NBAC Emerging Technologies Tiger Team (ET3)

NBAC Face-to-Face Update (2018)

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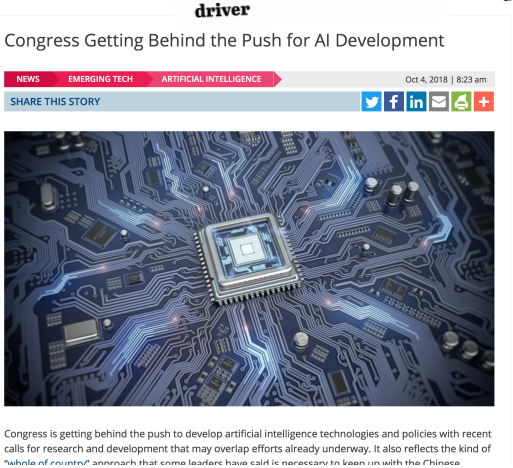
EMERGING TECH IN THE NEWS

In its initial state, the operating system published 1,100 data feeds curated by the Smart Columbus team to help address six mobility-related challenges faced by residents.

Sample datasets include foodbank data that may be used to help hungry families access groceries; the locations of low bridges in Franklin county, which may be used to help prevent dangerous bridge strikes by oversized trucks; and data on ographic concentrations of older adults, which may be mbined with public transit data to identify ways to better serve e mobility needs of Columbus seniors.



Pentagon officials have been pretty clear about their belief that artificial intelligence is changing the game for military operations, saying that AI will penetrate "every corner" of the Department of Defense (DoD), in the words of Brendan McCord, head of machine learning at the Defense Innovation Unit. DoD Chief Information Officer Dana Deasy lists AI among his four most important strategic areas. Defense Secretary James Mattis reportedly pushed for a "whole of country" approach earlier this year as the White House was announcing its Select Committee on Artificial Intelligence.

Emergency Technologies are entering the mainstream with wide-ranging discussion, consolidation and initiative.

ET3 BACKGROUND

The **NBAC Emerging Technology Tiger Team (ET3)** was launched in 2018 following initial discussion during the 2017 NBAC Face-to-Face event. Activities in year 1 are designed to establish priority areas for review, development a gap analysis with respect to data model impact and generate emerging user requirements.

2018

- Initial NBAC Emerging Tech Prioritization
- Identification of Existing Standards and NIEM Data Model Coverage Gaps
- Call For Early Implementation Requirements

Beyond

- Identify ET Attributes, Map to Model and Stakeholders
- Identify CoI Leaders Support NBAC Domain Steward/Formation Dialogue
- Develop Stakeholder Requirements Documentation in Support of NBAC/NTAC Alignment Re: Emerging Technology Areas and Impacts

2018 FOCUS AREAS

1. **Program Level** – Includes all recurring activities, such as participation in NBAC Face-to-Face event or monthly NBAC updates.

2. **Data Model Management** – Review existing and emerging standards, frameworks and data sets to identify gaps in NIEM models and domain coverage

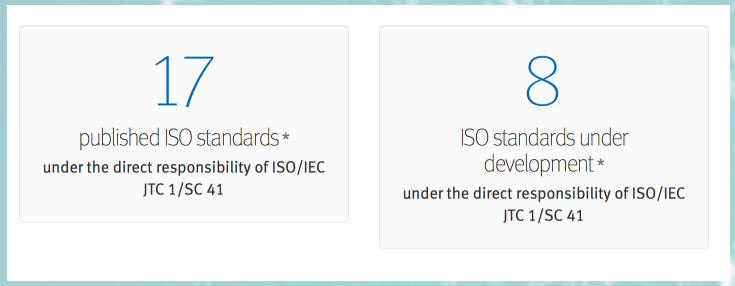
3. **Identify and Frame Technical Requirements** – Work in tandem with early planning and implementation efforts / users to identify and consolidate requirements related to emerging technologies that may impact NIEM Program, community, users, domain, NBAC/NTAC alignment and guidance

4. **Emerging Priorities and Community** – Development of community and support structure to facilitate development and cross-domain sharing of best practices, generate interest in emerging technologies and NIEM / NIEM Domain stand-up, link NIEM/NBAC to emerging technology standards development organizations.

INTERNET-OF-THINGS

Technology Overview: The Internet of things (IoT) is the network of physical devices, vehicles, home appliances and other items embedded with electronics, software, sensors, actuators, and connectivity which enables these objects to connect and exchange data.

Existing/Emerging Standards: INCITS Working Group **SC 41** yields ISO standards (global). Possible opportunity to form NIEM>NBAC>Domain liaison relationship.



INTERNET-OF-THINGS

National Institute of Standards and Technology
U.S. Department of Commerce

NIST's "Interagency Report on Status of International Cybersecurity Standardization for the Internet of Things (IoT)" aims to help develop and standardize IoT components, systems and services.

- **Defining IoT as a concept** based on components that interact with the physical world and have data storage, networking, processing and sensing capabilities.
- **Describing representative IoT applications** such as connected vehicles, consumer IoT (like smart homes), health IoT and connected medical devices, smart buildings and smart manufacturing.
- **Listing and summarizing core areas of cybersecurity**, including encryption, digital signatures, hardware assurance, identity and access management, network security, security automation and continuous monitoring and supply chain risk management.
- **Describing IoT cybersecurity objectives, risks and threats** as they relate to the representative applications.
- **Analyzing the current standards landscape** for IoT cybersecurity as related to the core areas.
- **Presenting a matrix** of the status of the major IoT cybersecurity standards and how they map to the core areas and applications.
- **Listing several possible standards gaps,** such as applying blockchain technology to IoT security and best practices for avoiding malware in software and firmware.

INTERNET-OF-THINGS

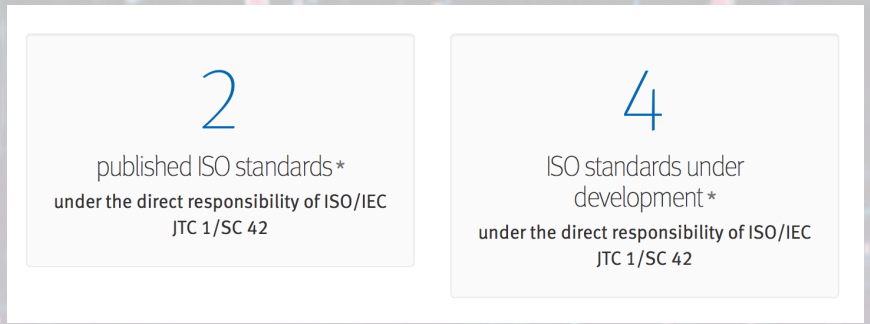
INCITS/IoT will address standardization in the areas assigned to SC 41 which has the following terms of reference: 1) Serve as a focus of and proponent for JTC 1 IoT standardization program. 2) Develop foundational standards for IoT related to JTC 1 for guiding IoT efforts throughout JTC 1 upon which other standards can be developed.

- Developing Terms and Definitions for JTC 1 IoT Vocabulary
- Developing IoT Reference Architecture and other foundational specifications as JTC 1 standards
- Continuing the work begun in SWG on IoT on standardization gaps
- Establishing a liaison with JTC 1, ISO, IEC or other entities undertaking work related to IoT
- Encouraging the prompt and efficient exchange of information within JTC 1 and with ISO, IEC, or other entities working on IoT, as appropriate
- Monitoring the ongoing IoT regulatory, market, business and technology requirements
- Developing other IoT standards that build on the foundational standards when relevant JTC 1 subgroups that could address these standards do not exist or are unable to develop them.

AI/ML

Technology Overview: Artificial Intelligence and Machine Learning are broad topics that are only now gaining traction within the public sector, but that have the potential to touch many different domain arenas.

Existing/Emerging Standards: INCITS (ISO/IEC) JTC 1/ SC 43 yields ISO standards (global).
Possible opportunity to form NIEM>NBAC>Domain liaison relationship. Review at NBAC level or discuss during F2F



IDENTITY MANAGEMENT

Technology Overview: Management of individuals, their authentication, authorization, and privileges within or across system and enterprise boundaries with the goal of increasing security and productivity while decreasing cost, downtime and repetitive tasks. Touches Biometrics, Screening, MilOps and other domains.

Existing/Emerging Standards: In active cooperation with the user community, NIST maintains the ANSI/NIST-ITL Biometrics standard. Major updates in 2011 have been followed with working group and minor release activity in 2013 (Update), 2015 (Working Group) and 2017/18 (Working Group).

Internationally, INCITS M1 (Working Group 37) oversees development of ISO standards for biometrics. All major federal exchange partners also maintain system specific protocols (DHS IXM, DOD EBTS, DOJ EBTS).

2018-2019 ACTIVITIES

Ongoing

- Review and identification of new-to-NIEM attributes from existing international standards

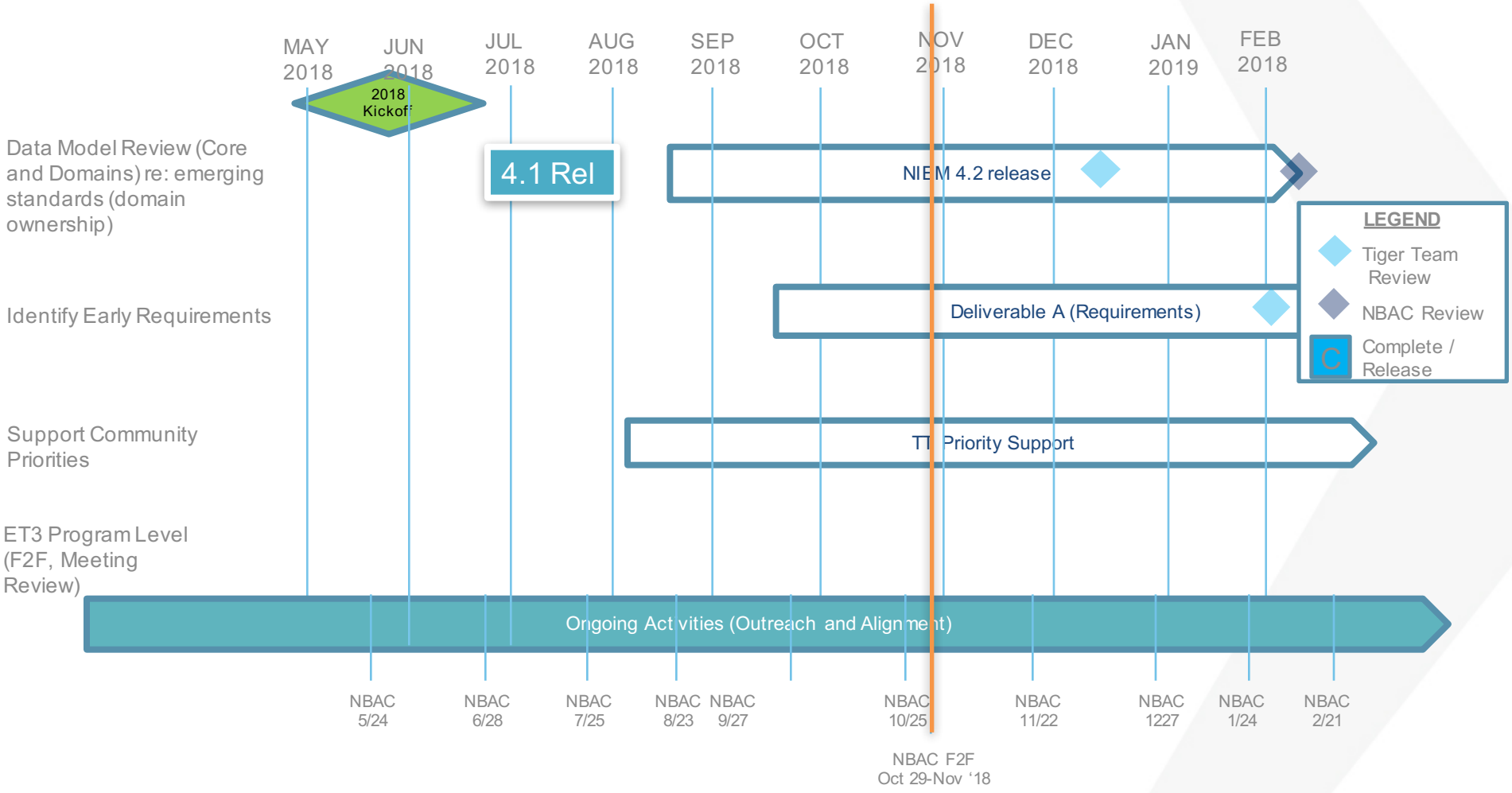
In-Development

- Impact Analysis (NIEM and Organizational): Model, Domain, Member, Expansion / Cross Domain Alignment

- Requirements Identification and Documentation, including impact to NTAC guidance under development

- Member Best Practices (New Technology Utilization, Alignment and Harmonization)

NBAC ET3 2018-2019



Includes Planned Initiatives and TT Review/Release Schedule

NEXT STEPS

- NIEM Model Coverage Analysis and Materials (Identification of New Attributes)
- Domain Business Case Development (Emerging Tech Impact) and Associated Requirements
- Community Engagement and Development In Support of Domain Development, Model Expansion and Technical Alignment

Questions/Participate

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THANK YOU!