Engineering and Technical Authority Overview

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What is Technical Authority?

The goal of E and TA is to ensure fielded systems meet the mission requirements of the Warfighter

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.

Technical Authority allows the Navy to organize engineering to articulate standards and risks clearly

SECNAVINST 5400.15

Technical Warrant Holder's Function

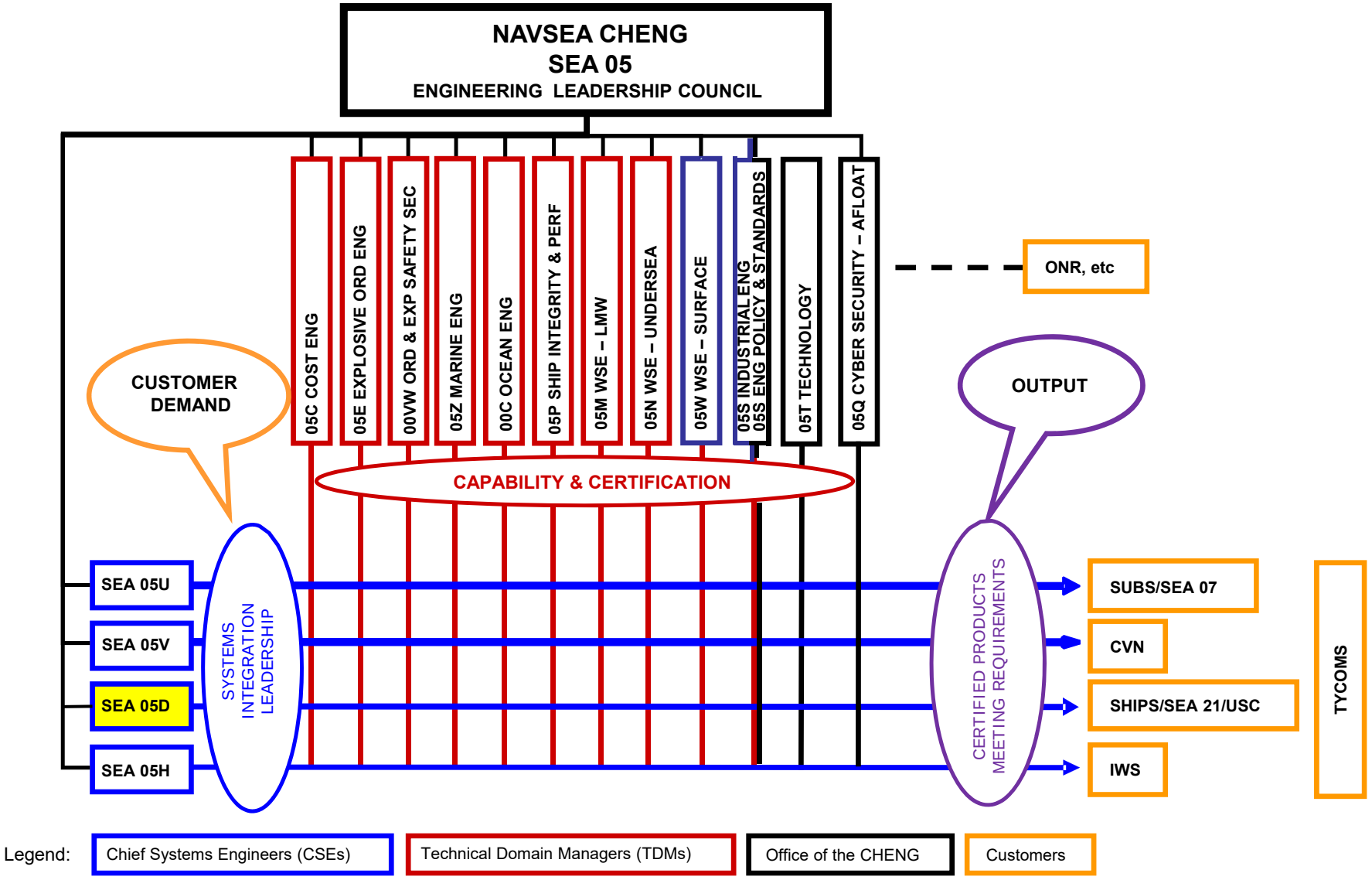
- Supports PMs and the Fleet, providing best value engineering and technical products
- Provides technically feasible options to PM
- Is independent of programmatic authority
- Provides adequate checks and balances to ensure safety, reliability, interoperability, and accuracy of costs
- Provides stewardship for his/her particular warranted area though management of Engineering Managers, Engineering Agents, Planning Yards, etc. as well as review of new technology and specs and standards.

Technical Authority focuses on system performance

Technical Warrant Holder Roles

1. Ship/System Design Manager (SDM) – responsible and accountable to both the technical and programmatic chains of command to manage the Program's systems engineering efforts
2. Systems Integration Manager (SIM) – double-hatted into the Warfare Systems Program Offices to integrate warfare systems and enable cohesive warfare and mission capabilities while ensuring safe and interoperable strike force operations
3. Waterfront Chief Engineer (CHENG) – NAVSEA technical authority of a Naval shipyard, RMC, SUPSHIP, or designated depot
4. (Cross-Program) TWH – lead Technical Areas that cross many Programs; apply their knowledge and experience to ensure common solutions and certifications which improve both safety and total life cycle costs
5. Cost Engineering Manager (CEM) – provide independent cost estimating, cost engineering and industrial base analysis for NAVSEA and associated PEO Programs

TDMs and CSEs within NAVSEA

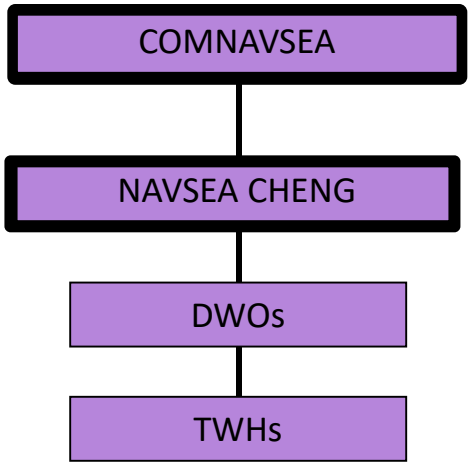


Questions


SURFACE SHIP DESIGN AND SYSTEMS ENGINEERING GROUP
NAVSEA 05D

NAVSEA TA Chain of Command

- Per SECNAVINST 5400.15, the SYSCOM Commanders are responsible for: providing for in-service support; providing support services to PEOs and DRPMs without duplicating their management functions; and serving as the technical authority and operational safety and assurance certification authorities for their assigned areas of responsibility.

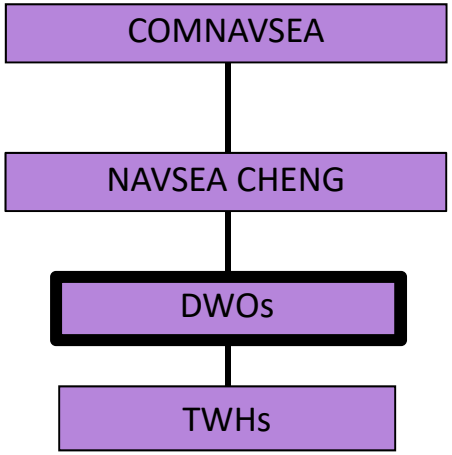


- Per NAVSEAINST 5400.97, COMNAVSEA provides TA leadership and is accountable for:
  - Establishing and maintaining organizational alignment throughout the SYSCOM, field activities, and affiliated PEOs to provide for technical authority
  - Designating DWOs and defining technical domains
  - Partnering with the other SYSCOM Commanders to ensure effective organizational alignment across SYSCOMs and to maximize collaboration and the delegation of TA and technical responsibilities between SYSCOMs where beneficial
- Per NAVSEAINST 5400.111, COMNAVSEA delegates the execution of TA to the NAVSEA Chief Engineer (CHENG) (SEA 05)
  - NAVSEA CHENG leads technical authority for NAVSEA and its affiliated PEOs
  - NAVSEA CHENG defines Technical Areas and designates TWHs

Deputy Warranting Officer Responsibilities

Two distinct types of technical authorities are normally needed to support the Competency Aligned Organization (CAO) construct

- Chief Systems Engineers (CSEs) integrate engineering and technical authority efforts in support of Programs
- Technical Domain Managers (TDMs) provide deep technical expertise to all appropriate programs



NAVSEAINST 5400.111

As of November 2016

Non-Ferrous Metallic Materials, Welding and Fabrication Processes for Structure –SHIPS

[NAVSEA 05P2]

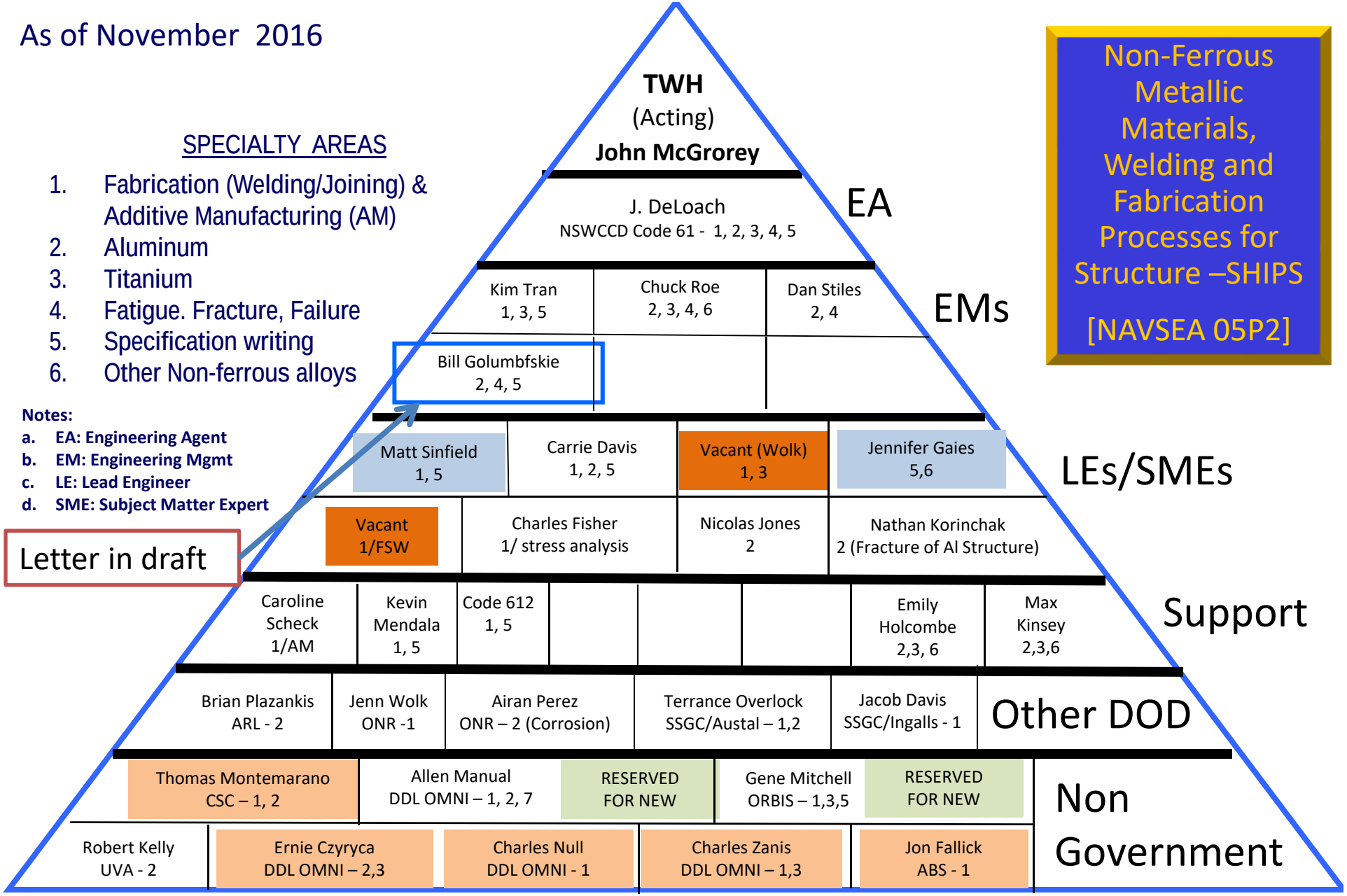
SPECIALTY AREAS

1. Fabrication (Welding/Joining) & Additive Manufacturing (AM)
2. Aluminum
3. Titanium
4. Fatigue. Fracture, Failure
5. Specification writing
6. Other Non-ferrous alloys

Notes:

a. **EA: Engineering Agent**
b. **EM: Engineering Mgmt**
c. **LE: Lead Engineer**
d. **SME: Subject Matter Expert**

Letter in draft



Technical warrant holder interface/collaboration: SDMs in 05D, U and V; TWHs in 05Z and P

TA Responsibility for Technical Standards

- TA is the authority, responsibility, and accountability to establish, monitor, approve, and apply technical standards, tools, and processes (as resourced by Programmatic Authority)
- With respect to technical standards, TAs are required to:
  - Maintain the currency and relevancy of technical standards within their scope
  - Communicate with programmatic authorities to ensure technical standards meet the needs of the customer and are implemented on contracts

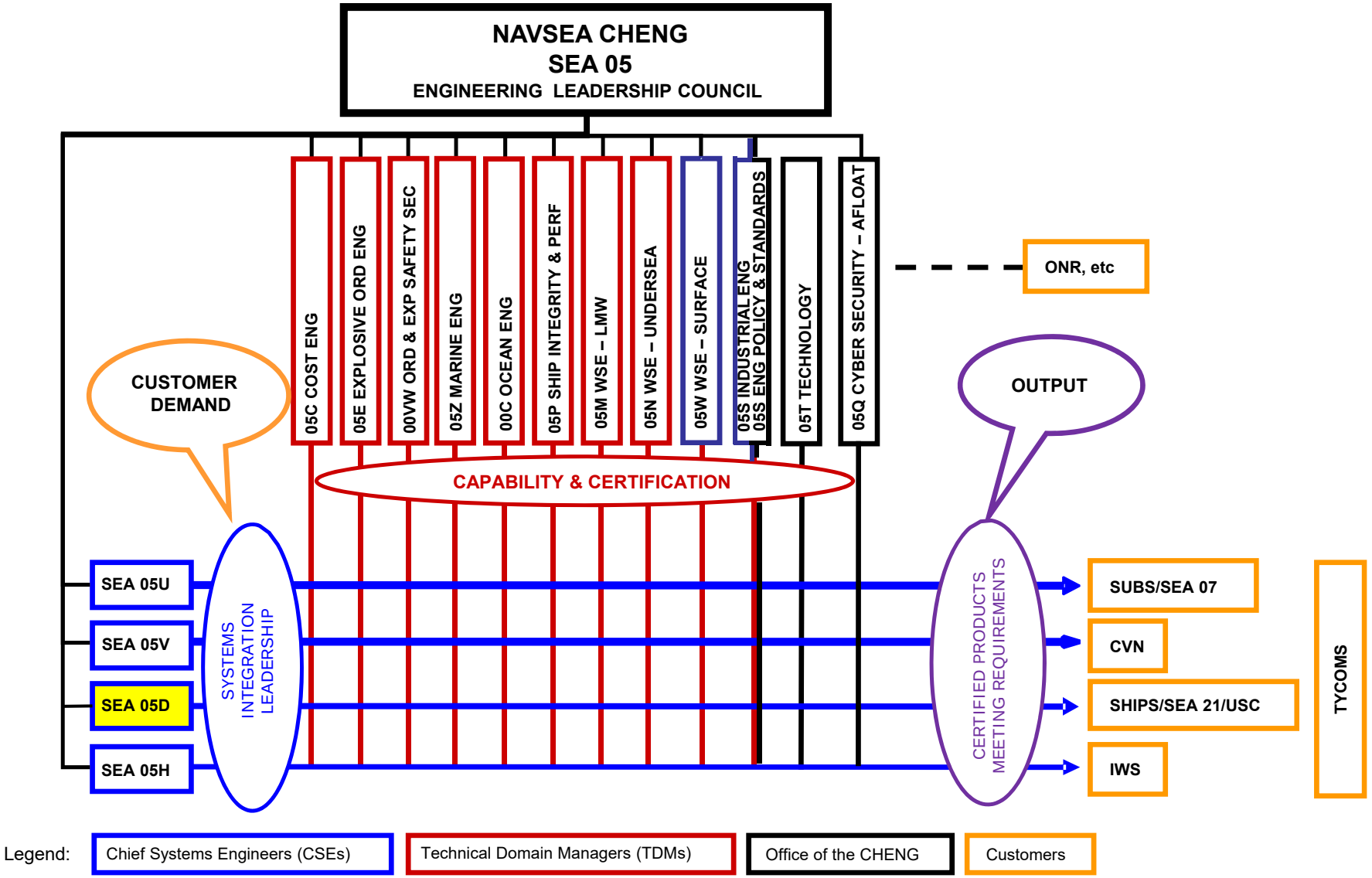
Technical requirements, standards, and processes directly affect the effectiveness, affordability, safety, and reliability of systems

Remember

Technical Authority provides the checks and balances to ensure that quality products, that meet validated operational capability needs, are delivered to the Fleet

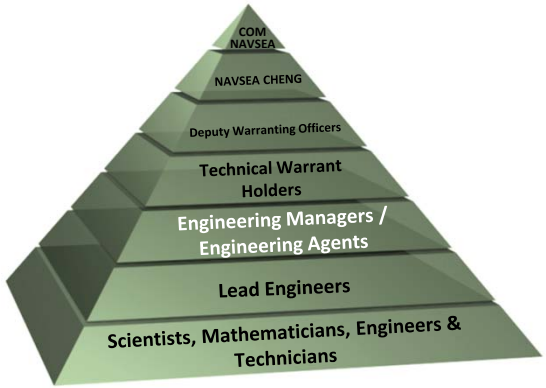
This supports all engineers working on NAVSEA ships and systems having clear standards as well as a path to seek clarification or propose an alternate standard to design, build, operate, maintain and modernize our ships and systems.

Engineering Leadership



Planning Yards

- EAs responsible to both the technical and programmatic authority chains of command
- Manage and update the engineering technical data that defines a Class of in-service ships
  - Bath Iron Works
  - HII - Pascagoula
  - Electric Boat
  - HII - Newport News
  - Puget Sound Naval Shipyard
  - Norfolk Naval Shipyard



NAVSEAINST 5400.95
NAVSEAINST 5400.114
ETAP 2.2.6

In-Service Engineering Agents (ISEAs)

- Delegated responsibility by the TWH
- Provides technical services to the TWH, PM and Fleet customers
  - Analysis
  - Development of technical alternatives
  - Total system performance assessment
  - Risk assessment and mitigation
  - Design and certification of systems or equipment, construction, production or integration for in-service systems

NAVSEAINST 5400.95
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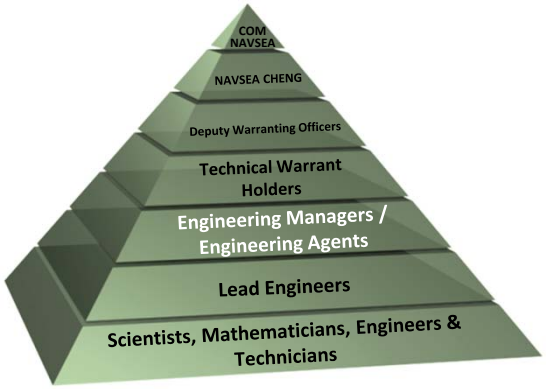
ETAP 2.2.6

Planning Activities

- EAs responsible to both the technical authority and programmatic chains of command
- Support modernization and Class Maintenance Plans
- Develop life cycle strategies to address system upgrades
- Includes:
  - Carrier Planning Activity (CPA)
  - Submarine Maintenance Engineering, Planning and Procurement (SUBMEPP)
  - Surface Maintenance Engineering Planning Program (SURFMEPP)
  - HII Newport News



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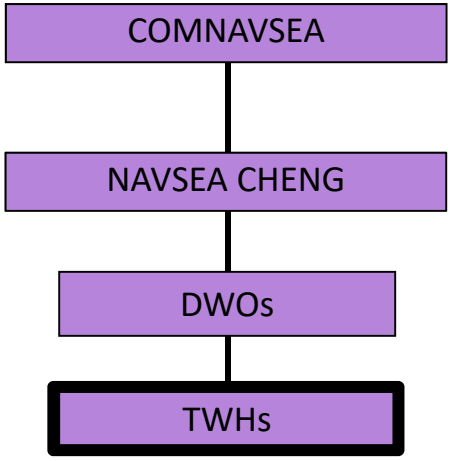
Technical Warrant Holder Responsibilities

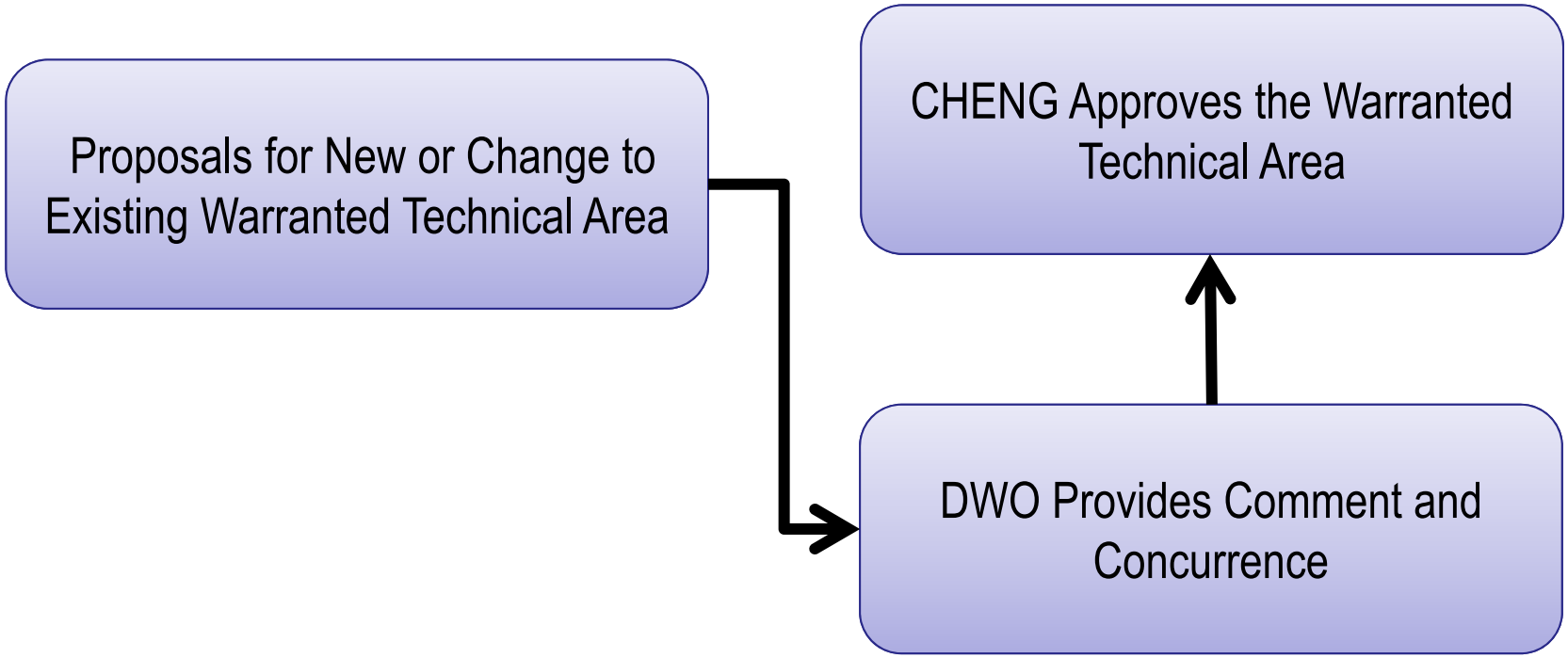


1. Set Technical Standards
2. Maintain Technical Area Expertise
3. Ensure Safe and Reliable Operations
4. Ensure Effective and Efficient Systems Engineering
5. Provide Judgment in Making Unbiased Technical Decisions
6. Steward Engineering and Technical Capabilities
7. Maintain Accountability and Technical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

TWHs lead technical efforts throughout DON in their Warranted Technical Areas

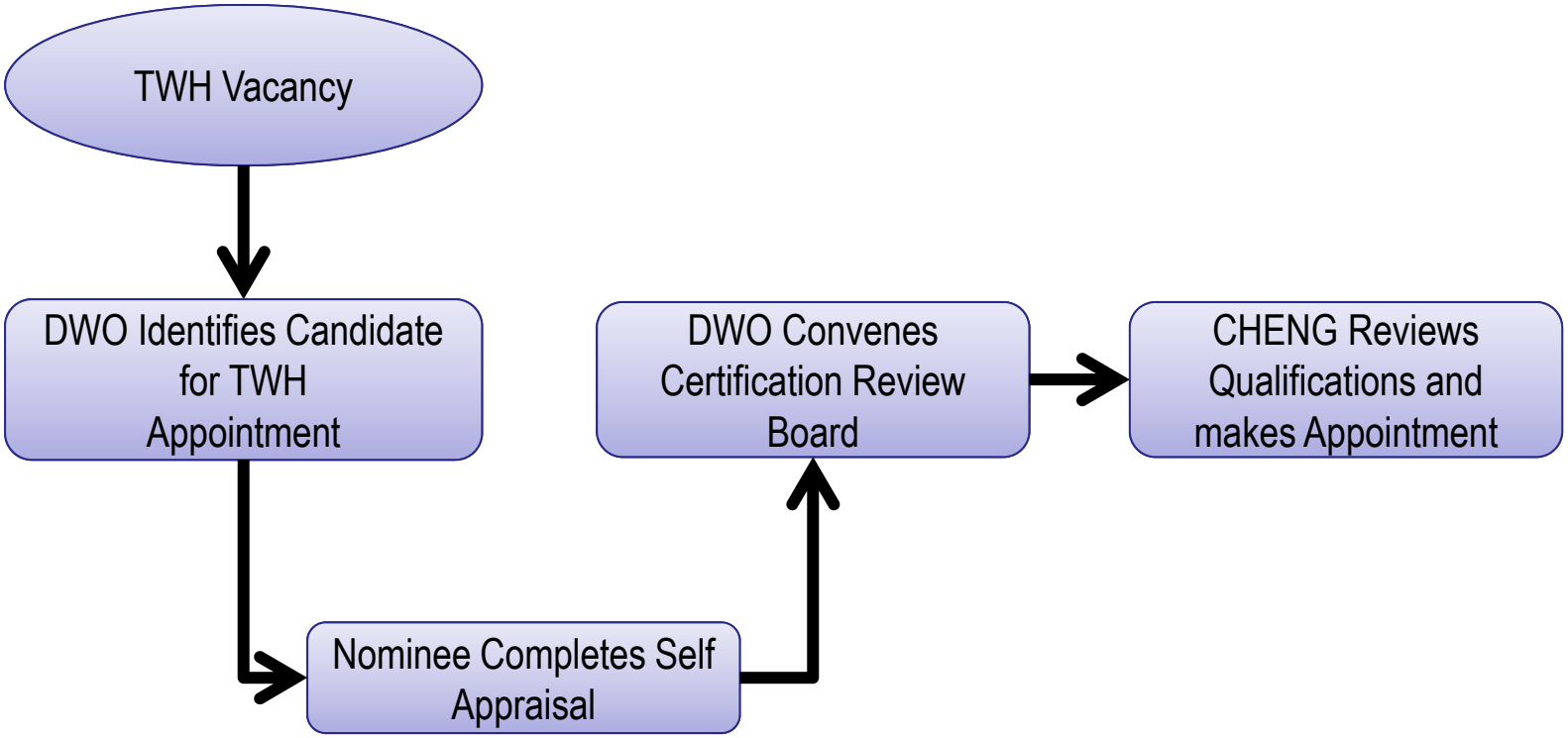
NAVSEAINST 5400.97

Process for Determining Warranted Technical Areas



ETAM Figure 2-6 Process
ETAP 2.2.5.1

TWH Warranting Process



Only the CHENG has Authority to Formally Appoint a TWH

ETAM Figure 2-7 Warranting Process
ETAP 2.2.5.2