



JTNC Standards Presentation to WinnComm



Prepared For:

WinnComm

30-November-2021

Presented By:

JTNC <https://www.jtnc.mil>



Agenda



- **Purpose**
- **JTNC Overview**
 - Organization
 - Core Functions
 - DoD Communications Standards Branch
- **JTNC Standards Consensus Standards**
- **Modular Radio Architecture**
- **Summary**
- **Questions**



Purpose

- **Organizational update since WinnComm 2019**
- **Description of the latest standards activities for the public domain**



Joint Tactical Networking Center (JTNC) Organization

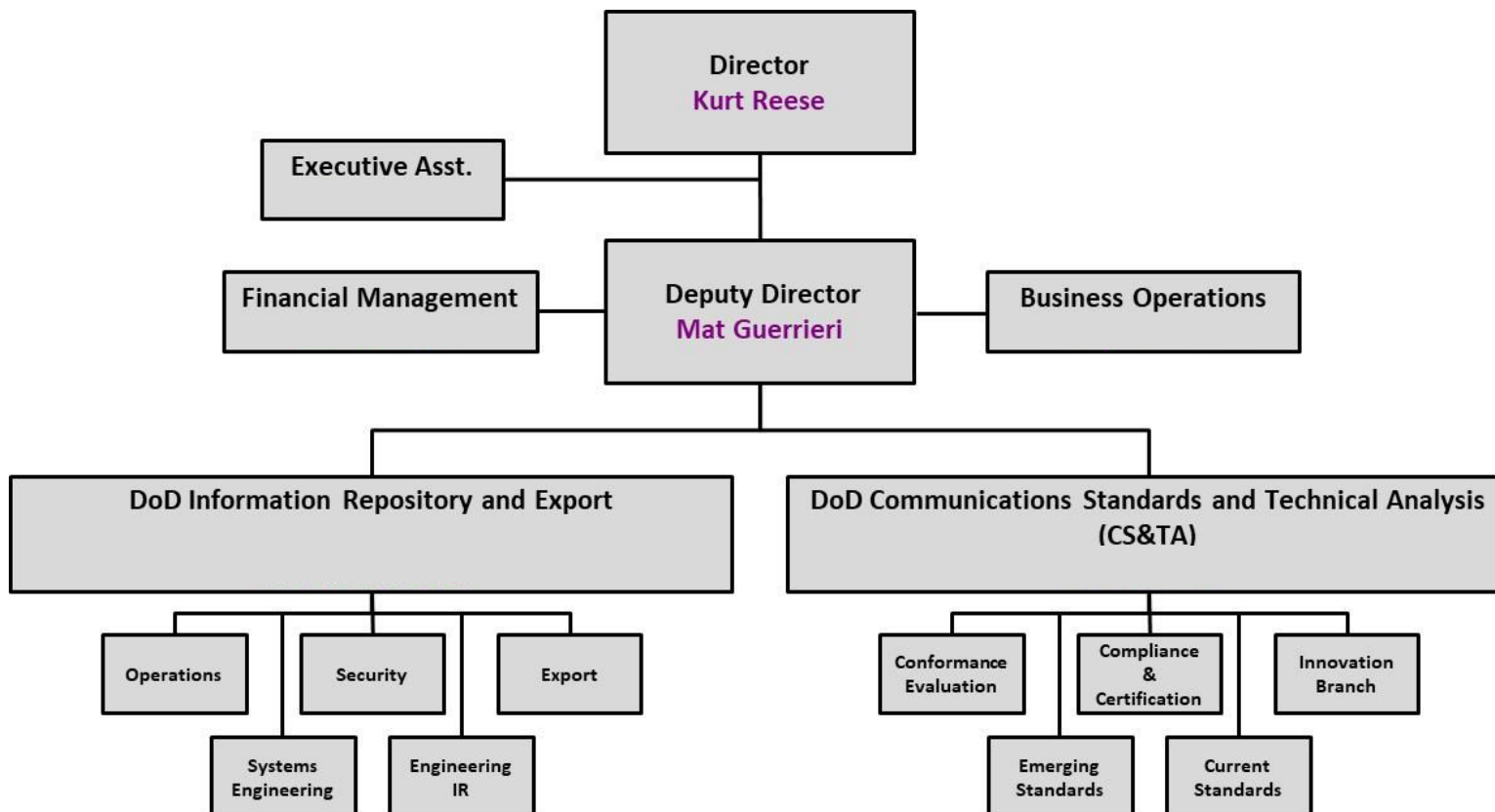
Command, Control, and Communications Leadership Board (C3LB) (Governance)



PEO C3T (Executive and Administrative Oversight)



NAVWARSCOM (Competency Alignment)





JTNC Mission and Vision

(JTNC Charter - 13 Sep 2019)



Chartered Mission

“To enable the DoD’s rapid identification, characterization, procurement, fielding, and sustainment of modular, innovative tactical communications products that ensure secure, interoperable, and resilient Command, Control, Communications, Computer, Intelligence, Surveillance, and Reconnaissance (C4ISR) capabilities.”

Chartered Vision

“Secure, Interoperable, and Resilient tactical communications capabilities aligned to modular open architectures in support of Service, Multi-Service, and Coalition forces.”





JTNC Core Functions*

- **DoD Information Repository (IR)**
 - Maintain a cyber-hardened DoD Information Repository (**IR**) providing controlled access for proprietary and non-proprietary waveforms
 - Maintain government configuration control of assigned IR products and datadocuments
- **Technical Analysis**
 - Perform capability characterizations/**technical analyses** on tactical communications products assessing the degree to which products meet their advertised capabilities and align with DoD wireless communications, cybersecurity, and interoperability standards and policies
- **Open Systems Architecture Standards**
 - Provide expertise, configuration management, and interface development for non-proprietary open systems architecture standards and interfaces that enable common radio, waveform, and network management functionality, and allow for rapid integration of enhanced technology/innovative capabilities
- **Exportability Analysis & Licensing Review**
 - Perform analyses to determine issues affecting potential exportability of tactical communications products
 - Review Software Defined Radio (SDR) and Waveform (WF) export license requests
- **Technical Advisor (Lead Service Initiative and Command, Control, and Communications Leadership Board (C3LB))**
 - Provide subject matter expertise on tactical communications products and/or Joint enterprise tactical networking as requested or identified in support of the DoD, the Services, and Program Offices
 - C3LB participation (Tactical Communications Senior Steering Group (TCSSG), Communications Technology and Waveform Working Group (CTWWG), HFWG))
 - Support both the Services and Principal Staff Assistant (DoD CIO) in oversight of Lead Service activities



<https://www.ready.navy.mil/>



DoD Communications Standards Branch

Purpose & Scope: Provide expertise, configuration management, and interface development for non-proprietary OSA standards and interfaces that enable common radio, waveform, and network management functionality, and allow for rapid integration of enhanced technology and innovative capabilities. Emphasis on Joint Service capabilities.

Supported Efforts:

DoD

- Modular Open Systems Working Group
- DoD High Frequency (HF) Working Group
- Secure Tactical Communications – Interoperability Specification (STaC-IS)

Industry Engagement

- SOSA and FACE™ Consortia and Wireless Innovation Forum (WInnF)

Key Priorities:

- Evolve, align, and promulgate open standards for the DoD and industry (including international)
 - HF Interoperability and Architecture SWG
- Lead Technical Exchange Meetings to facilitate Industry and Government stakeholder collaboration with the standards effort, leveraging existing forums when possible
- Support the Lead Services in establishing and updating policy for the implementation of common interface standards and joint enterprise reference architectures.
 - Dynamic Spectrum Sharing API SWG





Evolution of Consensus-Based Software Defined Radio (SDR) Standards

- JTNC Standards developed a *Modular Radio Architecture (MRA) Reference Architecture* based upon lessons learned from Software Defined Radio (SDR) development efforts
- JTNC Standards evaluated the contributions, overlap, and potential conflicts between multiple standards
- JTNC Standards has been working with the SOSA™ Consortium and the US Army to refine a consistent MOSA-based *Solutions Architecture*
- MRA is being refactored to produce a *Waveform Card* specification – for Plug-In Card(s) (PIC) that will support the Army's CMOSS development efforts



Photo Licensed Through Shutterstock



Modular Radio Architecture (MRA) Products

- **Reference Architecture**

- Identifies:
 - Where the communication application should reside
 - Constraints the applications must adhere to
 - Capabilities that the host (native) platform must provide
- Enables:
 - Specification of multiple Solution Architectures (instantiations of an RA) and families of Solution Architectures (e.g., multiple SOSA™ + CMOSS-based implementations)



- **Waveform Card Specification**

- Provides:
 - Open architecture specification of a waveform that resides on a plug-in card
- Identifies:
 - Interfaces and interactions between the physical card and its contained waveform and a hosting CMOSS chassis and infrastructure





Summary



JTNC Standards focuses on development & proliferation of SDR tactical communications solutions:

- Working to maximize reuse and repurpose of existing standards rather than defining new standards in all cases
- Pursuing cross organizational collaboration and coordination in order to converge Standards with examples which align with DoD priorities:
 - **MRA (CMOSS and SOSA™ interactions)**
 - **Waveform Card Specification**
 - **WINNF Working Group**
 - **FACE™ Working Group**
 - **SOSA™ Working Group**





Questions