
        <xs:element ref="mo:SecurityClassificationInformation">                        [4 lines]
        <xs:element ref="mo:DisclosureReleasability">                                  [4 lines]
        <xs:element ref="mo:HandlingRestrictions">                                     [4 lines]
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

NIEM RELEASE TIMELINES

- Add to MilOps 5.2 Release
- Projected 5.2 Release Timelines
  – Alpha, May
  – Beta, Jul/Aug
  – Release Candidate 1, Sep/Oct

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QUESTIONS

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NIEM AND METADATA

- Within NIEM, metadata is defined as "data about data"; that is, information that is not descriptive of objects and their relationships, but is descriptive of the data itself

- Characteristics of metadata include:

  - Metadata objects may appear outside the data they describe. They are applied by reference via the metadata attribute

  - Metadata objects may be applied to multiple objects within the same document

  - Each metadata attribute may hold references to multiple metadata objects, which enables messages to apply multiple metadata properties to objects and relationships

- NIEM supports metadata through use of metadata properties and types that are derived from structures:MetadataType

- Examples of NIEM metadata include nc:MetadataType and CUI marking metadata types; NIEM also supports use of IC-ISM

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NMO STATUS

Katherine Escobar

- Continue OASIS Transition
- NIEM Training – May Sold Out
- May 12 – Fireside Chat, Talk with a NIEM Expert
- DCSA NIEMafying SF 86
- DAMA Portland Chapter (5/19/22)
- National Science Foundation Open Knowledge Network Sprint (Mar – Jul 2022)
- Next ESC – June TBD
- MEP Builder Tool IOC
    - https://sourceforge.net/projects/niem-mep-builder/

NBAC STATUS

Kamran Atri & Thomas Krul

2022 CONTINUOUS PROGRESS

NBAC March 2022 Action Tracker

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- ## Continue Maturing
  - IP Domain, IHS Domain, L&D Domain …
  - Action Tracker, Manage releases, Advance NIEM Adoption, Support Domain Growth, Improve NIEM implementation,
  - Tiger teams, NIEM Community Governance, 2022 Work Plan
  - NBAC OASIS Transition
    - Update NBAC Charter, SOP, DSA - OASIS compliant

- ## Leveraging Tiger Teams
  - Internationalization (continue discussion with NTAC and how best to approach internationalization)
  - USA State, Local, & Tribal (Onboarding Canada SLTT)

- ## Ensure NIEM Data Model Maturation

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QUESTIONS
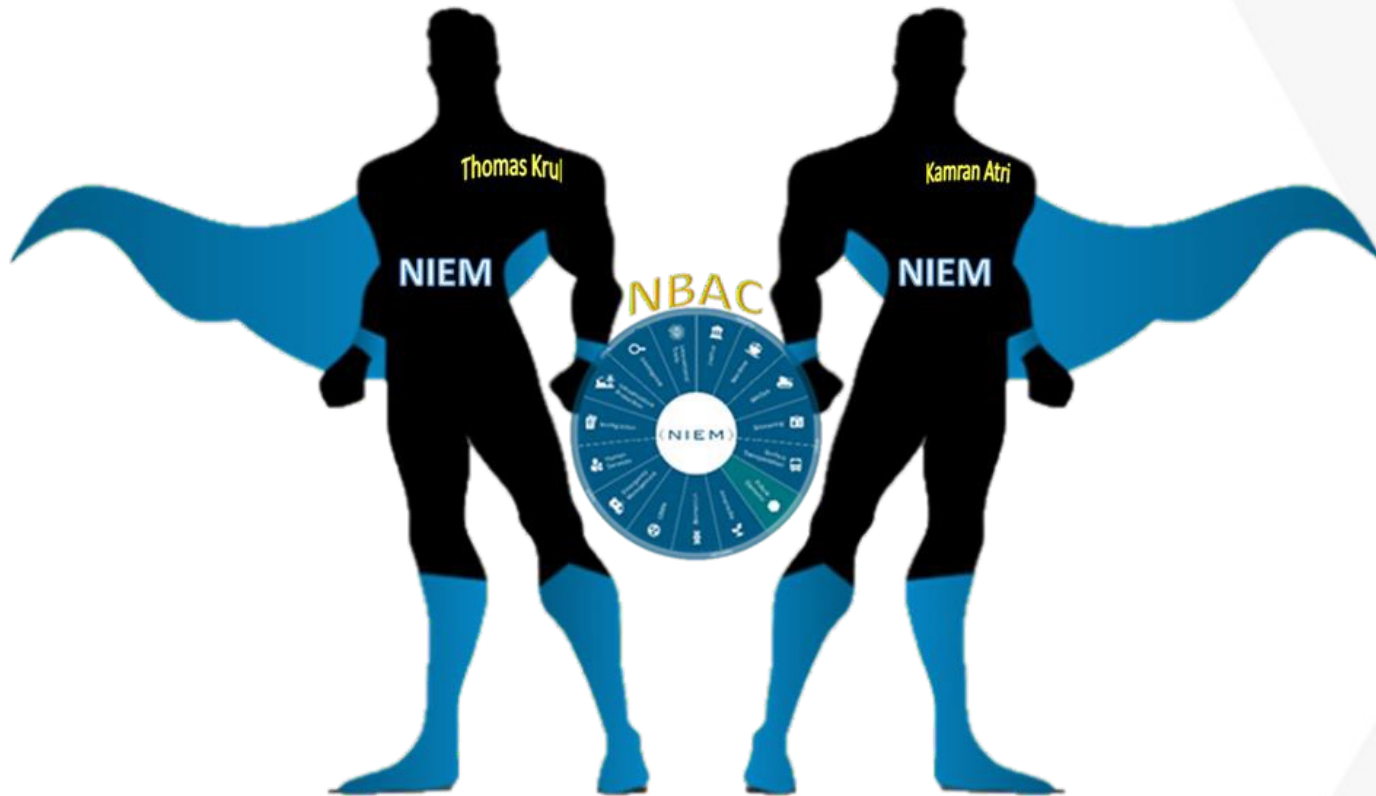
thomas.krul@FORCES.GC.CA   katri@A4SAFE.COM

NTAC STATUS

Tom Carlson

CURRENT ACTIVITIES

- Common Model Format (CMF)
  - Multiple technology support (XML, JSON, RDF, ...)
  - Provide open-source CMF tools for developers
- NIEM 6 Architecture improvements
- These are interrelated topics
  - Changes to one impact the other and vice versa
- Face-2-Face coming up
  - Week of 15 August

UPDATE

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NIEM COMMON MODEL FORMAT (CMF)

- Goal: Technology independence for data models
    - Before: Data models are represented as XML Schema documents
    - After: Data models are represented in the *Common Model Format (CMF)*
    - Unshackling NIEM from XML Schema's eccentricities
- Benefits
    - The NIEM model (core & domains) can be used by developers working with many data formats (JSON, RDF, etc.), and not just XML
    - A single message model can support many message formats
    - A NIEM message in one format can be translated into some other formats (XML to JSON, JSON to XML, etc.)

CMF STATUS & 2022 WORK PLAN

- Refine the metamodel / CMF as tool development proceeds
  - Iterative, one informs the other and vice versa
  - **Metadata is causing a major rethink**
  - **Potential new technologies like RDF* or JSON-LD***
- Developing free, open-source metamodel / CMF tools
- Working now:
  - Metamodel / CMF version 2 or so
  - Convert NIEM-based XML schema to CMF
  - Convert CMF to NIEM XML schema documents
- Planned for 2022:
  - Convert CMF to ontology formalism (RDFS+OWL)
  - Convert CMF to JSON Schema
  - Convert CMF to UML diagrams (XMI)
  - Convert UML diagrams to CMF (limited by lack of XMI standardization)
- Other technologies, eventually: Google Protocol Buffer, Apache Avro, YAML, etc.

UPDATE

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NIEM 6 ARCHITECTURE

- Major architectural changes happen only with a major release
- Next major release is NIEM 6.0 in 2023 (if so directed)
- Several significant changes in the works:
  - Replace XML Schema with CMF as the NIEM model representation
  - **Simplify or replace metadata attributes**
  - Handle ordered, repeated properties (replace @sequenceID)
  - Currently 14 other proposals
- For each proposal: consider, test, consult NBAC
- Looking good for a NIEM 6.0 release

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NIEM MESSAGE SPECIFICATIONS

- Currently on hiatus currently, as CMF and related NIEM 6 architecture issues are swamping our bandwidth
- Simplified next generation of IEPDs
  - Convention over configuration
  - Simple cases made simple, while complex cases still supported
- *Guidance for NIEM Message Specifications* in preparation now
  - A "how-to" guide, not a technical specification
  - Formal specification to follow, if needed

NIEM TRAINING UPDATE
2022-05-11

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TRAINING PROGRAM

- Monthly live training continues
  - May is sold out
- Recorded the full training
  - Will be available at some point for hybrid training
    - Video + live instructor on-call for questions
  - Will also be available as standalone online training
- Fireside Chat
  - Thursday at 1300-1500 (tomorrow)
  - For folks who have taken the course to ask follow-up questions
  - There will be no actual fire

DEMO – RESTRICTED REPOSITORY

Mr. Chuck Chipman

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OPEN DISCUSSION / CLOSING REMARKS

Next Meeting Wednesday June 8, 2022 @ 1000

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Closing Remarks

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