



CAD/PAD Technical Warrant Holder Update

14 August 2024

Prepared by:

Mr. John Burchett

CAD/PAD TECHNICAL WARRANT HOLDER

NAVSEA 05E4

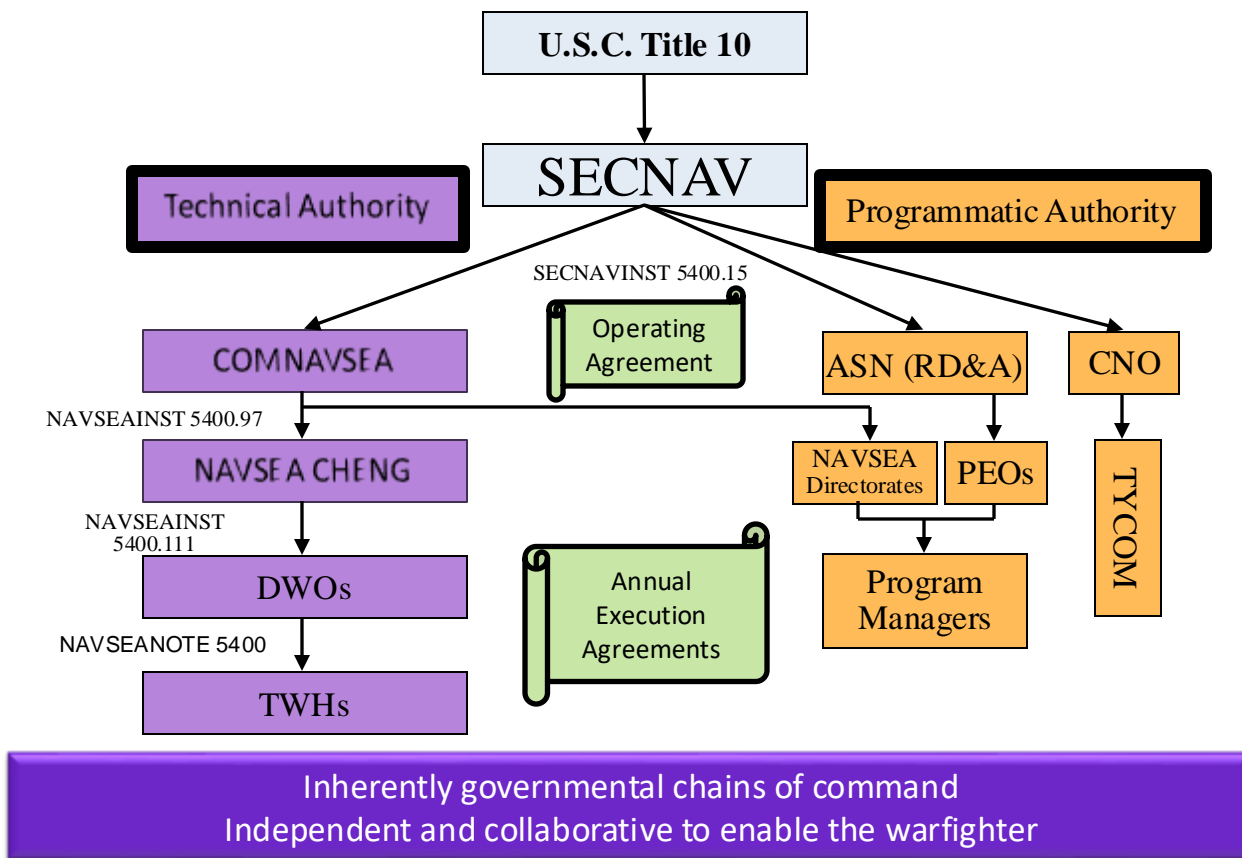
Version 1

Agenda

- Origin of Technical Authority
- What is Technical Authority
- Technical Authority's Scope
- NAVSEA Types of Authority
- CAD/PAD Technical Warrant Holder
- Backup



Origin of Technical Authority



Inherently governmental chains of command
Independent and collaborative to enable the warfighter

US Navy Technical Authority



DEPARTMENT OF THE NAVY

NAVAL AIR SYSTEMS COMMAND, PATUXENT RIVER, MD 20670-1547
NAVAL SEA SYSTEMS COMMAND, WASHINGTON NAVY YARD, DC 20376-4065
NAVAL SUPPLY SYSTEMS COMMAND, MECHANICSBURG, PA
NAVAL FACILITIES ENGINEERING COMMAND, WASHINGTON NAVY YARD, DC 20374-5065
SPACE AND NAVAL WARFARE SYSTEMS COMMAND, SAN DIEGO, CA 92110-3127

IN REPLY REFER TO

SPAWARINST 5400.1A SPW 05A 31 Oct 2006	NAVFACINST 5400.10 FAC CI 7 Nov 2006	NAVSUPINST 5400.15 SUP 31 12 Dec 2006
NAVSEAINST 5400.97C Ser TAB/018 27 Nov 2006		NAVAIRINST 5400.158A AIR-4.1 31 Jan 2007

VIRTUAL SYSCOM JOINT INSTRUCTION - VS-JI-22A

From: Commander, Naval Air Systems Command
Commander, Naval Sea Systems Command
Commander, Naval Supply Systems Command
Commander, Naval Facilities Engineering Command
Commander, Space and Naval Warfare Systems Command

Subj: VIRTUAL SYSCOM ENGINEERING AND TECHNICAL AUTHORITY POLICY



What is Technical Authority?

The *authority, responsibility, and accountability* to establish, monitor, and approve *technical standards, tools, and processes* in conformance to higher authority policy, requirements, architectures and standards.

Is independent of programmatic authority

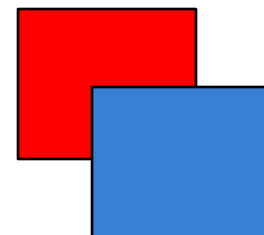
Provides adequate checks and balances to ensure safety, reliability, interoperability, and accuracy of costs

Supports PMs and the Fleet, providing best value engineering and technical products

Provides technically feasible options to PMs

Technical Authority's Scope

- Oversight of core processes
- Work toward most efficient infrastructure to support systems and operations
- Establish standard policies, technical specifications, and processes
- Introduce advanced technology and lessons learned
- Provide trained and qualified personnel

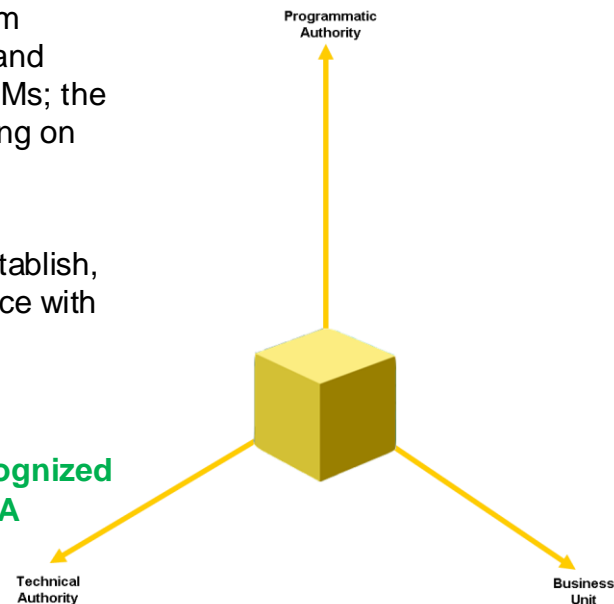


Technical Authority is independent of organizational boundaries and is accountable for managing risks across SYSCOMs

NAVSEA Types of Authority

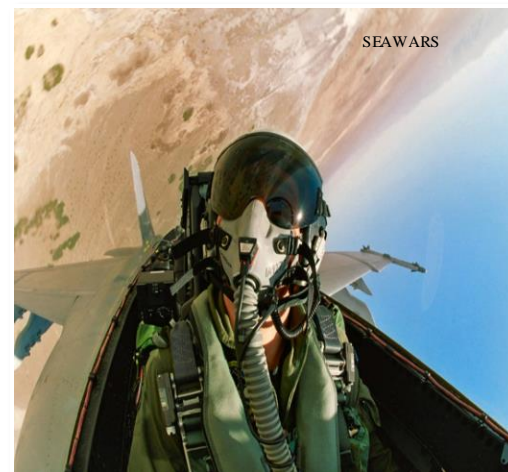
- **Business Unit (BU):** organizations that have line management responsibility for people, facilities, and operations
- **Programmatic Authority (PA):** manages all aspects of assigned programs from concept to disposal, including oversight of cost, schedule, and performance, and direction of life cycle management. Programmatic authority is exercised by PMs; the Commander, Navy Installations Command (CNIC); and by the Fleet, depending on funding and program assignments
- **Technical Authority (TA):** the authority, responsibility, and accountability to establish, monitor, and approve technical standards, tools, and processes in conformance with higher-authority policy, requirements, architectures, and standards
- **Certification Authority (CA):** **the authority to certify that products meet established standards. Specific certification authority is defined or recognized by the technical process documentation established by the cognizant TA**

Note: Technical authorities, programmatic authorities, and others may be certification authorities, depending on what the specific technical process documentation defines



CAD/PAD Technical Warrant Holder

- Current TWH: John Burchett (30 April 2017)
- Warranting Letter 22 November 2019
- Experience in CAD/PAD in aircraft, weapons, and other systems across all services
- Joined CAD/PAD in 1984
- MSc Explosive Ordnance Engineering
- BS Mechanical Engineering
- DAWIA Level III - Engineering



- Current CAD/PAD Deputy TWH: Anthony Quebral (1 May 2023)
- Experience in wide variety of weapon systems
- Joined CAD/PAD in 1988
- BS Mechanical Engineering

CAD/PAD TWH – At a glance

Completed/Current Initiatives

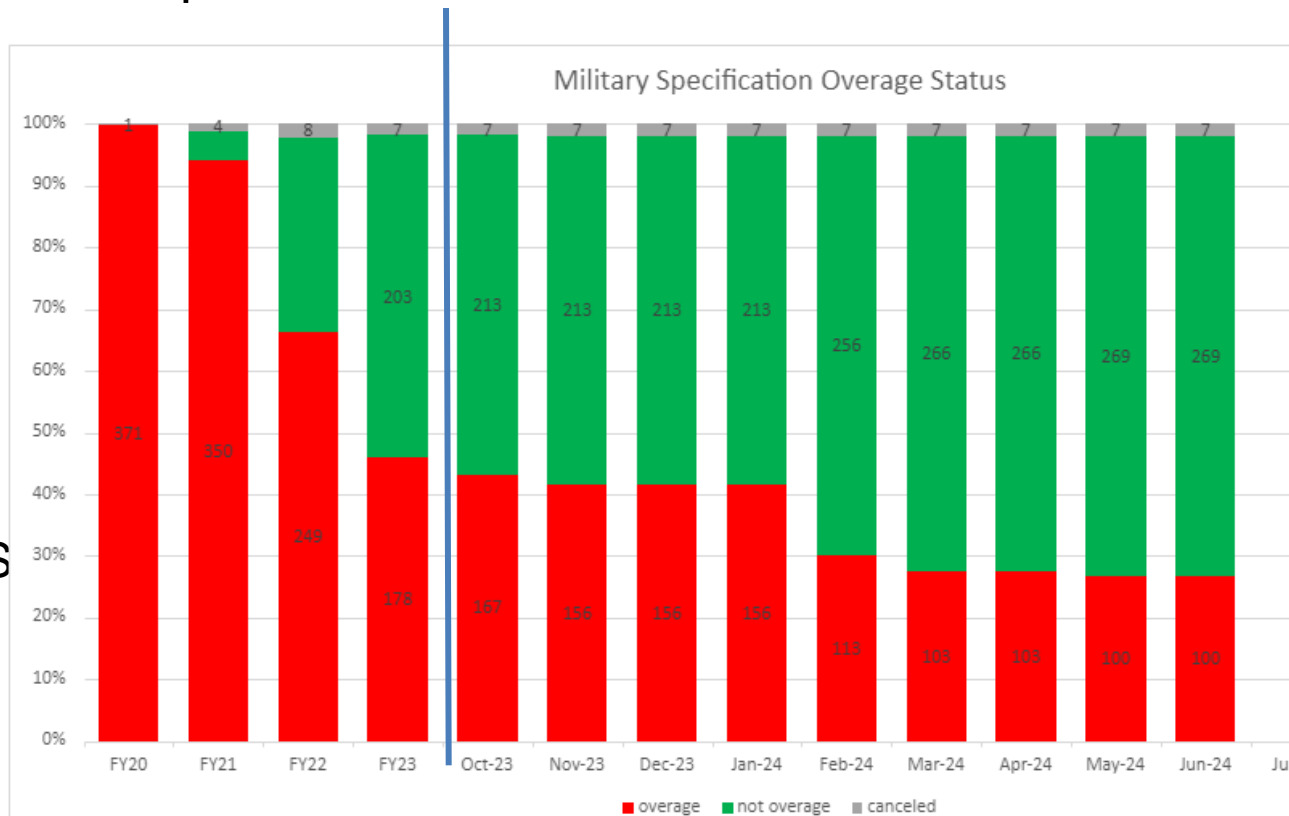
- **Worked with NAVSEA to hire a deputy CAD/PAD TWH**
- Worked with Indian Head, NOSSA, and others to update key processes, instructions, specs, and standards and train new employees
- Participated in SETR events (PDRs, CDRs, Design Certification Reviews) both on new components and for new weapons systems
- **Worked with NAVSEA systems engineering community to update policy and guidance regarding Environment, safety, and occupation Health Risk Assessment and the review of hazards utilizing the new Senior Risk Review Board**
- **Worked with NAVSEA (05H/05W) Weapons TWHs to review/approve NAVSEA eHARs by utilizing Indian Head and other TWH representatives (PFS, ISEA) to evaluate safety and reliability issues**
- Worked with NATO partners to develop a guidance document on qualification of CAD/PAD (JOT-30_/AAS3P-30)
- **Worked with NAVSEA and Indian Head to address backlog in over age specifications**

CAD/PAD MIL Specs – At a glance

- Each service has a Standardization Manager
- NAVSEA is USN manager of over 80,000 documents
- NAVSEA assigns “ownership” of those documents and requires their 340 TWHs to keep them current.

- CAD/PAD TWH owns 370 specs

- Thanks to CAD/PAD and NAVSEA 05S 05S for reducing number of Overage specs



CAD/PAD TWH – At a glance

Ongoing/Future Initiatives

- Continue work with NAVSEA and Indian Head to address backlog in over age specifications (Shift from item specs to general specs)
- **Work with NAVSEA (05H/05W) Weapons TWHs and WSESRB/NOSSA to publish a new standard on qualification/certification of rocket motors, missiles, and other weapon systems**
- **Work with stakeholders to better communicate qualification and certification of CAD/PAD and other energetic components for new weapon systems**
- Work with stakeholders to define and update key processes (i.e. SETR) regarding CAD/PAD
- Team with Indian Head and industry to encourage new technologies and obsolescence replacements
- **Work with other TWH and SMEs to establish workforce CAD/PAD technical training**
- Work with other TWH and related programs to establish better engagement with CAD/PAD
- Assist in transition to MBSE and MBPS tools
- **Establish mentoring opportunities and strengthen technical pyramid**

CAD/PAD TWH – Summary

- Look for....
 - Changes in specs and standards to streamline requirements, reduce costs, and provide a clearer and more consistent understanding of technical requirements
 - Streamlining of /Qualification/Certification Processes across CAD/PAD community
 - Better definition and understanding of Systems Engineering Technical Reviews (SETR) and other engineering processes
 - Better use of engineering artifacts (Objective Quality Evidence, OQE)
 - More engagement with new and evolving systems
 - Better assessments of risk

***Thank you in advance for your help and suggestions.
This is an impossible job without your contributions.***

Questions?



BACKUP

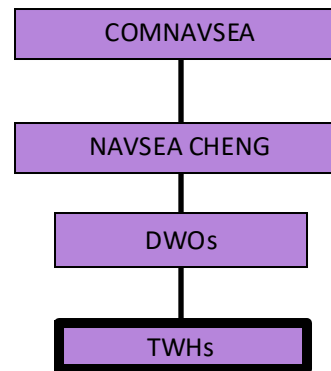
Certification Authority

- Certification Authority (CA) is the authority to certify that products meet established standards
- Specific certification authority is defined or recognized by the technical process documentation established by the cognizant TA
- Technical authorities, programmatic authorities, and others may be certification authorities, depending on what the specific technical process documentation defines
- Warfare systems, combat systems, and element certifications formally confirm meeting a standard and/or specification

NAVSEAINST 5400.97

Technical Warrant Holder Responsibilities *

1. Set Technical Standards
2. Maintain Technical Area Expertise
3. Ensure Safe and Reliable Operations
4. Ensure Effective and Efficient Systems Engineering
5. Provide Judgement in Making Unbiased Technical Decisions
6. Steward Engineering and Technical Capabilities
7. Maintain Accountability and Technical Integrity



TWHs lead technical efforts throughout DON in their Warranted Technical Areas

* As defined by Virtual SYSCOM Joint Instruction VS-JI-22A

NAVSEA ETAM

- Implements:
 - NAVSEAINST 5400.97 – Virtual SYSCOM Engineering and Technical Authority Policy
 - NAVSEAINST 5400.111 – NAVSEA Engineering and Technical Authority Policy
- Provides NAVSEA CHENG's direction and guidance to the NAVSEA engineering community
- Serves as a training tool and reference document for engineers, technical authorities, and those dependent on TA

S9800-AB-MAN-010

NAVSEA
Engineering and Technical Authority Manual
(ETAM)



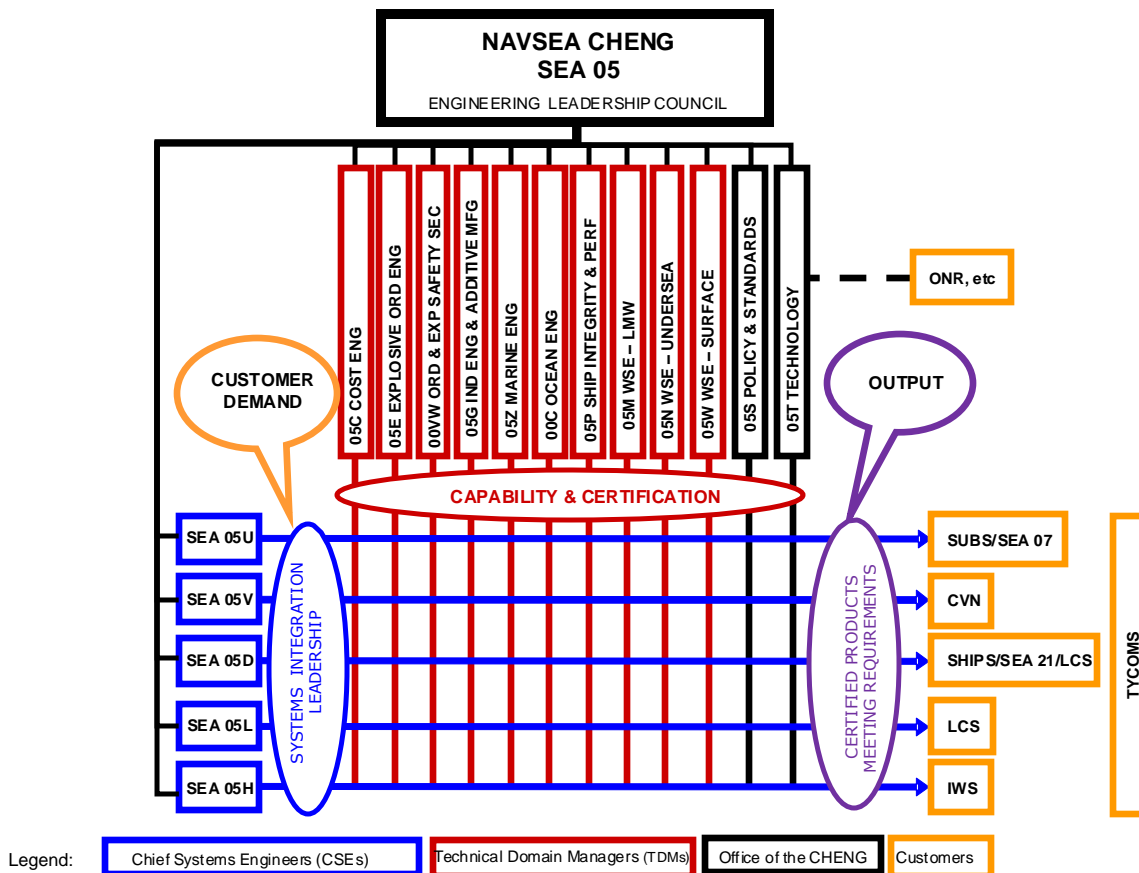
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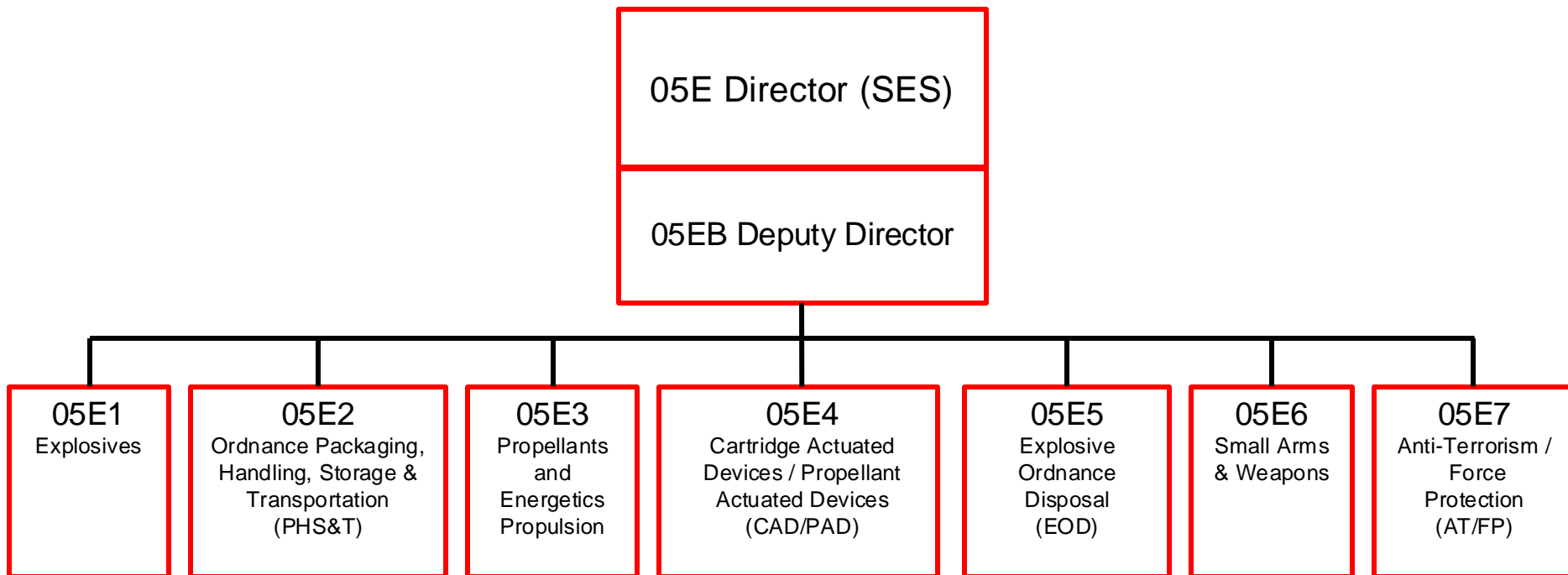
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Located on iNAVSEA in Technical Authority Library

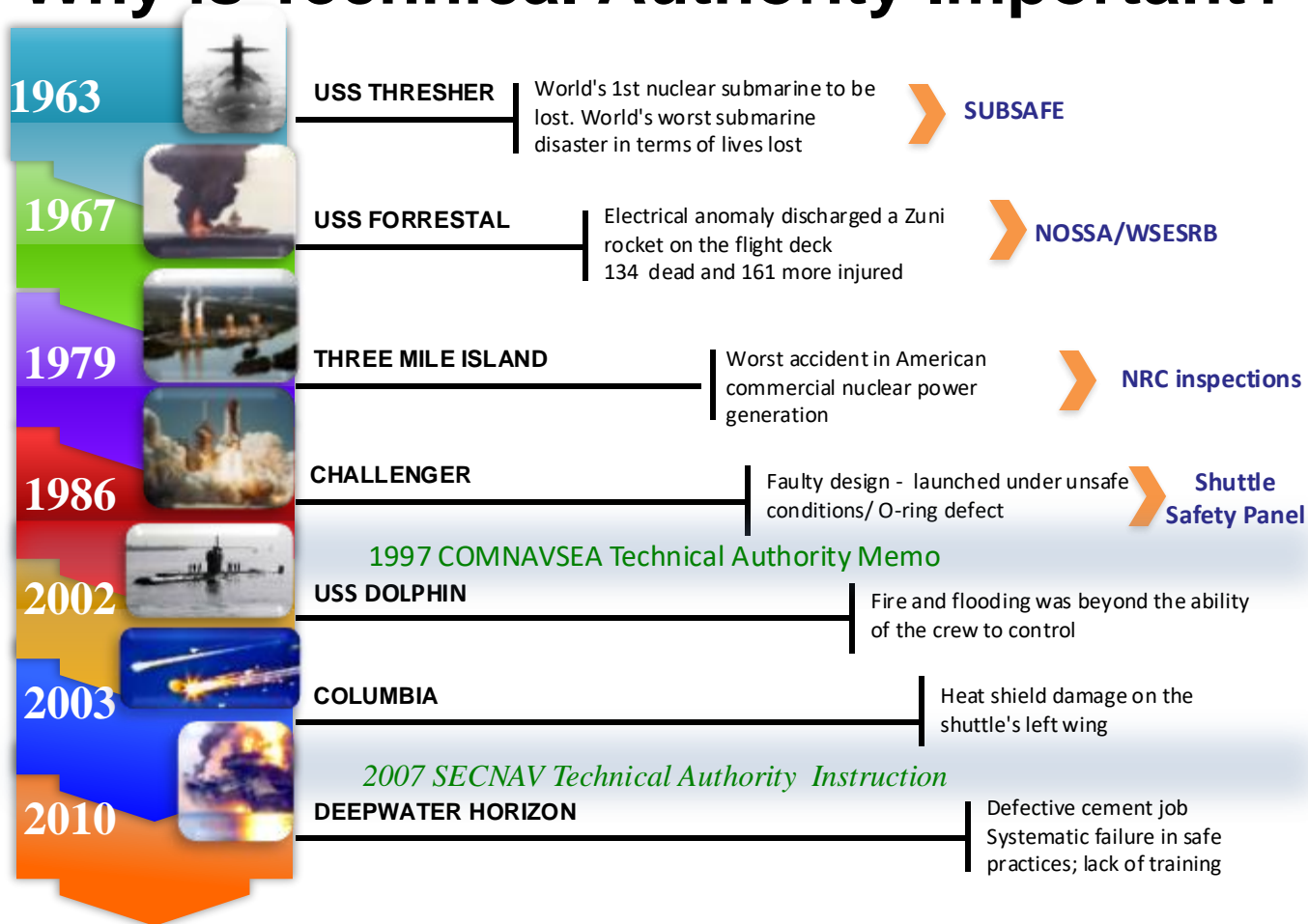
TDMs and CSEs within NAVSEA



NAVSEA 05E



Why is Technical Authority Important?



Roles and Responsibilities of DWOs

<u>Chief Systems Engineers (CSEs)</u>	<u>CSEs and TDMs</u>	<u>Technical Domain Managers (TDMs)</u>
<p>Generate and coordinate Annual Execution Agreements (AEAs)</p> <p>Provide input and review of technical standards</p> <p>Co-Chair Systems Engineering Technical Reviews (SETRs) and ensure proper technical support by SDMs/SIMs and cross program TWHs</p> <p>Lead program test, evaluation, certification, and ensure specialty engineering analyses are accomplished</p>	<p>Endorse Warranted Technical Area definitions</p> <p>Approve Engineering Agent Responsibilities Documents (EARDs)</p> <p>Implement technical authority policies and oversee execution of technical authority.</p> <p>Engage in risk assessments</p>	<p>Develop and maintain polices, standards and processes within their technical domain</p> <p>Identify investments required to mitigate technical authority risks</p> <p>Provide independent technical authority support for SETRs under the coordination of the CSEs</p> <p>Define technical authority Science and Technology needs</p>

Red and Blue boxes have equivalent authority

Technical Requirements

- CAD/PAD unique (MIL SPEC) requirements help support all of the above requirements
- Tailoring with upper level requirements is commonly done and brings commonsense to qualification * process

MIL-D-23615, Design and Evaluation of Cartridge Actuated Devices
MIL-D-21625, Design and Evaluation of Cartridges for Cartridge Actuated Devices
MIL-C-83124, Cartridge Actuated Devices/Propellant Actuated Devices, General Specification For
MIL-C-83125, Cartridge for Cartridge Actuated/Propellant Actuated Devices, General Specification For
MIL-C-83126, Propulsion Systems, Aircrew Escape, Design Specification For
MIL-DTL-23659, Initiator, Electric, General Design Specification
MIL-D-81980, Design and Evaluation of Signal Transmission Subsystem, General Specification For
MIL-D-81514B, Devices restraint Harness take-up, Inertia-Locking, powers-Retracting, General Specification
MIL-D-81303, Design and Evaluation of Cartridges for Store Suspension Equipment
MIL-C-85254 , Linear Shaped Charge
MIL-STD-1512, Electroexplosive Subsystem, Electrically Initiated, Design Requirements and Test Methods

- Use of these specs to evaluate a CAD/PAD supports qualification and/or certification of this component for its intended application. Use in any other application is not approved and must be independently evaluated prior to certification

* Qualification required by NAVSEA INST 8020.5D