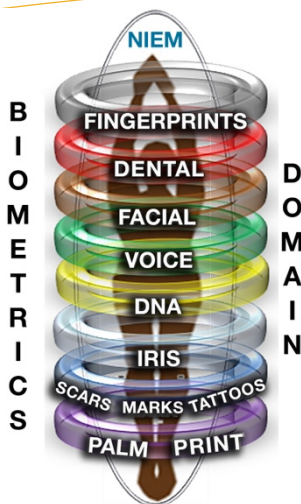


## Editor's Note

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, and 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, an overview of the NIEM Face to Face (F2F) Annual Meeting, and 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 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.

## About the NIEM Release 4.2

NIEM 4.2 (upcoming minor release) is under development and is targeted for a November 2019 release. It will address comments received in response to each prior phase of the release. The NIEM version 4.2 schedule is available at <http://niem.github.io/niem-releases/>.

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**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 Emerging Technologies Tiger Team (ET3) Update

During the July NBAC session, Mr. Jalal Mapar became the new ET3 Lead, replacing Mr. Lain McNeill. Mr. Mapar has been involved in NIEM for more than 10 years and currently works within the DHS Science and Technology (S&T) Directorate, in the Office of the Chief Scientist. He has been instrumental in representing S&T at the National Science Technology Committee (NSTC), participating in the Machine Learning (ML) and Artificial Intelligence (AI) Information Sciences and Quantum Computation subcommittees.

For additional information, contact the NIEM Biometrics Domain Team at: [OBIMFuturesIdentityNIEM@obim.dhs.gov](mailto:OBIMFuturesIdentityNIEM@obim.dhs.gov)

Prepared By:



## NIEM 5.0

The NBAC/NTAC launched the harmonization working group weekly meetings gearing up for the NIEM 5.0 major release next year. The purpose of this group is to focus on Core, cross-domain harmonization, and QA issues in order to reduce overlap and improve the quality and consistency of the NIEM model.

NIEM 5.0 requirements aim at improving NIEM adoption and data exchange implementation, and will support structured and unstructured content.

The NBAC is looking for participation from at least one representative from each domain, as well as other interested stakeholders.

Issues will be managed using the issue tracker in the NIEM Releases GitHub repository. A new project board has been set up specifically for NIEM 5.0 issues, with columns to track issue status. Issues to be discussed during these meetings can be found under the "Harmonization Workgroup" column:

<https://github.com/NIEM/NIEM-Releases/projects/3>.

Focus areas are use cases applicable to AI and Internet of Things (IoT). The NBAC plans to mature these use cases via the NBAC ET3 which meets periodically to work towards the NIEM 5.0 goal.

## ET3 Initiatives

The NBAC acknowledged the work that Mr. Lain McNeill and other ET3 members have accomplished to raise awareness of new technologies that should have touchpoints to NIEM. Additionally, they have assembled considerable expertise within the team.

Mr. Jalal Mapar presented his objectives for the Tiger Team, summarized below:

- Establish a roadmap within the next month for the new fiscal year, similar to what was done last year.
- Engage with other agencies about NIEM, focusing discussions on how to better support operationalizing their standards. For example, Mr. Mapar referenced the last meeting of the ML/AI subcommittee at the White House where one of the main topics was data standards. Some attendees were aware of NIEM and the NIEM Model, but had not realized its applicability to support the data aspects of AI.

For questions or participation in ET3, please contact Mr. Ralph O'Connell, NIEM Management Office Business Manager at [ralph.m.oconnell.civ@mail.mil](mailto:ralph.m.oconnell.civ@mail.mil).



The **NIEM IEPD Registry** provides a centralized repository for schemas and metadata, allowing services to flexibly interact and exchange data with each other without the challenge of managing and sharing schemas between them.

## NTAC Update

The NIEM Biometrics Domain attends NTAC weekly and monthly meetings. A current focus is developing a tool strategy with a phased work plan spanning 1 to 5 years. The Phase I timeline is planned for FY 2020. The "as is" system is used to create IEPDs, Mapping spreadsheets, SSGT, Movement, NIEM Conformance Tool (ConTesA), and a Code List generation tool. The Phase 1 strategy includes identification of tool gaps.

The future system is intended to provide flexible and adaptable NIEM tools for a Multipartner environment. The vision for the "to be" toolset will be based on the following requirements:

- Automate processes to reduce the level of expertise required to use the toolset.
- Capture IEPD registry metadata.
- Focus on ease-of-use and a self-service model.
- Develop as an open source tool that is user installable.
- Support for XML, JavaScript Object Notation (JSON), Structured Query Language (SQL), and Unified Modeling Language (UML) representation.
- Accredit in diverse environments to facilitate tool creation.
- Make modular to support incremental improvements and agile development.
- Accommodate third-party tool hosting, e.g., Sparx EA, Magic Draw Cameo plugin.

The current Movement and SSGT (Schema Subet Generation Tool) functions will be extended to export Model Description Format, which can be ingested by JSON Schema, XSD (XML Schema Document), UML, and Documentation generators.

## Upcoming NBAC Monthly Teleconference:

- Jan 23, 2020, 1:00pm – 2:00pm
- Feb 27, 2020, 1:00pm – 2:00pm

# NIEM 2019 Face to Face

## Keynote Address

Mr. John Boyd, Assistant Director at OBIM, discussed the importance of NIEM as a bridge between business practices, systems, and functions. He reiterated the DHS “NIEM First” mandate and challenged the group to consider what the NIEM community can do to increase adoption. He described Model Behaviors as cyclical with functions, system modules, and business practices. He highlighted the Futures Identity (FI) team’s 5-year outlook as working towards a “Solution Set Framework” with Capabilities, Analyses (the bedrock of what they do), and Standards & Architecture (CASA). He encouraged building in the standard (e.g., NIEM, ISO) from the bottom-up, meaning build pieces and show leadership the value so there is a “pull from them” rather than a “push to them.” He stated that FI intends to use technology to minimize border trafficking, such as the DNA Store, Match, Share (SMS) initiative. The FI project phases are 1.) Proof of Concept, 2.) Prototype, 3.) Joint Field Test, and 4.) Pilot/Production. Mr. Boyd indicated that FI leverages a lightweight and efficient lifecycle process to explore capabilities through innovation and creativity.

## Best of NIEM 2019 Awards

The NIEM Executive Steering Committee (ESC) announced this year’s awardees at the annual NIEM Face to Face (F2F) meetings in Arlington, VA. The awards were established in 2009 to recognize outstanding NIEM solutions. Best of NIEM nominees are solicited within the NIEM community and nominees are asked to demonstrate how their NIEM conformant information exchange improves performance, increases efficiency, and advances interoperability.

The Best of NIEM 2019 awardees are:

- The Project Management Office for DoD Biometrics was recognized for establishing a fully NIEM conformant process and Information Exchange Package Documentation (IEPD) in support of mission operations. Mr. William Graves, Chief Engineer, DoD Biometrics, accepted the award.
- The Program Office, Joint Technical Coordinating Group for Munitions Effectiveness, Cyber Operations, and Lethality Effects Integrated Product Team, DoD, was recognized for a Joint Non-Kinetic Effectiveness IEPD. Mr. Justin Pyle, Senior Technical Program Manager from Cyber Operations, accepted the award.
- NIEM recognized DHS OBIM for an outstanding UML achievement. OBIM has developed a DNA Prototype to leverage Rapid DNA capabilities, with a key objective to adopt a NIEM conformant and standards-driven data model enabling exchange interfaces. These messaging interfaces facilitate data sharing among U.S. Government agencies and international partners. Mr. Thomas Freed, OBIM FI Architect, received the award.



## Face to Face Overview

The NIEM Annual F2F Meeting is hosted by the NMO and was conducted from Monday, October 21 through Friday, October 25. During this event, the ESC, NBAC, NTAC, Tiger Teams, and Lead Developers collaborated on shared objectives and provided updates to the NIEM governance bodies. The meeting provided an excellent opportunity for the NIEM community to discuss how each domain uses NIEM, as well as ways they would like to use NIEM in the future.

During the F2F, the attendees discussed the NIEM 4.2 release which has been moved into production. They considered the path forward for the major 5.0 release which included collaboration planning discussions around AI, IoT, UML, JSON, Web Services, International Tiger Team (ITT), ET3, and Internationalization. Also, NIEM tool updates and enhancements were discussed and demonstrated. NIEM Domain and Community briefs were presented, which identified the Domain’s current status, highlights, objectives, recommendations, and challenges.

## OBIM’s Biometrics Solution Architecture Model Demo

Mr. Thomas Freed, OBIM FI Architect, discussed their approach to solution architecture through Model Based Systems Engineering (MBSE), their implementation of standards, a DNA use case review, and an overview of UML artifacts developed for the DNA data model. Mr. Freed indicated that NIEM conformant, standards driven modeling and simulation will ensure essential capability requirements are applied to DHS’s design, development, and usability while ensuring acceptance criteria are defined and approved. After the briefing, a Cameo Enterprise Architecture tool demonstration showcased its MBSE capabilities towards developing solution architecture models and artifacts.