QUARTERLY NEWSLETTER FOR THE BIOMETERICS DOMAIN
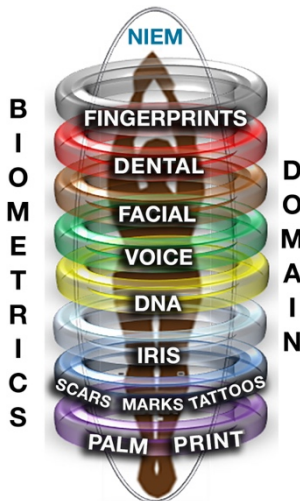
NIEM

Editor's Note

Welcome to your National Information Exchange Model (NIEM) newsletter. This publication provides Domain members with situational awareness of the latest features and related news of the Biometrics Domain, and enhances the exchange of intelligence and information across the Domains. Domain members represent the full range of operations that deal with gathering, analysis, fusion, and dissemination of biometrics intelligence. Our readers represent a broad audience of decision makers, stakeholders, as well as practitioners of the NIEM Biometrics Domain. This newsletter presents notable changes and current work in the Biometrics Domain. This specific issue covers topics such as the 4.2 and 5.0 NIEM Releases, details of the NIEM Face to Face (F2F) Annual Meeting, the Emerging Technologies Tiger Team (ET3), NIEM training, the NIEM Business Architecture Committee (NBAC), NIEM Technical Architecture Committee (NTAC), and NIEM Management Office (NMO) updates.

About the NIEM Biometrics Domain

The NIEM Biometrics Domain is a data model of agreed upon terms, definitions, and formats. It supports information sharing and promotes interoperability between mission-based organizations engaged in activities such as homeland security, national defense, border management, immigration benefits, and global law enforcement through the joint development and alignment of Extensible Markup Language (XML) Biometric Standards. The NIEM Biometrics Domain was launched in July 2012 and functions under the stewardship of the Office of Biometric Identity Management (OBIM) within the Department of Homeland Security (DHS). OBIM transitioned to the DHS Management Directorate after passage of the Cybersecurity and Infrastructure Security Agency Act of 2018.

Q1 2020 issue

The Biometrics Domain operates under the oversight of its executive committee, which includes:
Chair: John Boyd (OBIM)
Co-Chair: Jennifer Stathakis (DOJ/FBI)
Co-Chair: William Graves (DoD)
Ombudsman: Diane Stephens (NIST)

NBAC ET3 Update

During the October 2019 NIEM F2F, ET3 reiterated its mission to "*Promote NIEM as a Framework for Information Exchange for Emerging Technologies*". ET3's near-term (6 to 9 months) goal is to come up with a roadmap, identify ETs, brief ET collaboration, and explore pilot opportunities. ET3's long-term goal is to work on partnerships, pilots, collaboration, and track success, impact, and performance metrics. Tactical activities include: user Community of Interest (COI) collaboration, select committees, forums, and event planning.

For additional information, contact the NIEM Biometrics Domain Team at: OBIMFuturesIdentityNIEM@obim.dhs.gov

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NIEM 5.0

The NBAC/NTAC is organizing the harmonization working group's weekly meetings as they gear up for the NIEM 5.0 major release next year. Open issues are tracked in the NIEM Releases GitHub repository at https://github.com/NIEM/NIEM-Releases/projects/3.

Approved items currently include: 1.) National Data Exchange (NDEx) code sets, which are no longer being used and should be removed. 2.) Code type NIEM Core PleaCategoryCodeType that is defined in Core but is only used by Justice schema; the plan is to move it to the Justice domain with the rest of the components that are plea-related. 3.) Move the Justice-specific types from Core to the Justice domain. 4.) NIEM Core has elements for street pre- and post-direction text fields; the Justice domains have a code set for street directions; the plan is to create substitution groups in Core to make the text and code elements available together. 5.) Add street category and other mail-related codes to NIEM Core. 6.) PersonType in NIEM Core has ways to represent home, work, and emergency contact information; need to add a generic element for contact info in case the type isn't known; the suggestion is to add this to a Core Supplement for the 4.2 release.

About the NIEM Release 4.2

NIEM 4.2 (minor release) is the current version of NIEM. As a minor release, domains and domain code tables have been updated as needed. Core, all Core code tables, and the NIEM architecture are locked until the next major release which is NIEM 5.0. NIEM 4.2 conforms to the ReferenceSchemaDocument (REF) target of the NIEM Naming and Design Rules (NDR) Specification, version 4.0. There are several ways to access NIEM 4.2:

- Download the complete NIEM 4.2 schema package as a zip file from release.niem.gov.
- Search the contents of NIEM 4.2 using the Movement tool available on www.niem.gov.
- Browse the contents of NIEM 4.2 and the download schema subsets from the NIEM Schema Subset Generation Tool (SSGT) available on www.niem.gov.

NIEM releases are published on Github (https://github.com/NIEM/NIEM-Releases). NIEM 4.2 is tagged as niem-4.2, and can be downloaded as a zip file.

In addition to the XML schema release, 4.2 incorporates a default JavaScript Object Notation (JSON)-LD context for NIEM 4.2.

NIEM Training

NIEM Training is accessible on GitHub at https://niem.github.io/training/ and it provides a modern user-centric interface with interactive and customizable tutorials. The site addresses two types of training audiences:

1. Someone who is a NIEM beginner who could be managing domain model content, or developing and implementing an exchange.
2. Someone who is intermediate or advanced with NIEM and is looking for quick reference material.

NTAC Update

The NIEM Biometrics Domain attends NTAC weekly and monthly meetings where discussions are ongoing about the proposed NIEM Metamodel. A defining aspect of the NIEM tool strategy is the implementation of the concept of Metamodel. Metamodeling is the analysis, construction, and development of the frames, rules, constraints, models, and theories applicable and useful for modeling a predefined class of problems. Intrinsic to the tool strategy is creating a model description for the NIEM data models.

NIEM data definitions can be treated as data itself and transformed to support various representations. While the XML schema describes the NIEM data model, not all XML schema syntax is needed by JSON or UML.

The NIEM data model represents the relationships between entities, and the model of these relationships is referred to as the NIEM Metamodel. It is the keystone artifact enabling the transformation of data models from one format to another. This approach permits the transformation of the NIEM XML schema into a common Metamodel format, and then the Metamodel format can be repurposed into a NIEM JSON schema.

The NTAC team is planning the scope and timelines. Their approach will tackle individual development tasks in small packages, with minimally viable products. Future features and capabilities will be added in iterations leading to modular development.

Upcoming NBAC Monthly Teleconference:

- **Feb 27, 2020, 1:00pm – 2:00pm**
- **Mar 26, 2020, 1:00pm – 2:00pm**

NIEM 2019 Face to Face Updates

NIEM Outreach

The NBAC discussed how NIEM is seeing increased use in the Government and the need to better market NIEM across a broader community. The expanded adoption of NIEM elevates data as a strategic asset. This will improve global data interoperability in order to support existing and emerging technologies. The NBAC's recommendations:

• Encourage the health, education, housing, and other domains to utilize an expert in their field with the vision and gravitas to charter a proper domain. This person would understand how to message the fact that a key purpose involves how to translate between NIEM and the existing standards in their domain, e.g., Health IT standards, rather than to compete with them.

• Provide a NIEM Customer Relations Management (CRM) tool to improve Domain collaboration and awareness within and across Federal, State, local, and international stakeholders.

• Provide access to a library of topic-based information handouts such as Artificial Intelligence, the Internet of Things, and Open Data to facilitate cross-community collaboration.

• Develop and maintain an updated list of organizations using NIEM.

IEPD Registry Update

The NIEM NTAC Technical Manager, Lanzo Wallace demonstrated a prototype Information Exchange Package Documentation (IEPD) registry capability at the F2F. The demonstration led to further discussion of potential issues, needs, and requirements, and next steps. Mr. Gerry Christman, from the NIEM NMO, emphasized the DoD Chief Information Officer Executive Steering Committee has an interest in a NIEM capability that can support re-use and ease of use to attract new NIEM adopters. He reinforced a requirement for inclusion of metrics/analytics to provide leadership with a dashboard reflecting overall NIEM performance based on IEPD development and reuse. The NBAC recommended, and has since established, a Registry Tiger Team to carry forward the effort of issue resolution and requirement facilitation supporting the IEPD Registry Pilot.

NIEM International Tiger Team

The NBAC launched an International Tiger Team in late 2016 with a goal of expanding the utility of NIEM to a global audience. During 2017, refinements to U.S.-centric terms/definitions in the Core were suggested and implemented, including NIEM 3.0 inputs to Core and domain models. During 2018 and 2019, the Tiger team initiated a translation effort to bring Public Safety Canada into the NIEM community and continued attribute identification (300-plus global operations). The NBAC suggested the following tasks as the 2019-2020 direction:

• Potentially use NIEM 5.0 as an opportunity to review and align more than 1,200 new elements.

• Continue the Canadian Transportation project and utilize it as a blueprint to derive best practices for this type of tiger team associated activity.

NIEM Tool and Architecture Recommendations

During the NIEM Annual F2F, the NBAC provided the following Tool and Architecture recommendations:

• Integrate existing Movement and Subset Schema Generation Tool (SSGT) capabilities.

• Consider alternate representations of NIEM to make it easier for tool developers to work within the NIEM framework.

• Identify whether there is a way to facilitate and automate all phases of the NIEM IEPD lifecycle, including tools to trace Information Exchange requirements from the DoD Architecture Framework, defined artifacts for scenario planning, and Extract, Transform, and Load mapping from a native model to NIEM.

• Provide comprehensive NIEM JSON tool support.

• Allow SSGT to restrict data type facets in subset schema generation, e.g., impose minimums for string lengths and integer inclusive values.

• Create IEPD registry or repository.

• Develop privacy sensitivity markings and additional guidance on authorization for access to NIEM-exchanged data.

• Expand NIEM capability beyond XML and JSON, to ensure support for mobile device exchanges, microservices, and web services.

• Provide an easy browsing tool for NIEM core and domain content.

• Focus on ease of use to encourage increased adoption and implementation.

• Consider whether NIEM could position itself as a translator of standards rather than as a standard itself, where it can be dismissed as a competing standard or just another standard.