NIEMOPEN

Transition ESC

20 October 2022

Ms. Katherine Escobar
Joint Staff J6, DDC5I, Data & Standards
NIEM Managing Director

ESC AGENDA

- Welcome (Ms. Katherine Escobar)

- Keynote (Mr. Stuart Whitehead)

- Opening Remarks (Dr. Clark Cully)

- History & 2019-2022 Successes (Mr. Ryan Schultz)

- Transition to OASIS OPEN Project (Ms. Katherine Escobar)
  - NIEM Open Timeline Status
  - Transfer of NIEM Capital & Equities
  - Governance
  - Transition Progress
  - Sponsorship
  - Message Exchange Package (MEP) Tool Buildout
  - Transfer of Governance

- NIEM OPEN Sponsorship (Ms. Dee Schur)

- Recognition & Thank you (Ms. Katherine Escobar)

- Adjourn

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Who is presenting today:

- **Dr. Clark Cully -** Deputy Chief Digital and Artificial Intelligence Officer – Policy and Acting DoD Chief Data Officer

- **Mr. Stuart Whitehead** - Deputy Director for Cyber and Command, Control, Communications and Computers (C4) Integration (DD C5I), within Directorate for Command, Control, Communications, and Computers/Cyber, JS J6

- **Mr. Ryan Schultz -** Chief, Data and Standards Division at Joint Staff J6

- **Ms. Katherine Escobar** - Deputy Division Chief, Data and Standards Division at Joint Staff J6 and NIEM Managing Director

- **Ms. Dee Schur** - Open Source and Standards Advocate at OASIS

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MAKING THE MOST OF OUR SESSION

Virtual Meeting Etiquette

PLEASE:

- **MUTE your mic when you're not talking**

- **Identify yourself before you start to speak**

- **Speak clearly**

- **Disable "call waiting" feature**
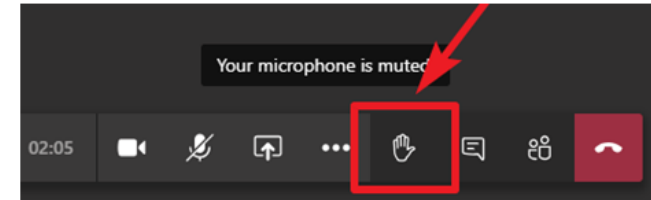 (the clicking noise can be heard by all)

Please note: ESC sessions are audio recorded.

Meeting Minutes will be published and distributed to participants.

QUESTIONS & ANSWERS ARE ENCOURAGED!

To signal you want to contribute without interrupting the speaker
- Enter comments via **CHAT window** at any time

To signal a question or respond to a question
- Click on '**Raise your hand**' button on meeting toolbar

 (Lower hand after you've talked by clicking hand button again)

Presenters, please be mindful of timing

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KEYNOTE

Mr. Stuart Whitehead

- PAST
  - NIEM for Federal Interoperability through 2005
  - XML Focus
  - 15 Years of Building Model Content & Expanding Domains

- 2022/23 Focus
  - Agnostic NIEM
    - Decouple XML
    - Metamodel
  - 17 Domains
  - Tools & Training

- Where Are We Going – Big Picture
  - NIEM Open Standard
  - Cast a Broader Net
    - National Perspective (State, Local, Tribal, Territorial, Public, Private)
    - International Outreach

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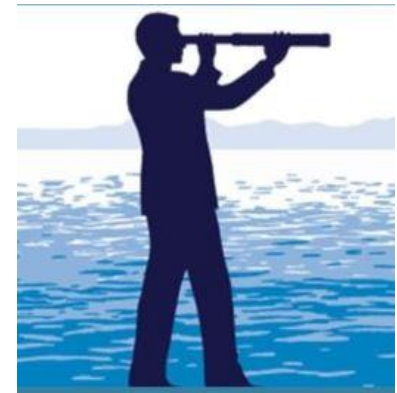
OPENING REMARKS

Dr. Clark Cully

- Welcome

- Transition

- Comments from ESC Principals

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HISTORY & 2019-2022 **SUCCESSES**
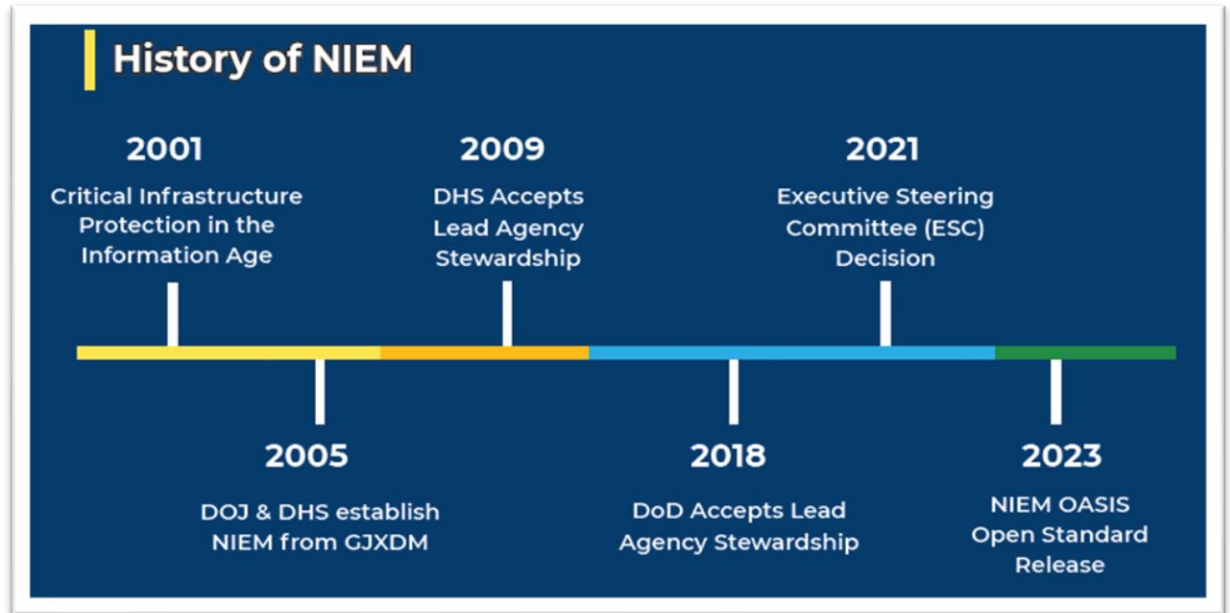

Mr. Ryan Schultz - Chief, Data and Standards Division at Joint Staff J6

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HISTORY - LOOKING BACK

Milestones

- NIEM has come a long way since its formal launch in April 2005 by DHS & DOJ
  - Global Justice XML Data Model (GJXDM)
  - Creation of DHS with focus on standardization
  - ESC, PMO, and Committees established to govern the program
- NIEM Model – establishes common definitions, rules, "syntax & semantics" for data exchange
  - Core & Community specific   ➡ 6 Domains
- 2006 – NIEM 1.0 released
- 2009 – DHS Lead Agency Stewardship
- 2010 – HHS Joins
- 2013 – DoD adopts NIEM and establishes MilOps Domain   ➡ 12 Domains
- 2018 – DoD Lead Agency Stewardship   ➡ 14 Domains
- 2021 – Critical Decision Point - ESC Approves Transition to OASIS Open Project Standard   ➡ 17 Domains
- 2022/23 – NIEMOpen Standard

History of NIEM

2001	2009	2021
Critical Infrastructure Protection in the Information Age	DHS Accepts Lead Agency Stewardship	Executive Steering Committee (ESC) Decision

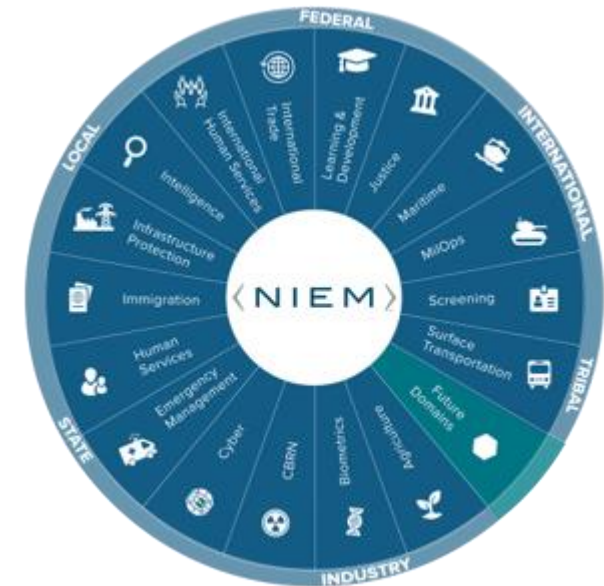| 2005	2018	2023
DOJ & DHS establish NIEM from GJXDM	DoD Accepts Lead Agency Stewardship	NIEM OASIS Open Standard Release

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WHY BECOME AN OPEN PROJECT STANDARD?

- NIEM Open Project recognized as accredited standard resulting in:
  - Faster Governmental adoption
  - Greater participation by Government and Industry
- Improves International adoption
  - Preference to accredited standards
- Increased scalability and keeps pace with speed of innovations in data technologies and standardization to accelerate adoption and public-private exchange/interoperability
  - Sustainable
  - Aligns with Government Policy/Process/Procedure
  - Open Standard removes barriers - industry hesitation to participate, conflict of interest concern

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2019 - 2022 SUCCESSES

- Onboarding of "New Domains"
  - Cyber 2019
  - International Human Services 2021
  - Learning & Development 2021
- NIEM 5.1. Release
- Transition of IEPD to Message Exchange Package (MEP)
- Message Exchange Package (MEP) Tool
- Restricted & Public Repo
- Metamodel
- Common Model Format (CMF)
- Rejuvenated Technical Training – Instructor Led & Hybrid
- IOC NIEMOpen.org
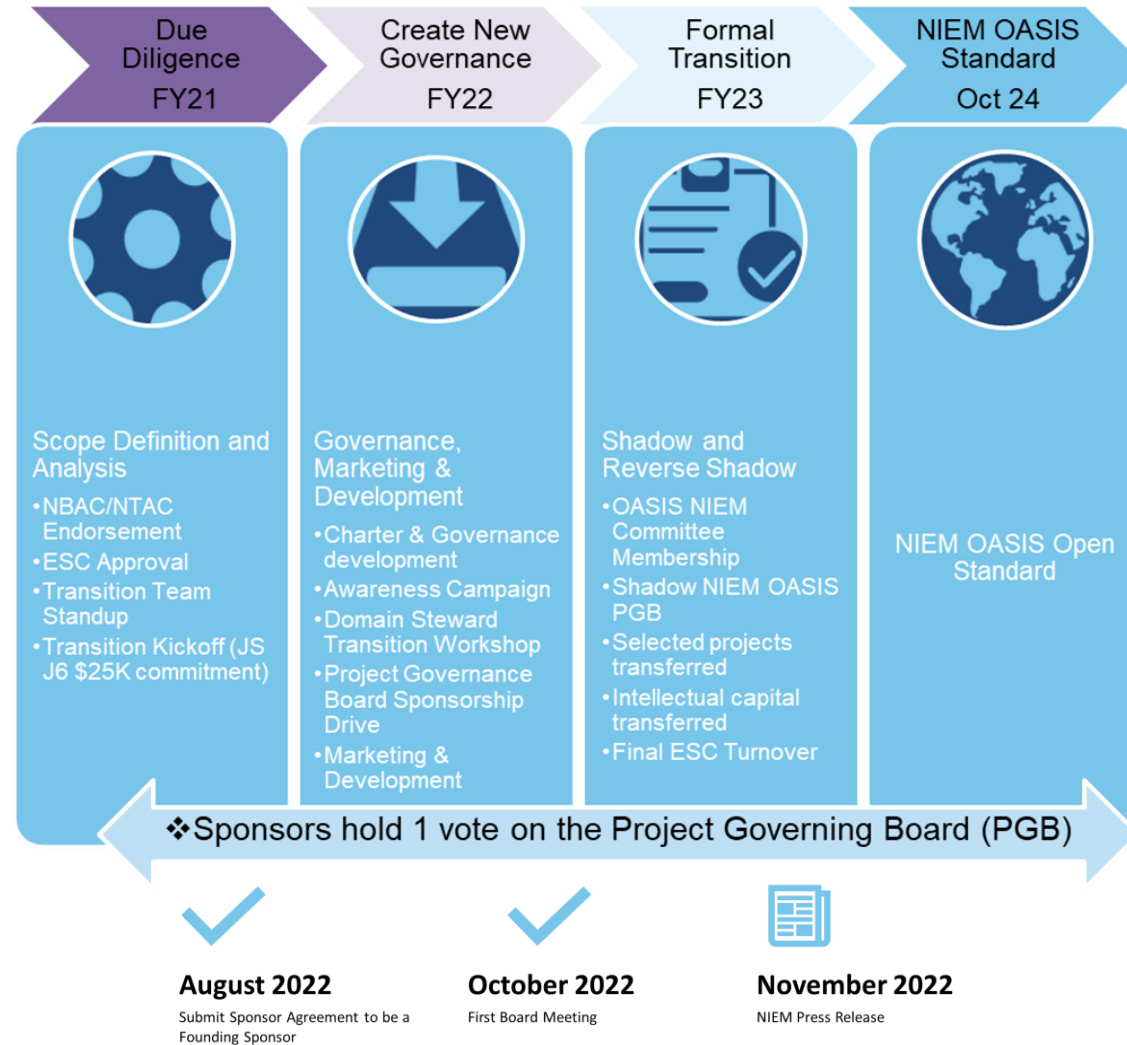- Standup of NIEMOpen Project Governing Board (PGB) Today!

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TRANSITION TO OASIS OPEN PROJECT & TRANSFER OF GOVERNANCE

Ms. Katherine Escobar-- Deputy Division Chief, Data and Standards Division at Joint Staff J6 and NIEM Managing Director

NIEM OPEN TIMELINE STATUS

- Phased approach Open Standard – 24 months
  - Phase 1 (12 months): Preparation (Governing Documentation and Sponsor Commitments)
  - Phase 2 (12 month): Formal Transition to OASIS (NMO)

Due Diligence FY21	Create New Governance FY22	Formal Transition FY23	NIEM OASIS Standard Oct 24
Scope Definition and Analysis •NBAC/NTAC Endorsement •ESC Approval •Transition Team Standup •Transition Kickoff (JS J6 $25K commitment)	**Governance, Marketing & Development** •Charter & Governance development •Awareness Campaign •Domain Steward Transition Workshop •Project Governance Board Sponsorship Drive •Marketing & Development	**Shadow and Reverse Shadow** •OASIS NIEM Committee Membership •Shadow NIEM OASIS PGB •Selected projects transferred •Intellectual capital transferred •Final ESC Turnover	NIEM OASIS Open Standard

❖Sponsors hold 1 vote on the Project Governing Board (PGB)

August 2022
Submit Sponsor Agreement to be a Founding Sponsor

October 2022
First Board Meeting

November 2022
NIEM Press Release

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# PHYSICALLY TRANSFER NIEM CAPITAL/ EQUITIES TO OASIS (LEAD DEVELOPER)

- **NIEM API 2.0** - Provides lead developer resources currently used to manage the NIEM model as open-source code
  - NIEM database
  - NIEM model management functions (add, update, delete content)
  - NIEM model QA Change request spreadsheet
  - QA Change request spreadsheet importer
  - NIEM XML schema importer
  - NIEM XML schema generator
  - NIEM XML schema conformance validator
  - Documentation spreadsheet generator
  - Change log generator
  - Release builder
  - Release statistics generator
  - Migration rule builder
  - SSGT
  - Migration Tool
- **User Tools -** Open-source front-end tools for the NIEM community.
  - SSGT 2.0 functionality
  - Migration Tool functionality
- **Processes**
  - Harmonization
  - Change request
  - QA Build a release (major, minor, supplement/update)
  - Deploy NIEM tools
  - Build a NIEM specification
-

- **Subdomain Management** - Transfer files and management of the following niem.gov subdomains. Management functions include hosting management, updating certificates, managing redirects, and other system admin functions.
  - **release.niem.gov** - Contains release artifacts that are also available on the GitHub NIEM-Releases repo, but schema URIs resolve here (via redirects)
  - **reference.niem.gov**
    - **guidance** - Old information, archive candidates
    - **resource** - Old information. archive candidates
    - **specification** - Contains NIEM specifications, conformance target identifiers and other links resolve here
  - **publication.niem.gov** - Contains domain updates and Core supplements
  - **tools.niem.gov** - Currently hosts SSGT and ConTesA
  - **beta.movement.niem.gov** - The source code for Movement is already open source and available on GitHub
- **Mailing Lists**
- **Miscellaneous**
  - NIEM OASIS specification generator
  - NIEM GitHub Sites
  - GENC codes parser - Schematron to extract GENC codes to update NIEM releases
  - NIEM GML profile generator - XSLT to subset the full GML external standard for the NIEM release
  - NCCT issue export - Export issues from the old Bugzilla issue tracker (NIEM Configuration Control Tool) used prior to the GitHub issue trackers

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PHYSICALLY TRANSFER NIEM CAPITAL/ EQUITIES TO OASIS (NMO)

- Specifications for all NIEM releases
  - Naming and Design Rules (NDR)
  - JavaScript Object Notation (JSON)
  - Code Lists Specifications
  - Conformance Targets Attribute Specification v3.0
  - Information Exchange Package Documentation (IEPD) Specification
  - Conformance Specification
- Metamodel
- Model
- Source Code
- Release 5.2
- Release 6.0
- User Tools
  - The Common Model Format (CMF)
  - MEP Builder Tool
- R2 Open
- Training (Active and Archive Material)
- Documentation Archive Files

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TRANSITION TO OASIS OPEN PROJECT/GOVERNANCE

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NIEM OPEN TRANSITION PROGRESS

OASIS — Open standards. Open source.
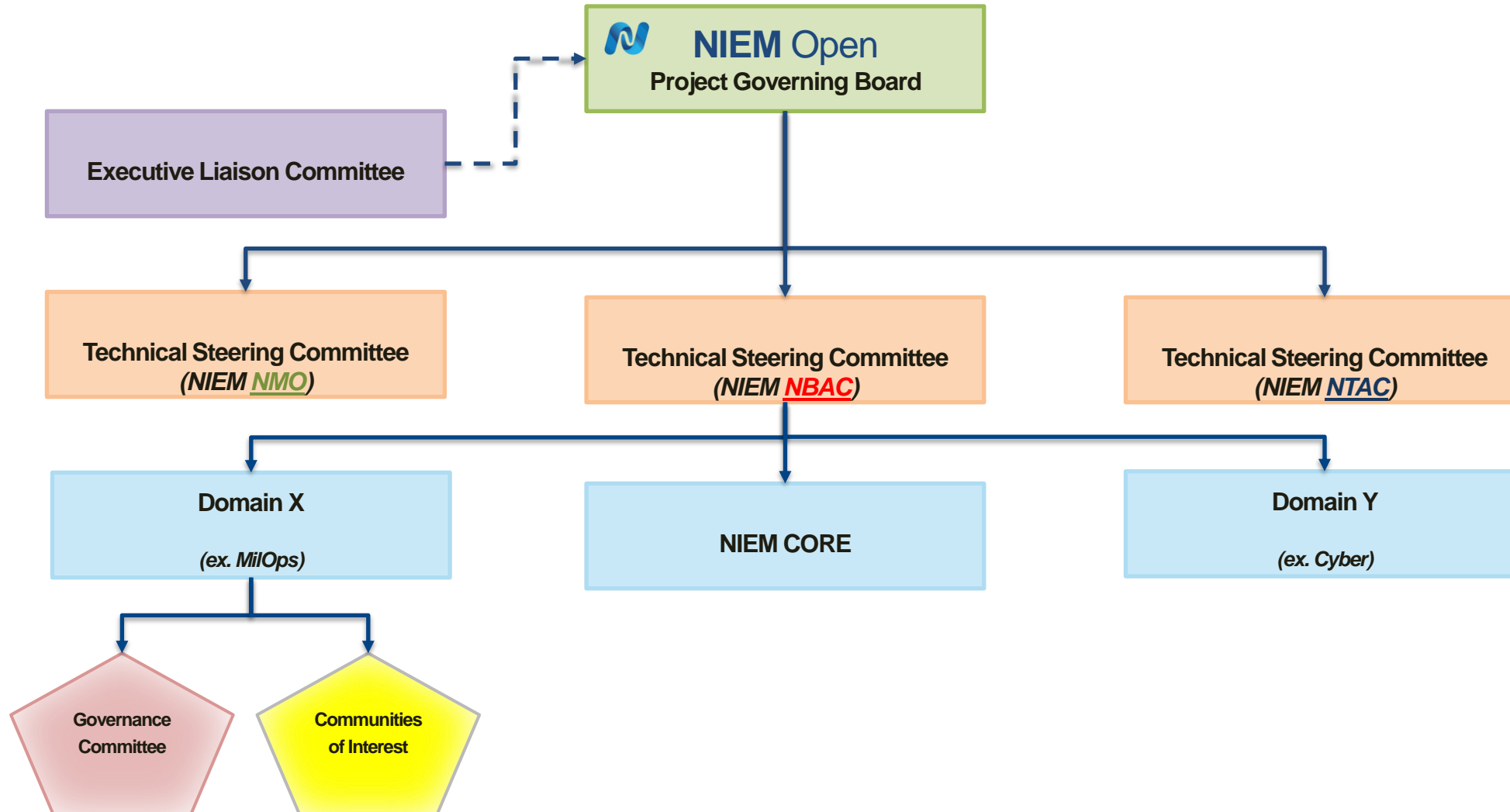
Complete

- ✓ Draft POA&M
- ✓ Draft and publish NIEM Open Charter
- ✓ J6 Sponsorship
- ✓ Transfer NIEM community Rosters/email distros
- ✓ Conduct First Sponsor Kickoff Mtg
- ✓ OASIS Admin Privileges
  - – Web Presence (NIEMOpen.org)
  - – Jira/Confluence

In Progress

- Identify Potential Sponsors/Conduct Outreach
- Revising NBAC & NTAC Charter, Domain Steward Agreements
- Populating OASIS Jira & Confluence Site
- Updating NIEM Branding
- Build Out NIEMOpen.org
- Weekly Synch w/ OASIS Staff
- Assessing NIEM Model & NIEM GTRI GitHub Capital/Equities & Planning Transfer to OASIS
- Researching OASIS Release Process and Planning 1st Release Under OASIS
- TRANSITION ESC TO PGB ADVISORY BODY 20 OCT 22
- KICKOFF PGB 20 OCT 22
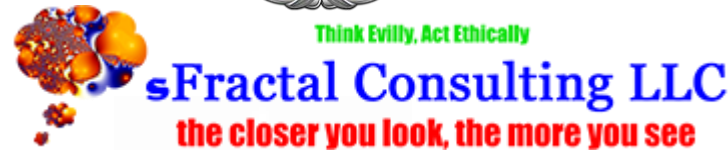
To Be Accomplished

- Obtain contributor license agreements (CLAs/e-CLAs)
- Physically Transfer NIEM Capital/Equities (Model, Specifications, Documentation) to OASIS
- Implement "New" development and release processes (lead developer actions)
- Submit NIEM Project Specifications for approval as OASIS Standard
  - – NIEM Model
  - – NIEM Technical Framework

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NIEM OPEN SPONSORSHIP

- Founding sponsors
  - JS J6
  - DHS S&T
  - Equivant
  - GTRI
  - sFractal
  - NAJIS
- On the Cusp
  - Earnst & Young
  - MITRE
  - DOT
- Expressed Interest
  - Government
    of Canada
  - DHS OBIM
  - DHS CISA
  - MICROSOFT

MESSAGE EXCHANGE PACKAGE (MEP) TOOLS BUILDOUT UPDATE

NIEM Tools v2.0 Development

- Continue enhancement of NIEM Lifecycle Tools Suite
- Build additional functionality in IEPD development steps started in v1.0
- Expand capability in Assemble & Document & Publish and Implement Lifecycle Phases

Message Specification Lifecycle Tool Suite Available

NIEM Tools v3.0 Considerations Pending Funding 2023

- Build functionality that replaces SSGT and ConTessA
- Complete requirements to develop Message Specification Lifecycle

Build Version	V1.0	V2.0	V3.0
Lifecycle Steps			
Scenario Planning	100%		
Analyze Requirements	56%	100%	
Map and Model	50%	83%	100%
Build and Validate	15%	50%	100%
SSGT Capability	0%		100%
ConTessA Capability	0%		100%
Assemble and Document	60%	80%	100%
Publish and Implement	0%	100%	
Infrastructure Support	52%	86%	100%

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TRANSFER OF GOVERNANCE

- The NIEM ESC is Sunset and NIEM Governance Transitions to the NIEM OPEN Project Governing Board (PGB) under the Auspices of OASIS OPEN Project

- Encourage ESC Principals to Continue in an Advisory Role to the PGB & for your Organizations to Consider NIEM Open Sponsorship

- NIEMOPEN PGB Executive Session Kickoff commences today at 1 PM with a Plenary for the Community at 2:15 PM

NIEM OPEN SPONSORSHIP

Ms. Dee Schur – Senior Manager, Development & Advocacy

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The Ask

Participation, sponsorship, and support

▼

The main reason to sponsor NIEM is to ensure this work continues to expand and gain increased international recognition. Sponsor organizations will benefit by leveraging the freely available NIEM Standards and improve stakeholder's mission experience while saving time and resources.

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What will your organization gain by supporting NIEM?

Create partnerships and tap into brain trust of NIEM experts from public sector

Participate in the development of NIEM standards, ensuring your perspectives and use-cases are represented

Opportunity to become a steward with a seat on the NIEM Board

Unify fragmented efforts and encourage convergence

Determine if/when approved work should be submitted to ITU, ICC, UN, ISO, Etc....

Facilitate communication between private and public-sector

What core services does OASIS provide?

Legal entity, management of trademarks and copyrights	Contributor License Agreement administration	Collaboration tool set: GitHub org, mailing group, calendar, roster, ballot, asynchronous chat, video meetings…
OASIS Standards process submission management	Submission of approved deliverables to ISO, IEC, ITU via OASIS liaison	Community management support
Assistance in writing charter, Code of Conduct, other policies	Governance administration and support	Support for project assets such as website design, hosting, site maintenance, collateral and logo design
Press, promotion & outreach to attract developers and sponsors	Meeting planning and coordination	Free public access to deliverables in perpetuity

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SPONSOR REGISTRATION

- Open Project Sponsorship Registration: https://www.oasis-open.org/join-2/#membership-dues-op

- Points of Contact:
  - Dee Schur (Senior Manager, Development and Advocacy): dee.schur@oasis-open.org
  - Carol Geyer (Chief Development Officer): carol.geyer@oasis-open.org
  - Irene Heller (Payment Submission POC): irene.heller@oasis-open.org

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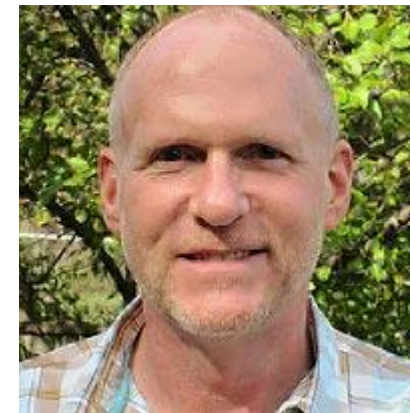
RECOGNITION & THANK YOU

NIEM Champions

Donna Roy

Kshemendra Paul

Ron Bewtra

Christina Bapst-Stump

Frank Klucznik

Mike Hulme

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RECOGNITION & THANK YOU

NIEM Champions

Kamran Atri

Thomas Krul

Ryan Schultz

Scott Renner

Paul Wormeli

Tom Carlson

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What Times They Were
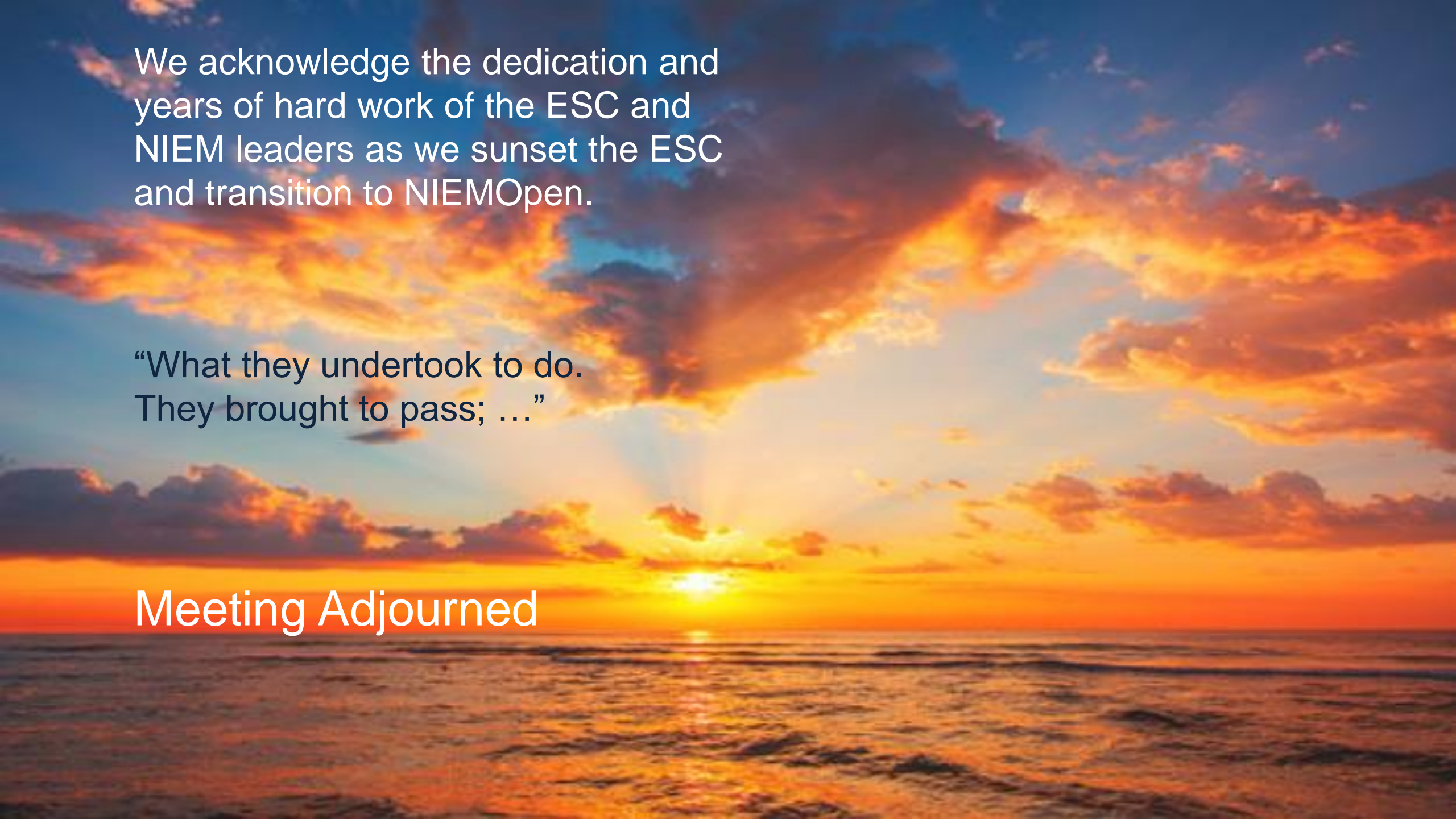
We acknowledge the dedication and years of hard work of the ESC and NIEM leaders as we sunset the ESC and transition to NIEMOpen.

"What they undertook to do.
They brought to pass; …"

Meeting Adjourned

BACKUP

NIEM 5.1 MINOR RELEASE (2021) – RECAP

- **Biometrics** – Added new DNA and pedigree content

- **CUI** – Refactored Limited Dissemination Control codes

- **Cyber** *(new)* – Added content supporting federal and SLTT cyber incident reporting requirements

- **Emergency Management** – Added flood damage claim content from OpenFEMA

- **Justice** – Refactored and updated National Crime Information Center (NCIC) code sets

- **Military Operations** – Added cyber-related content from the Joint Non-Kinetic Effectiveness (JNKE) IEPD

Group		Properties	Types	Codes
Core	1	1,810	282	101
Domain	15	10,467	2,856	11,096
Adapter	4	14	16	
Auxiliary	2	543	148	173
Code Set	39	142	1,068	79,957
Total	61	12,976	4,370	91,327

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NIEM 5.2 MINOR RELEASE (2022)

- Minor releases include updates to domains and code sets

- Check release status at https://niem.github.io/niem-releases/

Phase	NIEM
🟢 Alpha 1	AUG 2022
🟡 Beta 1	OCT 2022
⚪ RC 1	NOV 2022
⚪ Release	Fall 2022

- **Biometrics** – Additional DNA encoding content

- **Cyber** – New Cyber Physical System (CPS) and ransomware content

- **Learning and Development** *(new)* – New content for courses, course sections, students, and employment positions

- **Justice**
  - Updated National Crime Information Center (NCIC) code sets
  - Updated Model Minimum Uniform Crash Criteria (MMUCC) code sets

- **Military Operations**
  - New Minimum Essential Metadata (MEM) content – resource descriptions, safe guarding and sharing information
  - New USMTF (US Message Text Format) content – military operations, missions, resources, readiness, and training

- General code set updates

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NIEM 6.0 MAJOR RELEASE (2023)

Major releases include updates to Core, domains, and code sets, and the architecture

Content Updates

- **International Human Services** *(new)*

- **Military Operations** – Add additional USMTF content

- Additional content changes for domains

- The Harmonization Working Group will review and harmonize content across Core and the domains

- Merge complex and simple code types

- Simplify how metadata is defined and used

- Standardize representation of adapters

- Potentially simplify the representation of roles in the model

Specification updates

- Naming and Design Rules (NDR)

- Message Specification Guidelines

- Update others to meet OASIS requirements

Tool updates

- SSGT – New content and 6.0 architecture changes

- Migration tool – New migration from 5.2 to 6.0 subsets

- Conformance tool – Validate schema conformance against updated NDR rules

- NIEM API – Support new content, architecture, backend model and release management capabilities

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NIEM OPEN: AN OASIS OPEN PROJECT

- What is an Open Project?

- Open Projects is the first-of-its-kind program that creates a more transparent and collaborative future for open source and standards development.

- Open Projects gives communities the power to develop what they choose--APIs, code, specifications, reference implementations, guidelines-- in one place, under open source licenses, with a path to recognition in global policy and procurement.

  – Engage open-source community in distributed development while ensuring work stays on-track

  – Use vetted IP policy and open-source licenses

  – Work under supported, streamlined process

  – Submit work to ISO, IEC, ITU and/or EU for international recognition via PAS submitter status

  – Focus on your technical goals while OASIS staff takes care of financial, legal, and technical administration and marketing

  – Leverage OASIS global reputation, 2000+ member base, and experience running standards and open source projects

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NIEM OPEN: AN OASIS OPEN PROJECT

- Open Projects gives groups more control and streamlined governance. It provides all the process a community needs--and not a bit more--so groups can accomplish great things fast.
- Open-Source Benefits:
  - The base to encourage innovation
  - Breaking technical monopolization
  - Strategic tools to promote software development for information
  - The fundamental bases of SOA
  - The strategic direction of NIEM
- We anticipate two OASIS standards for NIEM 6
  - NIEM model (core and domains) – a shared semantic reference model for the NIEM community
  - NIEM technical framework – usable by anyone

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NIEM COMMON MODEL FORMAT (CMF)

- NIEM has always used XML Schema as its data modeling language
  - Model semantics formally defined via mappings to Resource Description Framework (RDF)
  - Mappings defined in the Naming and Design Rules
  - Convenient for designers and developers implementing XML-based data exchange

```
<xs:complexType name="VehicleType">
 <xs:annotation>
  <xs:documentation>
    A data type for a conveyance designed
    to carry an operator, passengers and/or
    cargo, over land.
  </xs:documentation>
 </xs:annotation>
<xs:complexContent>
<xs:extension base="nc:ConveyanceType">
  <xs:sequence>
```

```
nc:VehicleType a rdf:Class ;
    rdfs:Subclass nc:ConveyanceType ;
    rdfs:comment "A data type for a
      conveyance designed to carry an
      operator, passengers and/or
      cargo, over land." .
```

XML Schema like this ——————— *entails* ——————→ RDF like this

NIEM COMMON MODEL FORMAT (CMF)

- NIEM has always used XML Schema as its data modeling language
  - Model semantics formally defined via mappings to Resource Description Framework (RDF)
  - Mappings defined in the Naming and Design Rules
  - Convenient for designers and developers implementing XML-based data exchange
- NIEM now supports developers who aren't using XML
  - XML Schema is not convenient for them
- For NIEM 6, we created the NIEM metamodel and Common Model Format
  - Metamodel: A conceptual data model for the things we want to know about data models
  - CMF: A NIEM-based implementation of the metamodel… Just like any IEPD

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