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MEMORANDUM FOR DISTRIBUTION

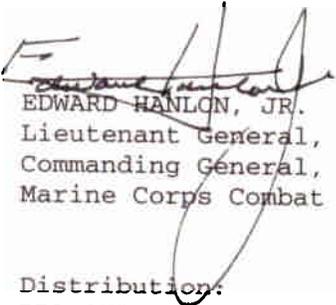
Subj: PROMULGATION OF FORCENET CAMPAIGN PLAN

Encl: (1) FORCENet Campaign Plan

1. Enclosure (1) was prepared to formalize the processes that have evolved with respect to FORCENet roles and responsibilities. Furthermore, the FORCENet Campaign plan defines the architectures and performance standards necessary for FORCENet implementation.

2. Organizations identified in enclosure (1) as having lead responsibilities are tasked with developing and publishing their own execution plan within 30 days from the date of this memorandum.

3. The point of contact for this Campaign Plan is Captain Young Kim, N61FP, office: (COM) (703) 601-1450, fax: (703) 601-1332/(DSN) 329-XXXX, email: young.kim1@navy.mil.


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FORCEnet Campaign Plan 2003



Transforming Information Into Combat Power

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1.0 Introduction

FORCENet is a key contributor to Naval transformation and the means to make Network Centric Warfare (NCW) an operational reality in the Department of the Navy. It is the architectural framework for Naval Warfare that aligns and integrates warriors, networks, sensors, command & control, platforms, and weapons into a globally networked, distributed combat force, scalable across the spectrum of conflict from seabed to space and from sea to land. Implementation of FORCENet requires a comprehensive approach that transforms doctrine, organization, technology, material, leadership, personnel, facilities (DOTMLPF) and other elements of warfighting capability.

1.1 Background

FORCENet responds to strategic guidance from National, Defense, and Naval leadership on NCW and Joint transformation as follows:

NATIONAL SECURITY STRATEGY OF THE UNITED STATES OF AMERICA: Establishes the need for DOD transformation to develop advanced remote sensing, long-range precision strike capabilities; transform maneuver and expeditionary forces; innovate based on experimentation; strengthen joint operations; fully utilize U.S. intelligence capabilities; and take full advantage of science and technology.

QUADRENNIAL DEFENSE REVIEW: Establishes the need for a fully netted force with the agility and lethality to counter and dominate future threats.

JOINT VISION 2020: Establishes the need to effect the transformation of Joint military capabilities, using experimentation and simulation to shape future operations.

NAVAL TRANSFORMATION ROADMAP: In June 2002, the Secretary of the Navy (SECNAV), Chief of Naval Operations (CNO) and Commandant of the Marine Corps (CMC) submitted the *Naval Transformation Roadmap* (NTR) to the Office of the Secretary of Defense in response to above strategic guidance. The NTR identified FORCENet as an enabler for the Operational Concepts of Sea Strike, Sea Shield, Sea Basing, and Expeditionary Maneuver Warfare (EMW) and of the supporting initiatives of Sea Trial, Sea Warrior and Sea Enterprise. These capstone concepts for Naval transformation have been further refined in *Naval Power 21* and the *Naval Operating Concept for Joint Operations*.

Sea Strike	Projecting precise and persistent offensive power
Sea Shield	Projecting global defensive assurance
Sea Basing	Accelerating sustainable joint operational independence
Sea Trial	Accelerating enhanced capabilities to the fleet through innovation and experimentation
Sea Warrior	Maximizing human capital
Sea Enterprise	Maximizing business efficiencies
EMW	Capstone Concept for Marine Corps Operations

1.2 FORCENet Success Factors

Achievement of the Sea Power 21 vision and associated Naval transformation depends on the successful development and implementation of FORCENet. FORCENet is an ongoing process. It incorporates spiral development, continued capability enhancement and the integration of technology to enhance warfighting. As such, FORCENet does not have defined end state. The governance process maintains an operational focus and ensures that FORCENet delivers value-added capability to the operating forces over time. FORCENet requires a continually developed and assessed set of performance metrics that are used to guide and ensure forward progress. These performance metrics

are directly related to the following success factors that guide FORCEnet decisions. FORCEnet capabilities will:

- Be developed and delivered to function in a Joint/Allied/Coalition/Interagency environment - associated architectures, systems and doctrine must focus on interoperability.
- Ensure precepts are based on approved Naval strategy and shape current programs, processes, and the near and long term evolution of warfighting doctrine, technical architectures and systems.
- Ensure the seamless and secure function of the information infrastructure, systems, applications, and data.
- Deliver timely, accurate, and operationally relevant information to the warfighter enabling enhanced situational understanding and accelerated decision-making.
- Give priority to the Human System Integration (HSI) practices that maximize warfighter capabilities.

1.3 Purpose

This Campaign Plan articulates the actions, milestones and organizational responsibilities necessary to implement FORCEnet. The plan will:

- Support resource allocation decisions and validation of requirements through analytical and assessment methodologies supported by a quantitative and qualitative metrics framework.
- Maximize combat effectiveness through coordinated architecture, standards, systems engineering, and human centered design.
- Ensure alignment to transformational efforts of JFCOM, in synchronization with the individual services, allied and coalition forces, and other government agencies.

1.4 Major Elements of the Campaign Plan

This document defines the elements of a campaign plan and FORCEnet certification process. The latter process will ensure capabilities are aligned with FORCEnet success factors, establish a basis for assessment of warfighting utility, and ensure current and future systems are FORCEnet compliant. The major elements of this Campaign Plan are:

REQUIREMENTS GENERATION AND INTEGRATION: This is a capabilities-based approach, involving:

- Capture of the warfighter's (operator's) needs across all mission and functional areas where FORCEnet capabilities are key enablers.
- Operator (Fleet) validation and prioritization of the requirements.
- Service Headquarters validation of the requirements as part of the Department of the Navy's investment strategy.

ARCHITECTURE AND STANDARDS: The FORCEnet Integrated Architecture and Standards articulates the relationships between operational, functional and physical elements to build future operational capabilities in a Joint, Allied, Coalition, and interagency environment. The Integrated Architecture and Standards provides a coherent basis for future assessments and implementation of FORCEnet integration strategies.

FORCENET INNOVATION: FORCEnet will employ a process of Innovation framed by an Innovation Continuum including war gaming, modeling & simulation, lab and field Limited Objective Experiments (LOEs), technology pilots, advanced concept demonstrations, deployable prototypes, Fleet Battle Experiments, and Advanced Warfighting Experiments with underlying technical, requirements, and operational analysis. Technologies are inserted into FORCEnet solutions through the explorative advanced technology efforts and experimentation, including collaboration with other Service laboratories, industry and academia. Sea Trial provides the means to address both material and non-material solutions by developing and vetting warfighting concepts and capabilities through a Fleet-led continuum of experimentation.

HUMAN SYSTEMS INTEGRATION: HSI focuses on human cognitive and collaborative requirements to provide the warfighter with enhanced situational awareness through integration of sensors, command and control processes, organizations, platforms, and weapons systems.

PLANNING FOR DELIVERY OF CAPABILITY: Assessments help define the blocks of capability that will be incrementally implemented to achieve FORCEnet capabilities and serve as the basis for Navy and Marine Corps alignment of available resources. The FORCEnet Matrix will be used to identify the platforms on which systems are to be deployed, associated resources, and key implementation and integration milestones.

COMPLIANCE AND CERTIFICATION: These processes, executed at multiple levels in the Department of the Navy and at multiple phases of the requirements, investment planning, and acquisition processes, are intended to ensure compliance with the FORCEnet Integrated Architecture and Standards.

FORCENET GOVERNANCE: These actions will apply organizational analysis to create an organizational relationship model that includes stakeholder activities, relationships, and products.

2.0 Roles and Responsibilities

The Navy staffs have substantially re-aligned to put in place the focused organizational structure needed to implement FORCENet. The Department of the Navy is also improving processes for inter-service integration with the Marine Corps as well as other Services and Agencies. Table 2-1 identifies the roles and responsibilities assigned to key organizations charged with FORCENet implementation.

Table 2-1. FORCENet Roles and Responsibilities		
Role	Assigned To	Responsibilities
Acquisition Governance and Oversight	ASN (RD&A)	<ul style="list-style-type: none"> Ensures compliance with FORCENet Integrated Architecture and Standards
FORCENet Resource Sponsor	OPNAV N61	<ul style="list-style-type: none"> Validates (Resources) Navy FORCENet requirements through coordination with all affected Resource Sponsors Advocate of FORCENet in Naval, Joint, allied, coalition, and interagency environments Resource Sponsor for FORCENet TYCOM activities
FORCENet Warfare Sponsor (Co-Chair)	OPNAV N704 (N61, N2, EFDC)	<ul style="list-style-type: none"> FORCENet advocate for prioritization of requirements Assists with development of investment strategy Coordinates with other warfare sponsors
USMC FORCENet Lead	CG, Marine Corps Combat Development Command (MCCDC)	<ul style="list-style-type: none"> Leads U.S. Marine Corps (USMC) command and control integration (C2I) Leads Marine Corps FORCENet requirements process Produces Architecture Operational Views (OV)
FORCENet TYCOM Operational Agent for FORCENet	Naval Network Warfare Command (NETWARCOM)	<ul style="list-style-type: none"> Operational Lead of Naval efforts to achieve FORCENet capabilities Coordinates FORCENet Fleet implementation and related FORCENet Innovation Continuum activities to include Sea Trial Generates the Integrated Priority List (IPL) and Capability Catalogue of Fleet operational requirements Liaises with Marine Corps Concepts Development and Experimentation Joint Operations Center (JOC) Facilitates coordinated development of FORCENet concepts and implementation strategies Ensures alignment with Joint and Naval strategies, concepts, and review bodies
USMC FORCENet Supporting	C4 (HQMC)	<ul style="list-style-type: none"> Responsible for establishing policy and guidance for enterprise IT architecture Proponent for Blue-in-Support-of-Green C4 systems Proponent for MAGTF networks
Sea Trial Lead	Commander, Fleet Forces Command (CFFC)	<ul style="list-style-type: none"> Leads development of Fleet operational requirements through concept-based experimentation
Sea Trial Project Coordinator	Navy Warfare Development Command (NWDC) (for CFFC)	<ul style="list-style-type: none"> Matches Sea Trial experimentation to Fleet priorities to develop FORCENet capabilities Promulgates FORCENet operational concepts and Tactics/Techniques/Procedures (TTP) Works with MCCDC, MCWL and EFDC to ensure an integrated Naval approach.
Operational Agent for Sea Basing and Sea Strike	Commander, Second Fleet (C2F)	<ul style="list-style-type: none"> Operational lead and validator for Sea Basing and Sea Strike capabilities
Operational Agent for Sea Shield	Commander, Third Fleet (C3F)	<ul style="list-style-type: none"> Operational lead and validator for Sea Shield capabilities

Table 2-1. FORCEnet Roles and Responsibilities		
Role	Assigned To	Responsibilities
FORCEnet S&T Lead	Office of Naval Research (ONR)	<ul style="list-style-type: none"> • Prepares S&T Roadmap based on gap analysis from the review of Naval Capabilities and Sea Trial results and anticipated future needs. • Coordinates with other Services and agencies.
Marine Corps Experimentation	Commanding General, Marine Corps Warfighting Laboratory (CG, MCWL)	<ul style="list-style-type: none"> • Integrates Marine Corps S&T and experimentation • Serves as Vice Chief of Naval Research • Works with NWDC to ensure an integrated approach to concept development and experimentation
Lead SYSCOM for FORCEnet	Space and Naval Warfare Systems Command (SPAWARSYSCOM)	<ul style="list-style-type: none"> • Assesses overlaps, interoperability, technical and schedule risks and costs • Develops FORCEnet Integrated Architectures and Standards • Integrates the FORCEnet efforts of the SYSCOMs. • FORCEnet Chief Engineer • FORCEnet Head Assessor
Lead SYSCOM for USMC	CG, Marine Corps Systems Command (CG, MCSC)	<ul style="list-style-type: none"> • Coordinates development of the Operational View (OV) of USMC C2 architecture developed by Expeditionary Force Development Center • Develops associated systems and technical Views (SV and TV) • Coordinates with SPAWAR on development of standards
Lead SYSCOM for Sea Strike	Naval Air Systems Command (NAVAIRSYSCOM)	<ul style="list-style-type: none"> • Coordinates with CFFC and OPNAV N77/N78 to define Architecture and Standards for Sea Strike
Lead SYSCOM for Sea Shield and Sea Base	Naval Sea Systems Command (NAVSEASYSCOM)	<ul style="list-style-type: none"> • Coordinates with CFFC and OPNAV N76/N77 to define Architecture and Standards for Sea Shield • Coordinates with CFFC and OPNAV N75 to define Architecture and Standards for Sea Base

3.0 Plan of Action

This section prescribes the processes, actions, and organizations responsible for executing the FORCEnet elements of the Naval transformational strategy.

3.1 Requirements Generation and Integration

The following will establish and document an initial Naval requirements baseline, complete the formal derivation of warfighting requirements based on CNO and CMC direction, and establish the process and tools needed to manage a Naval capabilities-based FORCEnet requirements process.

3.1.1 FORCEnet Warfighter Capabilities

NETWARCOM (lead): Establish a single Naval ***FORCEnet Warfighter Capabilities Hierarchy*** to ensure unity of effort and to provide direction and a strategic framework that will support Navy and Marine Corps transition to a capabilities-based requirements, planning, programming, and acquisition process. This action will:

- Reconcile the independently developed hierarchies currently used by various organizations.
- Align the resulting capabilities hierarchy with approved Naval strategies, including the Naval Operating Concept, the Naval Transformation Roadmap, and the USMC EMW Capabilities List (ECL).
- Align with evolving JFCOM Joint Integration and Interoperability (JI&I) Battle Management Command and Control (BMC2) efforts.

MILESTONES:

- 30 May 2003NETWARCOM submit ***FORCEnet Warfighter Capabilities Hierarchy*** for stakeholder review.
- 30 Jul 2003.....***FORCEnet Warfighter Capabilities Hierarchy*** signed by OPNAV N6/N7.

3.1.2 FORCEnet Baseline Initial Capabilities Document

NETWARCOM on behalf of CFFC (lead): Develop a ***Baseline Initial Capabilities Document (BICD)*** defining near-term Fleet priorities to guide the budget process, the FORCEnet Matrix, FORCEnet Innovation Continuum, and analysis activities through FY04 while the FORCEnet Integrated Architecture and Standards is developed. The BICD will focus on generating measurable improvements in capability within 18 to 24 months in response to warfighter needs. The Marine Corps employs a similar capabilities based process that will be synchronized with the Navy to identify gaps and overlaps.

MILESTONES:

- 30 May 2003NETWARCOM submit ***Baseline Initial Capabilities Document*** for stakeholder review
- 30 Jun 2003.....***Baseline Initial Capabilities Document*** signed by CFFC

3.1.3 Fleet FORCENet Requirements Catalog

CFFC (NETWARCOM) and MCCDC (co-leads): Define an authoritative Naval requirements management process that is aligned with warfighter needs and expectations. Develop a repository to document known FORCENet-related warfighter needs from all relevant capability areas and battlespace effects. Additionally, establish a web-based Requirements Catalog to serve as the common reference database for Naval warfighter requirements related to FORCENet. This catalog will leverage the USMC Expeditionary Force Development System and JFCOM BMC2.

MILESTONES:

- 30 Jun 2003.....NETWARCOM and MCCDC (EFDC) submit *Fleet FORCENet Requirements Process Description* for stakeholder review
- 31 Jul 2003.....*Fleet FORCENet Requirements Process Description* signed by CFCC and MCCDC
- 31 Aug 2003NETWARCOM publish *Fleet FORCENet Requirements Catalog*

3.2 Architecture and Standards Definition

A family of architecture products is essential to the Naval planning and programming process to facilitate near-term and long-term evolutionary development and implementation of FORCENet. These products will necessarily evolve in parallel with exploration of transformational concepts, concepts of operation (CONOPS), and Tactics, Techniques, and Procedures (TTP) through the Sea Trial Process.

3.2.1 FORCENet Architecture Vision

SPAWAR (lead): As FORCENet CHENG, SPAWAR will ensure architecting efforts are aligned to planned Joint initiatives and products, such as Transformational Communications (TC), Joint Tactical Radio System (JTRS), Open Architecture Computing Environment (OACE) Guidance Document, Global Information Grid (GIG) Enterprise Services (GES) and Network Centric Enterprise Services (NCES). In conjunction with these documents, SPAWAR will develop the *FORCENet Architecture Vision* at a level of detail that demonstrates value to the warfighter.

MILESTONES:

- 1 May 2003SPAWAR submit *FORCENet Architecture Vision* for stakeholder review
- 31 May 2003*FORCENet Architecture Vision* signed by OPNAV N61

3.2.2 FORCENet Integrated Architecture and Standards

SPAWAR (lead): Develop a *FORCENet Integrated Architecture and Standards* document in close coordination with NETWARCOM, MCCDC, and the other systems commands. The *FORCENet Integrated Architecture and Standards* includes the information necessary to integrate Joint, Navy and Marine Corps requirements and articulates operational, functional and ultimately physical requirements and how they interrelate and evolve over time. The *FORCENet Integrated Architecture and Standards*:

- Defines the specific architectural elements that enable FORCENet capability as well as the capabilities of Sea Shield, Sea Base, and Sea Strike for construction of an implementation roadmap

- Defines the specific architectural structure that will enable development of the FORCENet core product line including a classified appendix to cover classified programs
- Provides the background for programmatic decision support for the budget process
- Specifies the technical requirements to be satisfied by existing and planned programs to ensure these systems conform to the *FORCENet Architecture Vision*
- Identifies the operational concepts and technologies to be validated in the Sea Trial process

MILESTONES:

- 30 Jun 2003.....SPAWAR submit the delivery schedule of architecture views and All View 1 (AV 1) to stakeholders
- 30 Nov 2003*FORCENet Integrated Architecture and Standards* signed by ASN RDA, OPNAV N6/N7, and MCCDC

3.2.3 FORCENet Master (Materiel) Plan

SPAWAR (lead): Based on engineering analyses, the *FORCENet Master (Materiel) Plan* will provide detailed design and implementation guidance; assessment of alternatives, design studies, and Programs of Record (PORs); and detailed reviews of functional and performance requirements. The *FORCENet Master (Materiel) Plan* will be derived from the *FORCENet Architecture Vision* and the *FORCENet Integrated Architecture and Standards*. It will also be amended to reflect new concepts and lessons learned from the experimental initiatives of Sea Trial.

MILESTONES:

- 1 Apr 2003SPAWAR submit final “book plan” that establishes document scope, structure, and outline for *FORCENet Master (Materiel) Plan* to stakeholders for review
- 1 Feb 2004SPAWAR submit *FORCENet Master (Materiel) Plan* for stakeholder review
- 1 Apr 2004*FORCENet Master (Materiel) Plan* signed by OPNAV N61
- AnnuallySPAWAR update the *FORCENet Master (Materiel) Plan*

3.3 FORCENet Innovation

FORCENet innovation is composed of two key focus areas. The first is the FORCENet Innovation Continuum, which integrates Program of Record capability, accelerates the transition of near term Science and Technology (S&T) capability and employs new Doctrine, Tactics, Techniques, and Procedures. This focus area includes the *FORCENet Innovation Continuum and Concept Development & Experimentation (CD&E) Plan*. The second focus area is Science and Technology (S&T) and includes the *FORCENet S&T Roadmap* that is composed of Future Naval Capability (FNC) products and the longer term Discovery and Invention (D&I) projects.

3.3.1 FORCENet Innovation Continuum

NETWARCOM (lead): Will develop FORCENet Innovation Continuum in close collaboration with NWDC, MCCDC, ONR, SPAWAR, NWC and other Navy and Marine Corps stakeholders. The FORCENet initiative will rely upon an operationally relevant Innovation Continuum that brings together various aspects of war gaming, modeling and simulation, lab and field experimentation, Fleet Battle

Experiments, Advanced Warfighting Experiments, advanced technology demonstrations, sustainable prototype development, and accelerated Program of Record (POR) enhancements.¹ The FORCEnet Innovation Continuum brings together these parallel efforts with a focus on providing operationally relevant FORCEnet capability to the Fleet and Fleet Marine Force. The outcome of the FORCEnet Innovation Continuum is to influence joint and maritime Concepts of Operations (CONOPS), Tactics, Techniques and Procedures (TTP), analysis of promising technologies in the FORCEnet context, operational assessment of the benefit of FORCEnet capabilities, and assessment recommendations to influence planning, programming, and budgetary decisions.

The *FORCEnet Innovation Continuum and Concept Development & Experimentation (CD&E) Plan* will:

- Establish and maintain a database that will provide initiative-based tracking, allow projects of various complexity and maturity to be entered and related to the concept area taxonomies at the enabling capability level, and support evaluation of initiatives throughout the implementation process
- Coordinate with the other Services and Joint Forces Command to ensure alignment with Joint experimentation opportunities and explore cross-service warfighting concepts, integration and interoperability
- Provide the initial fleet experimentation and prototyping priorities and plans for FORCEnet complementary to ongoing Sea Trial efforts. This plan integrates and synchronizes science and technology products, modeling and simulation, study, analysis, experimentation and prototyping plans

MILESTONES :

30 May 2003NETWARCOM deliver *FY04/FY05 FORCEnet Innovation Continuum and CD&E Plan* to Sea Trial Executive Steering Group (ESG) for approval

30 Sep 2003....Execute the FORCEnet Expeditionary Strike Group (ESG)-focused Limited Objective Experiment (LOE) / Integrated Prototype Demonstration (IPD) 03

3.3.2 FORCEnet Science and Technology

NETWARCOM (lead) in coordination with OPNAV N61, NWDC, Office of Naval Research (ONR), and Marine Corps Warfighting Lab (MCWL); S&T is resourced by OPNAV N091, managed by ASN (RD&A), and executed by ONR. FORCEnet S&T is supported by ONR, TENCAP, SYSCOMs, and Service laboratories, as well as the Defense Advanced Research Projects Agency (DARPA), other national organizations/agencies, and industry. OPNAV N61/N706 participates directly in the ONR Future Naval Capability efforts, and indirectly in the Discovery & Invention process to assist ONR in crafting an S&T investment strategy responsive to Fleet desired capabilities. FORCEnet S&T is pursuing near-through-long-term research and development in areas such as: 1) non-COTS networking technology that provide mission responsive, dispersed-force sharing of information; 2) command and control concepts that provide for rapid, accurate knowledge and courses of action for force/battle management; 3)

¹ The term "Innovation Continuum" is used here since the process goes beyond experimentation and demonstrations. War gaming, modeling & simulation, lab and field experiments, advanced technology demonstrations, sustainable prototype development, and POR enhancements are considered sub-components of the Innovation Continuum.

human factors and command structure concepts that enable the warfighter to make decisive, accurate decisions; and 4) sensors that provide continual and pervasive situational awareness.

FORCEnet S&T is coordinated closely with operational, requirements, experimentation, and acquisition communities to ensure technology projects meet critical warfighter needs, have superior transition potential, and are co-evolved with doctrine, organization, training, materiel, leadership, personnel, and facilities (DOTMLPF). FORCEnet S&T will:

- Develop a FORCEnet RDT&E database that provides the capability to analyze relationships among science and technology (S&T) programs, technology shortfalls or challenges, warfighter needs statements, and FORCEnet capability requirements
- ***FORCEnet S&T Roadmap*** will be derived from the RDT&E database that includes schedules, milestones and transition programs for those science and technology enablers in the FORCEnet domain. This roadmap is also intended to provide FORCEnet S&T near-term transition and long-term alignment recommendations and priorities to CNO N70. The Fleet through the Sea Trial Executive Steering Group (STESG) will validate it.

MILESTONES :

31 Jul 2003.....NETWARCOM submit FORCEnet ***S&T Roadmap*** for stakeholder review

31 Aug 2003***FORCEnet S&T Roadmap*** delivered to OPNAV N091 for signature

3.4 Human Systems Integration (HSI)

NETWARCOM (lead) in coordination with OPNAV N61, NWDC, SYSCOMs, ONR, Naval Research Lab (NRL), OPNAV N125, OPNAV N00T, OPNAV N2, and other appropriate agencies: The warfighter is the key to successful implementation of FORCEnet capabilities. The primary focus area for FORCEnet HSI is properly defining the domains of knowledge and how they will be dynamically allocated across technological and human systems. At issue is the degree to which the fully networked force will create tasks that have not been anticipated or which will emerge as a result of the networked systems. Studies and experimentation should include analysis of anticipated networked systems using laboratory, operational, and other environments. The HSI working group will be chartered to collaborate, establish modes of interaction and define roles and responsibilities for Naval HSI stakeholders.

FORCEnet HSI Working Group will:

- Identify near, mid- and long-term HSI requirements, priorities and products
- Coordinate inclusion of HSI standards into the ***FORCEnet Integrated Architecture and Standards***
- Define metrics-based analysis and assessment methodologies to document, trace and assess adequacy of FORCEnet HSI capabilities
- Coordinate with ONR and DARPA to fund HSI issues directly related to improving human performance in FORCEnet
- Advocate HSI in processes related to acquisition, planning, resourcing and delivery of FORCEnet capabilities

- Participate in the definition of other FORCENet processes defined in this document to ensure HSI is addressed throughout all FORCENet processes, particularly in early planning, definition and design

The *FORCENet HSI Assessment Plan* will identify FORCENet HSI assessment methodologies and define associated metrics.

MILESTONES:

- 30 May 2003NETWARCOM formally establish HSI working group
- 30 Jun 2003.....NETWARCOM submit *FORCENet HSI Assessment Plan* for stakeholder review
- 30 Jul 2003.....*FORCENet HSI Assessment Plan* signed by COMNAVNETWARCOM

3.5 Planning for Delivery of FORCENet Capability

The FORCENet planning and programming process is an enterprise level integration effort that looks across Joint, Naval, Allied/Coalition and other agency programs to ensure unity of effort and realization of economies of scale. Delivery of FORCENet capability will focus on implementation through a measurable process that synchronizes activities over the near, mid, and long term. This effort will further focus on identification, quantification, and elimination of redundant efforts.

3.5.1 FORCENet Capabilities Assessment

OPNAV N704 (lead): Using warfighting CONOPS, Campaign Analysis, and program assessments from SYSCOMS and other tools/resources, FORCENet capabilities to meet fleet requirements will be assessed as the basis for the N6/7 integrated capabilities investment strategy.

MILESTONES:

- 01 Oct 2003OPNAV N704 submits FORCENet Capabilities Assessment to OPNAV N70

3.5.2 FORCENet Program Assessment

SPAWAR (lead): Capability gaps and duplicated efforts in programmatic functions must be identified to ensure proper integration, synchronization, and coordination of FORCENet implementation activities. The FORCENet program assessment will:

- Determine the extent to which required FORCENet capabilities are provided including total systems impact, hardware, software, and warfighter missions and tasks
- Assess gaps and overlaps in programs that support FORCENet capabilities
- Identify potential strategies for the convergence, consolidation, alignment or integration of existing or planned programs
- Identify program-level technical, cost or schedule risks which might impact the delivery of FORCENet capabilities

The assessment will draw from defined analytical processes, objective assessment criteria, supporting metrics, and data mined from operational views and CONOPS for existing and planned systems and

architectures. The **FORCEnet Program Assessment Report** will make sequencing recommendations for implementing preferred options, with the outcome of these assessments serving as the basis for program investment decisions.

MILESTONES :

5 Jun 2003.....SPAWAR submit **FORCEnet Program Assessment Report** to OPNAV N61/N704

3.5.3 Operational Assessments

CFFC (NETWARCOM) and MCCDC (co-leads): The Operational Assessment process uses analytical methods and supporting metrics to assess the alignment of FORCEnet implementation activities to Sea Power 21 warfighting requirements. The near-term focus of the FORCEnet assessment process is on interoperability issues to ensure that the Naval Forces are networked and interoperable prior to deployment. The longer term efforts will focus on Joint alignment and interoperability/integration issues.

MILESTONES :

30 Sep 2003NETWARCOM and MCCDC (EFDC) submit **Operational Assessment Process Definition (to include MOE)** for stakeholder review

30 Oct 2003**Operational Assessment Process Definition** signed by CFFC and MCCDC

3.5.4 FORCEnet Matrix

OPNAV N61 (lead) in coordination with other OPNAV resource sponsors, HQMC (C4), SYSCOMs, PEOs, and NETWARCOM: The effective implementation of FORCEnet capability throughout the Fleet requires the alignment of multiple related processes. The **FORCEnet Matrix** as a management tool will integrate and coordinate the following:

- Requirements/capability analysis and prioritization
- Configuration management and control
- Deployment/availability schedule coordination
- Experimentation/design/testing of transitional and new systems/processes/capabilities
- Procurement and installation of legacy, prototype, transitional, and new systems/processes/capabilities
- Training coordination for legacy, transitional, and new systems/processes/capabilities
- Alignment of execution and budget year funding based on priority for the best match of limited resources and FORCEnet requirements
- Alignment of planning and programming funding to ensure future year FORCEnet capabilities can be effectively implemented

MILESTONES :

OngoingOPNAV N61 maintain **FORCEnet Matrix**

3.5.5 FORCEnet Capability Evolution Description (CED)

NETWARCOM (lead): FORCEnet capability will be delivered to the Fleet in incremental blocks whose definitions are fundamentally shaped by Fleet requirements, the *FORCEnet Integrated Architecture and Standards*, and results of concept-based experimentation and prototyping (Sea Trial). The *FORCEnet CED* will describe how FORCEnet capabilities will evolve over time, including

- Definition of the capability objectives for each block
- Recommendations for material or non-material solutions
- Linkage to specific Fleet and strategic requirements

The *FORCEnet CED* provides the capability framework for the *FORCEnet Matrix*. The *FORCEnet Master (Materiel) Plan* is the materiel component of the *FORCEnet CED*.

FORCEnet Block 0 Capability Definition, the first capability increment of the CED, will be derived from available material solutions to answer initial C2F/C3F and COMNAVNETWARCOM identified capability shortfalls.

MILESTONES:

- 30 May 2003NETWARCOM submit *FORCEnet Block 0 Capability Definition* for stakeholder review
- 30 Jun 2003.....NETWARCOM submit *FORCEnet Block 0 Definition* to OPNAV N61
- 31 Jul 2003.....NETWARCOM submit *FORCEnet CED* for stakeholder review
- 15 Aug 2003*FORCEnet CED* signed by OPNAV N61

3.6 Compliance and Certification

To achieve the desired degree of alignment and integration and to bring FORCEnet capabilities to the warfighter, a multi-tiered, multi-phased framework of governance, metrics, conditions and changes will be applied to technologies, programs, initiatives, and issues to determine and enforce FORCEnet compliance. Timelines are linked to the budget, acquisition review process, and Fleet schedules. The *FORCEnet Integrated Architecture and Standards* will provide the foundation for the compliance and certification framework, which will depend on a mixture of existing and evolving processes and organization structures, as outlined below.

3.6.1 Acquisition Certification

Assistant Secretary of the Navy for Research, Development and Acquisition (ASN (RD&A)) (lead): Review and enforce architectures, roadmaps, and standards compliance during milestone and program reviews with assistance from ASN (RDA) Office of the Chief Engineer (CHENG).

Example metrics, conditions and changes include:

- Compliance with the Global Information Grid (GIG) Capstone Requirements Document (CRD) and similar related capstone documents
- Compliance with the Naval Transformation Roadmap (NTR)
- Compliance with Joint mandates

- Compliance with government-industry software, communications, network, and interface standards
- Compliance with approved architectures and HSI guidelines
- Compliance with approved Information Assurance requirements
- Results from the Program Certification and Architecture Compliance processes

3.6.2 Program Certification

CNO N61 (lead): Review and certify programs as part of the Navy's budget and assessment process.

Example metrics, conditions, and changes include:

- Compliance with the Integrated Strategic Capability Plan (ISCP)
- Compliance with planning and programming guidance
- Compliance with Systems Command (SYSCOM) program and technical assessments
- Fleet capability priorities from CFFC and the Type Commanders
- Compliance with FORCENet requirements documents to include:
 - *FORCENet Fleet Requirements Catalog*
 - *FORCENet Matrix*
 - *FORCENet CED*
- Results from the Architecture Compliance process and Fleet Requirements Validation

3.6.3 Architecture Compliance

NETWARCOM (lead): Ensuring compliance with *FORCENet Integrated Architecture and Standards* requires the active cooperation of the organizations charged with defining requirements, managing the programs and evaluating the resultant programs.

- SPAWAR will define a *FORCENet Compliance Process and Checklist* identifying which architectural requirements will be verified during each milestone and other important program events. SPAWAR will review and assess programs and technical solutions as part of this checklist.

Example metrics, conditions, and changes include:

- Operational conditions and systems performance parameters
- Compliance with government-industry design, software, communications, network, and interface standards and constraints, as documented in the *FORCENet Integrated Architecture and Standards*
- Compliance with the DoD Architecture Framework, the DoN Information Management and Information Technology Strategic Plan, DoN Integration and Interoperability Management

Policy, the DoN Enterprise Architecture Framework and Information Technology Infrastructure Architecture, and DoN Data Management and Interoperability policies

- Compliance with approved FORCENet, Joint, and DoD Technical Architectures
- Compliance with the Global Information Grid (GIG) Architecture
- Compliance with the Transformational Communications Architecture (TCA)
- Compliance with approved changes documented in the *FORCENet Compliance Checklist*
- Alignment with the **FORCENet Matrix** and *CED*
- Feedback from Requirements Validation
- Each program prepares a *FORCENet Compliance Plan* indicating how it will address the requirements of the *FORCENet Compliance Checklist*
- Each program submits its *FORCENet Compliance Plan* to SPAWAR for review and then SPAWAR forwards to ASN (RDA) and resource sponsors for approval

MILESTONES

30 Sept 2003SPAWAR submit *FORCENet Compliance Process and Checklist* for stakeholder review

31 Oct 2003*FORCENet Compliance Process and Checklist* signed by COMNAVNETWARCOM

Annual.....The *FORCENet Compliance Process and Checklist* will be reviewed and updated in conjunction with the *FORCENet Integrated Architecture and Standards*

3.6.4 Requirements Validation

NETWARCOM (lead): Integrates and submits FORCENet requirements to CFFC, who reviews and validates Fleet FORCENet capability, innovation, and experimentation priorities and FORCENet requirements as part of the Sea Trial and the FORCENet Innovation Continuum processes. This process is documented by CFFC in the *Sea Trial Concept Development and Experimentation Campaign Plan*. Fleet validated FORCENet requirements are forwarded to OPNAV N81 for Navy and Joint validation.

MCCDC (Marine Corps Lead): Integrates Marine Corps requirements on behalf of the Marine Operating Forces using the Expeditionary Force Development System (EFDS). Within EFDS, MARFOR needs statements will be reviewed, analysis of alternatives conducted, and validated requirements that deliver FORCENet capability integrated into the *FORCENet BICD or FORCENet Requirements Catalog*. Requirements will be identified as requiring Marine Corps funding (“Green-in-Support-of-Green”) or as nominations to the Navy budget (“Blue-in-Support-of-Green”).

3.7 FORCENet Governance

These actions will apply organizational analysis to create an organizational relationship model that includes stakeholder activities, relationships, and products.

3.7.1 FORCEnet Process-Product Matrix

NETWARCOM (lead): Define the product inputs, outputs, and relationships from the above actions.

MILESTONE:

30 May 2003NETWARCOM submit *FORCEnet Process-Product Matrix* to stakeholders

3.7.2 FORCEnet Organization-Governance Matrices

NETWARCOM (lead): For each category of action in this campaign plan, an organizational-governance matrix will define the:

- Levels of Governance
- Participants at each level
- Lead organizations
- Escalation process and criteria
- Events schedule

These matrices will follow the RACI model (Responsible, Accountable, Consult, Inform)

MILESTONES :

31 Aug 2003NETWARCOM submit *Organization-Governance Matrices* for stakeholder review

31 Oct 2003*Organization-Governance Matrices* signed by COMNAVNETWARCOM

4.0 Quick Win

FORCEnet will enable existing organizational activities and leverage integrated Joint development efforts to accelerate the introduction of capabilities and processes to the warfighter. The examples below highlight possibilities for rapidly developing and deploying networked Joint forces with significant increases in situational awareness. Enhancing situational awareness (SA) through improved combat identification to minimize Blue-on-Blue engagements has been repeatedly demonstrated as a central challenge to operational Command and Control. Meeting this challenge requires timely, accurate relay of common track ID via a shared network that enables accurate and secure blue SA and should be targeted as an initial proof of concept for FORCEnet. To accomplish this with Joint, Allied, Coalition and other agencies, FORCEnet is contributing to fielding of the Blue Force tracking capability that will be demonstrated in the real world counter-terrorism operations in PACOM AOR in September 2003. Also the Common Network Interface (CNI) Program is proposed as the proof-of-concept model that will be integrated into evolving Sea Shield Programs of Record such as the Cooperative Engagement Capability (CEC). NETWARCOM will coordinate Naval and individual Services' efforts to enhance air-track combat ID via Common Network Interface (CNI).

4.1 Blue Force Tracking (BFT)

During Operation Iraqi Freedom, hundreds of U.S. commandos wore miniature BFT transmitters, built by General Dynamics under an NRO contract, which let commanders sometimes thousands of miles away track their units during combat. These are the same BFT devices TENCAP, the JTF WARNET Program Office, and SPAWAR have outfitted 31 MEU, ESSEX ARG, and VP-9 with to support real world counter-terrorism operations in PACOM AOR. The Blue Force tracking capability being fielded is a combination of connectivity, precision location information (PLI) data and software translators that enable integration of existing and emerging Blue Force Tracking systems into a Common Operational Picture (COP). JTF WARNET (VRC-99) and tactical LOS radio nets, US Army MTX hardware, and Joint Battle Force Situational Awareness ACTD, provide an initial capability while leveraging existing USMC and US Army tactical data network blue force tracking capabilities. Blue Force Tracking will ensure that the GPS-accurate positions of Marines and Army troops are known all the way down to the unit level. This critical element of situational awareness, as well as rapid access to intelligence, surveillance and reconnaissance data will now be available at the tactical Commander's level. With accurate Blue ground force PLI available to any GCCS-M and C2PC subscribers, Naval and Joint fires effects will be accelerated by eliminating the delays associated with current manual blue-on-blue avoidance procedures and by enabling more rapid, informed decision making.

4.2 Enhanced Air-track Combat ID

The preponderance of current surface ship, airborne and ground based air command and control (C2) and combat direction systems (CDS) cannot maintain accurate, continuous and consistent airborne track combat identification for high-speed, maneuvering objects of interest within the battle space. The Cooperative Engagement Capability (CEC) provides networking of sensors for disparate radar systems,

maintenance of track identification (TI) capability and significantly improved Situational Awareness for those CEC equipped platforms. At present, CEC battle forces cannot take full advantage of the improved CEC TI capability due to the limited number of installations and CDS integration requirements. The Common Network Interface (CNI) is a Rapid Technology Insertion Program (RTIP) that offers a low cost, low risk alternative to fielding additional CEC systems; into the presently minimally equipped battle forces.

4.2.1 Common Network Interface (CNI) Project Description

The CNI Project is an effort that addresses warfighting shortfalls in airborne track identification quality (TIQ) and track quality (TQ) within the Anti-Air Warfare Mission area. Functionally, CNI provides, in a prototype form, the automated means to reconcile the differences between own platform and off platform force level TQ anomalies and to correct the TIQ persistence among those Force systems holding tracks of airborne objects within the Force level battle space. The CNI functionally uses both own platform and force level CEC TI information, along with TI information provided over TADIL (Link-16) via the Command and Control Processor (C2P) function from off platform to reconcile the TI inconsistencies and anomalies.

4.2.2 CNI Integrated Prototype Demonstration (IPD)

The CNI IPD will demonstrate that the CNI Project, developed in accordance with the PEO-IWS Open Architecture guidance, can provide a common force TQ/TIQ capability in an operational environment. This will implement an OA based common track management function across FORCENet that eliminates the need for separate TTPs for handling Force TI. Appropriate process, event and timeline adjustments will be made to ensure FORCENet compliance. CNI would be subject to Warfighter requirements and capability validation and submission to the SEA TRIAL process. Successive at sea experiments per SEA TRIAL will provide a means to refine the Track Management functional and operational requirements for the material solution that could be procured under the CEC Block 2 Option.

Appendix A Milestone Summary

<u>Name</u>	<u>Responsibility</u>	<u>Finish Date</u>
Requirements Generation and Integration		
Submit <i>FORCEnet Warfighter Capabilities Hierarchy</i> for stakeholder review	NETWARCOM	5/30/2003
<i>FORCEnet Warfighter Capabilities Hierarchy</i> signed	OPNAV N6/N7	7/30/2003
Submit <i>FORCEnet Baseline Initial Capabilities Document (BICD)</i> for stakeholder review	NETWARCOM	5/30/2003
<i>FORCEnet Baseline Initial Capabilities Document</i> signed	CFFC	6/30/2003
Submit <i>Fleet FORCEnet Requirements Process Description</i> for stakeholder review	NETWARCOM & MCCDC	6/30/2003
<i>Fleet FORCEnet Requirements Process Description</i> signed	CFFC & MCCDC	7/31/2003
Publish <i>Fleet FORCEnet Requirements Catalog</i>	NETWARCOM	8/31/2003
Architecture and Standards Definition		
Submit <i>FORCEnet Architecture Vision</i> for stakeholder review	SPAWAR	5/1/2003
<i>FORCEnet Architecture Vision</i> signed	OPNAV N61	5/31/2003
Submit delivery schedule of architecture views and AV 1 to stakeholders	SPAWAR	6/30/2003
<i>FORCEnet Integrated Architecture and Standards</i> signed	ASN RDA, OPNAV N6/N7, MCCDC	30 Nov 2003
Submit <i>FORCEnet Master (Materiel) Plan</i> “book plan” for stakeholder review	SPAWAR	4/1/2003
Submit <i>FORCEnet Master (Materiel) Plan</i> for stakeholder review	SPAWAR	2/1/2004
<i>FORCEnet Master (Materiel) Plan</i> signed	OPNAV N61	4/1/2004
Update <i>FORCEnet Master (Materiel) Plan</i>	SPAWAR	Each Feb
FORCEnet Innovation		
Deliver <i>FY04/FY05 FORCEnet Innovation Continuum and Concept Development and Experimentation (CD&E) Plan</i> to ESG for approval	NETWARCOM	5/30/2003
Submit <i>FORCEnet S&T Roadmap</i> for stakeholder review	NETWARCOM	7/31/2003
<i>FORCEnet S&T Roadmap</i> signed	OPNAV N091	8/31/2003

<u>Name</u>	<u>Responsibility</u>	<u>Finish Date</u>
Human Systems Integration (HSI)		
Establish FORCENet HSI Working Group	NETWARCOM	5/30/2003
Submit <i>FORCENet HSI Assessment Plan</i> for stakeholder review	NETWARCOM	6/30/2003
<i>FORCENet HSI Assessment Plan</i> signed	NETWARCOM	7/30/2003
Planning for Delivery of FORCENet Capability		
Submit <i>FORCENet Capabilities Assessment</i> to OPNAV N70	OPNAV N704	10/1/2003
Submit <i>FORCENet Program Assessment Report</i> to OPNAV N61/N704	SPAWAR	6/5/2003
Submit <i>Operational Assessment Process Definition</i> for stakeholder review	NETWARCOM & MCCDC	9/30/2003
<i>Operational Assessment Process Definition</i> signed	CFFC & MCCDC	10/30/2003
Maintain <i>FORCENet Matrix</i>	OPNAV N61	Ongoing
Submit <i>FORCENet Block 0 Capability Definition</i> for stakeholder review	NETWARCOM	5/30/2003
Submit <i>FORCENet Block 0 Capability Definition</i> to OPNAV N61	NETWARCOM	6/30/2003
Submit <i>FORCENet CED</i> for stakeholder review	NETWARCOM	7/31/2003
<i>FORCENet CED</i> signed	OPNAV N61	8/15/2003
Compliance and Certification		
Submit <i>FORCENet Compliance Process and Checklist</i> for stakeholder review	SPAWAR	9/30/2003
<i>FORCENet Compliance Process and Checklist</i> signed	NETWARCOM	10/31/2003
Update <i>FORCENet Compliance Process and Checklist</i>	SPAWAR	Each Sep
FORCENet Governance		
Submit <i>FORCENet Process-Product Matrix</i> for stakeholder review	NETWARCOM	5/30/2003
Submit <i>Organization-Governance Matrices</i> for stakeholder review	NETWARCOM	8/31/2003
<i>Organization-Governance Matrices</i> signed	NETWARCOM	10/31/2003

Appendix B FORCENet Document Descriptions

Baseline Initial Capabilities Document – Defines near-term Fleet priorities to guide the budgeting process, the FORCENet Matrix, and Sea Trial activities through FY04 while the FORCENet Integrated Architecture and Standards is developed

FORCENet Architecture Vision – Provides the architectural vision and themes central to the transformational aspects of FORCENet

FORCENet Capability Evolution Description - Articulates FORCENet planning results describing the evolution of FORCENet capabilities and schedule of incremental deliveries to the Fleet

FORCENet HSI Assessment Plan - Identifies FORCENet HSI assessment methodologies and defines associated metrics

FORCENet Integrated Architecture & Standards – Articulates the FORCENet architecture in 2012. It will provide technical standards to ensure FORCENet compliance and will document the end-to-end FORCENet architecture development process

FORCENet Master (Materiel) Plan - Provides top level design and implementation guidance; assessment of alternatives, design studies, and Programs of Record (PORs); and detailed reviews of functional and performance requirements

FORCENet S&T Roadmap - Includes schedules, milestones and transition programs for those science and technology enablers in the FORCENet domain. The roadmap also is intended to assist in developing the FORCENet S&T investment strategy

FY04/FY05 FORCENet Innovation Continuum and Concept Development and Experimentation (CD&E) Plan - Provides a plan for fully integrating new technologies, from facilitating initial fleet insertion to full-scale production, and describes a continuum from concept development to wargames, LOEs, demonstrations, experiments and prototyping