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 COMMEAND, 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

Ref: (a) SECNAVINST 5400.15B, Department of the Navy Research, Development and Acquisition, and Associated Life Cycle Management Responsibilities, 23 Dec 2005
(b) OPNAVINST 5450.218, Mission, Functions\ and Tasks of Commander, Naval Facilities Engineering Command Headquarters, 5 Sep 1986
(c) Operating Agreement between the Commander, Naval Air Systems Command and Affiliated Program Executive Officers, of 11 Feb 2005
(d) Operating Agreement between the Commander, Naval Sea Systems Command and Affiliated Program Executive Officers, of 18 Apr 1997
(e) Memorandum of Agreement between Commander, Space and Naval Warfare Systems Command and Program Executive Officer, Command, Control, Communications, Computers, and Intelligence and Space, of 22 September 2003
(f) Navy Virtual SYSCOM Guidance 2005, 18 Apr 2005
(g) Public Law 105-270, Federal Activities Inventory Reform Act of 1998 and OMB Circular No A-76 of May 2003

Encl: (1) Technical Authority Roles and Responsibilities
(2) Systems Engineering Hierarchy
(3) NAVAIR Technical Domains
(4) NAVSEA Technical Domains
(5) NAVSUP Technical Domains
(6) NAVFAC Technical Domains
(7) SPAWAR Technical Domains

1. Purpose

a. To define engineering and technical authority policy and actions needed to fulfill the responsibilities of references (a) through (g) and support Program Managers (PMs) and the Fleet in providing best value engineering and technical products.

b. To establish a common approach and consistent terminology for independent technical authority, including the definitions in enclosures (1) and (2).

c. To describe the inter-relationship among systems engineering, technical authority, programmatic authority, technical processes, certification authority, and certificate holders.

2. Cancellation. Virtual Systems Command (SYSCOM) Joint Instruction 22 of 3 January 2005. Revision A is being issued to expand the scope to include the Naval Facilities Engineering Command (NAVFAC) and the Naval Supply Systems Command (NAVSUP).

3. Scope and Applicability

a. This instruction applies to engineering, technical work and technical authority associated with products under the cognizance of Naval SYSCOMs and affiliated Program Executive Officers (PEOs) and Direct Reporting Program Managers (DRPMs), as delineated in references (a) and (b), and as assigned to these SYSCOMs and affiliated PMs. Within this scope, this instruction applies to the Fleet. Specific exclusions are addressed in enclosures (3) through (7).

b. This instruction does not change the responsibilities of SYSCOMs, PEOs, DRPMs, PMs, Participating Managers or other Program Support Managers as delineated in the applicable DOD/SECNAV 5000 series guidance. In accordance with reference (a), PMs are vested with the authority, accountability, and resources necessary to manage all aspects of assigned programs from concept to disposal. This instruction does not change those responsibilities; it defines a common approach adopted by the Virtual SYSCOM that is consistent with and complies with references (a) through (g) for partnering of the programmatic and technical authorities.

c. This instruction does not change the direct reporting relationships of Warfare Center Commanders, System Center Commanding Officers, Shipyard Commanders, Supervisors of Shipbuilding, Field Component Commanders, and other field activity Commanders who report directly to the SYSCOM Commander.

4. Vision and Definitions

a. Engineering. The Virtual SYSCOM is aligned to develop and employ consistent disciplined collaborative engineering processes that provide safe, reliable, effective, integrated, timely, and affordable products for the Navy. The Naval SYSCOMs' engineering workforce is aligned by technical areas; its engineers are empowered and accountable to make disciplined technical decisions, consistent with their technical expertise. This alignment is essential to an agile, effective and efficient engineering workforce. The independence of technical authority is an essential aspect of our engineering community because it provides (1) constructive collaboration with programmatic authorities on technical work, and (2) checks and balances necessary to ensure our facilities and products support the war fighter and meet the changing needs of the Navy.

b. Technical Authority. Consistent with references (a) through (g):

(1) Technical authority is 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.

(2) The exercise of Technical Authority is a process that establishes and assures adherence to technical standards and policy providing a range of technically acceptable alternatives with risk and value assessments.

(3) Technical authority is an inherently governmental function assigned to the Naval SYSCOM Commanders by the Secretary of the Navy. The SYSCOM Commanders must structure a responsible and programmatically independent technical authority process to:

(a) Ensure that our technical standards, tools and processes ensure the safety, reliability and performance of our products, are practical, are complete, and meet programmatic needs.

(b) Ensure that our products are certified to meet those requirements.

(c) Ensure that our products are supported properly throughout their lifecycle.

(d) Ensure the timeliness and responsiveness of technical decisions without excessive review and oversight.

(4) The SYSCOM Commanders formally warrant qualified individuals as independent technical authorities, entrusted and empowered to:

(a) Provide leadership and make technically sound engineering decisions within their warranted technical areas.

(b) Ensure integration with other technical areas.

(c) Perform their responsibilities with integrity and discipline.

(5) Consistent with reference (g), a necessary ingredient of technical authority processes is a sufficient number of trained and experienced staff to perform the inherently governmental functions of contract administration and oversight. Although contracting authority is not normally a responsibility of our engineering community, our engineering community is an essential component of contract administration and oversight and must be properly staffed to do so.

c. Programmatic Authority. In accordance with references (a) and (b), programmatic authorities manage 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.

d. Certification Authority. Certification authority 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 technical authority. Note that technical authorities, programmatic authorities, and others may be certification authorities, depending on what the specific technical process documentation defines.

5. Policy

a. Technical Authority Roles and Responsibilities. Virtual SYSCOM technical authority roles and responsibilities are defined in enclosure (1), including responsibilities of the technical authority chain of command (SYSCOM Commanders Warranting Officers, Deputy Warranting Officers, and Technical Warrant Holders (TWHs)), the Virtual SYSCOM Systems Engineering and Technical Authority Board, and the SYSCOM Technical Authority Boards. Enclosures (3) through (7) define SYSCOM specific roles, including the technical domains of each Deputy Warranting Officer.

b. Cross-SYSCOM Engineering and Technical Authority. A goal of the Virtual SYSCOM is to establish technical authorities and engineering support capabilities independent of organization boundaries, using technically competent and accountable individuals throughout the Virtual SYSCOM. Technical Accountability should cross SYSCOM boundaries at the appropriate level. Here are some examples of Cross-SYSCOM engineering and technical authority:

(1) TWH Example. In the enclosure (7) list of SPAWAR Deputy Warranting Officers, COMSPAWAR delegates technical authority for FORCEnet to SPAWAR 05, as part of SPAWAR 05's technical domain. Because the FORCEnet process will affect a large subset of products in other SYSCOMs, SPAWAR 05 has established TWHs in other SYSCOMs to lead application of FORCEnet technical processes throughout those SYSCOMs. The technical authority chain of command is SECNAV to COMSPAWAR to SPAWAR 05 to the TWHs in the other SYSCOMs. The SYSCOM Commander from each of the other SYSCOMs nominates these individuals to COMSPAWAR who then issues the technical authority warrants.

(2) Certification Example. NAVSEA 05P3 is a TWH at NAVSEA and is the Navy's technical authority for shock as it applies to NAVSEA platforms. NAVAIR and SPAWAR cognizant equipment is installed in these platforms. Therefore, NAVSEA 05P3 shock certification requirements, and any associated certification authority qualification requirements, apply to those applications.

c. Programmatic Authority Roles and Responsibilities. Consistent with reference (a), programmatic authorities:

(1) Act as the designated point of entry for formal correspondence that directly involves their program. Technical authorities and their support network are tasked by the programmatic authority to review and provide technical recommendations, evaluations and positions. All programmatic and technical authorities shall share information and keep each other informed on technical issues of mutual interest.

(2) Select from among technically acceptable alternatives identified by cognizant technical authorities.

(3) Have the authority, responsibility and accountability to ensure compliance with technical policy, requirements, architectures and standards established by cognizant technical authorities.

(4) Must obtain approval of engineering change proposals, deviations and waivers from the cognizant technical authorities.

(5) Fund engineering efforts directly supporting their programs. Normally, this includes funding engineering contractors and the support network of TWHs (see enclosure (2)). TWHs are commonly supported by an independent funding source such as Expense Operating Budget (EOB)/Mission Funding or Navy Working Capital Funding (NWCF) production overhead.

d. Technical Conflict Resolution. Technical conflicts, both within the engineering community and between the engineering and programmatic communities shall be resolved at the lowest level practical. Where resolution cannot be reached in a timely manner, technical conflicts shall be elevated using the technical authority chain of command. Disagreements on

technical matters shall be resolved prior to issuing technical correspondence. If needed, the SYSCOM Commander(s) will provide authoritative resolutions.

e. Systems Engineering Hierarchy. Enclosure (2) depicts the roles, influence and insight of TWHs in a systems engineering hierarchy model, using the definitions in enclosure (1). The enclosure (2) model shall be used for systems engineering efforts within the scope of this instruction.

f. Technical Processes and Certifications. Technical processes and associated certifications are an essential aspect of independent technical authority, providing documented methods and objective evidence that ensure safety, reliability and affordability, and that customer needs are met. The following requirements apply:

(1) Proper execution of technical authority and systems engineering depends on the inter-relationship of: (1) the technical authority structure defined by this instruction, (2) integration of numerous technical areas using the enclosure (2) systems engineering hierarchy model, and (3) specific technical processes. The documentation for each technical process shall be clear in how it overlays the technical authority structure and the systems engineering hierarchy, showing inter-related roles and responsibilities, and if needed, how that technical process inter-relates with other technical processes.

(2) Each technical certification process shall have TWH ownership. The assigned TWH is responsible for maintaining the documentation that defines the technical process, ensuring its continued relevance, assuring appropriate training and qualification is in place throughout the community the process affects, and assuring continued adherence to the process.

(3) The documentation for each technical process shall define the required training and qualification to be a certificate holder, the objective evidence needed for each certification, and who the certification authority is for each certification. Certifications shall be staggered as needed throughout the design, construction and maintenance timelines to ensure that final certifications are meaningful and based on objective evidence.

6. Action

a. NAVAIR, NAVSEA, NAVSUP, NAVFAC, SPAWAR and affiliated Programmatic Authorities shall implement the policies contained in this instruction, including warranting the TWHs, and reviewing and updating technical processes.

b. The Chairmen of the SYSCOM Technical Authority Boards shall establish the Virtual SYSCOM Systems Engineering and Technical Authority Board based on the proposed structure in enclosure (1).

c. Each SYSCOM shall issue a NOTICE or equivalent describing SYSCOM specific technical authority roles and responsibilities. These shall update enclosures (3) through (7), be revised at least annually to ensure currency, and include:

(1) Statements defining the scope (area of cognizance) of the Warranting Officer's technical authority. The scope shall include all engineering within the scope of responsibilities defined in references (a) and (b) for the SYSCOM and its affiliated PEOs, reflect assignments made since references (a) and (b) were last revised, and clearly define exclusions.

(2) The list of DWOs and a summary description of their specific technical domains, including appropriate higher-authority references.

(3) The members (chair, principal and stakeholder) of the SYSCOM Technical Authority Board.

(4) The list and titles of TWHs.

d. The Virtual SYSCOM will update this instruction to:

(1) Ensure consistency with CNO initiatives, such as the Naval War Fighter Enterprises.

(2) Incorporate a process to address the selection, assignment, responsibility, tasking, empowerment and appraisal of engineers and organizations that support TWHs.

(3) Define requirements for chartering platform design teams and documenting their responsibilities.

(4) Address responsibilities of the organizational chain of command that TWHs report to, where the organizational chain of command differs from the technical authority chain of command defined by the warrant.

(5) More thoroughly incorporate technical authority responsibilities for Human Systems Integration and sailor training and interface.

e. The Virtual SYSCOM technical authority structure shall be accessible in a web-based tool that includes the support network of engineers for each TWH, identifies responsibilities and technical documentation ownership (e.g., technical and engineering standards, tools and processes), and includes contact information.

7. Concurrence. This instruction has been concurred with by all the principal and stakeholder members of the SYSCOM Technical Authority Boards, as listed in enclosures (3) through (7).

M.C. BACHMANN
RADM, USN
Commander, Space and Naval Warfare Systems Command

W.G. SHEAR JR.
RADM, CEC, USN
Commander, Naval Facilities Engineering Command

D.H. STONE
RADM, SC, USN
Commander, Naval Supply Systems Command

P.E. SULLIVAN
VADM, USN
Commander, Naval Sea Systems Command

W.B. MASSENBURG
VADM, USN
Commander, Naval Air Systems Command

Distribution:

SNDL:

FKP	COMNAVSEASYSCOM Shore Activities
C84	COMNAVSEASYSCOM Shore Based Detachments
FKA1C	COMNAVFACENGCOM
A1J1F	PEO SHIP
A1J1L	PEO IWS
A1JIM	PEO LMW
AIJIN	PEO SUB
AIJ1Q	PEO CARRIERS
FT88	EDOSCOL
21A1	CFFC
21A2	COMPACFLT
24A	Air Force Commanders
24D	Surface Force Commanders
24G	Submarine Force Commanders
FKQ	(SPAWAR Activities)

SPAWAR (00, 01, 02, 04, 05, WLA)
MCCDC
NETWARCOM
SPAWAR ITC (00)
PEO C4I AND SPACE
PEO IT
PEO SPACE SYSTEMS
DRPM NMCI
MARCORSYSCOM Deputy for C4I Integration
RDA CHENG AND DEPUTY CHENG
PEO(T)
PEO(A)
PEO(W)
AIR-1.0, 4.0, 5.0 and 6.0
NAWC AD, WD
DRPM ERP

NAVAIRHQs Directives Web Address:
http://directives.navair.navy.mil
or
https://mynavair.navair.navy.mil/portal/server.pt

NAVSUP (Electronic only via the Naval Logistics Library (NLL) Web site https://nll.ahf.nmci.navy.mil)

TECHNICAL AUTHORITY ROLES AND RESPONSIBILITIES

1. **WARRANTING OFFICERS:** The SYSCOM Commanders are the Warranting Officers. Within their areas of cognizance, Warranting Officers will provide leadership and be accountable, including:

a. Establishing and maintaining organizational alignment throughout the SYSCOM, field activities and affiliated PEOs to ensure technical authority:

(1) Is independent of programmatic authority.

(2) Provides adequate checks and balances to ensure safety, reliability and interoperability.

(3) Supports Program Managers and the Fleet in providing best value engineering and technical products.

b. Designating the Deputy Warranting Officers and the members of the SYSCOM Technical Authority Board, including the Chairman, Principal Members, and Stakeholder Members.

c. Resolving technical disagreements that Technical Authority Board members (Principal and Stakeholder) cannot resolve amongst themselves.

d. Partnering with the other Warranting Officers to ensure effective organizational alignment across SYSCOMs and to maximize collaboration and the delegation of technical authority and technical responsibilities between SYSCOMs where beneficial.

2. **DEPUTY WARRANTING OFFICERS:** Within their technical domains, Deputy Warranting Officers shall:

a. Provide leadership and be accountable for all engineering and technical decision-making accomplished throughout the Navy, including field activities, affiliated PEOs and the Fleet.

b. Establish technical policy, standards, and processes. This includes issuing instructions that address critical technical processes such as systems engineering, interoperability, technology transition, and technical

standards. As appropriate, these instructions shall be coordinated with activities outside the specific SYSCOM and affiliated PEOs.

c. Coordinate with other Deputy Warranting Officers and the SYSCOM Technical Authority Board(s) to determine the scope of technical authority warrants.

d. Develop, qualify, designate and evaluate their TWHs. The Deputy Warranting Officer may provide input to the TWH's performance appraisal or Fitness Report. Selection of TWHs shall be based on demonstration of sufficient proven ability in the following competencies to hold the warrant:

(1) Setting Technical Standards

(2) Technical Area Expertise

(3) Ensuring Safe and Reliable Operations

(4) Ensuring Effective and Efficient Systems Engineering

(5) Judgment in Making Unbiased Technical Decisions

(6) Stewardship of Engineering and Technical Capabilities

(7) Accountability and Technical Integrity

e. Ensure due diligence and oversight of engineering and technical authority.

f. Ensure financial and personnel (e.g. technical expertise) resources necessary for TWHs to execute their responsibilities and resolve issues with programmatic authorities and the Fleet.

g. In concert with the TWHs and their organizational Chains of Command, develop, train and maintain a competent technical workforce to ensure:

(1) The Navy is a smart customer by sustaining and exercising SYSCOM technical core equities, critical skills and capabilities.

(2) The Navy sustains its core inherently governmental functions.

(3) Unnecessary redundancies are eliminated.

(4) There is a career progression to TWH status.

h. Resolve technical disagreements that TWHs cannot resolve amongst themselves. Where TWHs have unresolvable technical disagreements with programmatic authorities, work with the corresponding stakeholder member(s) of the Technical Authority Board to resolve those disagreements.

3. **TECHNICAL WARRANT HOLDERS:** Technical warrant holders (TWHs) shall be Headquarters or Field Activity Government employees or military personnel. Although TWHs may be double-hatted into programmatic organizations to provide alignment in managing and leading technical efforts, they may not be employees of those organizations. Technical authority warrants do not circumvent TWH's responsibilities to their operational Chain of Command. However, it does provide them with the authority and accountability to directly access the Deputy Warranting Officer and the Warranting Officer without fear of administrative repercussion in issues affecting technical performance, operational readiness and safety.

TWHs are experts in their warranted technical areas and lead technical efforts throughout the Navy, independent of organizational boundaries. Within the technical areas defined by the scope of their warrants, TWHs have the following responsibilities, organized by the competencies discussed in the Deputy Warranting Officer section above:

a. Setting Technical Standards:

(1) Establish technical policy, standards, tools, requirements and processes, including certification requirements, ensuring consistency with higher authority policy, requirements, architectures and standards.

(2) Interface with other TWHs to ensure consistency in selection, interpretation and implementation of technical requirements and policies.

(3) Ensure lessons learned and best practices are strongly considered for implementation.

(4) Ensure adequate checks and balances exist.

b. Technical Area Expertise:

(1) Provide technical advice to the Fleet, Depot Chief Engineers (CHENGs), and other DoD customers.

(2) Provide expert testimony as required.

(3) For new or improved technologies, and for maintaining technical expertise, interface with the Science and Technology community in technical areas related to the warrant.

c. Ensuring Safe and Reliable Operations:

(1) Ensure safety and reliability are properly addressed in technical documentation.

(2) When required, act as the certification authority.

(3) Ensure technical products are in conformance with technical policy, standards, processes and requirements. Where they are not, identify options and associated risks, and, if appropriate, approve non-conformances or engineering changes in a manner that ensures risks are technically acceptable.

(4) For operational systems that do not meet technical requirements (e.g., due to unaccounted for variables, emergent Fleet requirements, or damage), assess and recommend options, and identify associated risks.

d. Ensuring Effective and Efficient Systems Engineering:

(1) Ensure engineering and technical products meet Navy needs and requirements, including interoperability.

(2) Support programmatic authorities and the Fleet by providing best value engineering and technical products. Identify and evaluate technical alternatives, determine which are technically acceptable, and perform associated risk and value assessments.

(3) Assess concept or system performance based on experience, tests and analysis.

(4) Ensure systems engineering interfaces and data exchange are properly coordinated.

e. Judgment in Making Unbiased Technical Decisions:

(1) Provide leadership and be accountable for all engineering and technical decision-making.

(2) Promote and facilitate communications throughout the technical community to ensure appropriate individuals and organizations are aware of and involved in technical issues and technical decisions, and that all applicable technical requirements are identified and understood.

(3) Apprise the Deputy Warranting Officer in a timely manner of significant engineering and technical authority issues, including technical disagreements that cannot be resolved with other TWHs or with programmatic authorities.

f. Stewardship of Engineering and Technical Capabilities:

(1) Ensure an appropriate engineering and technical authority support network is established for the warranted technical area, and provide leadership for that support network.

(2) Assist the Deputy Warranting Officer in ensuring technical competency, expertise and infrastructure are maintained to effectively perform assigned missions within the warranted technical area. This includes ensuring applicable engineering leadership skills are being developed in scientists and engineers and that they are empowered consistent with technical competency, expertise and integrity.

(3) Identify both immediate and future resources needed to properly exercise technical authority including funding, manpower, and training. If sufficient resources are not available, inform the Deputy Warranting Officer of: the resource shortage; an assessment of the associated root cause, significance and priorities; actions being taken to provide best value to the Navy given the resource shortage; work and

responsibilities that can not be accomplished; and any relevant options.

g. Accountability and Technical Integrity:

(1) Exercise integrity and discipline to ensure the soundness of technical decisions.

(2) Keep their organizational Chain of Command informed of issues and decisions, since their organizational Chain of Command remains responsible for the quality of their performance.

(3) In support of the all of the above responsibilities and where appropriate, delegate engineering responsibilities in writing to subordinates, engineering agents, design teams, certificate holders, and other technical organizations. The limits of the delegated responsibility and reporting relationships shall be clearly defined. Delegating responsibility does not reduce the accountability of the TWH.

4. **EXAMPLES OF TECHNICAL WARRANT HOLDERS:**

a. A platform design manager warranted to manage the systems engineering efforts for assigned platforms, including compliance with DoD/SECNAV 5000 series guidance, making integration decisions for those platforms, and ensuring interoperability. The platform design manager acts as the lead/chief systems engineer for the platform PM. (For example, the Ship Design Manager for CVN-78)

b. Other lead/chief systems engineers warranted to assist platform design managers in the integration of broad collections of warfare systems into platforms where the warfare systems PM is separate from the platform PM. This is frequently the case when complexity exceeds the ability of an individual PM and platform design manager to effectively manage all integration and interoperability functions. The lead/chief systems engineer may support one platform or multiple platforms in the warranted technical area, depending on Navy needs. Lead/chief systems engineers manage systems engineering and interoperability efforts for the assigned warranted technical areas, including compliance with DoD/SECNAV 5000 series guidance. (For example, the NAVAIR Systems Engineer for CVN 78)

c. A cost engineering manager warranted to ensure independent cost engineering and cost estimating in support of Navy programs. (For example, the NAVSEA Cost Engineering Manager for Carriers)

d. A technical area expert warranted to provide technical ownership of assigned product lines (e.g., systems, components, equipment, software and materials) throughout their full lifecycle, and ensure needed support and expertise related to their warranted technical areas are provided to other TWHs, and their programmatic counterparts. (For example, the TWH for Surface Ship Guns)

e. A technical process owner warranted as the Navy's expert for major technical and engineering certification processes who makes decisions that have a direct effect on capability delivered to the Fleet (e.g, design standards, changes, waivers, deviations). The TWH is empowered by and held accountable by the Deputy Warranting Officer in defining, implementing, interpreting, modifying, and ensuring compliance with the assigned technical and engineering certification processes. Technical and engineering certification process documentation is used to define, as a minimum, the roles, requirements, training, and certifications required of engineers, technical authorities, programmatic authorities, and other support personnel related to the process. (For example, the TWH for Anti-Tamper). Note that technical and engineering certification processes may be owned by all TWHs, since TWHs often define technical and engineering certification processes related to their warranted technical area.

f. A depot/field chief engineer warranted as the TWH at a Naval Shipyard, Supervisor of Shipbuilding, Regional Maintenance Center, Facilities Engineering Command or other Depot to lead and focus the technical efforts of the SYSCOMs from the waterfront and depots/field to support and execute construction, modernization, maintenance and repair. These chief engineers make technical decisions within their technical capabilities, allowing the SYSCOMs to quickly respond to Fleet needs. (For example, the Southwest Regional Maintenance Center Chief Engineer)

5. **CERTIFICATE HOLDERS:** Certificate holders are qualified by training, certification, and demonstrated performance and empowered to perform specific functions and certifications related to specific technical processes.

a. Certificate holders can be located organizationally anywhere in the Virtual SYSCOM, the Fleet, or private industry, including programmatic organizations and field activities. Specific organizational controls, as needed, shall be defined in the documentation for the specific technical process.

b. The documentation for the technical process shall define the training and qualification requirements for the certificate holders.

c. Training and qualification programs for certificate holders should be combined where practical to improve efficiency and synergism.

d. Certificate holders are often lead engineers certified and empowered by appropriate TWHs to perform a specific certification and then matrixed from a TWH's engineering agent to a platform design team.

6. **VIRTUAL SYSCOM SYSTEMS ENGINEERING AND TECHNICAL AUTHORITY BOARD**
(DRAFT)

PRINCIPAL MEMBERSHIP

- Chairmen of the SYSCOM Technical Authority Boards
- The ASN(RD&A) CHENG
- Others as determined by the Warranting Officers

STAKEHOLDER MEMBERSHIP

- Chief of Naval Research (CNR)
- Commander, Navy Installations Command (CNIC)
- Commander, Operational Test and Evaluation Forces (COMOPTEVFOR)
- Director, Marine Corp Operational Test and Evaluation Activity (MCOTEA)
- President, Board of Inspection and Survey
- Selected Fleet and OPNAV N codes
- Others as determined by the Warranting Officers

The Chairmanship of the Virtual SYSCOM Systems Engineering and Technical Authority Board rotates among the Chairmen of the SYSCOM Technical Authority Boards. Responsibilities of the Virtual SYSCOM Systems Engineering and Technical Authority Board include:

a. Ensure common Naval policies for science and technology, research and development, independent technical authority, systems engineering, test and evaluation, and certification.

b. Ensure there are adequate checks and balances in place to ensure Naval products are safe and reliable.

c. Ensure systems engineering and technical authority interfaces with Virtual SYSCOM Customers are effective, including ensuring technical and programmatic authorities have proper organizational alignment and consistent vision.

d. Oversee the Systems Engineering Stakeholders Group (SESG) to continually improve alignment of systems engineering and other technical processes for the Navy.

7. **SYSCOM TECHNICAL AUTHORITY BOARDS**

PRINCIPAL MEMBERSHIP

- Chairman
- Deputy Warranting Officers
- Other leaders of the SYSCOM's engineering community, as determined by the Warranting Officer

STAKEHOLDER MEMBERSHIP

- Affiliated Program Executive Officers
- Others as determined by the Warranting Officer, such as the Fleet Maintenance Officers (N43)

a. Establish common policies for technical authority, technical standards, metrics, systems engineering, certification, reliability and safety.

b. Coordinate engineering and technical authority interfaces with PEOs, other SYSCOMs, and the Fleet.

c. Resolve issues associated with the function, operation, organization, resources, and manning of engineering and technical authority. This includes ensuring proper coordination among numerous activities at headquarters and in the field, engineering workload performed by mission funded and working capital funded billets, and division of engineering workload between the Government and contractors, consistent with SYSCOM and higher authority policy.

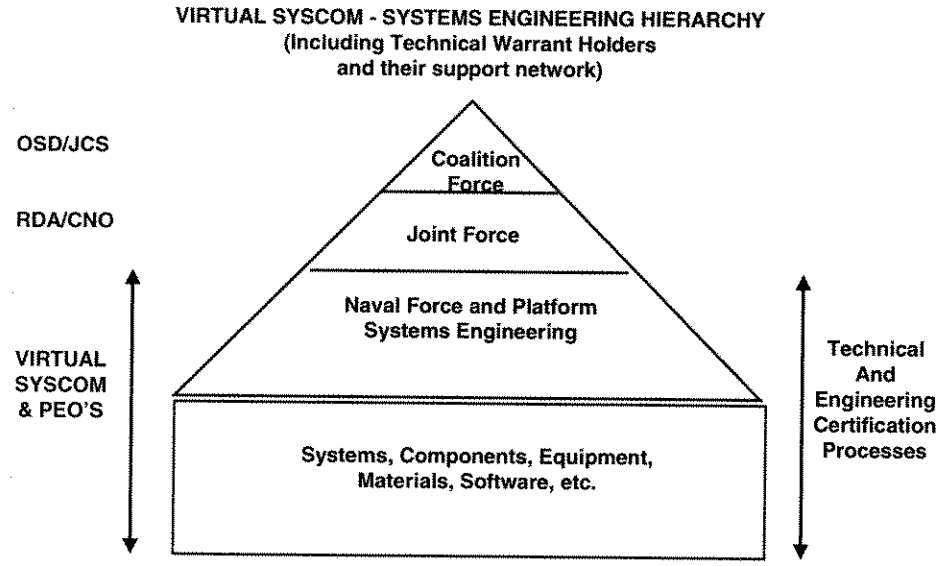
d. Provide guidance on technical authority matters such as:

(1) General descriptions of different types of engineering agents and their responsibilities.

(2) The processes for determining the specific technical areas to be warranted.

(3) The qualification, selection and evaluation process for TWHs.

(4) The process for determining who is acting in the absence of the TWH.



NOTES:

1. The support network for TWHs at the naval force and platform systems engineering level in this hierarchy often consists of platform design teams.
2. The support network for TWHs at the Systems, Components, Equipment, Materials, Software, etc. level often consists of engineering agent organizations at Warfare Centers or in industry.
3. The direct support network for TWHs who own Technical and Engineering Certification Processes is typically their staff or an engineering agent. They also have an indirect support network consisting of the certificate holders they qualify to perform certifications.
4. The Virtual SYSCOM and PEOs also support Joint and Coalition level systems engineering efforts that are led by RDA/CNO and OSD/JCS, respectively.

NAVAIR TECHNICAL DOMAINS

Ref: (a) SECNAVINST 5400.15B, Department of the Navy Research, Development, and Acquisition, and Associated life Cycle Management Responsibilities, 23 Dec 2005
(b) Operating Agreement between the Commander, Naval Air Systems Command and the Naval Aviation Program Executive Officers of 11 Feb 2005
(c) NAVAIRINST 5400.1C, Organizational Manual, 07 Aug 2000
(d) OPNAVINST 3710.7T, Naval Air Training and Operating Procedures Standardization (NATOPS) Program, 02 Mar 2004
(e) NAVAIRINST 5400.154, NAVAIR Team Assignment Agreements, 15 Aug 2000
(f) NAVAIR Integrated Program Team (IPT) Manual, Dec 1996
(g) NAVAIRINST 4355.19C, Systems Engineering Technical Review Process, 25 Jun 2003
(h) NAVAIRINST 13034.1C, Flight Clearance Policy for Air Vehicles and Aircraft Systems, 28 Sep 2004

1. **NAVAIR Scope**: SECNAV and OPNAV policy clearly delegates Technical Authority to each of the Naval Systems Commanders within their technical domains. In accordance with references (a) through (f), the Commander of Naval Air Systems Command (NAVAIR) is the Technical Authority for air systems, aeronautical weapons systems and associated subsystems, support equipment, components and parts, systems integration, software, and human systems. NAVAIR Technical Authority shall include:

a. Oversight of core processes required to support the acquisition, in-service support and disposal of air systems,

b. Operation and sustainment of the most efficient infrastructure needed to acquire, field, and support air systems,

c. Establishing standard policies, technical specifications, and processes,

d. Introduction of advanced technology and lessons learned, and

e. Providing trained and qualified personnel to the Integrated Program Teams (IPTs).

For in-service systems, NAVAIR has cognizance over all aircraft equipment limitations and technical data in NATOPS publications and airworthiness certification of all Naval aircraft.

2. **Deputy Warranting Officer Technical Domains:** The NAVAIR Competency Aligned Organizational/Integrated Program Team (CAO/IPT) construct maintains a single integrated engineering organization, which flows technical authority down throughout the technical organizational supervisory chain via a Team Assignment Agreement (TAA). References (g) and (h) provide process policies that ensure technical authority is executed independent of program authority and provides an alternate communication path to the competency leadership and the NAVAIRSYSCOM Commander. The NAVAIR Deputy Warranting Officer Technical Domains are:

a.	Research and Engineering	AIR-4.0
b.	Systems Engineering	AIR-4.1
c.	Cost Analysis	AIR-4.2
d.	Air Vehicle	AIR-4.3
e.	Propulsion and Power	AIR-4.4
f.	Avionics and Mission Systems	AIR-4.5
g.	Human Systems	AIR-4.6
h.	Weapons Systems	AIR-4.7
i.	Air Launch and Recovery System	AIR-4.8
j.	Research and Engineering Sciences	AIR-4.9
k.	Warfare Analysis	AIR-4.10
l.	Test and Evaluation	AIR-5.0
m.	Logistics	AIR-6.0

3. **NAVAIR Technical Authority Board Membership:**

Chairman:
NAVAIR Chief Engineer (AIR-4.0/4.0A)

Other Deputy Warranting Officers:
Directors, AIR-4.1-4.10, 5.0, 6.0

Stakeholder Members:
PEO(T)
PEO(A)
PEO(W)
AIR-1.0
NAWCAD
NAWCWD

NAVSEA TECHNCIAL DOMAINS

Ref: (a) SECNAVINST 5400.15B, Department of the Navy Research, Development and Acquisition, and Associated Life Cycle Management Responsibilities, of 23 Dec 2005
(b) Operating Agreement between the Commander, Naval Sea Systems Command and Affiliated Program Executive Officers, of 18 Apr 1997
(c) NAVSEAINST 5400.1E, NAVSEA Organizational Manual, of 03 Jan 1994
(d) NAVSEANOTE 5400E, Establishment of the Director for DoD Explosive Ordnance Disposal Technology and Training, SEA 00E, to be issued.
(e) NAVSEANOTE 5400V, Modification of the Title and Responsibilities of the Director for DoN Ordnance Safety and DoD Explosive Ordnance Disposal Technology and Training, SEA 00V, to be issued

1. **NAVSEA Scope**: In accordance with references (a) and (b), COMNAVSEA is the technical authority for ships and ship systems, including:

a. Overseeing core processes required to support the acquisition, in service support and disposal of platforms,

b. Operating and sustaining the most efficient infrastructure needed to acquire, field, and support weapon systems and commodities,

c. Establishing standard policies, technical specifications, and processes,

d. Rapidly and consistently incorporating advanced technology and lessons learned, and

e. Supporting integrated platform management teams.

2. **Exclusions**:

a. Naval nuclear propulsion plant systems, equipment and facilities under the cognizance of the Deputy Commander, Nuclear Propulsion Directorate (SEA 08). As outlined in reference (c), Executive Order 12344, statutorily prescribed by P.L. 98-525 (42 U.S.C. 7158 note), establishes the responsibilities and authorities of the Deputy Commander, Nuclear Propulsion

Directorate (SEA 08) over all facilities and activities which comprise the Naval Nuclear Propulsion Program, a joint Department of Energy (DOE)/Navy organization. These responsibilities and authorities include all technical and logistical matters related to naval nuclear responsibilities and propulsion. Accordingly, nothing in this instruction supersedes or changes those authorities, and SEA 08 shall be consulted concerning all matters related to Naval Nuclear Propulsion.

b. Strategic weapons systems under the cognizance of the Strategic Systems Program (SSP).

3. **Deputy Warranting Officer Technical Domains**:

a. SEA 00E - Consistent with reference (d), the NAVSEA Director for DoD Explosive Ordnance Disposal Technology and Training (SEA 00E) is the DoD's technical authority for explosive ordnance disposal and related technology and training, and for ground based counter Radio-Controlled Improvised Explosive Device Electronic Warfare (CREW) Technology.

b. SEA 00V - Consistent with reference (e), the NAVSEA Director for DoN Ordnance Safety (SEA 00V) is the DoN's technical authority for ordnance safety.

c. SEA 017 - The Director, Cost Engineering and Industrial Analysis (SEA 017) is the Command's technical authority for ship and ship related combat and weapons systems cost engineering and industrial analysis.

d. SEA 03 - The Deputy Commander for Human Systems Integration (SEA 03) is the Command's technical and final certification authority for certifying that ships and shipboard systems delivered to the Fleet are ready to enhance sailor performance, optimize manpower, personnel and training, and promote personnel safety, survivability and quality of service.

e. SEA 04 - The Deputy Commander for Logistics, Maintenance and Industrial Operations (SEA 04) is the Command's technical authority for standardized technical processes for logistics, modernization, maintenance, and industrial operations and support systems, including those that cross platforms and systems and for environmental and occupational safety and health regulatory compliance.

f. SEA 05 - The Deputy Commander for Ship Design, Integration and Engineering (SEA 05) is the Command's technical authority for platform and ship systems including areas common to both surface ships and submarines.

g. SEA 06 - The Deputy Commander for Warfare Systems Engineering (SEA 06) is the Command's technical authority for surface ship combat and weapons systems, and is the Battleforce Systems Engineer responsible for top-level systems engineering and systems-of-systems engineering.

i. SEA 07 - The Deputy Commander for Undersea Warfare (SEA 07) is the Command's technical authority for submarine-specific systems, as well as life cycle support of in-service submarines.

4. **NAVSEA Technical Authority Board Membership:**

Chairman:
SEA 05

Other Deputy Warranting Officers:
SEA 00E
SEA 00V
SEA 017
SEA 03
SEA 04
SEA 06
SEA 07

Other Principal Members:
COMNSWC
COMNUWC

Stakeholder Members:
CFFC/CLF N43
CPF N43
RDA CHENG
PEO CARRIERS
PEO IWS
PEO LMW
PEO SHIP
PEO SUBS
SEA 08E

NAVSUP TECHNICAL DOMAINS

Ref: (a) SECNAVINST 5400.15B, Department of the Navy Research Development, and Acquisition, and Associated Life Cycle Management Responsibilities, of 23 December 2005
(b) NAVSUPINST 5400.4M, Naval Supply Systems Command Organizational Manual, of 15 Feb 2000
(c) 2006 NAVSUP Strategic Plan

1. **NAVSUP Scope**: In accordance with references (a), (b) and (c), COMNAVSUP is the Navy's technical authority for logistics support, including:

a. Overseeing core processes required to support the acquisition, in service support and disposal of platforms and air systems,

b. Operating and sustaining the most efficient infrastructure needed to acquire, field, and support weapon systems and commodities,

c. Establishing standard policies, technical specifications, and processes,

d. Rapidly and consistently incorporating advanced technology and lessons learned, and

e. Providing credentialed supply personnel to support integrated program management teams.

2. **Exclusions**:

a. Naval nuclear propulsion plant repair parts and spares under the cognizance of NAVSEA 08 and NAVICP 87. Technical authority and responsibilities for logistics support of systems, equipment and facilities directly involved in support of Navy nuclear propulsion plants remain vested in NAVSEA 08, and nothing in this instruction supersedes or changes those authorities.

b. Strategic Weapons System repair parts and spares under the cognizance of Strategic Systems Program (SSP) and NAVICP 83.

3. **Deputy Warranting Officer Technical Domains**:

a. NAVSUP 04 - The Deputy Commander for Fleet Logistics Operations is Navy's technical authority for supply business processes and functional design requirements of ship spaces to support them.

b. NAVSUP CIO - The Command Information Officer (CIO) is Navy's technical authority for Supply Information Technology (IT) applications.

c. NAVSUP OP/03 - The Director of Supply Corps Personnel and the Deputy Commander for Corporate Operations are Navy's technical authority for Supply workforce community management.

d. Navy AIT - The Automatic Identification Technology (AIT) Director is Navy's technical authority for AIT applications.

e. NEXCOM - The Commander, Navy Exchange Service Command is Navy's technical authority for ship's services (retail services, laundry and barber) operations and functional design requirements of ship spaces for them.

f. NAVSUP 05 - The Director for Navy Family Support is Navy's technical authority for food service, postal and disbursing operations, and functional design requirements of ship spaces for them.

g. NAVICP 00 - The Commander, Naval Inventory Control Point is Navy's technical authority for Packaging, Handling, Storage and Transportation (PHS&T).

4. **NAVSUP Technical Authority Board Membership**:

Chairman:
NAVSUP Executive Director (SUP ED)

Deputy Warranting Officers:
NAVSUP 04
NAVSUP CIO
NAVSUP OP
NAVSUP 03
NAVY AIT
NAVSUP 05

NEXCOM
NAVICP

Stakeholder Members:
DASN(L)
OPNAV N41
CFFC/CLF N41
CPF N41
PEO CARRIERS/SHIPS/SUBMARINES
SEA 04
AIR-6.0
Navy Safety Center

NAVFAC TECHNICAL DOMAINS

Ref: (a) OPNAVINST 5450.218, Mission, Functions and Tasks of Commander, Naval Facilities Engineering Command Headquarters, of 05 Sep 1986
(b) SECNAVINST 11260.2A, Navy Weight Handling Program for Shore Activities, of 28 Sep 2005
(c) NAVFAC Products and Services and Communities Managed
(d) NAVFACINST 3540.1A, Policy for Professional Licensing of Engineers and Architects, of 13 Aug 2004
(e) NAVFAC Concept of Operations, Jul 2006
(f) NAVFAC Strategic Plan 2005-2011

1. **NAVFAC Scope**: SECNAV and OPNAV policy clearly delegates Technical Authority to each of the Naval Systems Commanders within their technical domains. In accordance with references (a) through (f), the Commander, Naval Facilities Engineering Command (NAVFAC) is the Technical Authority for all matters relating to facilities engineering policies and practices. Specifically, NAVFAC manages and executes the planning, design, construction, and public works support for naval facilities on a worldwide basis. NAVFAC Technical Authority includes:

a. Oversight of core processes required to support the acquisition, in-service support and disposal of ashore infrastructure,

b. Operation and sustainment of the most efficient infrastructure needed to support the Navy ashore mission,

c. Establishing standard policies, technical specifications, and processes,

d. Define, shape and train a highly skilled global workforce.

2. **Deputy Warranting Officer Technical Domains**:

a. The Assistant Commander for Capital Improvements/Chief Engineer (CI) is the Command's technical authority in accomplishing the design, construction and acquisition of Navy shore facilities, family/bachelor housing, and fixed ocean and seafloor systems.

b. The Assistant Commander for Environmental Programs (EV) is the Command's technical authority for the delivery of environmental products and services to meet compliance, cleanup, environmental planning, natural resource, and cultural resource program needs.

c. The Assistant Commander for Base Development (BD) is the Command's technical authority for land and facilities planning for the ashore infrastructure to support naval operating forces.

d. The Assistant Commander for Public Works (PW) is the Command's technical authority for public works support of Navy installations including Facility Support Contracts (FSC), Strategic Sourcing support, Facilities Management, reduction of energy consumption and cost for Navy, commercial utilities acquisition, utilities engineering and transportation management.

e. Consistent with reference (b), the Director of the Navy Crane Center (NCC) is the Command's technical authority for all matters pertaining to the Navy's weight handling program at Navy shore activities.

3. **NAVFAC Technical Authority Board Membership**:

Chairman:
Assistant Commander for Capital Improvements/Chief Engineer

Other Deputy Warranting Officers:
Assistant Commander for Environmental Programs
Assistant Commander for Base Development
Assistant Commander for Public Works
Director, Navy Crane Center (NCC)

Stakeholder Members
ASN (I&E)
Commander, Navy Installations Command (CNIC)
CMC (I&L)

SPAWAR TECHNICAL DOMAINS

Ref: (a) SECNAVINST 5400.15B, Department of the Navy Research, Development, and Acquisition, and Associated Life Cycle Management Responsibilities, of 23 Dec 2005.
(b) Memorandum of Agreement between Commander, Space and Naval Warfare Systems Command and Program Executive Officer, Command, Control, Communications, Computers, and Intelligence and Space of 22 Sep 2003
(c) ASN (RDA) Memorandum, Summary of FORCEnet EXCOMM of January 22, 2004
(d) ASSTSECNAV RDA 112123Z OCT 02 Realignment of the Office of the Assistant Secretary of the Navy for Research, Development and Acquisition, SYSCOMs, and the Program Executive Offices (PEO)

1. **SPAWAR Scope**: In accordance with references (a) through (c), COMSPAWARSYSCOM is the Technical Authority for Command and Control Systems, Communications Systems, Intelligence Systems, Space Systems, Force level Warfare Systems Architectures, and FORCEnet. In reference (d), the Assistant Secretary of the Navy for Research, Development, and Acquisition assigned COMSPAWARSYSCOM additional duty as the C4I Chief Engineer to all the other SYSCOMs, having oversight over any C4I engineering related activity. This oversight includes technical authority for FORCEnet.

2. **Exclusions**: Navy-managed systems under the purview of the National Security Space Acquisition Polity (SAF/USA Policy Number 03-01, October 6, 2003) are excluded from the provisions of this instruction.

3. **Technical Authority Support Network MOAs**: SPAWAR and each SPAWAR-affiliated PEO will sign specific memoranda of agreement (MOAs) on how TWH support networks will be funded.

4. **Deputy Warranting Officer Technical Domains**:

a. The SPAWAR Chief Engineer (SPAWAR 05) is the Navy's technical authority for FORCEnet and the Command's technical authority for Human Systems Integration.

b. The SPAWAR Technical Director for Command and Control is the technical authority for the Command's technical enterprise areas of command and control and combat support applications.

c. The SPAWAR Technical Director for Communications is the technical authority for the Command's technical enterprise areas of communications and networking, both afloat and ashore.

d. The SPAWAR Technical Director for Intelligence, Surveillance, and Reconnaissance / Information Operations (ISR/IO) is the technical authority for the Command's technical enterprise areas of network sensors and intelligence, surveillance, and reconnaissance and information operations applications.

e. The SPAWAR Technical Director for Business Information Technology is the Command's technical authority for business information technology and applications.

5. **SPAWAR Technical Authority Board Membership**:

Chairman:
SPAWAR Chief Engineer (SPAWAR 05)

Other Deputy Warranting Officers:
SPAWAR Deputy Chief Engineer (SPAWAR 05A)
SPAWAR TD for Command and Control
SPAWAR TD for Communications
SPAWAR TD for Intelligence, Surveillance, and Reconnaissance / Information Operations
SPAWAR TD for Business Information Technology

Other Principal Members:
SPAWAR 04
SPAWAR 08
Executive Director SSC San Diego
Executive Director SSC Charleston
Executive Director SSC Norfolk
Executive Director SSC New Orleans

Stakeholder Members:
RDA CHENG/DEPUTY CHENG
COMNAVNETWARCOM
PEO C4I and Space
PEO SPACE
PEO IT
DRPM NMCI