NIEM MILOPS

STAKEHOLDER ENGAGEMENT

Wednesday, 14 September 2022

AGENDA

Time	Topic	Presenter
1000-1005	Opening Remarks	Ms. Beth Smalley
1005-1010	Review NIEM Open MILOPS Charter	Ms. Beth Smalley
1010-1020	NIEM Open OASIS Transition Status	Mr. Steve Sullivan
1020-1030	NIEM 5.2	Ms. Christina Medlin
1030-1050	Cogent Way	Mr. Jeff Iannazo
1050-1055	Open Discussion	All
1055-1100	Closing Remarks	Ms. Beth Smalley

OPENING REMARKS / INTRODUCTIONS

Beth Smalley

NIEM OPEN MILOPS CHARTER

Beth Smalley

- MILOPS Domain Charter ready for signature
- Slimed down compared to old Charter
  - Authority
  - Overview
- Operations and Maintenance Documentation
  - Updated as needed
  - Day to day operations
  - Domain Membership
  - CCB Process
  - Communication
  - Technical Support

NIEM OPEN OASIS TRANSITION STATUS

Steve Sullivan

- ✓ NIEM Open Charter
- ✓ Conducted NIEM Annual Meeting 15-19 Aug Focused on OASIS Transition
- Sponsorship - 3 Sponsors have signed, more needed
  - DoD Joint Staff J6
  - DHS Science and Technology (S&T)
  - Equivant
- ✓ NIEMOpen.org Web Presence & OASIS - Jira & Confluence Tools online
- Updating NIEM Governance Documentation Congruent with OASIS Open Project
  - ✓ NIEM Open Charter
  - NBAC & NTAC governance drafts in progress
- ✓ Cataloguing NIEM Capital/Equities for Transfer
- ✓ Transition ESC & NIEM Open PGB Kickoff scheduled for 20 Oct

NIEM 5.2

Notes

- NIEM 5.2 will be a minor release and will include updates to domains and code sets
- Check release status at https://niem.github.io/niem-releases/

Phase	NIEM
MOMS 5.1	APR 2022
Alpha 1	AUG 2022
Beta 1	SEP 2022
RC 1	OCT 2022
Release	Fall 2022
MOMS	Q1 2023

Expected changes

- **Cyber** domain – Cyber Physical System (CPS) content and SLTT Cyber Incident Reporting Requirements (CIRR) updates
- **Learning and Development** domain *(new)* – New content for courses, course sections, students, and employment positions
- **MilOps** domain – Minimum Essential Metadata (MEM) and USMTF content
- Code set updates

Data & Mission Modernization

Introducing Target Mission Architecture & Cogent Way Project
Dual-use Title 10/50 Data Modernization

Joint Staff J2F/J28

14 Sep 2022

Update since Introduction to MilOps Community on 08 June 2022

Overview

- Engagement with MilOps Community
- Refresher
- Status
- Progress
- Forecast

Engagement with MilOps Community

- **Introduction**
  - Target Mission Architecture for Integrated Operations and Intelligence (TMA IO&I)
  - Cogent Way Project

- **Update**
  - Status
  - Progress
  - Forecast

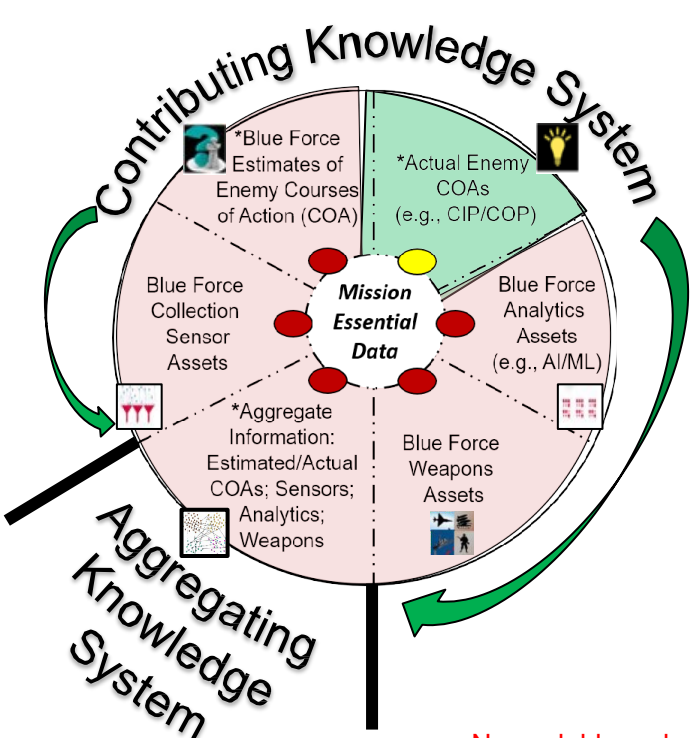
08 Jun 2022

15 Sep 2022

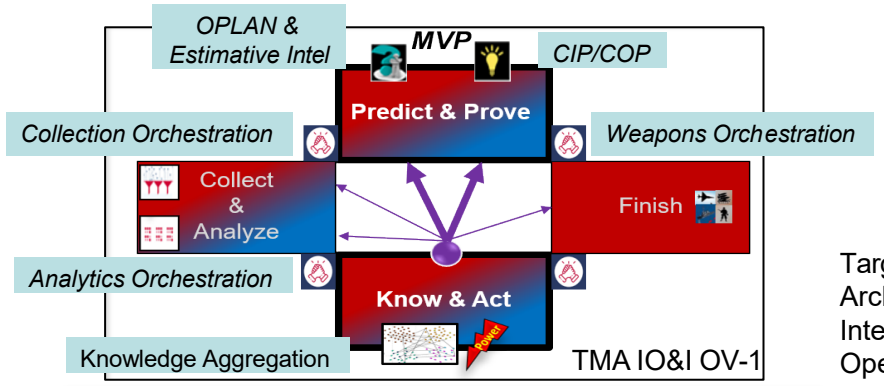
TMA IO&I – Cogent Way Refresher

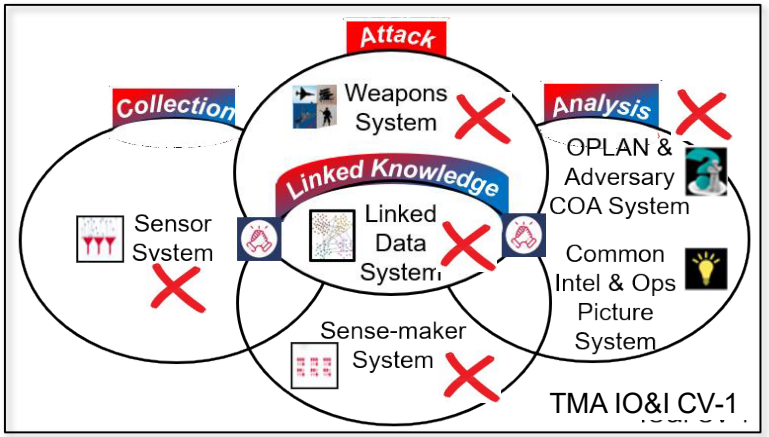
- **Multi-year Project:** Advocated by Joint Staff (JS) J2F and J6 for scalable Integrated Operations & Intelligence (IO&I)
- **Concentration:** Reveals & addresses data, data science, and systems engineering gaps; employs problem/INT/Weapons/Domain-agnostic approach for Inter-Agency and Intra-Agency modernization
  - ~90% of mission-essential data unavailable to Data Scientists; data not architected for machine-understandability
  - No scalable ability to aggregate information from siloed data
  - Lack of Data Science talent for Graph analytics and scalable Artificial Intelligence (AI) & Machine Learning (ML)
- **Partner Engagement:** Collaboration with USD(I&S), OUSD R-E, JS J6 (JADC2, NIEM, AIC2 WG), CDAO, IC CDO, CIA, DIA, DHS, LOE, NRO, NSA, USAF, Navy, Army, SOUTHCOM, NORTHCOM, INDOPACOM, AFRICOM, DTIC, & DOD-IC Ontology Working Group (DIOWG)
- **DTRA RD & SOUTHCOM:** Postured to deliver first-of-kind capabilities—Linked Data Environment (LDE)—on JWICS & NIPR that aggregate information in Enterprise Knowledge Graph form & enable Graph-powered AI

TMA IO&I – Cogent Way Refresher



Data Emphasis drives Architecture Modernization





Target Mission Architecture for Integrated Operations & Intelligence (TMA IO&I)

Current DoDAF Portfolio: AV-2, OV-1, CV-1, OV5a, OV5b, CV-2

✕ No scalable orchestration systems in current ecosystems

TMA IO&I – Cogent Way Refresher

Vector

Data Modernization

Semantic Interoperability

Human- and Machine-Understandable & Actionable

Data Science Modernization

Graph Analytics in concert with data analytics

Integrated Operations & Intelligence (IO&I)

Target Mission Architecture (TMA)

Overarching JADC2 &

Mission-specific Ecosystems across DOD, IC, & Law Enforcement

Status (as of 14 Sep 2022)

- **Project Phase:** Execution
- **Mission Use Cases:**
  - Humanitarian Assistance & Disaster Relief per U.S. SOUTHCOM CONPLAN 6150 Responsibility
  - Weapons of Mass Destruction Chemical, Bio, Nuclear, and Hypersonic Weapons Production via DARIUS Use Case
- **Supporting and Receiving Guidance From:**
  - Joint Staff J2F and J6
  - IC CDO
  - CDAO
- **Key Teammates Working to Deliver Capabilities:** USAF/AFRL; Navy: OPSNAV N2/N6, Naval Postgraduate School; U.S. SOUTHCOM; DTRA RD & IT Directorates; JS J2F85, JS J6 NIEM, Department of Treasury Office of Foreign Assets Control

Data Environments

Domain	Data Steward	Source	DARIUS Use Case	SOUTHCOM Use Case
UNCLASS	Department of Treasury	Office of Foreign Assets Control (OFAC) Data Store	✓	✓
UNCLASS	SOUTHCOM	Enhanced Domain Awareness (EDA)		✓
UNCLASS	Florida International University	Secure Research Hub (SRH)	✓	✓
UNCLASS	Department of Commerce	Harmonized System Codes	✓	
JWICS	Agency 1	Unified Engagement Environment (UEE)	✓	
JWICS		Mission Data Repository (MDR)	✓	
JWICS		PULSE	✓	
JWICS		Knowledge Management Curation/Reference Knowledge System (KMC/RKS)	✓	
JWICS	Agency 2	Fusion Analysis Development Effort (FADE) Intelbook	✓	
JWICS	Agency 3	Machine-assisted Analytic Rapid-repository Systems (MARS)	✓	
JWICS	Agency 4	Counterproliferation Analysis and Planning System (CAPS)	✓	
JWICS	Agency 5	Primer AI (Multiple data stores)	✓	

As-Is "Compliance" States

NC: Non-Compliant C: Compliant

NIEM	Linked Data/Foundry	Domain	Data Steward	Source
NC	NC	UNCLASS	Department of Treasury	Office of Foreign Assets Control (OFAC) Data Store
NC	NC	UNCLASS	SOUTHCOM	Enhanced Domain Awareness (EDA)
NC	NC	UNCLASS	Florida International University	Secure Research Hub (SRH)
NC	NC	UNCLASS	Department of Commerce	Harmonized System Codes
NC	NC	JWICS	Agency 1	Unified Engagement Environment (UEE)
NC	NC	JWICS		Mission Data Repository (MDR)
NC	NC	JWICS		PULSE
NC	NC	JWICS		Knowledge Management Curation/Reference Knowledge System (KMC/RKS)
NC	NC	JWICS	Agency 2	Fusion Analysis Development Effort (FADE) Intelbook
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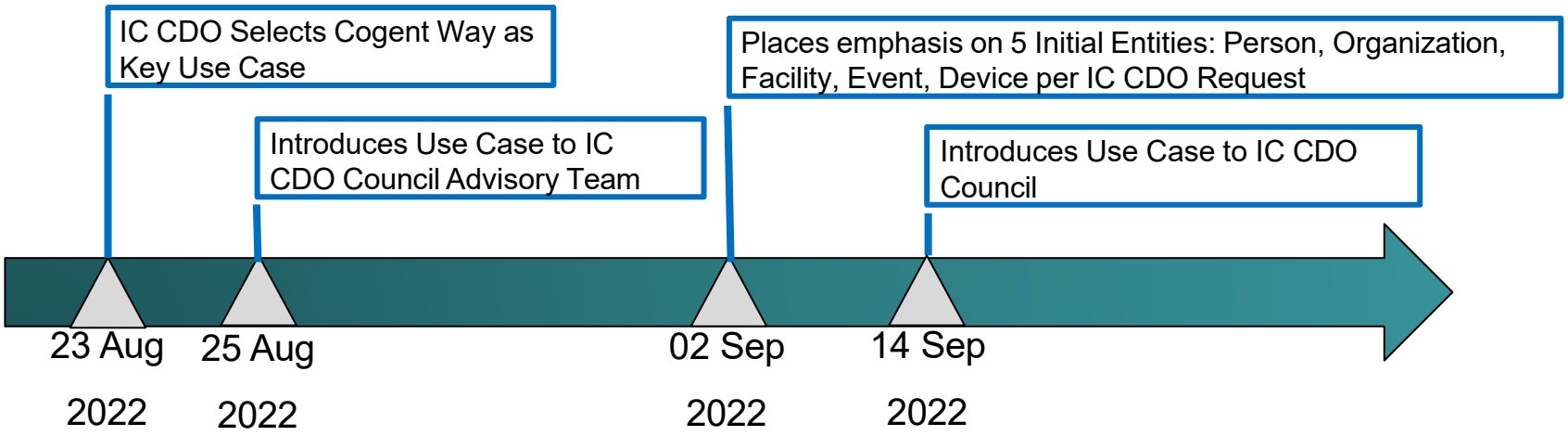
NC	NC	JWICS	Agency 5	Primer AI (Multiple data stores)

Progress – IC Chief Data Office (CDO)

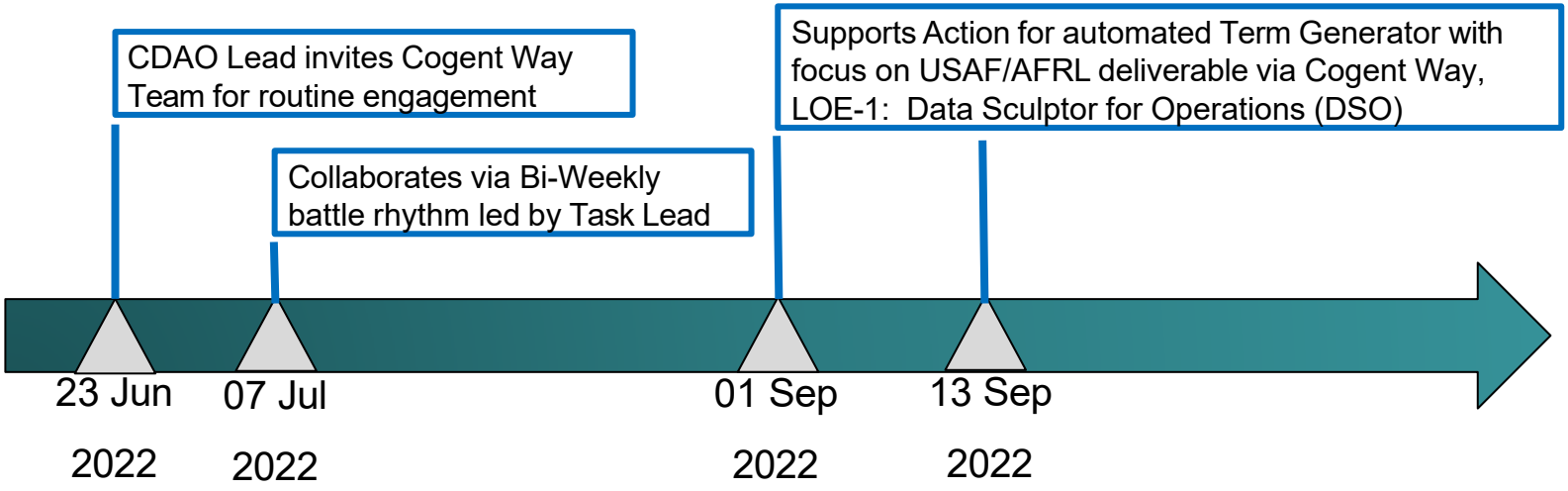
- IC CDO Team leading Data Centricity action per Consolidated Intelligence Guidance (CIG) Strategic Objective #8, Programmatic Activity #29 – a CIG 2024-2028 Modernization Activity



Through this CIG 2024-2028 Data Centricity Action, TMA IO&I via Cogent Way introduces a data architecting approach to achieve machine- and human-understandability & action that is not exclusive to any specific Issue; rather Issue-agnostic.

Progress – Chief Data and Artificial Intelligence Office (CDAO)

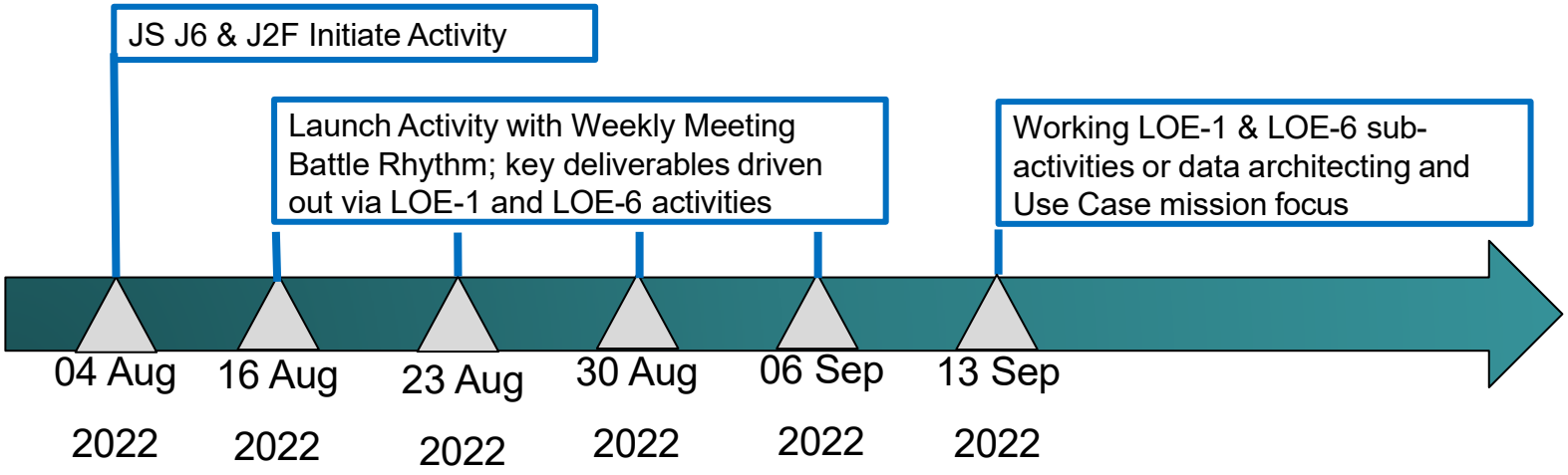
- CDAO Team leading Canonical Controlled Vocabulary activity in support of JADC2 Data Modernization: JADC2 LOE-1, Task 1.2A: Manage/Align Data Vocabularies Working Group



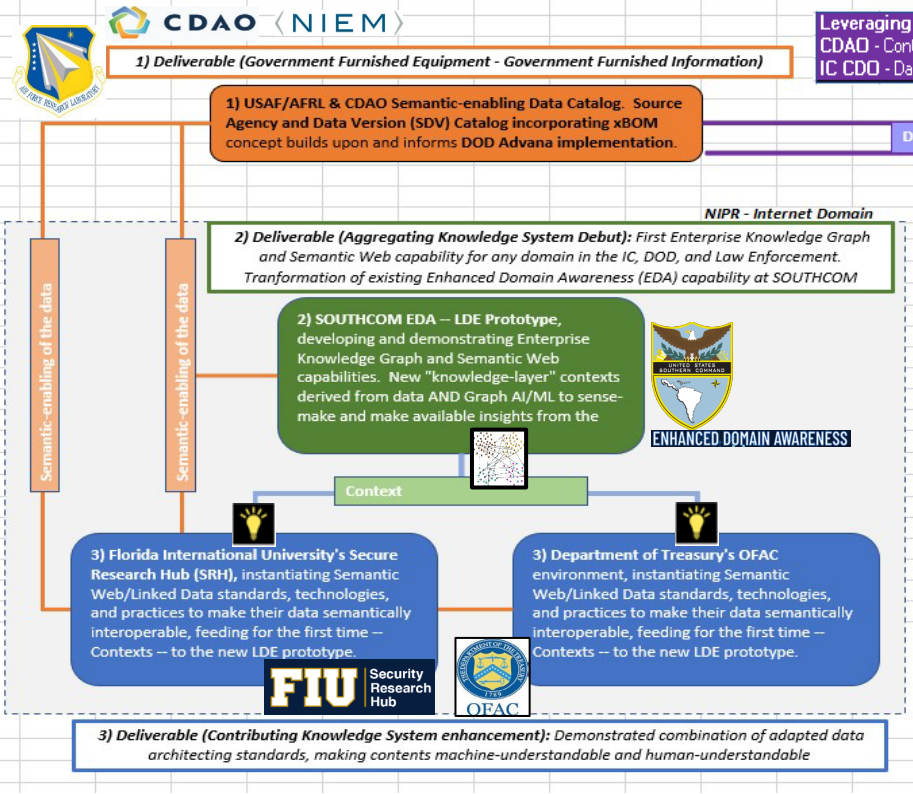
Working across multiple organizations and driving towards common envisioned end-states for data modernization. Facilitated introductions among CDAO, IC CDO, and DHS/CBP Leads. Through Cogent Way execution, bridging IC, DOD, and Law Enforcement activities in support of unified approach.

Progress – SOUTHCOM Activity

- Joint Staff J6, in coordination with J2F, launch a TMA IO&I-driven Cogent Way Activity with U.S. SOUTHCOM and Department of Treasury in support of JADC2 Expectations for seamless, dynamic U.S. Title 50 / Title 10 capabilities



Progress – SOUTHCOM Activity



4) Government side Deliverables -- Project Management, Engineering & Research Deliverables (Government side -- Government, FFRDC, SETA - level of effort):

Project Management - **Joint Staff J2F** (overall Cogent Way Project

Project Management and Data modernization - **SOUTHCOM, Dept of Treasury** (sub-level activities)

SDV-xBOM Advisement: **USAF AFRL & CDAO**

NIEM Advisement: **Joint Staff J6**

TMA for IO&I Engineering: **Joint Staff J2F & DTRA RD** (based on Lead Engineer position currently)

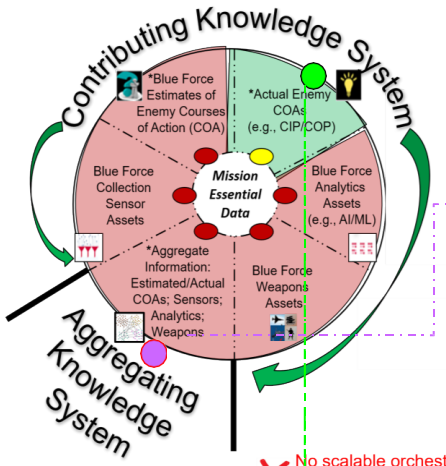
Research & Assessment - **Navy COMNAVWARSYSCOM & Naval Postgraduate School**

Foundry Advisement: **CDAO**

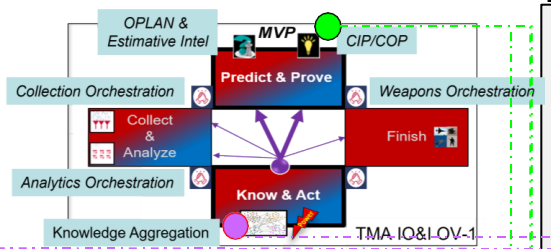
JS J2F, J6, CDAO, IC CDO, DTRA-RD, USAF AFRL, SOUTHCOM J2, Dept of Treasury, Navy NAVWARSYSCOMMAND & Naval Postgraduate School . . .

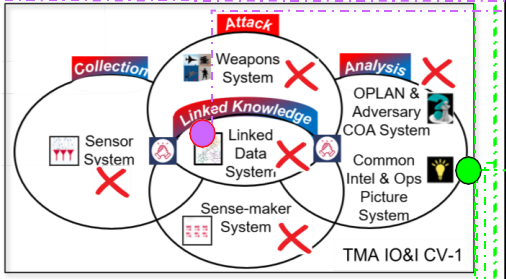
. . . among Core Team investing In-kind resources & planning for material & non-material solutions to demonstrate Data, Data Science, & Engineering innovation – this draft excerpt presented to CW Sub-level Activity Team
22 Aug 2022

Progress – SOUTHCOM Activity



Data Emphasis drives Architecture Modernization





No scalable orchestration systems in current ecosystems

Data-driven TMA IO&I Implementation

*ASAP – Apply Consistent **Aggregating Knowledge Class** & **Contributing Knowledge Class** Design applies in-kind for SIPR, JWICS, JWICS+ (ref slide 7 for JWICS sources)*

OSINT/UNCLASS Domain

ENHANCED DOMAIN AWARENESS
https://eda.goamerigeo.com/

Contexts Aggregated in Enterprise Knowledge Graph

Contexts Derived from Data

OFAC
https://home.treasury.gov/policy-issues/office-of-foreign-assets-control-sanctions-programs-and-information

FIU Security Research Hub
https://srh.fiu.edu/home/

INTERNATIONAL TRADE ADMINISTRATION
https://www.trade.gov/harmonized-system-hs-codes
https://www.foreign-trade.com/reference/hscode.htm

Aggregating Knowledge System Component

Contributing Knowledge System Component -- Data Type supporting CIP/COP visualization

Forecast (as of 14 Sep 2022)

- **Project Phase:** Continue over next 12 months; identify and acquire resources for iterative progress.
- **Debut Key Deliverable:** Semantic-enabling capability from USAF/AFRL – Data Sculptor for Operation (DSO) via Cogent Way LOE-1 (Data/Knowledge Aggregation).
  - Apply in context of support to CDAO and IC CDO Data Modernization Activities
  - Inform current DOD, IC, and Law Enforcement acquisition baselines for data management
- **Continue Growing Cogent Way Team**
  - **NIEM MilOPS Participation welcomed – an immediate opportunity**
  - Welcome and learn from new Partners – understand, apply where applicable, and expedite progress
    - Introduce current and planned NIEM practices in mission systems
    - What are exemplar uses of NIEM in the MilOPS Community serving current missions?
    - What are plans going forward to advance NIEM-enabled capabilities?

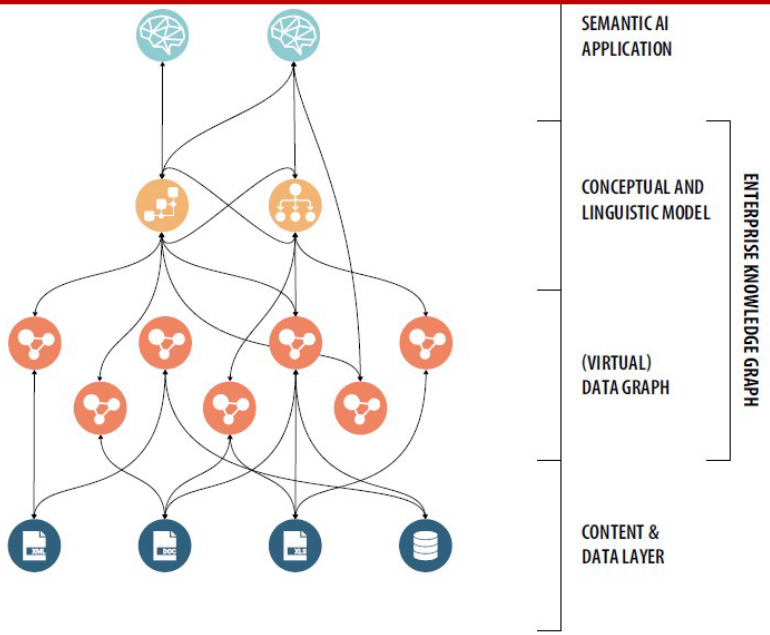
Bonus Item: A Useful Reference

This capability does not exist in IC, DOD, and Law Enforcement segments

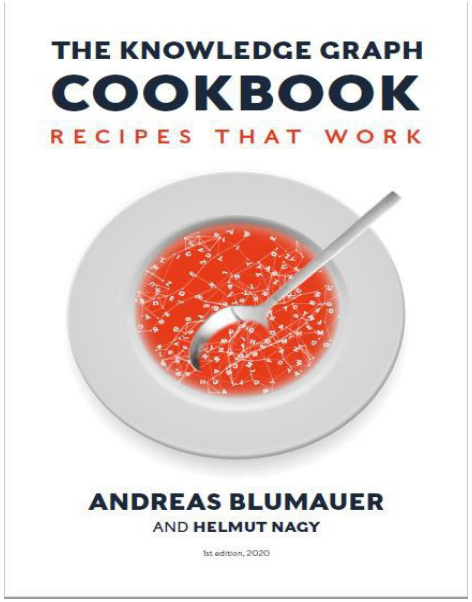
TMA IO&I via Cogent Way addresses this need

Consequently, vendor-lock systems are mass-duplicating/co-locating data because of the absence of virtual data/knowledge layer

Excerpt: Pg 93



Four-layered Information Architecture



https://www.poolparty.biz/the-knowledge-graph-cookbook/

Overview

Discussion

OPEN DISCUSSION / CLOSING REMARKS

Next Meeting Wednesday October 12 14, 2022 @ 1000

Closing Remarks

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