QUARTERLY NEWSLETTER FOR THE BIOMETERICS DOMAIN
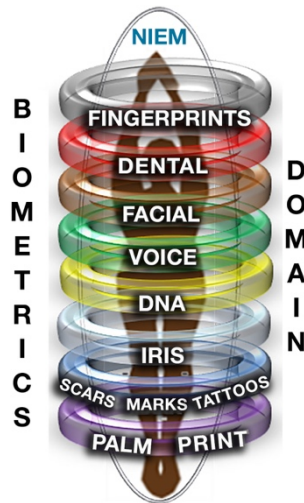
NIEM

Editor's Note

Welcome to your National Information Exchange Model (NIEM) Biometrics Domain 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 dealing with the gathering, analysis, fusion, and dissemination of biometrics intelligence. Our readers represent a broad audience of decision makers, stakeholders, and practitioners of the NIEM Biometrics Domain.

This newsletter presents notable changes and current work in the Biometrics Domain. This issue covers topics such as the launch of the NIEM Biometrics Domain GitHub Repository, Maturing the NIEM Biometrics Voice Data Model, NIEM 5.1 NBD Updates including the DNA and Release Updates, an overview of the OBIM presentation, Biometric Vocabulary - A Standards - Based Approach, and the NBAC/NTAC Annual Meeting details.

About the NIEM Biometrics Domain

The NIEM Biometrics Domain (NBD) 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 NBD 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

Visit the NIEM Biometrics Domain Community Online here!

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Q3 2021 Issue

The NIEM Biometrics Domain Executive Committee (NBDEC) includes:
Chair: John Boyd (OBIM)
Co-Chair: Jennifer Stathakis (DOJ/FBI)
Co-Chair: William Graves (DoD)
Ombudsman: Diane Stephens (NIST)

NIEM Biometrics Domain GitHub

The NIEM Biometrics Domain Team at OBIM worked with the NIEM Management Office (NMO) to launch a NIEM Biometrics Domain GitHub site to collaborate with the Biometrics community. The information provided on the GitHub site includes:

- **NBD Executive Committee:**
NBDEC includes OBIM as Chair, DoD and DOJ as Co-Chairs, and NIST as Ombudsman.
- **Biometrics Newsletters:**
OBIM publishes quarterly content on notable changes in the domain.
- **NIEM Biometrics Working Groups:**
OBIM Chairs the NBD Working Group (NBDWG) and provides status updates.
- **Biometrics Community Documents:**
NIEM Biometrics domain-related documents benefit the Biometrics community.
- **Biometrics Membership/Feedback:**
NIEM biometrics domain membership and feedback enhance outreach.

Maturing Voice Data Model for NIEM Biometrics at OBIM

The NIEM Biometrics Domain Working Group (NBDWG) lead at OBIM, Ms. Tara Etemadi, holds bi-weekly biometrics standards meetings to mature the Human Language Technology (HLT) / Voice Data Model for the Biometrics Community. Participants from DHS, DoD, DOJ, NIST, the Project Team, and HLT Subject Matter Experts (SMEs) review the conceptual data model for voice and a glossary of terms and definitions drafted by OBIM. The NBDWG is expanding the focus to include forensic use cases as well as access control. The NBDWG is working with NIST editors to understand the existing Type-11 voice record containers; and in conjunction with the International Organization for Standardization (ISO) / International Electrotechnical Commission (IEC) 19794-13:2018 Information Technology — Biometric Data Interchange Formats — Part 13 Voice Data, is focused on the access control use case.

The NBDWG's goal is to advance voice standards, ensure conformance to NIEM, and support development of elements/services in Identity Exchange Messaging (IXM) for the OBIM HLT prototype.

NBD encourages HLT SMEs to join the standards discussions: OBIMFuturesIdentityNIEM@obim.dhs.gov

NIEM Release 5.1– NBD Updates

NIEM publishes annual releases on a 3-year cycle. A major release year will be followed by 2 minor release years. NIEM 5.1 will be a minor release and is currently under development. The NIEM 5.1 publication is scheduled for fall 2021.

The NIEM 5.1 Alpha 2 was published for community review and the NBD team provided initial feedback. The NIEM 5.1 Beta1 release is slated for August 2021 and will include feedback provided by the Biometrics Domain.

Previous releases and the status of the draft release, instructions, and links are available at: https://niem.github.io/niem-releases.

NIEM 5.1 includes approximately 60 new DNA attributes identified and agreed upon by the NBDWG. These are modifications to existing DNA attributes currently available in the NBD model. The goal is to reflect the NIEM Biometrics DNA changes in the NBD Data Model.

Note: New or updated voice attributes may be reflected in NIEM 5.2 based on expected consensus achieved through the NBDWG.

NIEM 5.1 Release Planning

The updated NIEM 5.1 release schedule:
Major inputs ue:
- Alpha 1:   Mar 2021
- Alpha 2:   June 2021
- Beta 1:   Aug 2021
- Release Candidate 1:   Aug 2021
- Release: Fall 2021

Additional phases (e.g., Beta 2) may be added as needed during the development process.

Participate in the NBD!
For more information or to join our working groups, contact us at:
OBIMFuturesIdentityNIEM@obim.dhs.gov

Biometric Vocabulary - A Standards-Based Approach

Dr. James Wayman, OBIM Futures Identity Special Government Employee, provided a Biometric vocabulary briefing on July 13 to the OBIM Director, staff, and leaders who engage with biometrics stakeholders. Dr. Wayman explained the need for a common, standardized vocabulary in the field of biometrics, reviewed the ISO standards and process for vocabulary development, and shared details of the development of ISO/IEC 2382-37. He discussed issues and controversies that apply when attempting to standardize biometric vocabulary. To summarize:

- Technical communications and legally enforceable contracts require consistent, unambiguous language with clear "rules."
- The historically inconsistent language of "biometrics" has led to scientific and contractual misunderstandings.
- International standards exist for the creation of terminology.
- Terminology harmonization efforts should always start at the concept level and continue at the term level. For each concept, list all essential characteristics.
- ISO/IEC 2382-37 was developed by an international team of experts working over the last 20 years using ISO principles.
- Consider translatability (French, Spanish, German, Russian, Japanese).
- ISO/IEC 2382-37 is now the accepted international standard for terminology in biometrics.
- ISO/IEC 2382-37 incudes 200+ pages of Concept Maps.

NBAC Monthly Teleconference:
- Aug 26, 2021, 1:00pm – 2:00pm
- Sep 30, 2021, 1:00pm – 2:00pm
- Oct 28, 2021, 1:00pm – 2:00pm

Top 4 Reasons To Adopt NIEM

1. NIEM Improves Decision Making: NIEM makes it possible for organizations to share critical data, and as a result, people are empowered to make informed decisions, which improve efficiency and help organizations advance and fulfill their missions.

2. NIEM Standardization Increases Collaboration: NIEM provides a common vocabulary and mature model that enables agencies to collaborate and develop innovative, data - driven, mission - focused solutions.

3. NIEM Speeds Up Development and Reduces Costs: As an organization's experience with developing NIEM information exchanges increases, the cost of developing these NIEM exchanges decreases. Furthermore, due to the fact that exchanges are reusable, NIEM saves even more money over time.

4. NIEM is Flexible with Reusable Exchanges: NIEM's framework consists of mature, repeatable, reusable processes and tools that align with an organization's enterprise architecture, which allows organizations to move information quickly and effectively without having to rebuild systems or abandon legacy infrastructure.

Upcoming NBAC Annual Meeting

The NIEM Business Architecture Committee (NBAC) has released the schedule for this year's NBAC Annual Meeting. The meeting will be held September 14 – 16, 2021 at the Georgia Technical Research Institure (GTRI) in Arlington, Virginia with an option for virtual attendance.

Topics planned for discussion include:

- **NIEM Adoption**: NIEM is a Federal, State, local, tribal, and private initiative to increase information sharing between organizations. NIEM includes a data model from which organizations can establish information sharing specifications. NIEM adoption leads to cost avoidance, enhanced mission capabilities, and low total cost of ownership.
- **NIEM Stewardship:** Domain stewards play a critical role in the success of a domain by managing domain activities, driving domain growth, and interfacing with NIEM governance bodies. Domain Stewards must be Federal entities. The Domain Stewardship Agreement must be signed by an individual with funding authority.
- **Train-the-Trainer:** The NMO is planning to offer a training program for trainers and potential trainers of NIEM courses.
- **Road to Success:** The establishment of a Community of Interest (CoI) is essential to the long-term success and continued maturation of a domain.
- **Sharing and Collaboration:** NIEM is about standardizing data across systems, which enables sharing with mission partners. NIEM enables sharing and collaboration approaches that:
  o Align with the whole-of-government approach
  o Accommodate a diverse user community
  o Are easily composable and scalable

Upcoming NTAC Annual Meeting

The NIEM Technical Architecture Committee (NTAC) has released the schedule for this year's NTAC Annual Meeting. Attendees will gather between August 10 and 12, 2021. NTAC members represent technical experts and thought leaders across the community, including representation from all levels of Government, Standards Developing Organizations, and industry to ensure interoperability and coordinated development. Prominent topics planned for discussion include:

- **NIEM Metamodel**:

The NIEM metamodel will allow the development of NIEM conformant message specifications to not be limited to the XML data format. This will allow other formats including JavaScript Object Notation (JSON).

The metamodel is a framework for building models to improve NIEM by allowing data definitions, which are interoperable across data representation and specification technologies. It defines a model for NIEM data definitions, so those definitions may be used with technologies in addition to the XML Schema.

For example, an exchange may be implemented using JSON messages, with the JSON Schema defining the syntax of those messages. The model, describing objects, values, and relationships between them, will be consistent across the XML Schema and the JSON Schema. This consistency will ensure data definitions can be reused across multiple technologies.

- **JSON Specification:**

The NIEM JSON Specification establishes the technical basis for using JSON as a data format for exchange of information consistent with NIEM - conformant Schemas and message specifications.