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Unified Network Operations (UNO)

Chair: COL Christian Haffey

Director, Cyber - Capability Development Integration Directorate (C-CDID)

May 9-10, 2022

Unified Network Operations (UNO)

- **Chair: COL Christian Haffey, Director, C-CDID**
- **Panel Members:**
  - *MAJ Todd Klinzing-Donaldson, S6, 2BCT/3ID*
  - *Mr. John Howell, APEO Networks, Cyber and Services, PEO EIS*
  - *Mr. Matt Maier, PM I2S, PEO C3T*
  - *Mr. Brent Smith, PdM TCNO, PM I2S*

Description: *This panel will provide an update on the Army's UNO strategy and program execution efforts in support of the Army Unified Network Plan (AUNP). Panelists will discuss UNO operational needs, requirements timeline, and program acquisition approach.*

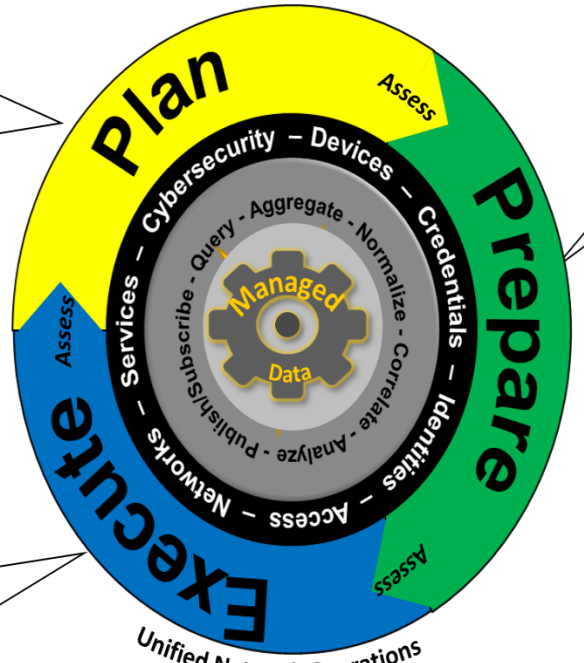
Unified Network Operations (UNO)

UNO is the command and control system for the Army's Unified Network

- UNO **standardizes, integrates, and simplifies** end-to-end Army Department of Defense Integrated Network (DODIN) operations functions for the **Unified Network (UN).** UNO capabilities will enable the Army to "**Sense, Control and Visualize"** the UN to enable near real-time assessment of impacts to Multi Domain Operations / Joint All Domain Operations (MDO/JADO).

- UNO provides **tailorable and scalable** DODIN operations capabilities to the DODIN-Army.**design, plan, model & simulate, secure, configure, operate, extend, maintain,** and **sustain.**

The ability to meet prioritized Commander's Critical Information requirements in threat environments with assured voice and data communications.



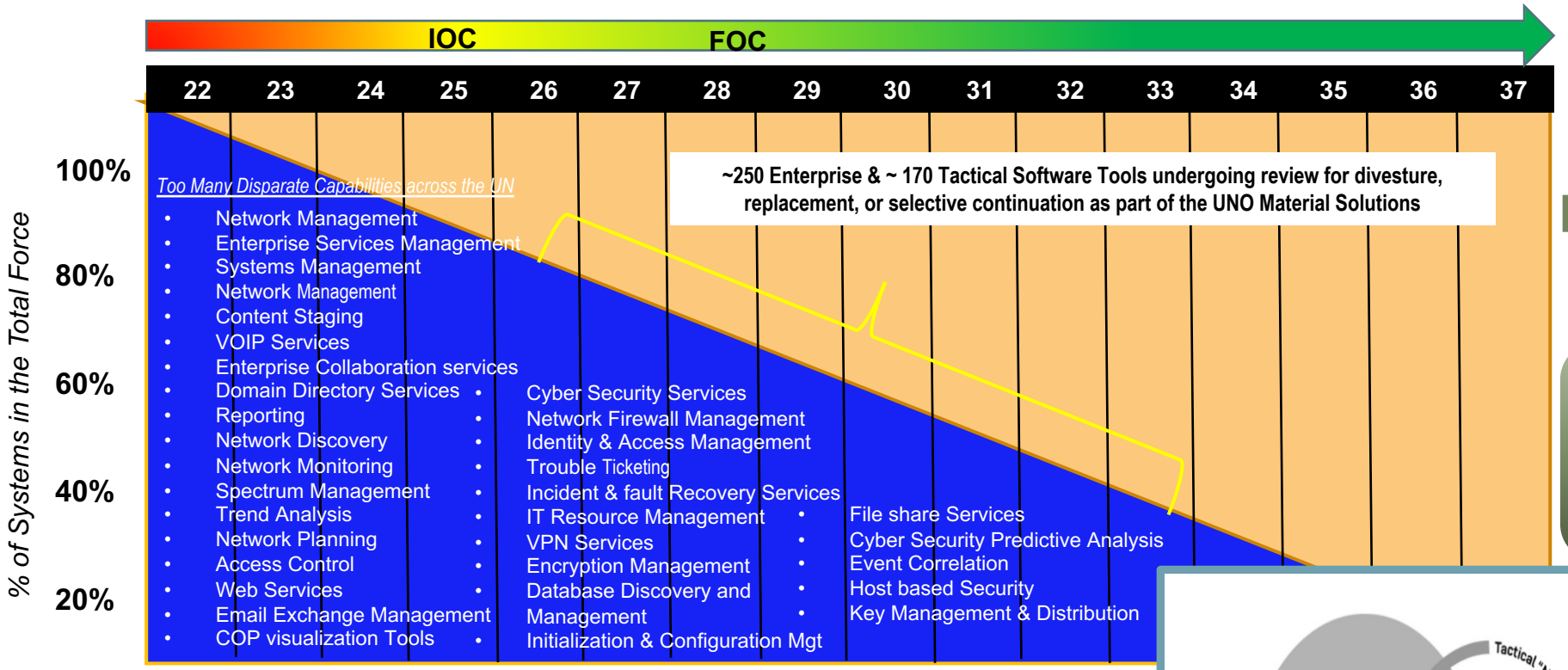
The ability to properly load and initialize physical and logical assets to meet mission requirements.

The ability to implement changes to the Unified Network based upon changing conditions and mission requirements.

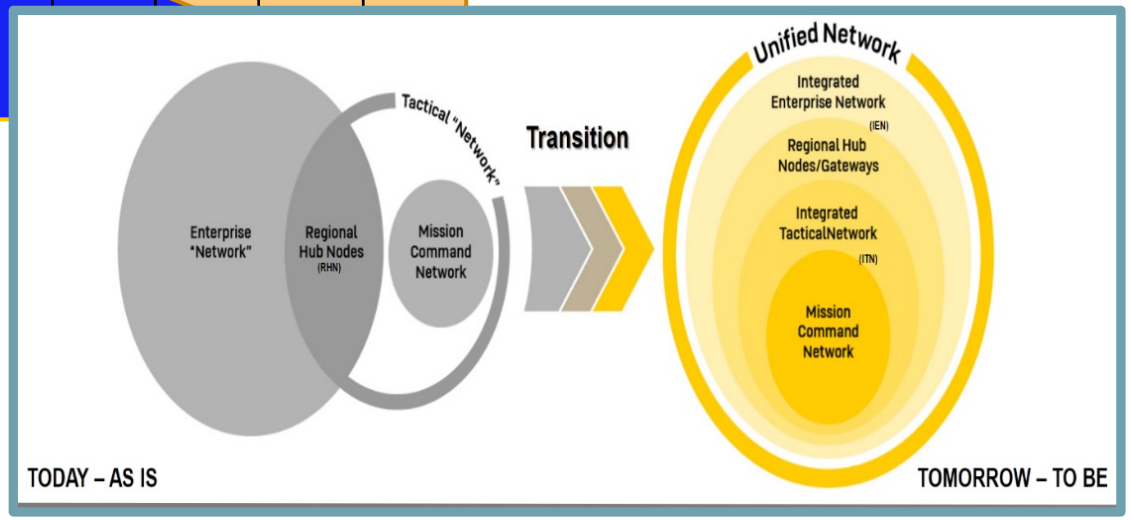
Critical Features

- **Streamline number of Tools**
- **Ease of Use**
- **Optimizing the Network**
- **Reduce Complexity**
- **Reduce Training**
- **API/Standardizing NetOps**

Unified Network Operations (UNO) Problem Set



Unified Network Operation's goals:
- Reduce these numbers significantly over time
- Reduce overall sustainment costs
- Reduce the complexity/duplication for Signal soldiers

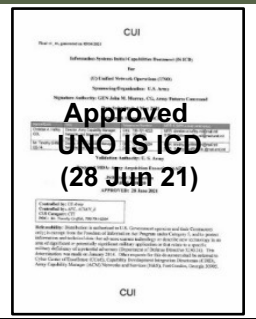


- Too many tools:
  - Not integrated, interoperable or sustainable
  - Disparate between strategic and tactical
- Disparate Networks
- Focus shift from Network Centric to Data Centric

UNO Requirements Document Development Strategy

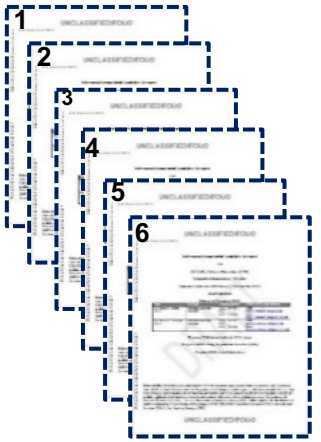
The UNO IS-ICD (UNO)

- **Identifies** approved DODIN operations related **gaps**
- Defines the **high-level required capabilities** to **mitigate** identified **gaps**
- Serves as the JCIDS parent document for follow-on Requirements Definition Packages (RDPs) which identify operational requirements to be developed



Common Services Appendix

6 RDPs



RDP Capability Drops (CDs) (As Required)

	UNO RDP	Focus	Description
1	Lower-Tier Tactical (LTT) ***(Army Staffing Completed / Pending AROC)***	Command Post – Mounted – Mobile/Handheld - Sensor Computing Environments	Operational requirements needed to plan, prepare, and execute required network functions at **Battalion and Below**
2	Upper-Tier Tactical (UTT) ***(Submitting for approval to begin Army Staffing)***	Command Post Computing Environments Through Regional Hub Node (RHN)	Operational requirements for all **Brigade and Above** Command Posts through the RHN needed to plan, prepare, and execute network functions
3	Identity, Credential, and Access Management (ICAM) ***(Awaiting cost estimate in order to submit to begin Army Staffing)***	Create digital trust of Person and Non-Person Entities	Operational requirements across all the Unified Network for **all Person and Non-Person Entities (PE/NPE)** to access all required information based on **role, persona, and credentials**
4	Data Fabric ***(In development / weekly Working level Integrated Product Team (WIPT) meetings being conducted)***	Locations were data is aggregated, normalized, correlated, and analyzed to be made available to publish, subscribe, query, or use	Defines data environment requirements and **standards for sharing information** through interfaces and services to discover, understand, exchange, and use **Army Unified Network data** across all domains, security levels and echelons
5	Strategic (Pending development)	Enterprise Computing Environment	Operational requirements needed to plan, prepare, and execute required network functions at the **Regional Cyber Centers (RCCs), DoDIN Fusion Center, and strategic command posts**
6	Installations (Pending development)	Network Enterprise Centers (NECs) and Below	Operational requirements needed to plan, prepare, and execute required network functions at **all NECs** in support of installation networks

The need for UNO at the Operational Edge

C2 modernization efforts provide increased communications, command and control capabilities. With this, comes increased complexity for communicators to plan, manage, and monitor a myriad of newly fielded technologies. Key to a brigade's ability to effectively execute these three tasks for lower and upper tactical networks is consolidating multiple tools into a single software package.

KEY TAKEAWAYS:

- Reduce training burden at all echelons
- Reduce operator cognitive load
- Reduce decision time
- Simplify, automate, and consolidate

Unified Network Operations: an Acquisition Perspective

- **UNO solution which significantly reduces: operator cognitive load, time-to-decision and training burden, at all echelons, will require (minimum):**
  - Laser-focus on capabilities (not on specific tools)
  - Coordinated acquisition strategy between PEO C3T and PEO EIS
  - Responsive governance structure to ensure capabilities maintain relevance and operator empowerment
    - Input from ALL stakeholders (user, capability developer, materiel developer)

Goal: coordinated, synchronized solutions which empower the warfighter

PEO Enterprise Information Systems (EIS) and UNO/AUNP

Supporting UNO

- **Where we are today**
  - Close collaboration with NETCOM and PEO C3T to ensure good understanding of UNO
- **Where we need to be**
  - Single ‘pane of glass’: Synchronized NETOPS capability with truly unified tools
- **Where industry can help**
  - Focus on synchronization solutions vs. tools

Supporting AUNP

- **Identity Credential & Access Management**
  - *Two Efforts:*
    - Near Term: Army Deputy Chief of Staff, G6 ICAM Roadmap (Phases 1, 2)
    - Mid-Term: Requirements Definition Package (2025-27)
- **Global SIPR Modernization**
  - Commercial Solution(s) for Classified
  - Virtual Desktop Infrastructure (VDI)
  - Multiple Independent Levels of Security (MILS)
- **Voice Modernization**
  - Attempt to reduce overall phone count
  - Regionalize existing VOIP capabilities
  - Implement a regional modernization approach
  - Decommission Time Division Multiplexing (TDM) infrastructure

Tactical UNO



✓ ***UNO in Tactical Environment***

- **Modernization informed by Soldier feedback**
- **Scalability to tactical/enterprise and all echelons**
- **PEO C3T Near Term Capability Focus:**

LTT	Planning, Management, Configuration, Initialization, Control, Monitoring
UTT	
ICAM	Authorization, Authentication, Credentialing, Zero Trust, Endpoint/ Event Management
Data Fabric	Tactical Data Fabric, Cloud Pilot, Master Data Node

Shape/ Inform

Reference Architecture
Application Program Interface
Capability Pilots

✓ ***Shaping in Progress***

- **Acquisition Strategy/ Pathway**
- **Contract Strategies/ Options**
- **Resourcing/ Costing**

NEXT STEP: *Approach Feedback from Industry*

UNO Program of Record Contracting Timeline

- **UNO Lower Tier Tactical (LTT) RDP**
  - Request for Information (RFI) completed.
    - A second RFI release expected in May
  - Draft Request for Proposal (RFP) planned for release in 1QFY23
  - Final RFP expected for release in 3QFY23
  - Contract award expected 2QFY24

- **UNO ICAM**
  - RFI may be released separately, if needed.
  - Draft Request for Proposal (RFP) planned for release 1QFY23
  - Final RFP expected for release 3QFY23

- **Upper Tier Tactical may be included in LTT Contract Scope. If not:**
  - Draft RFP released 3QFY23
  - RFP released 3QFY24
  - Contract award in 2QFY25

- **UNO Data Fabric, Strategic and Installation RDPs (TENTATIVE)**
  - Contract award in FY26 or beyond

UNO LTT High-Level Goals

- **Reduce the cognitive load on Soldiers.**
  - Simplify and standardize data displays and workflows.
- **Reduce the time it takes to complete tasks.**
  - Automate routine or predictable workflows to the maximum extent possible.
  - Automating data exchange and populating fields with known data to the maximum extent possible.
- **Reduce the training burden on units by consolidating tools.**
  - Add a common user interface to existing tools.
  - Use an intuitive and simplified display of data and user actions.

HOW?

- **Develop and implement the UNO API to include an API Middleware and Graphical User Interface (GUI)**
- **Scalability to encompass multiple UNO echelons (LTT scaling to UTT, etc.)**
- **Iterative design effort with yearly Capability Drops**