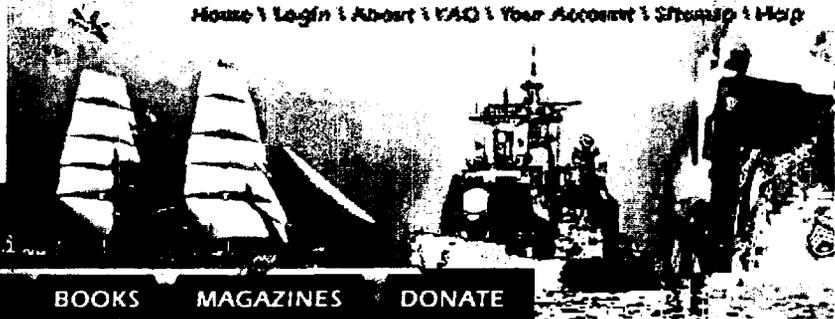




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Sea Power 21 Series—Part I

Projecting Decisive Joint Capabilities

By Admiral Vern Clark, U.S. Navy

Proceedings, October 2002

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Sea-based operations use revolutionary information superiority and dispersed, networked force capabilities to deliver unprecedented offensive power, defensive assurance, and operational independence to Joint Force Commanders.

Our Vision

- [Our Vision](#)
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The 21st century sets the stage for tremendous increases in naval precision, reach, and connectivity, ushering in a new era of joint operational effectiveness. Innovative concepts and technologies will integrate sea, land, air, space, and cyberspace to a greater extent than ever before. In this unified battlespace, the sea will provide a vast maneuver area from which to project direct and decisive power around the globe.

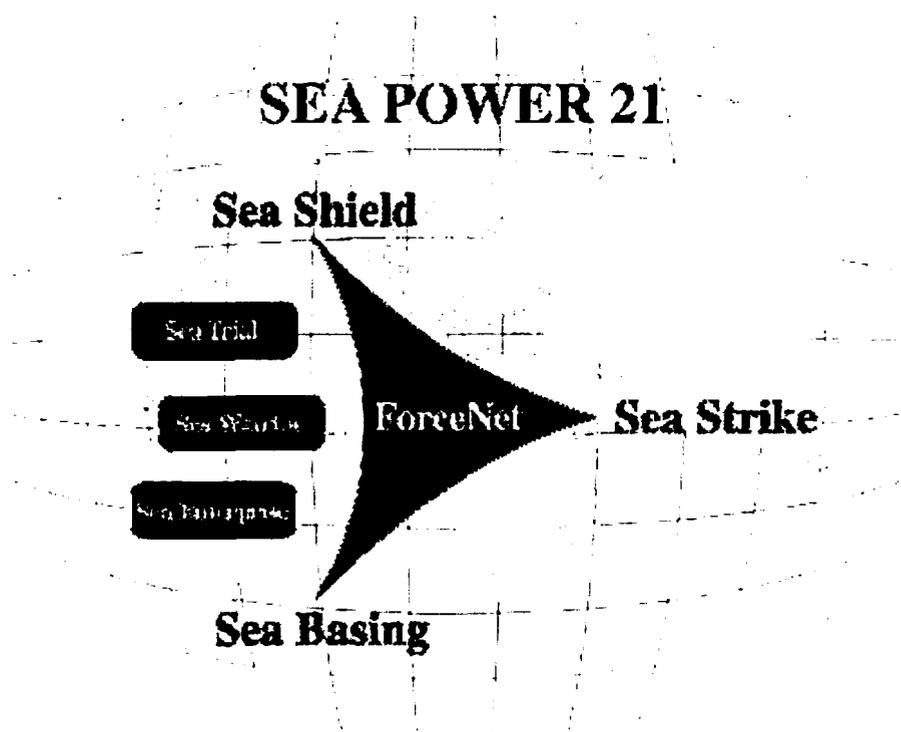
Future naval operations will use revolutionary information superiority and dispersed, networked force capabilities to deliver unprecedented offensive power, defensive assurance, and operational independence to Joint Force Commanders. Our Navy and its partners will dominate

NW DC Source CAPT DAVISON

the continuum of warfare from the maritime domain—deterring forward in peacetime, responding to crises, and fighting and winning wars.

By doing so, we will continue the evolution of U.S. naval power from the blue-water, war-at-sea focus of the "Maritime Strategy" (1986), through the littoral emphasis of ". . . From the Sea" (1992) and "Forward . . . from the Sea" (1994), to a broadened strategy in which naval forces are fully integrated into global joint operations against regional and transnational dangers.

To realize the opportunities and navigate the challenges ahead, we must have a clear vision of how our Navy will organize, integrate, and transform. "Sea Power 21" is that vision. It will align our efforts, accelerate our progress, and realize the potential of our people. "Sea Power 21" will guide our Navy as we defend our nation and defeat our enemies in the uncertain century before us.



- **Sea Strike**—Projecting Precise and Persistent Offensive Power
- **Sea Shield**—Projecting Global Defensive Assurance
- **Sea Basing**—Projecting Joint Operational Independence

Transformation for a Violent Era

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The events of 11 September 2001 tragically illustrated that the promise of peace and security in the new century is fraught with profound dangers: nations poised for conflict in key regions, widely dispersed and well-funded terrorist and criminal organizations, and failed states that deliver only despair to their people.

These dangers will produce frequent crises, often with little warning of timing, size, location, or intensity. Associated threats will be varied and deadly, including weapons of mass destruction, conventional warfare, and widespread terrorism. Future enemies will attempt to deny us access to critical areas of the world, threaten vital friends and interests overseas, and even try to conduct further attacks against the American homeland. These threats will pose increasingly complex challenges to national security and future warfighting.

Previous strategies addressed regional challenges. Today, we must think more broadly. Enhancing security in this dynamic environment requires us to expand our strategic focus to include both evolving regional challenges and transnational threats. This combination of traditional and emerging dangers means increased risk to our nation. To counter that risk, our Navy must expand its striking power, achieve information dominance, and develop transformational ways of fulfilling our enduring missions of sea control, power projection, strategic deterrence, strategic sealift, and forward presence.

Three fundamental concepts lie at the heart of the Navy's continued operational effectiveness: Sea Strike, Sea Shield, and Sea Basing. Sea Strike is the ability to project precise and persistent offensive power from the sea; Sea Shield extends defensive assurance throughout the world; and Sea Basing enhances operational independence and support for the joint force. These concepts build upon the solid foundation of the Navy-Marine Corps team, leverage U.S. asymmetric advantages, and strengthen joint combat effectiveness.

We often cite asymmetric challenges when referring to enemy threats, virtually assuming such advantages belong only to our adversaries. "Sea Power 21" is built on a foundation of American asymmetric strengths that are powerful and uniquely ours. Among others, these include the expanding power of computing, systems integration, a thriving industrial base, and the extraordinary capabilities of our people, whose innovative nature and desire to excel give us our greatest competitive advantage.

Sea Strike, Sea Shield, and Sea Basing will be enabled by ForceNet, an overarching effort to integrate warriors, sensors, networks, command and control, platforms, and weapons into a fully netted, combat force. We have been talking about network-centric warfare for a decade, and ForceNet will be the Navy's plan to make it an operational reality. Supported by ForceNet, Sea Strike, Sea Shield, and Sea Basing capabilities will be deployed by way of a Global Concept of Operations that widely distributes the firepower of the fleet, strengthens deterrence, improves crisis response, and positions us to win decisively in war.

Sea Strike: Projecting Precise and Persistent Offensive Power

[Our Vision](#)
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Projecting decisive combat power has been critical to every commander who ever went into

battle, and this will remain true in decades ahead. Sea Strike operations are how the 21st-century Navy will exert direct, decisive, and sustained influence in joint campaigns. They will involve the dynamic application of persistent intelligence, surveillance, and reconnaissance; time-sensitive strike; ship-to-objective maneuver; information operations; and covert strike to deliver devastating power and accuracy in future campaigns.

Information gathering and management are at the heart of this revolution in striking power. Networked, long-dwell naval sensors will be integrated with national and joint systems to penetrate all types of cover and weather, assembling vast amounts of information. Data provided by Navy assets—manned and unmanned—will be vital to establishing a comprehensive understanding of enemy military, economic, and political vulnerabilities. Rapid planning processes will then use this knowledge to tailor joint strike packages that deliver calibrated effects at precise times and places.

Sea Strike Impact

- Amplified, effects-based striking power
- Increased precision attack and information operations
- Enhanced warfighting contribution of Marines and Special Forces
- "24 / 7" offensive operations
- Seamless integration with joint strike packages

Sea Strike Capabilities

- Persistent intelligence, surveillance, and reconnaissance
- Time-sensitive strike
- Electronic warfare / information operations
- Ship-to-objective maneuver
- Covert strike

Future Sea Strike Technologies

- Autonomous, organic, long-dwell sensors
- Integrated national, theater, and force sensors
- Knowledge-enhancement systems
- Unmanned combat vehicles
- Hypersonic missiles
- Electro-magnetic rail guns
- Hyper-spectral imaging

Sea Strike: Action Steps

- Accelerate information dominance via ForceNet
- Develop, acquire, and integrate systems to increase combat reach, stealth, and lethality
- Distribute offensive striking capability throughout the entire force
- Deploy sea-based, long-dwell, manned and unmanned sensors
- Develop information operations as a major warfare area
- Synergize with Marine Corps transformation efforts
- Partner with the other services to accelerate Navy transformation

Knowledge dominance provided by persistent intelligence, surveillance, and reconnaissance will be converted into action by a full array of Sea Strike options—next-generation missiles capable of in-flight targeting, aircraft with stand-off precision weapons, extended-range naval gunfire,

information operations, stealthy submarines, unmanned combat vehicles, and Marines and SEALs on the ground. Sovereign naval forces will exploit their strategic flexibility, operational independence, and speed of command to conduct sustained operations 24 hours per day, 7 days per week, 365 days per year.

Information superiority and flexible strike options will result in time-sensitive targeting with far greater speed and accuracy. Military operations will become more complicated as advanced intelligence, surveillance, and reconnaissance products proliferate. Expanded situational awareness will put massed forces at risk, for both friends and adversaries. This will compress timelines and prompt greater use of dispersed, low-visibility forces. Countering such forces will demand speed, agility, and streamlined information processing tied to precision attack. Sea Strike will meet that challenge.

The importance of information operations will grow in the years ahead as high-technology weapons and systems become more widely available. Information operations will mature into a major warfare area, to include electronic warfare, psychological operations, computer network attack, computer network defense, operations security, and military deception. Information operations will play a key role in controlling crisis escalation and preparing the battlefield for subsequent attack. This U.S. asymmetry will be a critical part of Sea Strike.



When we cannot achieve operational objectives from over the horizon, our Navy-Marine Corps team moves ashore. Using advanced vertical and horizontal envelopment techniques, fully netted ground forces will maneuver throughout the battlespace, employing speed and precision to generate combat power. Supported by sea bases, we will exploit superior situational awareness and coordinated fires to create shock, confusion, and chaos in enemy ranks. Information superiority and networking will act as force multipliers, allowing agile ground units to produce the warfighting impact traditionally provided by far heavier forces, bringing expeditionary warfare to a new level of lethality and combat effectiveness.

Sea Strike capabilities will provide Joint Force Commanders with a potent mix of weapons, ranging from long-range precision strike, to covert land-attack in anti-access environments, to the swift insertion of ground forces. Information superiority will empower us to dominate timelines, foreclose adversary options, and deny enemy sanctuary. Sea Strike operations will be fully integrated into joint campaigns, adding the unique independence, responsiveness, and on-scene endurance of naval forces to joint strike efforts. Combined sea-based and land-based striking power will produce devastating effects against enemy strategic, operational, and tactical pressure points—resulting in rapid, decisive operations and the early termination of conflict.

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Sea Power 21 Series—Part VIII

Sea Trial: Enabler for a Transformed Fleet

By Admiral Robert J. Natter, U.S. Navy

Proceedings, November 2003

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U.S. NAVY (ANDY MCKASKLE)

Seal Team Two conducts seal delivery vehicle training

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[Synchronizing Concept Development](#)
[The Sea Trial Process](#)
[Early Experimentation Results](#)
[Upcoming Experimentation](#)
[The Bottom Line](#)

Lieutenant Paul Jones has just launched two unmanned underwater vehicles (UUVs) from the littoral combat ship *Arrowhead*. Working with the USS *Virginia* (SSN-774) below the surface and an overhead swarm of unmanned aerial vehicles (UAVs) launched by the *Arrowhead*'s sister ships, the lieutenant is part of a sustained, littoral reconnaissance effort. In minutes, he receives confirmation that the UUVs are up and sweet in the net. His commanding officer is using all of his ship's nearly 50-knot speed to reposition outside the range of an enemy coastal defense cruise missile battery spotted by one of the UAVs. Jones thinks to himself that the battery will be a hellish place to be once hypersonic projectiles begin raining down from the destroyer 100 miles to seaward. As he checks the hyperspectral imagery coming from the

UAVs, Jones receives a video conference call on his personal communicator from his commanding officer. The captain of the *Virginia* and a SEAL platoon commander are in the conference as well. They already are recommending to the joint force commander the immediate insertion of special forces ashore. This is going to be a busy day for Lieutenant Jones and the rest of the *Arrowhead's* crew.

The technology at Lieutenant Jones's fingertips is in development now. How effective it will be in combat depends on the processes—known broadly as concepts of operations (ConOps) and doctrine—we develop to harness its potential. Simply grafting new technology to old processes will not work. To fully leverage the advantages technology brings, we must speed our process of innovation and coevolve concepts, technologies, and doctrine.

Sea Trial will drive that coevolution.

In the Navy's strategic concept for the 21st century, "Sea Power 21," Chief of Naval Operations Admiral Vern Clark designated Commander, U.S. Fleet Forces Command (CFFC), as the executive agent for Sea Trial. The reason is simple. Because the Navy starts with the fleet, the fleet must drive innovation and experimentation. Sea Trial cannot be dictated from programming offices in Washington, D.C., nor can systems commands alone foster it. It will require the active involvement of our operators in the testing and evaluation of the technology provided by systems commands and the tactics and doctrine developed by warfare centers of excellence. That depth of integration is possible only at the fleet level—and it is only through that kind of integration that we can generate the intellectual synergy necessary for experimentation and discovery. In the end, this process is about unleashing the creative genius of our people.

As executive agent for Sea Trial, CFFC integrates the efforts of the Second and Third Fleet commanders, along with the commander of Network Warfare Command, as they sponsor concept development and experimentation to develop Sea Strike, Sea Shield, Sea Basing, and ForceNet capabilities. These commanders will reach throughout the fleet, the military, and beyond to coordinate concept and technology development in support of future warfighting effectiveness. The systems commands and program executive offices are central partners in this effort, bringing concepts to reality through innovation and the application of sound business principles. Meanwhile, our ships and aircraft will serve as sea-based laboratories, with our operators helping to answer the most pressing questions posed by this period of rapid technological change:

- What new ConOps will make the most effective use of existing and emerging technologies?
- What organizational changes will be necessary to achieve the most efficient execution of the new ConOps?
- What new technologies must be developed to fully implement new doctrine?

Sea Trial is up and running, facilitating the transition of promising capabilities from validated concept, to experimentation and demonstration, to implementation in the fleet. This process serves both as the voice of today's war fighters and a means to look beyond current programs of record to provide the right capabilities for future generations. We will prioritize the fleet's required capabilities, share information on potential solutions, conduct sound and analytical war gaming and experimentation, agree on a way ahead, and implement it without delay. Sea Trial also will stimulate the Navy's science and technology efforts by identifying the technologies needed to fully implement new doctrine.

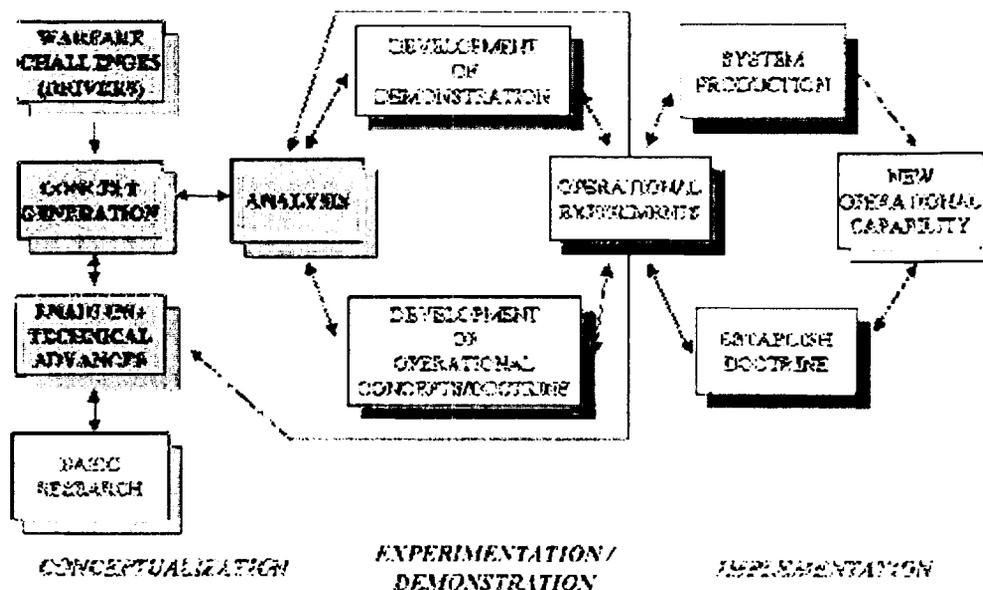
Synchronizing Concept

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Development

Early Experimentation Results
Upcoming Experimentation
The Bottom Line

Managing the development of each contributing element, from concept to capability to operational deployment, presents a unique challenge. Innovators are driven by discovery or opportunity independent of fixed timelines, a freedom that is inherent to a creative process and must be fostered inside the Navy environment. Experimenters and operators are driven by more disciplined rhythms, influenced by factors such as deployment schedules, joint war gaming, real-world contingencies, and demanding readiness requirements. Finally, Navy and DoD programs of record are driven by an even less flexible rhythm where planning is long-term and budgeting deadlines are nonnegotiable.



The challenge is to synchronize Sea Trial efforts efficiently across innovation, experimentation, and warfare programs, accounting for both fiscal realities and operational imperatives. The objective is to deliver relevant combat capability—including significant, transformational enhancements to our naval forces whenever possible—and to do so without slowing or artificially constraining the creative process. The Sea Trial organizational structure is designed to accomplish this.



The key players in the Sea Trial dynamic are:

CFCC's Sea Trial Executive Steering Group (STESG). Established as an oversight body, this flag-level group is comprised of key stakeholders within the naval corporate structure. It primarily is responsible for the creation and maintenance of an environment supportive of discovery and learning, cognizant of the balance between competing rhythms and tolerant of failure in the experimentation process. The STESG also is charged with asking the tough questions:

- Does the proposed experiment have the potential to enhance warfighting capability significantly?

- Does it represent a transformational capability?
- Is the technology/concept aligned with "Sea Power 21"?
- Is it naval? Is it joint?
- Does it have or can it readily get resource sponsorship?
- Is there a transition plan for implementation?

The STESG approves the overall Sea Trial concept development and experimentation campaign plan, resolves issues of resources and priorities, evaluates Sea Trial operational assessments, and makes recommendations to CFFC on the viability of emergent concepts, technologies, and doctrine.

Navy Warfare Development Command (NWDC). NWDC plans, coordinates, and implements the fleet's concept development and experimentation processes. As the overall coordinator, NWDC works to eliminate the seams between current processes and to speed advanced concepts and technology through workshops, war gaming, lab and fleet experimentation, integration with joint initiatives, and fleet validation. NWDC missions under Sea Trial include:

- Coordinate Sea Trial pillar groups (working groups for Sea Strike, Sea Shield, Sea Basing, and ForceNet) to develop an integrated and synchronized campaign plan, linking Sea Trial events to warfighting challenges identified by fleet and Marine Corps operational forces.
- Coordinate integration of Marine Corps concept development and experimentation into Sea Trial and leverage other services' and joint experimentation.
- Plan and coordinate execution, analysis, and assessment of fleet battle experiments, selected limited objective experiments, and Navy participation in joint experiments.
- Synchronize experimentation to coevolve technologies, tactics, techniques, procedures, doctrine, and organizational changes needed to field capabilities.
- Develop and host the Sea Trial Information Management System, an interactive database that serves as a central library of Sea Trial initiatives and technologies.

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SEA POWER 21

Sea Shield

Sea Trial

Sea Warrior

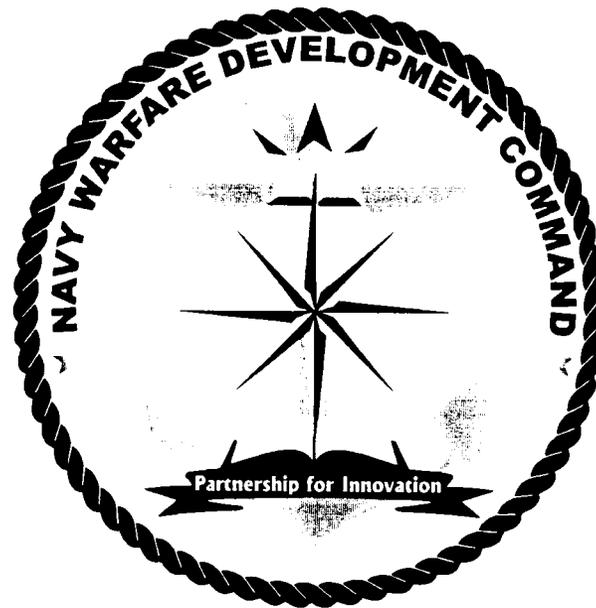
Sea Enterprise

FORCEnet

Sea Strike

Sea Basing

Enabling Processes



SEA TRIAL: The Process of Innovation



Introduction to SEA TRIAL

- **Originated in CNO's Sea Power 21 Vision – Implemented OCT 2002**
- **Fleet-led, enduring process of innovation**
- **Provides enhanced headquarters/fleet alignment to include Fleet requirements in OPNAV NCDP Process**
- **Integrates emerging concepts and technology into experimentation process to produce continuous warfighting improvements**
- **Closely aligned with USMC and Joint Concept Development and Experimentation**

SEA TRIAL Lead Agent Organization Today

CNO

CFFC

SEA TRIAL Executive Steering Group

Executive Agent for SEA TRIAL

SEA TRIAL Coordinator for CFFC

OPERATIONAL AGENTS

SEA STRIKE
C2F/C5F

SEA SHIELD
C3F/C7F

SEA BASE
C2F/C6F

FORCEnet
NNWC

FLEET COLLABORATIVE TEAMS

SEA STRIKE

- Strike (including SOF)
- Naval Fire Support
- Strategic Deterrence
- STOM

SEA SHIELD

- Force Protection
- Surface Warfare
- Undersea Warfare
- Theater Air & Missile Defense

SEA BASE

- Databases
- Employ
- Provide
- Integrated
- Logistics
- Preparation
- Joint
- Airbat

FORCEnet

- Comms & Data Networks
- ISR
- Common Operational and Tactical Picture

Experimentation/
Concept Development
Coordination





Operational Agents

- **Prioritize and coordinate all aspects of warfighting CD&E within their SP 21 pillar areas**
- **Validate proposed CD&E initiatives in SEA TRIAL Information Management System (STIMS)**
- **Oversee planning, coordination, and conduct of SEA TRIAL events**
- **Brief result to SEA TRIAL Executive Steering Group**



Fleet Collaborative Teams

- **Chartered by CFFC - organized along Mission Capability Package lines under Naval Capability Pillars**
- **Report to Operational Agents**
- **Develop Sea Power 21 Operating Concepts**
- **Provide subject matter experts**
- **Develop SEA TRIAL Execution Plans**
- **Oversee implementation of approved/funded activities in the SEA TRIAL Execution Plan (EXPlan)**
- **Ensure SEA TRIAL Events properly planned/scheduled**
- **Review Military Utility Assessments**
- **Participate in TACMEMO and TTP development**

START

CFFC SEA TRIAL Process

CD&E Plan + initiatives
(Fleet, SYSCOMs,
WCOEs, Joint, Labs,
ONR, Industry)

SEA TRIAL CD&E Plan
NCDP Gaps
FLEET Priorities

STIMS

OA Validation?

Has Potential?

CFFC/STESG review Military Utility Assessment

Prioritization/ Resources available?

CFFC concur with STESG?

Significant Enhanced Capability FAST TRACK
-or-
Enhanced Capability Push to OPNAV N6/N7 for capture in NCDP
-or-
Push to NWDC for capture in Doctrine process

Yes

No

Yes

No

No enhanced capability

No

Yes

No

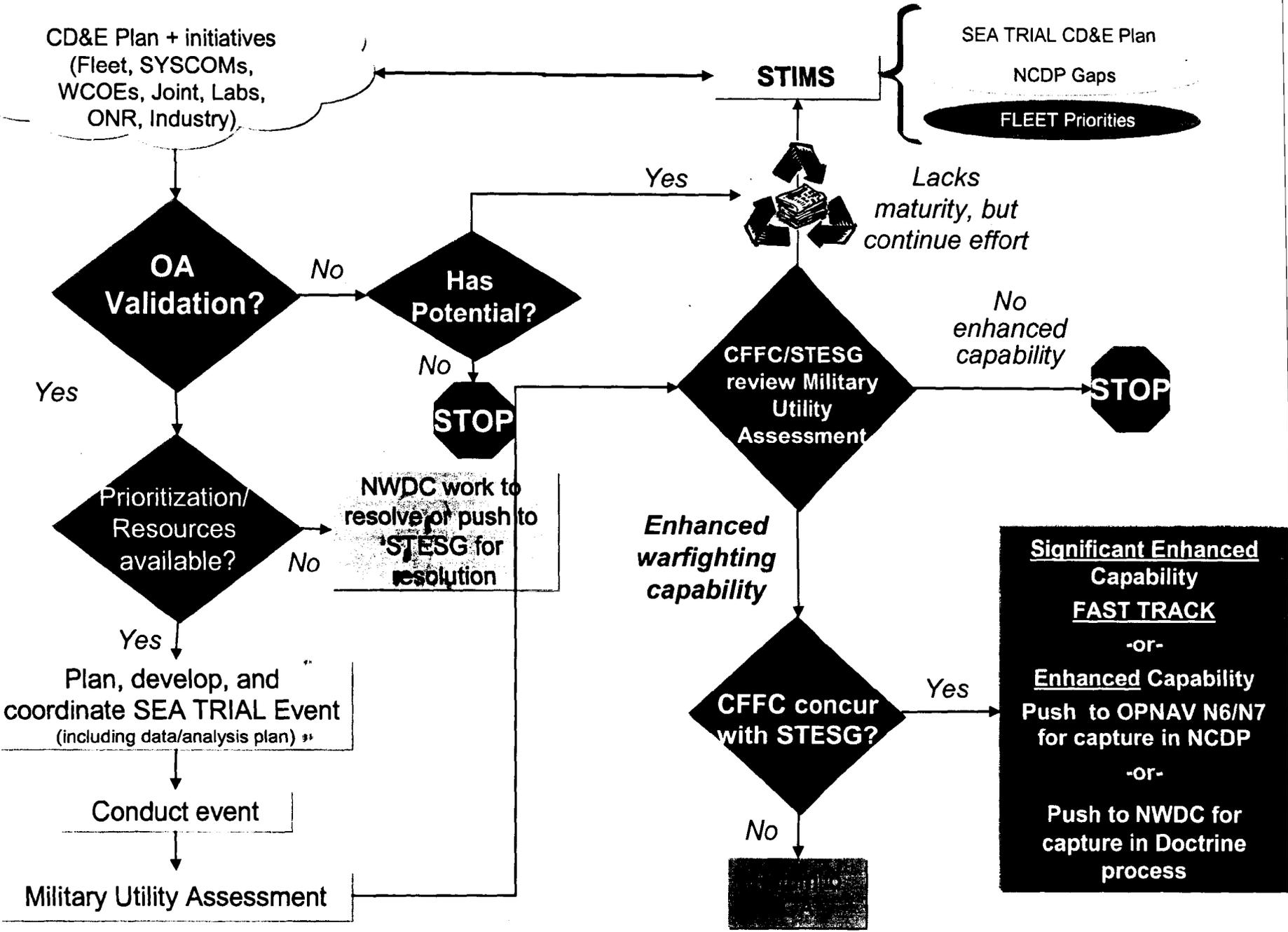
Lacks maturity, but continue effort

NWDC work to resolve or push to STESG for resolution

Plan, develop, and coordinate SEA TRIAL Event (including data/analysis plan)

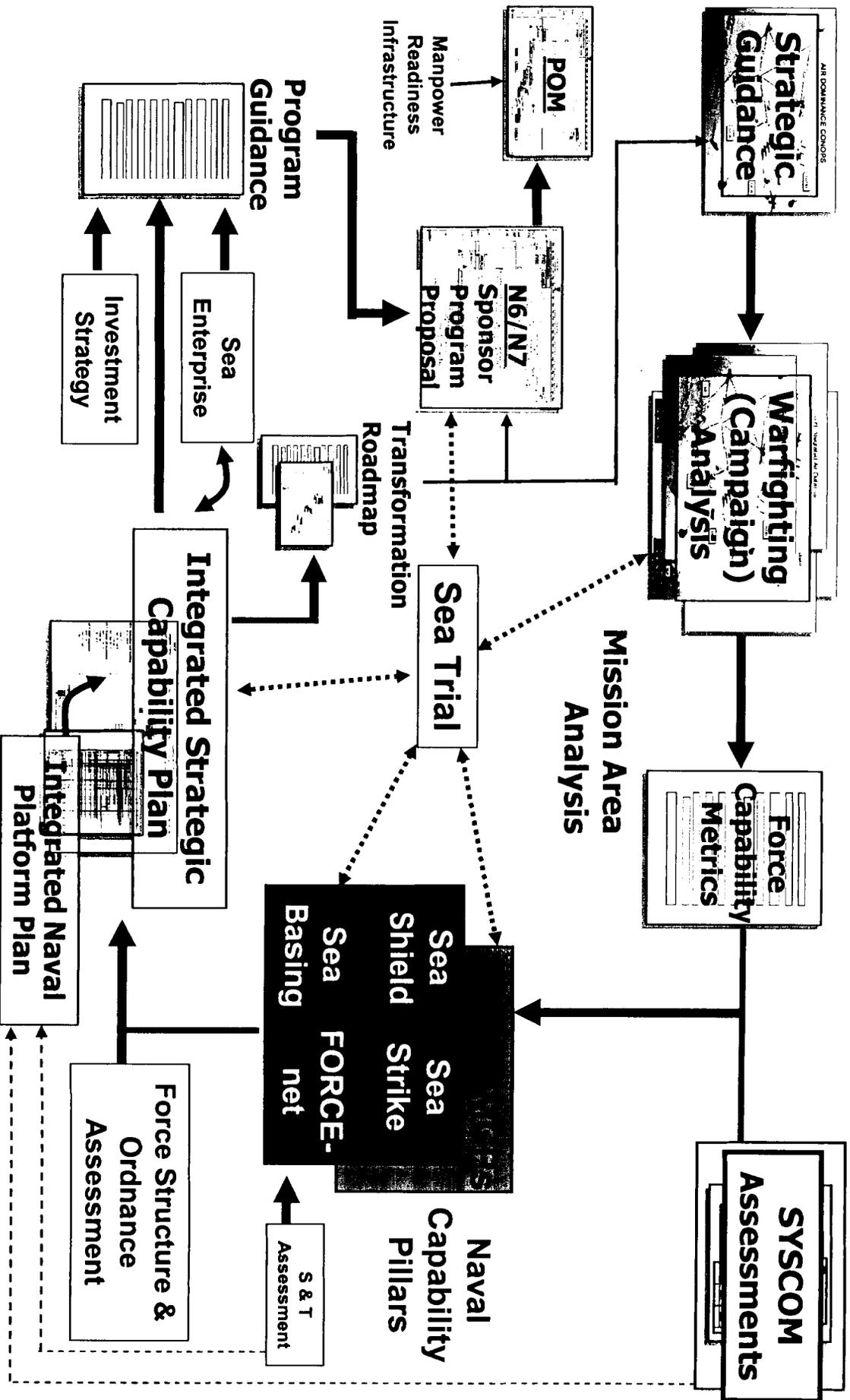
Conduct event

Military Utility Assessment





Naval Capabilities Development Process



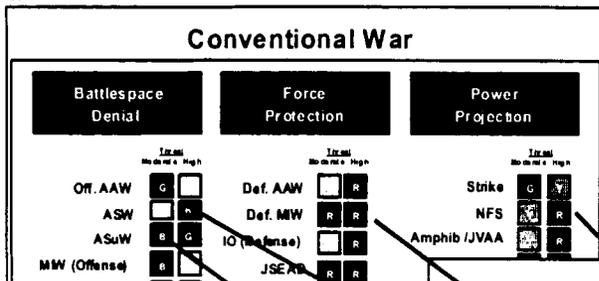


SEA TRIAL Concept Development and Experimentation Plan

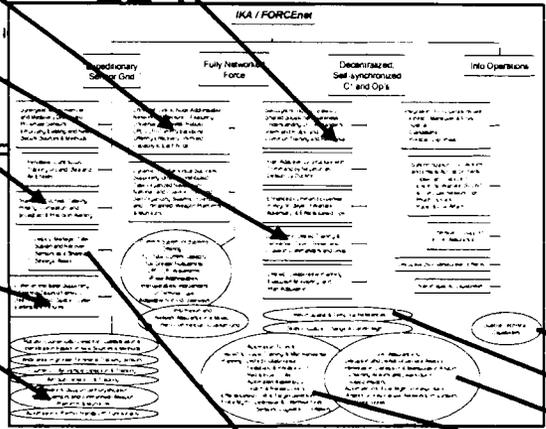
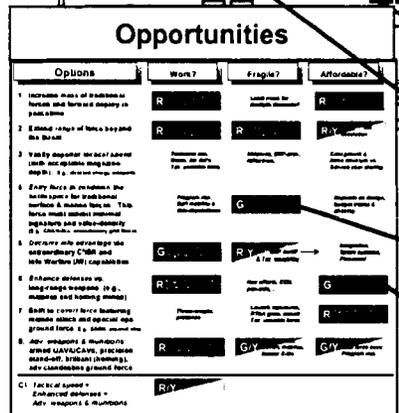
- **Comprehensive roadmap that integrates studies, war games, experimentation, and exercises with evaluation metrics**
- **Drafted by NWDC - Based on inputs from Operational Agents**
- **Links near-term experimentation with long-term objectives**
- **Provides detailed listing of Fleet priorities and mission capability gaps**
- **Establishes goals and provides metrics to determine applicability, measure progress, support planning, and evaluate results**



Linkage: Strategy, Challenges, Opportunities, Concepts, Capability Needs, Unknowns, Experiments

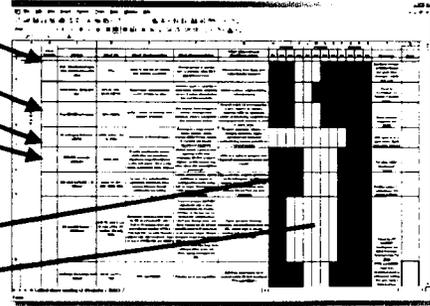


Challenges, opportunities, and desired operational capabilities

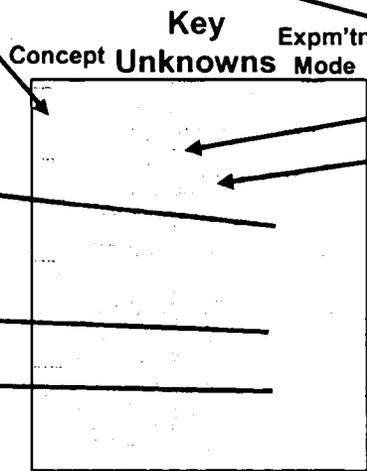
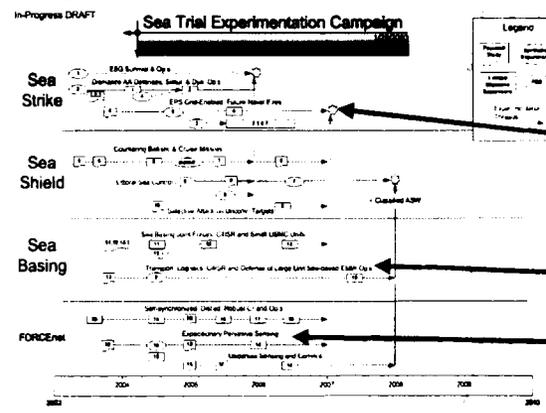


Solution Options: Conceptual innovations in operations

S&T/R&D/SYSCOMs Nominate Capabilities



Experimentation Execution Plan



- Experimentation Modes:
- Focused Study
 - Synthetic Experiment (M&S)
 - Limited Objective Experiment
 - Fleet Battle Experiment



Experimental Focus

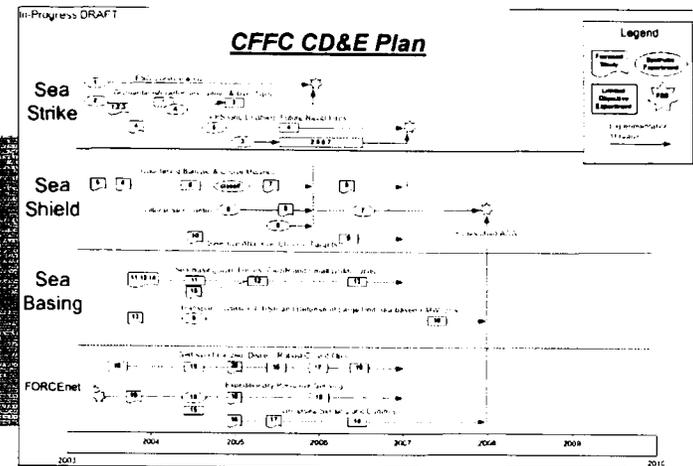
- Combatant Commanders
- Joint Staff
- Services

Achieving Decision Superiority

1. Achieving info superiority (anticipatory understanding)
2. Decision making in a Collaborative Information Environment
3. Coalition and interagency info sharing
4. Global integration
5. Joint ISR

Creating Coherent Effects

1. Info operations and info assurance
2. Joint maneuver and strike:
 - a. Global
 - b. Operational
 - c. Tactical
3. Interagency ops
4. Multinational ops
5. Precise effects
6. Urban operations
7. Deny sanctuary
8. Transition Ops

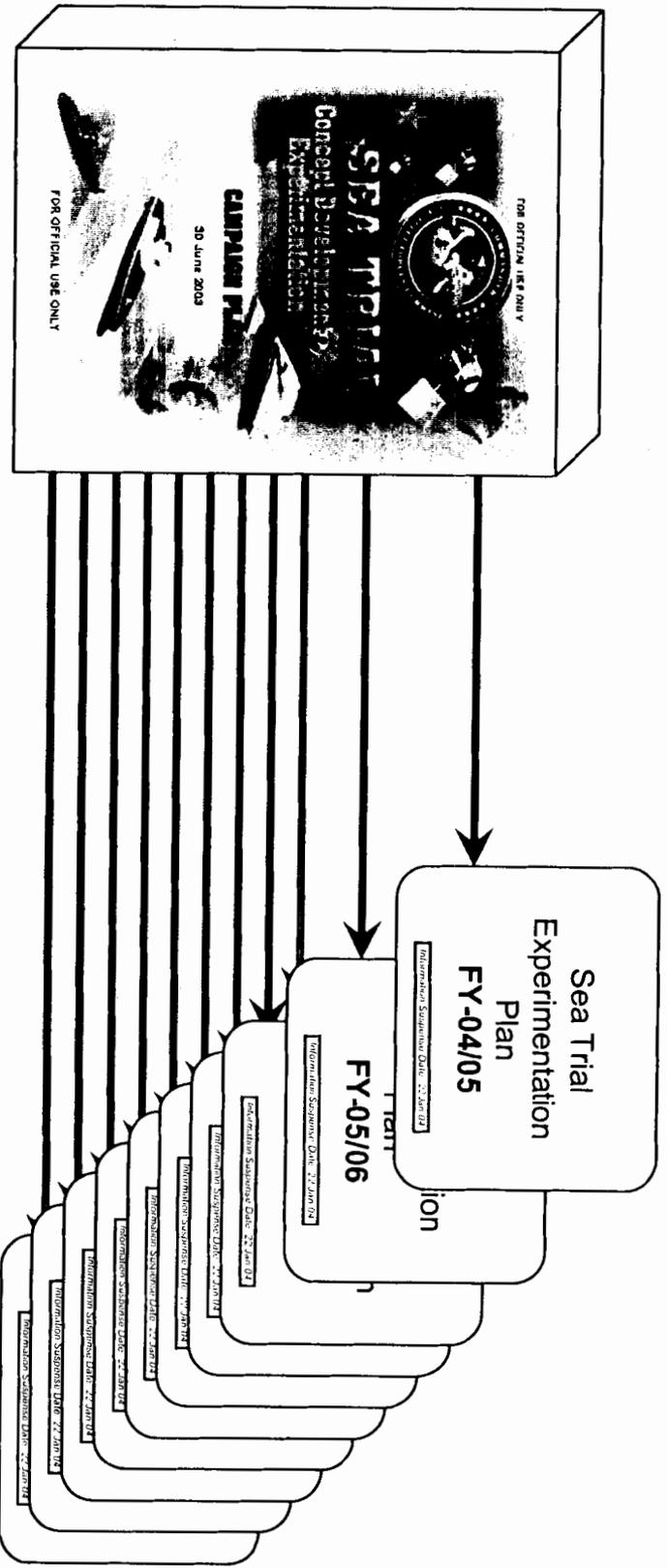


Conducting and Supporting Distributed Operations

1. Force projection: Deployment, Employment and Sustainability
2. Force protection and base protection
3. Counter anti-access and area-denial (includes Forcible Entry Ops)
4. Low density high demand assets
5. Proper decentralization



SEA TRIAL CD&E Leads to EXPlan





SEA TRIAL Execution Plan

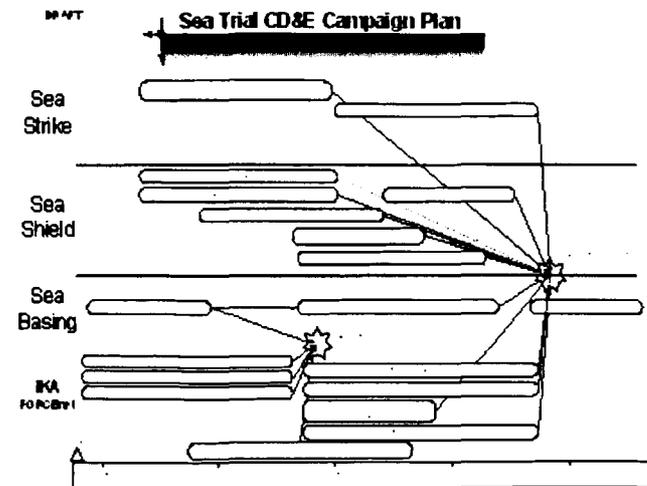
- **Two year document – Built by FCTs/OAs – Consolidated by NWDC**
- **Provides collection of OA/STESG approved SEA TRIAL events**
- **Briefed to STESG in June**
- **Contains evaluation metrics and execution timeline**
- **Changes briefed by the OA to STESG**



Near / Mid-term Experimentation Thrusts

(19 experimentation series identified FY04-08)

- FORCEnet
 - Sensors: massively distributed undersea + airborne tracking & fire control
 - Automated agent-based computing back-plane
 - Integrated C2 tools (esp. IO / Kinetic, dist'ed defensive decisions, and effects-based strike)
 - Comm's protocols to support IP-convergence layer, mobility, & security
- SEA BASING
 - Sea-based joint C2
 - Hosting needs + Simultaneous support to Navy / MC / Joint ops
 - Force lift, assembly, insertion and logistics -- needs and feasibility
 - Supporting access and defense implications of Navy / MC / Joint ops
- Sea Strike
 - ESG operations, TT&P and survivability
 - SSGN CONOPS
 - Engaging mobile target tracks and TSTs
 - Enhanced engagement
 - Cursor-on-target type operations
 - Machine-to-Machine Targeting
 - Integration of off-board fire control from EPS and other sources
- Sea Shield
 - Classified ASW
 - Viability / TT&P of MCM and counter-FPB ops
 - Navy / Joint TAMD integration, SIAP, OTH fire control, & regional interceptor force





SEA TRIAL Information Management System STIMS

Purpose -

- **To provide enterprise-wide Situational Awareness of Naval experimentation and related projects to:**
 - **Assist CFFC/STESG in making informed management decisions about SEA TRIAL events and related activities**
 - **Enable corporate Naval management to align experimentation to address OA priorities and NCDP warfighting gaps**
 - **Leverage SEA TRIAL process to maximize future value of capability investments**



STIMS Analysis Will:

- **Support alignment/prioritization of experimentation**
- **Identify duplicative efforts to enable informed experimentation investments**
- **Identify warfighting gaps not being pursued**
- **Maximize use of available events to support CD&E initiatives**
- **Provide agile means to adjust experimentation plans in pursuit of rapidly developing capability / technology opportunities**



Key Requirement

- ***Quality data inputs in STIMS by Naval activities performing experiments, demos, research, development, test and evaluation, studies, etc.***



STIMS Possible Inputs

- **Initiative** - A proposal to experiment with a technology, process, innovative procedure/doctrine that seeks to solve a naval capability gap through the SEA TRIAL process
- **Event** - Scheduled venue to accomplish a purpose. Examples include: fleet exercise, training exercise, workshop, conference, wargame, limited technical experiment, limited objective experiment, advanced warfighting experiment, modeling and simulation
- **Project** - On-going or planned effort included in STIMS for situational awareness. “Projects” do not require STESG/OA approval or resources



SEA TRIAL

Experimentation Proposal/Initiative Format

Step 1 - Title *

Step 2 - Primary Point of Contact Information *

Step 3 - Proposal/Initiative Description *

Choose Sea Power 21 Pillar/Fleet Collaborative Team (FCT)*

Provide a proposal/initiative description (executive summary)*

Step 4 - Proposal/Initiative Funding Information *

Sponsor Organization *

Sponsor POC*

Funding Comments*

Recommended Funding Source*

Estimated (not binding)

Cost*: \$

Amount Already Funded*: \$

Step 5 - Previous History of Proposal

Step 6 - Mission Capability Package Elements

Step 7 - Identify Associated/Related Technologies

Step 8 - Specific Operational and Tactical Questions to be Answered

Step 9 - Recommended Type of Experiment



Summary

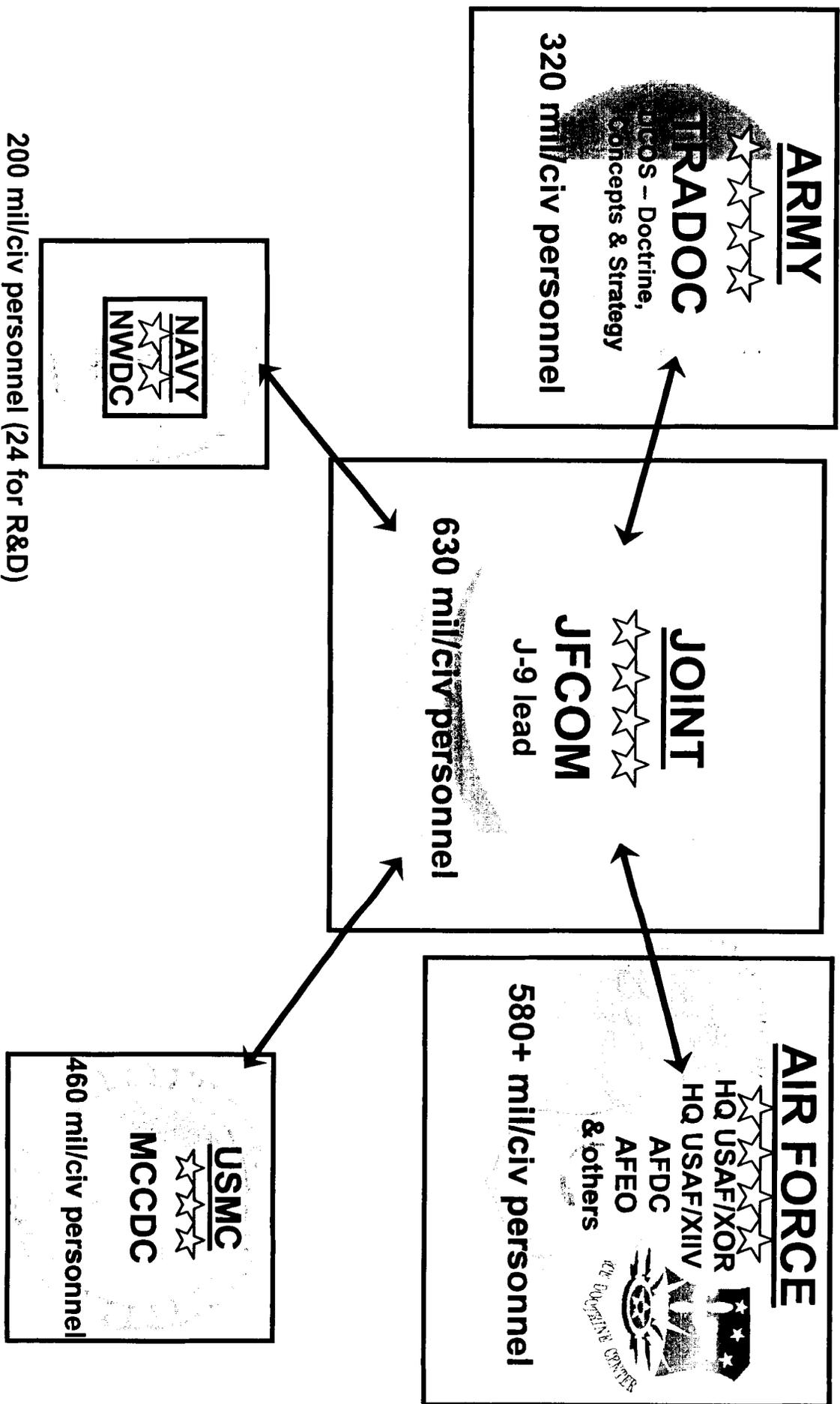
- **SEA TRIAL is integrated approach to Naval transformation in support of joint/combined warfighting capabilities**
- **STIMS is key to success of SEA TRIAL**
- **Aligns Navy Experimentation with USMC and Joint CD&E**



Questions?



Concept / Doctrine Development and Experimentation





Pre-Decisional – Draft Working Papers



CONOPS TO DOCTRINE:

Shaping the Force

From Idea Through Implementation



UNCLASSIFIED



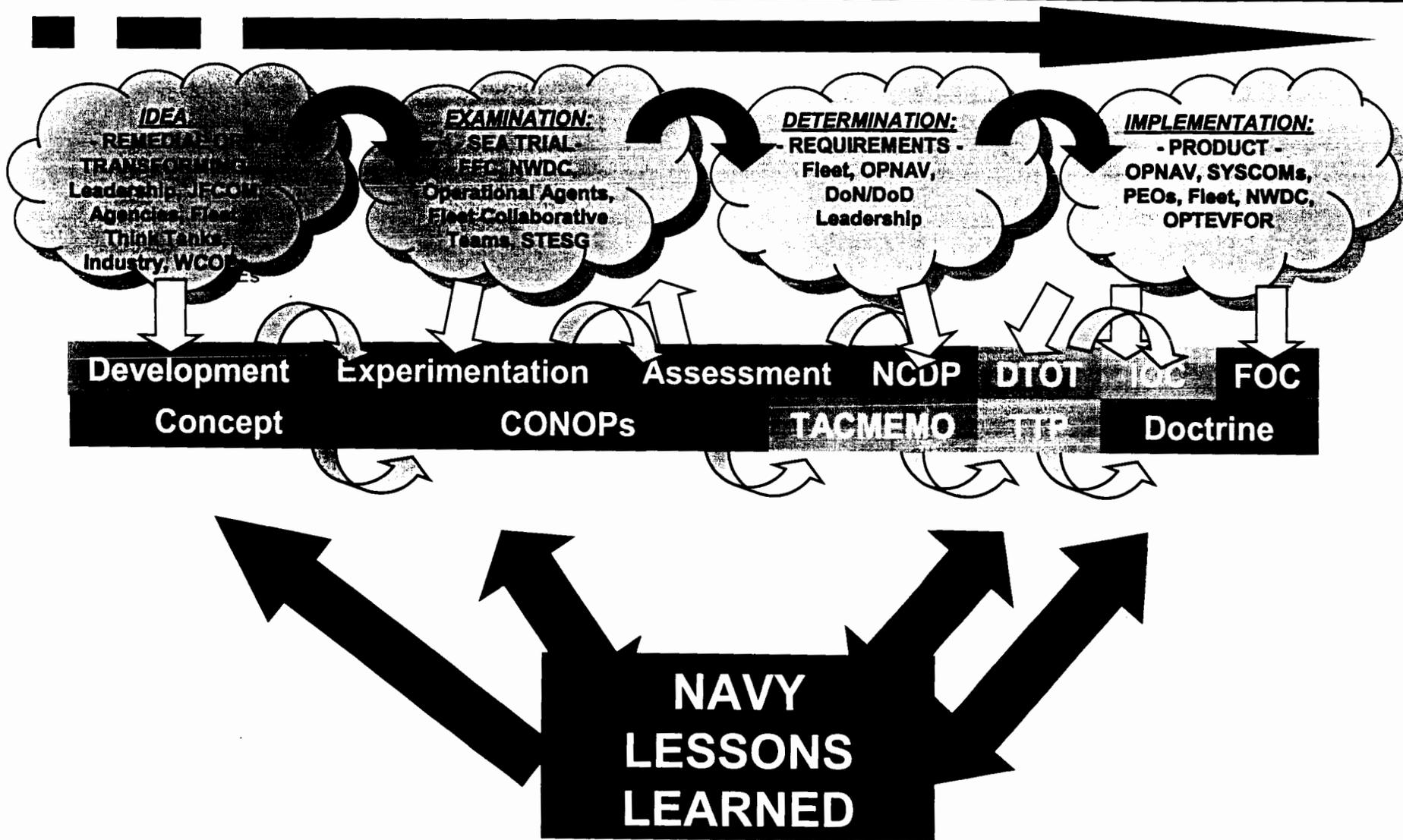
CONOPS to Doctrine

- ***Background***
- ***OPNAV Corporate Board Decision***
- ***CONOPs Tasks***
- ***CONOPs Development Process***
- ***Target Audience***
- ***CONOPs Format***



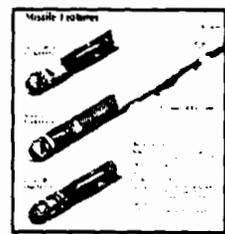
Pre-Decisional – Draft Working Papers

Cognition to Fruition

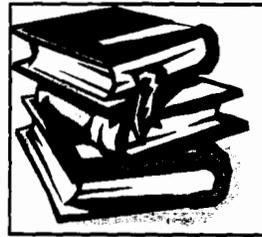




CD&E: An Iterative Function



NCDP



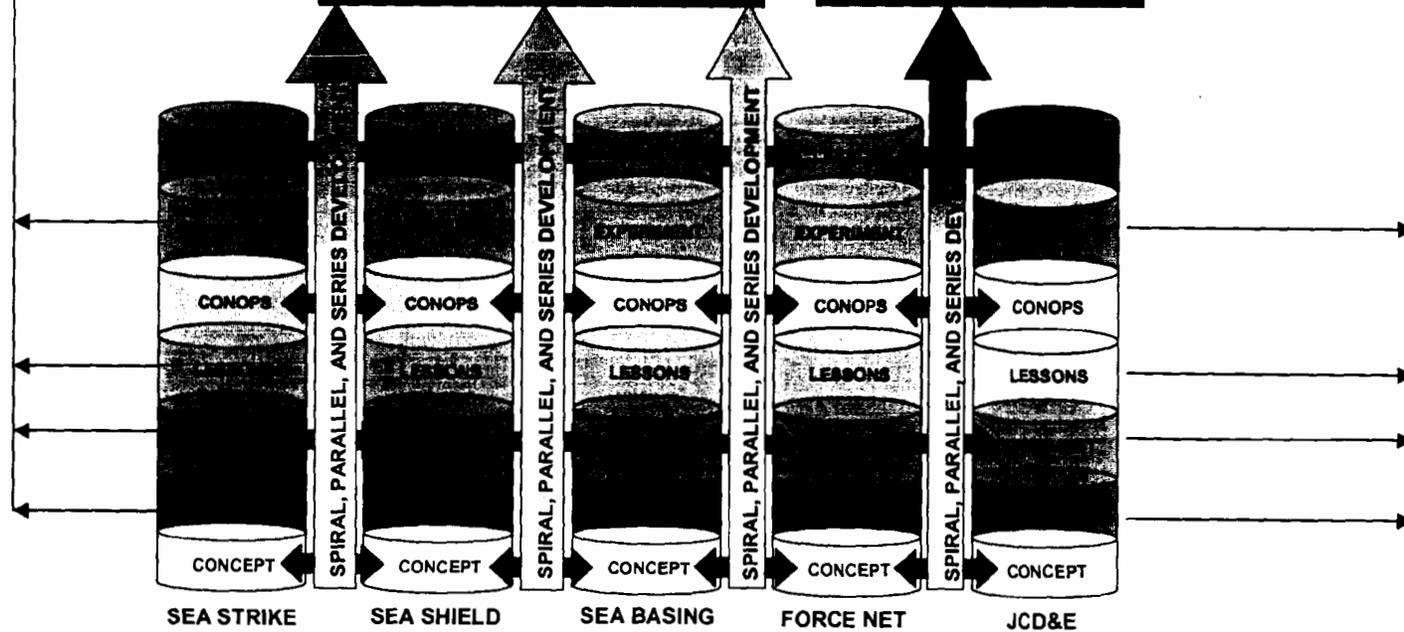
**NAVY
DOCTRINE**



**JOINT
DOCTRINE**



JCIDS



SEA STRIKE

SEA SHIELD

SEA BASING

FORCE NET

JCD&E

IDEAS → CD&E



Concepts

Concept: A document that describes a method or scheme for employing specific capabilities in the achievement of a stated objective or aim. This description may be broad or narrow. It may range from describing the employment of capabilities in the broadest terms and at the highest levels to specifying the employment of a particular technology system or the application of a particular training system.

Concepts are categorized as military or institutional. Military concepts are further sub-categorized as enabling, functional, or operating.

Concepts address “what” and “why.” They may be ‘remedial’—destined to close warfighting gaps. They may also be transformational—geared to render existing systems and capabilities obsolete, or to achieve required effects more efficiently.



Concepts: Who Generates?

- ***DoD Leadership***
 - ***SECDEF, JFCOM, Joint Staff, Agencies***
- ***DoN Leadership***
 - ***SECNAV, CNO***
- ***Private Think Tanks & Research Facilities***
 - ***CNA, JHU APL***
- ***DoD/Navy Think Tanks & Research Facilities***
 - ***NWDC, CNO SSG, NWC, NPS, ONR, DARPA***
- ***SEA TRIAL Participants***
 - ***Fleet, OAs, FCTs***
- ***Warfare Centers of Excellence***



Concept of Operations (CONOPs)



CONOPs: a description of how a set of capabilities may be employed to achieve desired objectives or particular end state for a specific scenario

A CONOPs is a description of how discrete, collective, or combined capabilities will be managed and employed to achieve desired objectives, or to test experimental technologies or concepts.

A CONOPs can inform Fleet operators and planners as well as resource, warfare, and acquisition sponsors, other departments and branches of government, industry, and the media. It is categorized by purpose, scope, level of integration, and temporal frame of reference.

A CONOPs can, and may be expected to, address issues pertaining to manning, equipping, training, maintenance, and administration.

CONOPs takes the CONCEPT and adds the who, where, when, and [most importantly] how. A CONOPs is a proposal that requires validation.



CONOPs: Who Generates?

- **JFCOM**
 - Strategic / operational focus, mission-centric
- **Combatant Commanders / Navy Component Commanders**
 - Operational / tactical focus, mission-centric
- **Platform Sponsors, TYCOMs, SYSCOMs**
 - Tactical focus, platform-centric
- **Warfare Sponsors, Operational Agents, FCTs, SYSCOMs**
 - Tactical focus, mission-centric
- **Navy Think Tanks—NWDC, NWC, NPS, SSG**
 - Operational / tactical focus, capability-centric (platform or mission)
- **Warfare Centers of Excellence**
 - Operational or experimental, tactical focus, mission-centric
- **Other Services and Agencies**

Current CONOPs efforts are duplicative and poorly coordinated, and finished products are inconsistent.



CONOPs: Sources of Conflict Today



No shortage of authoritative guidance

All bear some leadership imprimatur

- ***Vision Pieces***
- ***Road Maps***
- ***Transformation Plans***
- ***Master Plans***
- ***Concepts of Employment***

What roles do they serve?

What weight do they carry?

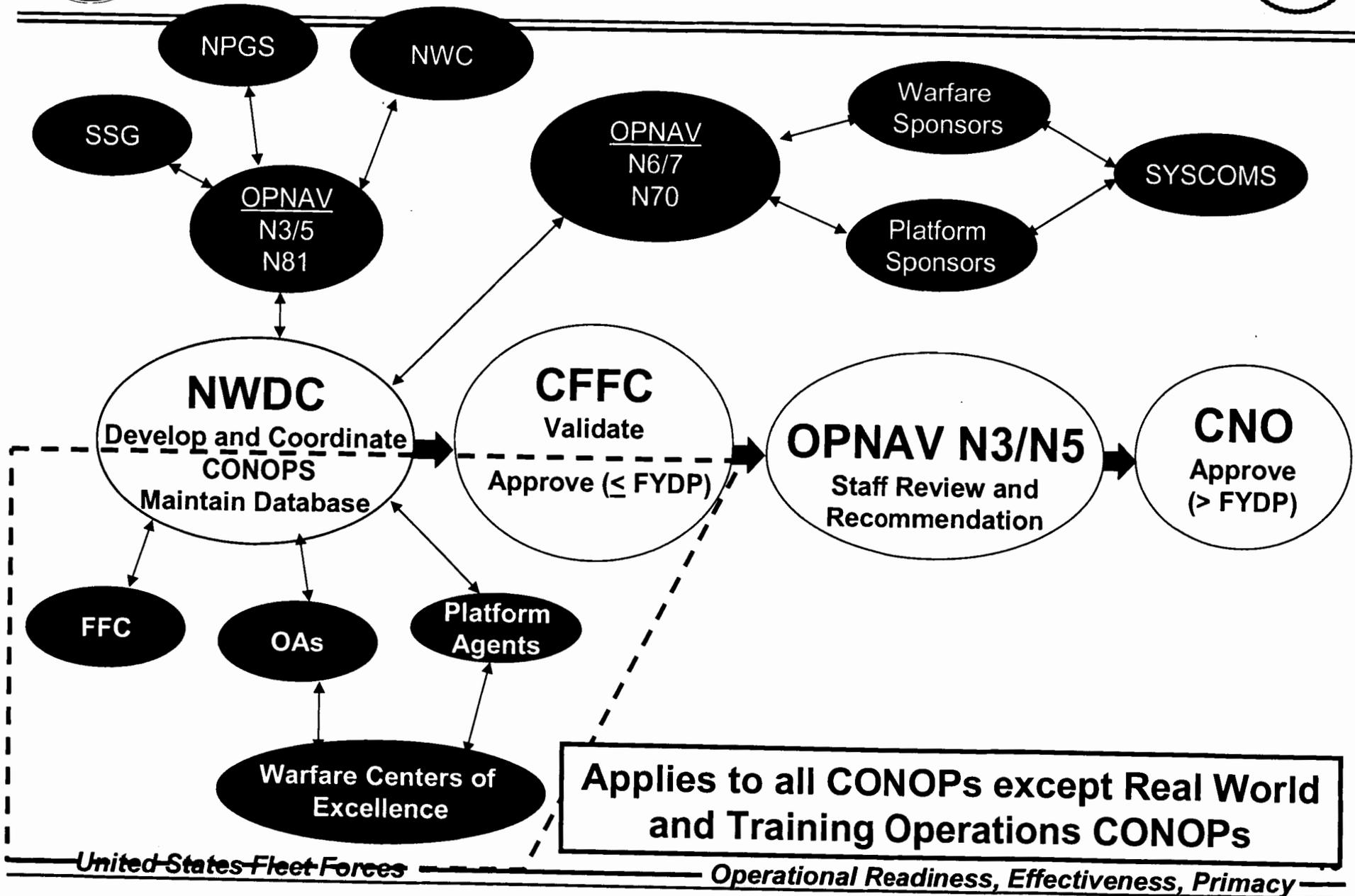
Who de-conflicts their contents?

Who determines their intended audience?

How do they affect CD&E, NCDP, and JCIDS?



CONOPs Management Process





Corporate Board Decisions

- ***CONOPs Approval Authority***
 - ***CFFC – Inside FYDP CONOPs (CNO if appropriate)***
 - ✓ ***Near-Term Operating CONOPs that address capabilities in the fleet today or that will IOC within the FYDP***
 - ***CNO – Outside FYDP CONOPs***
 - ✓ ***Far-Term CONOPs that describe new/future capabilities beyond the FYDP***
- ***Process must be open and collaborative***
- ***OPNAV as the concept development agent and FFC as CONOPs agent***



Specific Current Task - NWDC



- ***“NWDC, as leader of the CONOPs-experimentation- doctrine enterprise, is uniquely positioned to capitalize upon related Service and joint efforts, experimentation results, and lessons learned. NWDC manages Fleet CONOPs generation for CFFC, who approves CONOPs for execution in the FYDP and recommends approval to CNO for those beyond the FYDP.”***
- ***“NWDC: In shepherding these initiatives, ensure that the CONOPs leverage, and are aligned with existing work, and that their content reflects the cognitive breadth and depth required to deliver new Fleet capabilities.”***

CFFC 171946Z MAR 05



Specific Current Task – OAs/PAs

- ***Operational Agents and Platform Agents play vital roles in determining future capabilities.***
- ***Operational Agents exercise leadership in their pillar domains and will develop fleet warfighting CONOPs using affiliated Fleet Collaborative Teams.***
- ***Platform Agents are best able to address platform and system capabilities and can expect to produce platform CONOPs within a warfighting CONOP developed by an OA.***

CFFC 171946Z MAR 05

- ***I [CFFC] require that Operational Agents, Platform Agents, Warfare Centers of Excellence, and Fleet Collaborative Teams make capabilities generation, programming recommendations, and concept [CONOPs] development/experimentation primary duties.***

CFFC 072252Z APR 05 13

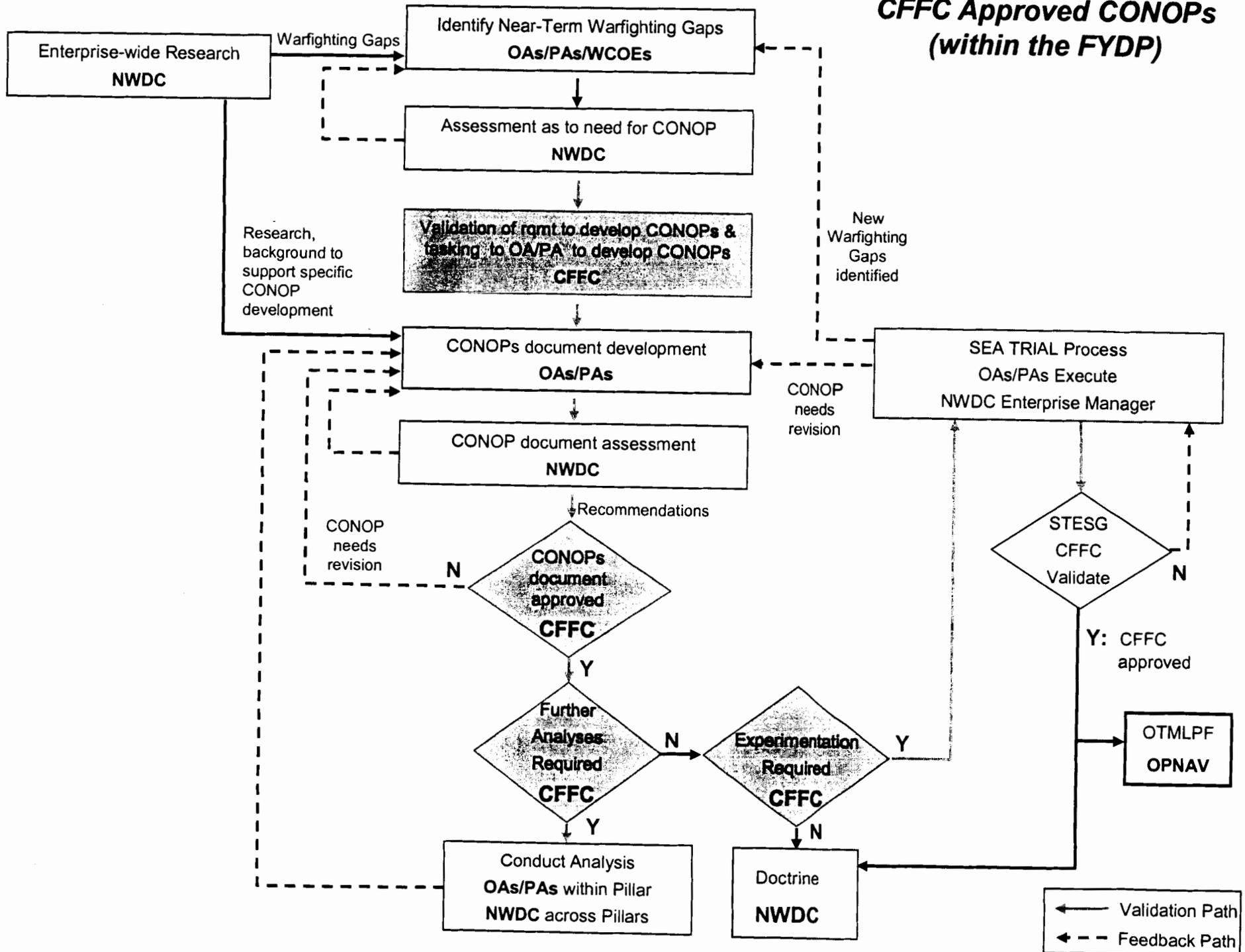


SYSCOM, PEO, PM Role



- ***SYSCOM, PEO, PM warfighting systems/platform development CONOPs feed to OA/PA CONOPs***
 - ***Where they are going with their developments***
- ***OA/PA CONOPs - feedback to SYSCOMs, PEOs, PMs to show how the Fleet intends to employ the systems/platforms for possible changes to their developments***
- ***Direct information exchange between OAs/PAs and SYSCOMs/PEOs/PMs***
- ***SYSCOM, PEO, PM CONOPs entered into central CONOPs database (STIMS) for visibility***

CFFC Approved CONOPs (within the FYDP)





CONOPS Development Process



- **OAs/PAs/WCOEs recommend what CONOPS should be developed based on informed ‘Warfighting Gaps’**
 - *Primary focus:*
 - Warfighting gaps provided by CFFC N80 (OPNAV/COCOM/Fleet inputs)
 - Systems/platforms included in current FYDP (FFC N80)
 - *NWDC conducts enterprise-wide research to capitalize on what has been done and what issues have been identified*
 - Relevant joint/Navy/other Service concepts/CONOPS
 - Relevant doctrine/lessons learned/experimentation results
 - *Other inputs*
 - FYDP near term assessment (FFC N80)
 - Relevant studies/analyses (multiple sources)
- **OAs/PAs/WCOEs recommendations/prioritization to NWDC**



CONOPs Development Process

- **NWDC will assess OA/PA/WCOE recommendations enterprise-wide (integration across all pillars)**
 - Feedback provided to OA/PA/WCOE then,
 - Forward to CFFC with recommendation for CONOP development tasking
- **CFFC approve/modify recommendations & issue tasking**
 - **CFFC Tasker Message**
 - Issue
 - Background - OA/PA/FCT/NWDC broad roles/responsibilities
 - Discussion - Guidance
 - Action - Specific task with due dates
- **NWDC assigns a team to support OA/PA/WCOE tasked**
 - Research subject related lessons learned, doctrine, experimentation results and related work by other Services/Joint and provide results to lead command



CONOPs Development Process

- **Lead command develops POA&M for CONOP development**
 - *NWDC/FFC review and recommend changes, if required*
- **Lead command conducts coordination meetings as required**
- **Lead command develops a Table of Contents**
- **Lead command conducts first integration IPR with related CONOPs commands and SMEs**
- **Lead command conducts second integration IPR prior to delivery of CONOP draft**
- **Lead command delivers first CONOP draft to NWDC**
 - *NWDC review and provide lead command with recommendations*
- **Lead command delivers final CONOP draft to NWDC**
 - *NWDC reviews and forwards to CFFC with recommendations for approval/rework/further analysis and/or experimentation*



CONOPs Development Process

- ***CFFC approves CONOPs or returns to lead command to rework***
 - *If approved, determine if CONOP requires further analysis/experimentation or can be incorporated into doctrine, as is*
 - *If further experimentation required, enter into SEA TRIAL Process*
 - *If further analysis required, OAs/PAs conduct within Pillars, NWDC across Pillars*



Target Audience

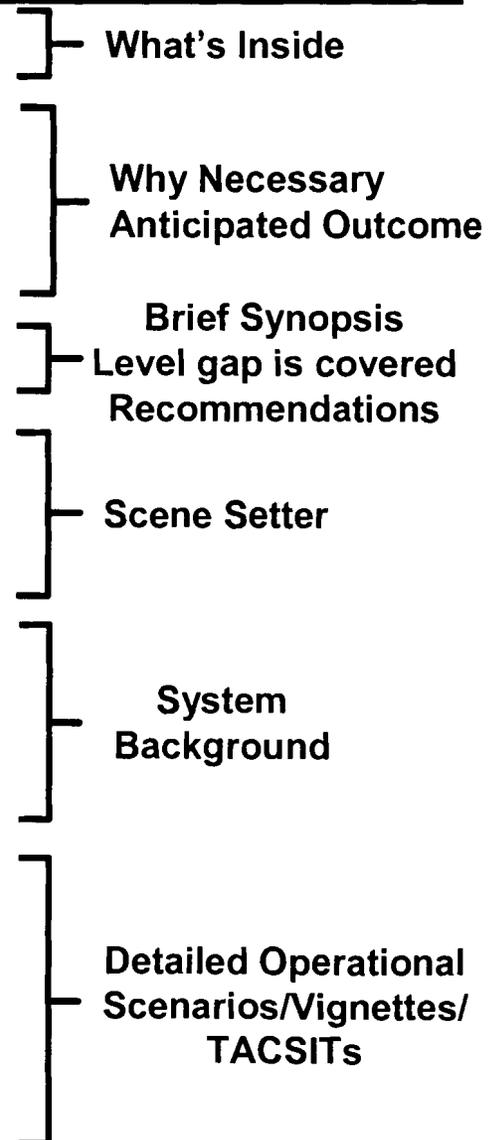


- **Warfighting CONOPs**
 - Those that will employ/operate the capability
 - Those that support the capability
 - Those that will integrate their capabilities with the capability listed in the CONOPs
 - Decision makers/planners within the capability chain-of-command
 - Those that are responsible for the delivery of the capability to the Fleet or may work on enhancements
- **Platform/Systems CONOPs** - Same as Warfighting CONOPs
- **Platform Support CONOPs** - Same as Warfighting CONOPs
- **Mission/Function CONOPs** - Same as Warfighting CONOPs
- **Experimental CONOPs**
 - Those involved in the planning, engineering, controlling and executing the capability experiment(s)



CONOPs Format

- **CONTENTS**
- **PURPOSE**
 - *Warfighting gaps addressed*
 - *Expected operational outcomes/end state/results*
- **EXECUTIVE SUMMARY**
- **INTRODUCTION**
 - *Strategic View, Background, Challenges, Operating Environment(s)*
- **DESCRIPTION**
 - *Mission/Tasks*
 - *Capabilities*
- **CAPABILITY EMPLOYMENT w/n JOINT CONTEXT**
 - *How, where, when, & by whom*
 - *Integration into existing or future systems & structures*
 - *Command and Control*





CONOPs Format

- **ORGANIZATIONAL ISSUES**
 - *Manning, Training, Equipping, Maintenance, Oversight*
 - **VALIDATION REQUIREMENTS (if applicable)**
 - *Analytical questions*
 - *Analysis plan, to include MOEs/MOPs*
 - *Deliverables*
 - *Recommended venue(s)*
 - *Estimated cost/time*
 - **DOTMLPF IMPLICATIONS**
 - **APPENDICES**
 - *Index, References, etc.*
 - **TERMS OF REFERENCE**
- Care & Feeding
- Analyses
Experimentation
Background
- Other Impacts
- Where to Find
- Acronyms &
Definitions



CONOPs Format (con't)

- CONTENTS

- **PURPOSE**

Provides an estimate of the degree that warfighting gap is 'covered' by capabilities provided in this CONOP. Should also identify portions of the warfighting gap not 'covered' by the CONOP.

- EXECUTIVE SUMMARY

- INTRODUCTION

- Strategic and Conceptual Framework

- DESCRIPTION

- Mission Focus
- Capabilities

- **Capability Employment within Joint Context**

This section is 'open format' but must address all specified elements. Current and future warfighting will be in a joint environment. Employment of the capabilities in the CONOP must be framed in the Joint context.



CONOPs Format (con't)

- ORGANIZATIONAL ISSUES

- Manpower, Training, Equip, Support, etc.

- VALIDATION REQUIREMENTS (if applicable)

Unless analysis/experimentation is available to validate that the capabilities will perform as stated in the CONOP, this section will state what validation is recommended, in sufficient detail to support validation planning.

- DOTMLPF IMPLICATIONS

Although specific implications for each DOTMLPF element may not be known, those elements that will be effected must be addressed. Many gaps may be 'covered' by non-material solutions such as an organizational, training or TTP changes.

- APPRE JUDICES

- Appropriate References

- TERMINOLOGY REFERENCES



Pre-Decisional – Draft Working Papers

Summary



Corporate Board decision allows for better CONOPs development, alignment and integration.

CONOPs management improves coordination and visibility; provides a standardized process and format



Pre-Decisional – Draft Working Papers



BACKUP SLIDES

UNCLASSIFIED

United States Fleet Forces

Operational Readiness, Effectiveness, Primacy



CONOPs by Type

(primary focus areas for OAs/PAs)



Purpose/Scope

- **Warfighting CONOPs**: Serves the purpose of informing Fleet operators and planners on ways to use a capability
 - Strategic (Navy Wide/OPNAV)
 - Operational (FLEET/NFC)
 - Tactical (Strike Group/Unit)

Level of Integration

- **Platform/Systems CONOPs**: Articulates how a system could be used to achieve discrete missions that support broader objectives, e.g. SSGN, LCS, F-35, TACTOM
- **Platform Support CONOPs**: Addresses manpower, training, logistics, and/or shore support options for platforms or systems on a platform
- **Mission/Function CONOPs**: Describes how multiple platforms or systems – a family of capabilities – will be used to execute a particular mission or function, e.g. ASW, Sea Basing, Expeditionary Warfare, Missile Defense, AT/FP

Other

- **Experimental CONOPs**: Describes how a capability will be tested to meet experimental objective(s) and produce analytical data



Pre-Decisional – Draft Working Papers

CONOPs by Type *(for information)*



Level of Integration (con't)

- **Theater/Campaign CONOPs**: Delineates how a group or force will be collectively used to achieve theater or campaign objectives, e.g. ASW in PACOM AOR, Logistics in CENTCOM AOR, TAMDM for a specific scenario
- **Policy/Resourcing CONOPs**: Address how Navy policy will be implemented and identifies required resources
- **Requirements/Capability Generation CONOPs**: CONOPs associated with the Initial Capabilities Document (ICD) within the acquisition process
- **COCCOM/Component CDR OPLAN/Training Support CONOPs**: Describes CONOPs in direct support of military operations and training (these CONOPs will not be submitted or maintained in the Navy CONOPs repository)



CONOPs - Temporal

All Types of CONOPs can be further defined by their associated timeframe

- **Near-Term CONOPs:** *Address capabilities that are in the Fleet today or will IOC within the FYDP*
- **Far-Term CONOPs:** *Address new/future capabilities that are not currently in the FYDP*



Joint Defined Timeframes



Within the FYDP Beyond FYDP-14 yrs 15-20 years

	Near-term	Mid-term	Far-term
Concepts	CONOPS	Future Concepts	Future Concepts
Enemy Capabilities	Known	Known to Postulated	Postulated
Blue Capabilities	Adjust Current Capabilities/Divest Old Capabilities	Adjust Current/ POM New / Divest Old Capabilities	New Capability Development



Tactics, Techniques, & Procedures (TTP)

TTP: Detailed instructions for configuring and employing combat systems, moving and stationing assets, enhancing interoperability, and reducing mutual interference.

Tactics, Techniques, and Procedures provide equipment settings, maneuvering recommendations, and technical guidance for equipment operators and tactical watch standers to allow them to maximize the capability and effectiveness of their systems, and to prevent them from engaging friendly or non-combatant forces.



Doctrine

Doctrine: A document that describes the fundamental principles by which the military forces or elements thereof guide their actions in support of national objectives. It is authoritative but requires judgment in application.

Doctrine is an established body of literature describing how the Navy employs a system, platform, or warfighting capability in pursuit of strategic, operational, or tactical warfighting objectives. It constitutes a user's manual for Fleet planners and operators. It reflects the experimentation, testing, and analysis associated with concept and system development.

Doctrine takes the tested and validated CONOP or TTP, incorporates required changes, and serves as the authoritative reference for a platform, system, or mission area. While Doctrine can and should be updated where warranted, it tends to be enduring and reflective of results and observations, not of theories, proposals, or ideas.



Doctrine

- ***Navy Doctrine is codified in the NWP Library***
 - ***“End State” for validated CONOPs and TTP***
- ***Tailored Fleet Doctrine is captured in Fleet OPORDS***
 - ***Although not normally considered to be doctrine***



Lessons Learned



A Lesson Learned is a vetted, formatted document that recommends specific DOTMLPF changes (1) to remedy identified warfighting shortfalls, or (2) to articulate transformational changes that will significantly enhance warfighting capabilities or efficiencies.

In addition to DOTMLPF changes, Lessons Learned may generate new concepts, CONOPS, or Tactics, Techniques, and Procedures (TTP).

Lessons Learned are preceded by observations and findings—preliminary, intuitive acknowledgments, supported by available evidence, that the status quo has failed to meet requirements, or that it is hindering more efficient operational practices.



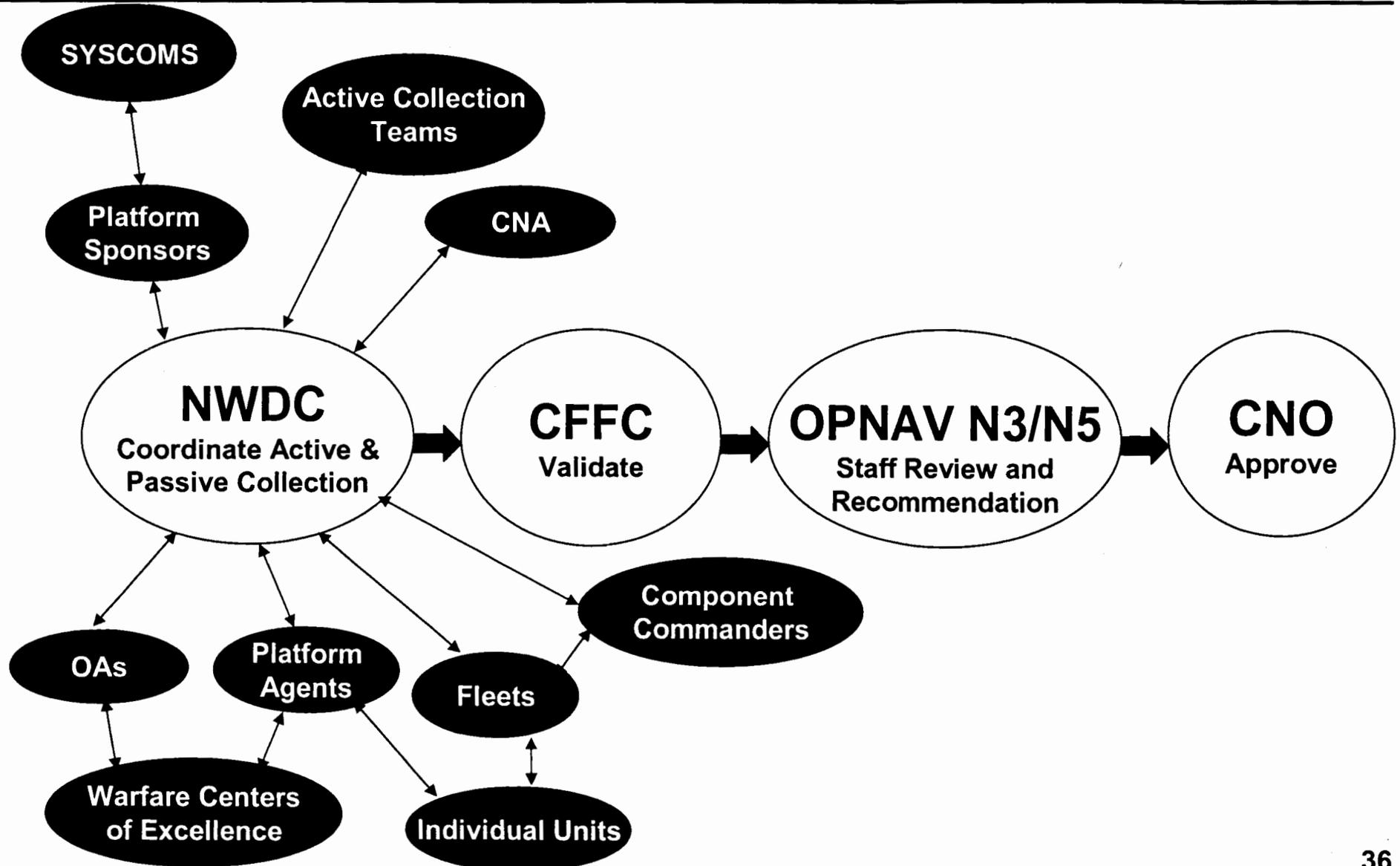
Navy Lessons Achilles Heel: Inertia

- ***Historic focus on input, not output***
 - ***Process trumps utility***
- ***Once approved, Lessons gather dust***
 - ***Result: Lessons re-learned***
- ***Joint Lessons outpacing Navy Lessons***
 - ***Navy losing ability to influence Joint processes***
- ***Need more than gathering, approving, and maintaining***
 - ***Input realignment not the whole fix***

Navy lacks a viable transition path from approved Lesson Learned to DOTMLPF enhancements



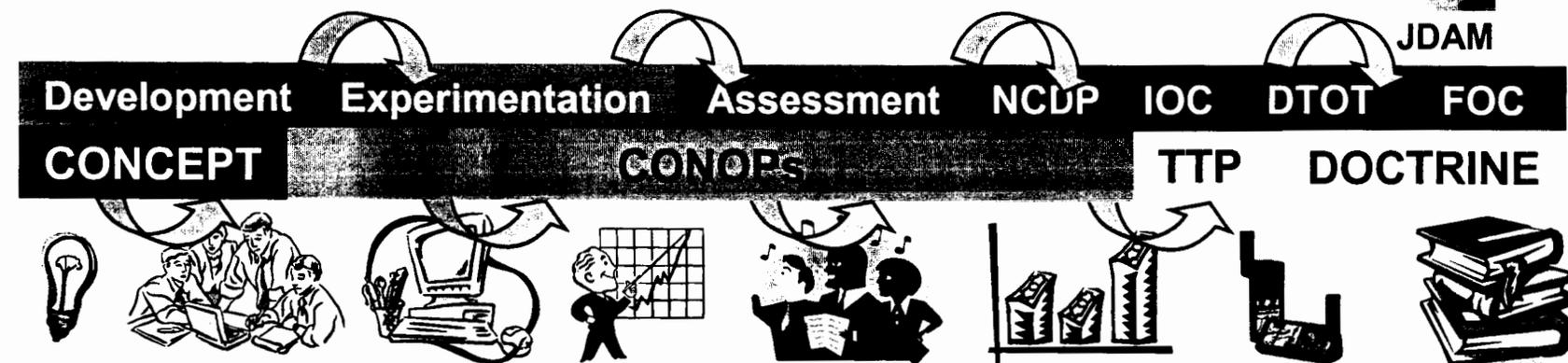
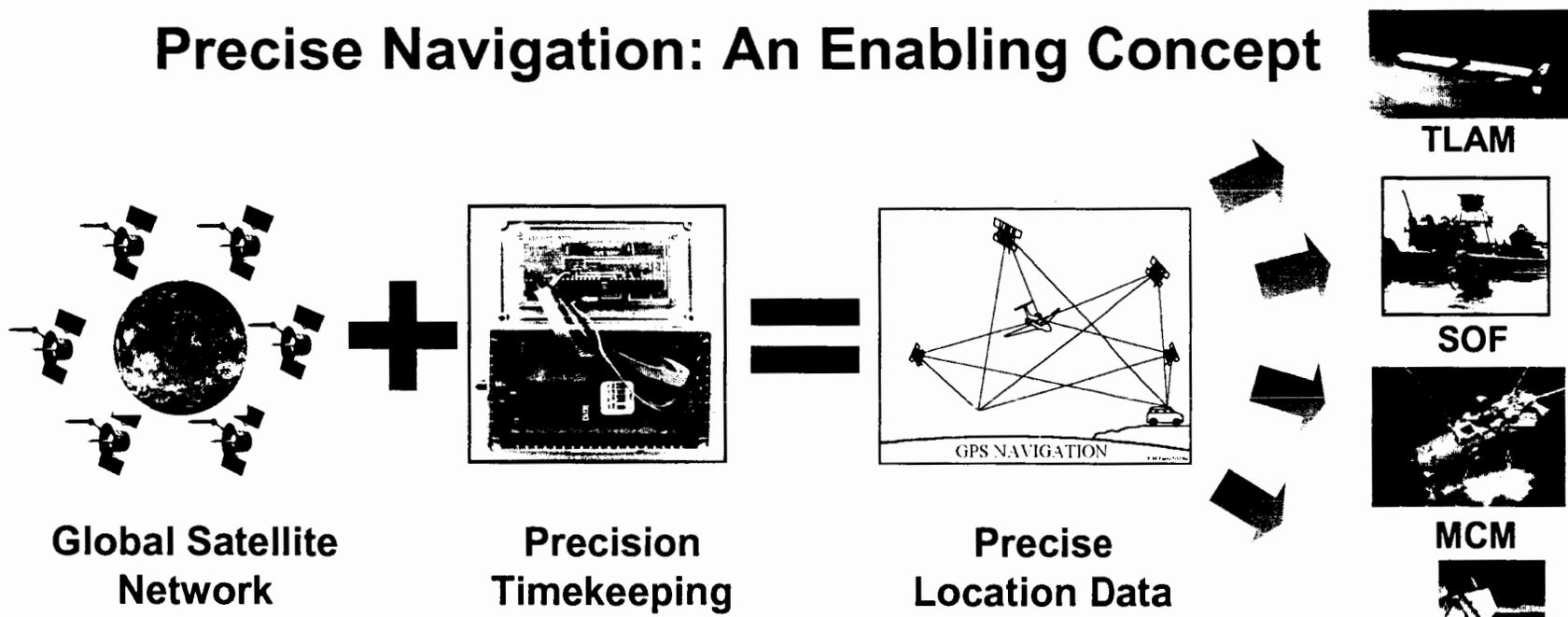
Lessons Learned Management Process





CONCEPT TO DOCTRINE

Precise Navigation: An Enabling Concept





CONCEPT TO DOCTRINE

Naval Aviation: An Enabling Concept

