QUARTERLY NEWSLETTER FOR
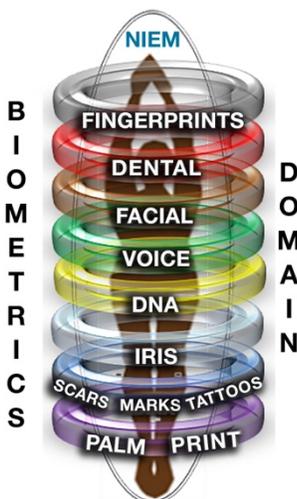THE BIOMETERICS DOMAIN

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, 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 upcoming NIEM Release 4.2, the outcome of the NIEM Business Architecture Committee (NBAC) monthly meeting and NIEM Technical Architecture Committee (NTAC) weekly meeting and progress on the DHS OBIM initiative for the DNA Store, Match, and Share Prototype.

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 under the stewardship of the Office of Biometric Identity Management (OBIM) within the Department of Homeland Security (DHS). OBIM operates and maintains the Automated Biometric Identification System (IDENT), the central DHS repository designed to store, match, and share biometric information.

About the NIEM Release 4.2

NIEM 4.2 alpha 1 (upcoming minor release) was released in March 2019 and comments are being accepted for the beta release.

The NIEM version 4.2 schedule is available at https://github.com/NIEM/NIEM-Releases/wiki/Upcoming-Release.

Q2 2019 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 Co-Chair Update

The NBAC Co-Chair, Ryan Schultz, is requesting nominations for a replacement since he is moving to a new role. Some aspects of the position include updating the committee charter and enhancing domain performance measures and metrics. The Co-Chairs are instrumental in developing NIEM's Release Cycle Optimization Process to standardize NIEM's major and minor release cycle and to strengthen NIEM's strategy to increase adoption at the local and state levels.

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

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Biometrics Domain Release 4.2

DHS OBIM proposed changes to the existing Biometrics Schema under Release 4.2 including components to support the modality of DNA. These changes are the result of the DNA Store, Match, and Share Prototype data exchange model leveraging Rapid DNA technologies. Suggested changes to the Biometrics schema include the addition of new attributes and modification of existing attributes.

Additions include:
1) PedigreeAnalysisResolution (a set of information about a resolution from analyzing a pedigree),
2) PedigreeResolutionText (a resolution from analyzing a pedigree),
3) PedigreeResolutionDate (a resolution date from analyzing a pedigree),
4) PedigreeAnalysisResolutionAugmentationPoint (An augmentation point for PedigreeAnalysisResolution).

Pedigree is a broader concept, applicable to modalities beyond DNA. Modifications to Pedigree-related NIEM attributes include:
1) Pedigree, PedigreeAugmentationPoint, **2)** PedigreeCommentText, **3)** PedigreeFatherIndexNumeric, **4)** PedigreeID, PedigreeMemberIndexNumeric, **5)** PedigreeMemberStatusCode, **6)** PedigreeMotherIndexNumeric, **7)** PedigreeDNASampleID.

FY 2019 Initiatives in Biometrics and Identity Management

The 13th Annual Biometrics for Government and Law Enforcement Summit took place between February 27th and March 1st in Washington D.C. The breakdown of initiatives listed below were identified at the summit for DHS in 2019. These initiatives help Federal, State, and local government decision makers accurately identify the people they encounter and determine whether those people pose a risk to the United States. The FY 2019 President's Budget strengthens DHS's biometric identification programs through these initiatives:

OBIM:

• IDENT/Homeland Advanced Recognition Technology (HART) Operations and Maintenance (O&M). HART will provide DHS and its mission partners the next generation of flexible, scalable, and efficient biometric repository technology, with O&M budgeted at $160.69 million.

Customs and Border Protection (CBP):

• National Targeting Center Expansion provides for additional resources to further support data analytics and statistical modeling capabilities to identify high-risk people and cargo in the air, land and sea environments, both entering and leaving the United States, budgeted at $26.9 million.

• Revenue Modernization is a multiyear acquisition program intended to create a long-term solution for improved management of approximately $50 billion in total revenue collected by CBP, budgeted at $18.5 million.

Transportation Security Administration (TSA):

• Passenger Roadmap aims at procuring and deploying 294 credential authentication technology (CAT) units at a number of airports to transform security check points, budgeted at $71.5 million. Computed tomography (CT) and CAT are cornerstone technologies to transform security at the checkpoint. This will allow for the purchase of at least 145 CT units.

NIEM enables efficient information exchange across diverse organizations.

NIEM Domain Partnership Initiative

The **goal** is for the NIEM Management Office (NMO) to support and promote Domain success. The NMO will:

• Leverage cross-community best practices
• Showcase domain highlights to strengthen NIEM advocacy and support
• Identify data exchange requirements

The **approach** is to assign the NMO liaison for each Domain to:

• Build trust and promote synergy
• Increase participation in domain events
• Serve as your domain advocate
• Focus NBAC monthly teleconferences on cross-community collaboration

NIEM Internationalization

Public Safety Canada has adopted NIEM as a standard for interoperability. The North Atlantic Treaty Organization (NATO) has also adopted NIEM as an interoperability standard between Nations. The NBAC is coordinating with Mr. Thomas Krul, Public Safety Canada, to obtain approval of Canada's Deputy Minister to co-chair the International Tiger Team. Canada is making interoperability progress through the Digital Exchange Working Group which supports NIEM. NBAC support will better enable future cross-domain capabilities through continued collaboration between Public Safety Canada and the United States on topics including human trafficking, the no-fly list, and international policing.

NIEM and the DoD

The Department of Defense Chief Information Officer (DoD CIO) assumed principle sponsorship of NIEM from DHS in October 2018. Joint Staff J6 DDC5I will execute the day-to-day operation of the NMO for the CIO and lead the Military Operations Domain, designed to provide a multifunctional, cross-organizational data dictionary to create NIEM-based information exchanges.

NIEM Demonstration for Enabling Access

A proposal is in progress at NBAC to enable Authorized User Access to Data and Authorized Physical Access to Countries and Human Services. The **Operational Objective** is to provide first responders, emergency management, law enforcement, human services, and military support personnel with necessary decision support information at the speed of relevance. The **Technical Objective** is to aggregate data in a near-real-time data vault with accurate security data tagging to enable multifunction data processing by national, non-governmental, and multinational mission partner systems for situational awareness (visualization), decision support (artificial intelligence), and planning and mission rehearsal (modeling and simulation). The **Demonstrative Objective** is to horizontally integrate existing and evolving government information technology capabilities into an enduring solution. The demonstration partners include DHS/OBIM, Department of Justice/Federal Bureau of Investigation Biometrics, Project Manager DoD Biometrics, DHS/U.S. Citizenship and Immigration Services, Department of Health and Human Services, Public Safety Canada, and the Office of the Director of National Intelligence. Use cases for this NBAC initiative will come next.

NTAC Update

The NIEM Biometrics Domain is supporting the NTAC. Here are highlights from the February meetings:

• The NTAC is requesting use cases for Mixed Content with requirements for NIEM conformant text. The NTAC welcomes any use cases across the agencies.

• The NTAC is working toward NMO's vision of Unified Modeling Language (UML) as part of the NIEM 5.0 release. The NMO goal is to enable production of UML for future NIEM releases. The NTAC discussed producing UML for NIEM profiles. The NTAC also updated the NIEM High Level Tool Architecture document to enable interoperability between the Schema Subset Generation Tool and the Movement tool. The goal of these efforts is to enable communication between the tools in XML Metadata Interchange (XMI) format.

• NTAC is discussing Open Data and the Data Tagging framework (Machine-to-Machine-requirement). As an example, historically, linked open data has always been oriented around Resource Description Framework methodology (JavaScript Object Notation for Linked Data), on which NIEM is wholly based. Machine-to-Machine Data Tagging use cases and requirements need to evolve further through community input for the NTAC to consider solution development and assess impact to the NIEM data model.

• The requirement to update the Model Package Description (MPD) Spec V4 catalog is based on 2 options:

▪ Option 1) Leave the MPD catalog alone as it was in v3, or:

▪ Option 2) Update the MPD catalog to be built off NIEM v4.

Option 2 would require an update to the namespace of the MPD catalog and open the door to other changes to the catalog. Members selected the second option.

DNA Store, Match, and Share Project

DHS OBIM is exploring a functional pilot based off of the prototype DNA Store, Match, and Share solution which will leverage Rapid DNA capabilities developed by the DHS Science and Technology Directorate. This will provide biological identification and relationship (kinship) testing and support identity fraud use cases. DNA, as a biometric modality, enables additional capabilities and enhances biometric identification. The power of DNA to determine familial relationships is unique. The addition of DNA profiling to the DHS biometric portfolios would substantially enhance verification and identification options across relevant DHS Components.

Unlike other biometric modalities, DNA is much less susceptible to alteration, manipulation, or obstruction. For example, acid cannot be used to remove DNA, as is possible with fingerprints. DNA has the highest and most accurate identity verification percentage (99.99%).

DHS OBIM supports the implementation of DNA operations by defining use cases with technical guidance on changes necessary to interface and import profiles from Rapid DNA instruments and laboratories. The use cases' status and next steps will be discussed during the Biometrics Domain update on the NBAC monthly teleconference call.

Upcoming NBAC Monthly Teleconference:

• **May 23rd, 1:00pm – 2:00pm**

• **June 27th, 1:00pm – 2:00pm**