



# Navy Modernization Program (NMP)



***SEAPOWERS THROUGH ENGINEERING***

4.1.2

ENGINEERING DUTY OFFICER SCHOOL BASIC AND RESERVE COURSES		CIN A-4N-0021 AND -0034
Version 5.0 16 DEC 2024	4.1.2 Navy Modernization Program and Alteration Installation Team	TIME: 1.5 HR
<b>TOPIC LEARNING OBJECTIVES</b>  <p>Upon successful completion of this topic, the student will be able to:</p> <ol style="list-style-type: none"> <li>1. Identify the goals of the Navy Modernization Program.</li> <li>2. Recognize the difference between maintenance and modernization in the operations and sustainment phase of ships and weapon systems.</li> <li>3. Recognize attributes of the Fleet Modernization Program (FMP), or legacy submarine process. <ol style="list-style-type: none"> <li>a. Match the various types or “titles” of SHIPALTs with who funds the development, procurement and installation.</li> <li>b. Match the various modernization documents (Justification Cost Form, SHIPALT Record, Ship Installation Drawing) with who prepares them and who approves them.</li> </ol> </li> <li>4. Recognize attributes of the Navy Modernization Program (NMP). <ol style="list-style-type: none"> <li>a. Match the various types of ship changes with who funds the development, procurement and installation.</li> <li>b. Recognize the purpose of the Ship Change Document (SCD) and who initiates and submits it.</li> <li>c. Identify the sponsor and approval authorities for modernization.</li> </ol> </li> <li>5. Recognize policies regarding the scheduling and accomplishment of alterations.</li> <li>6. Recognize the activities that accomplish alterations.</li> </ol>		<b>STUDENT PREPARATION</b>  <p>Student Support Material</p> <ol style="list-style-type: none"> <li>1. None</li> </ol> <p>Primary References</p> <ol style="list-style-type: none"> <li>1. NAVSEA SL720-AA-MAN-030 - Navy Modernization Process Management and Operations Manual (NMP MOM)</li> <li>2. COMFLTFORCOMINST 4790.3 (series) – Joint Fleet Maintenance Manual (JFMM)</li> </ol> <p>Additional References</p> <ol style="list-style-type: none"> <li>1. NMP MOM available at NDE-NM website: <a href="https://nde.navy.mil">https://nde.navy.mil</a> (requires account registration)</li> <li>2. JFMM available at SUBMEPP website: <a href="https://www.submepp.csd.disa.mil/jfmm/index.htm">https://www.submepp.csd.disa.mil/jfmm/index.htm</a></li> </ol>
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# Overview

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- Navy Modernization Program (NMP) Background
- Types of alterations
- Planning and execution



# History

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- Started Nov 2002 by surface ship leadership
- Transform maintenance & modernization planning processes
- From “effective but not efficient” to “both”
- Accomplish right work, right time, right cost
- Collaborate across Enterprise stakeholders
- Commands, customers/suppliers, internal/external
- Link closely with regional maintenance integration
- Use proven commercial process improvement methods
- Deliver Optimized Fleet Response Plan (OFRP) ready Fleet at a lower cost



# Need for Modernization

- Mechanism to address:
  - Emerging threats
  - New technology
- Management functions:
  - Proper engineering of alterations
  - Maintain configuration control
  - Ensure adequate logistics support
  - Permit training and personnel planning
  - Ensure equipment interoperability





# Goals of Modernization

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## ■ Goals

- Improve ship's capabilities and material condition by installation of approved alterations and modifications
- Improve safety, reliability, maintainability, habitability, and environmental compliance of ships and equipment
- Increase Fleet readiness by supporting warfighting requirements in a timely fashion

## ■ Definitions

- Modernization improves a ship's capabilities over and above the initial configuration
- Maintenance allows a ship to continue operating to its current design reliability and performance characteristics
- Repair returns a ship to its current design reliability and performance characteristics



# Goals of NMP

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- Manage the modernization and maintain the supporting instructions, manuals, policy guides, and process documents
- Provide Subject Matter Expert (SME) support and helpdesk support to Navy stakeholders
- Provide the infrastructure for creation, review, and approval of Ship Change Documents (SCDs)
- Provide the authoritative source for alteration and availability scheduling
- Provide policy and guidance (NAVSEA 9090-310 AIT Instructions) to Participating Acquisition Resource Managers (PARM) and Alteration Installation Teams (AIT)
- Provide AIT Quality Manager audit with tracking data





# Attributes of NMP

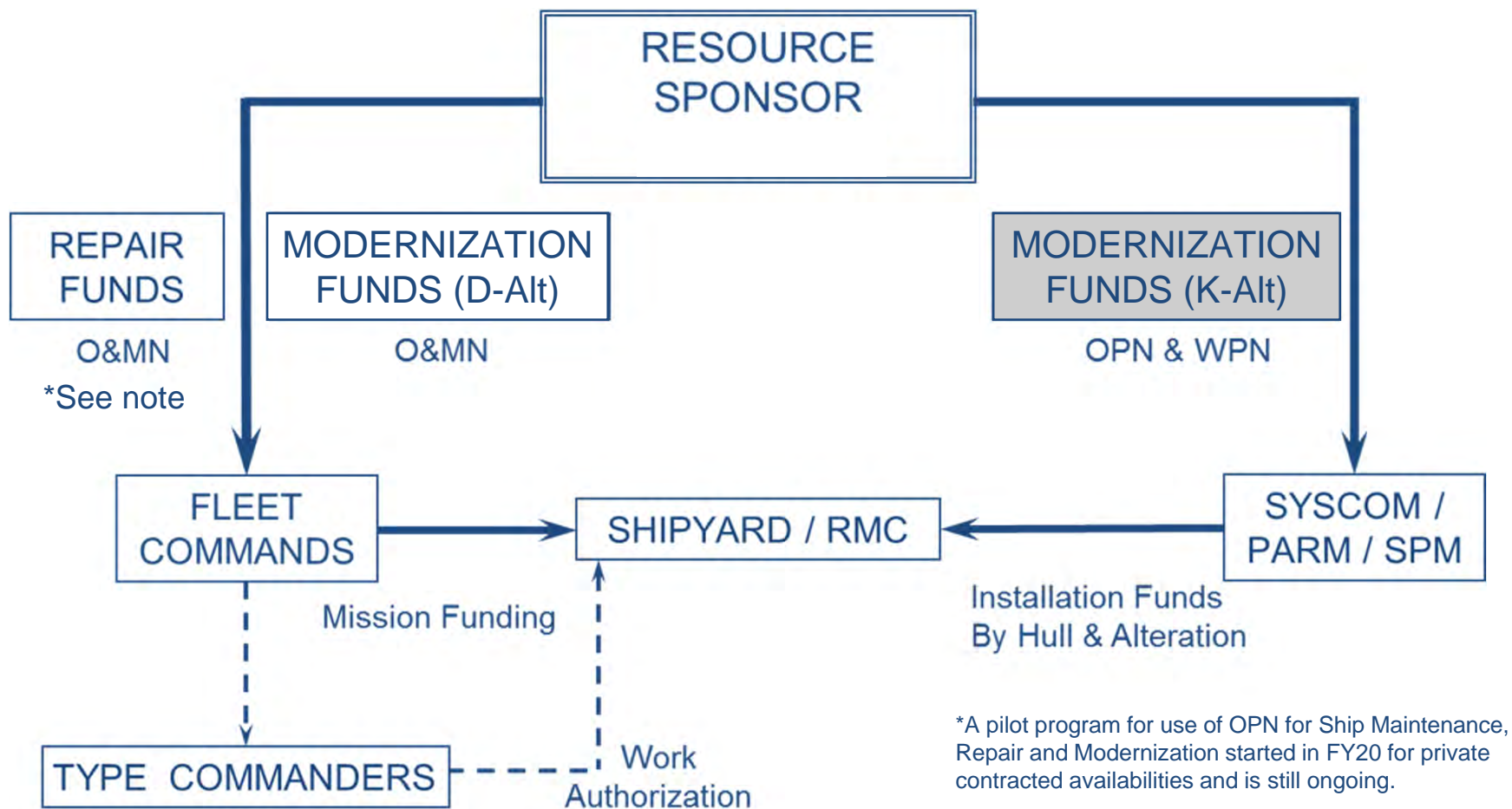
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- Provides a structure for *identifying, planning, designing, approving, funding, and installing* shipboard improvements while maintaining configuration management and supportability
- Designed to prevent unauthorized and non-supported Ship Changes/Alterations from being installed on ships
- Develop approved and fully funded changes which are selected based on technical, warfighting, readiness, and cost benefits





# Modernization Funding





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# Legacy Alterations

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- Ship Alterations (SHIPALT) Title D, K, KP, F
- Alteration Equivalent to Repair (AER)
- Equipment Alterations
  - Ordnance Alterations (OA)
  - Machinery Alterations (MA)
  - Engineering Change (EC)
  - Software Delivery (SWD)
  - Field Change (FC) legacy
  - Nuclear Alteration (NUCALT)
  - Coast Guard SHIPALTS
  - Trident Alterations (TRID)
  - Stand-alone Removal Alteration (RME)
  - Crossdeck Alteration (XDK)
- Temporary Alterations
  - Temporary Ship Alterations (TMP)
  - Temporary Equipment Alterations (PRT)
  - All Temporary Alterations have an accompanying Removal Alteration (RMV)



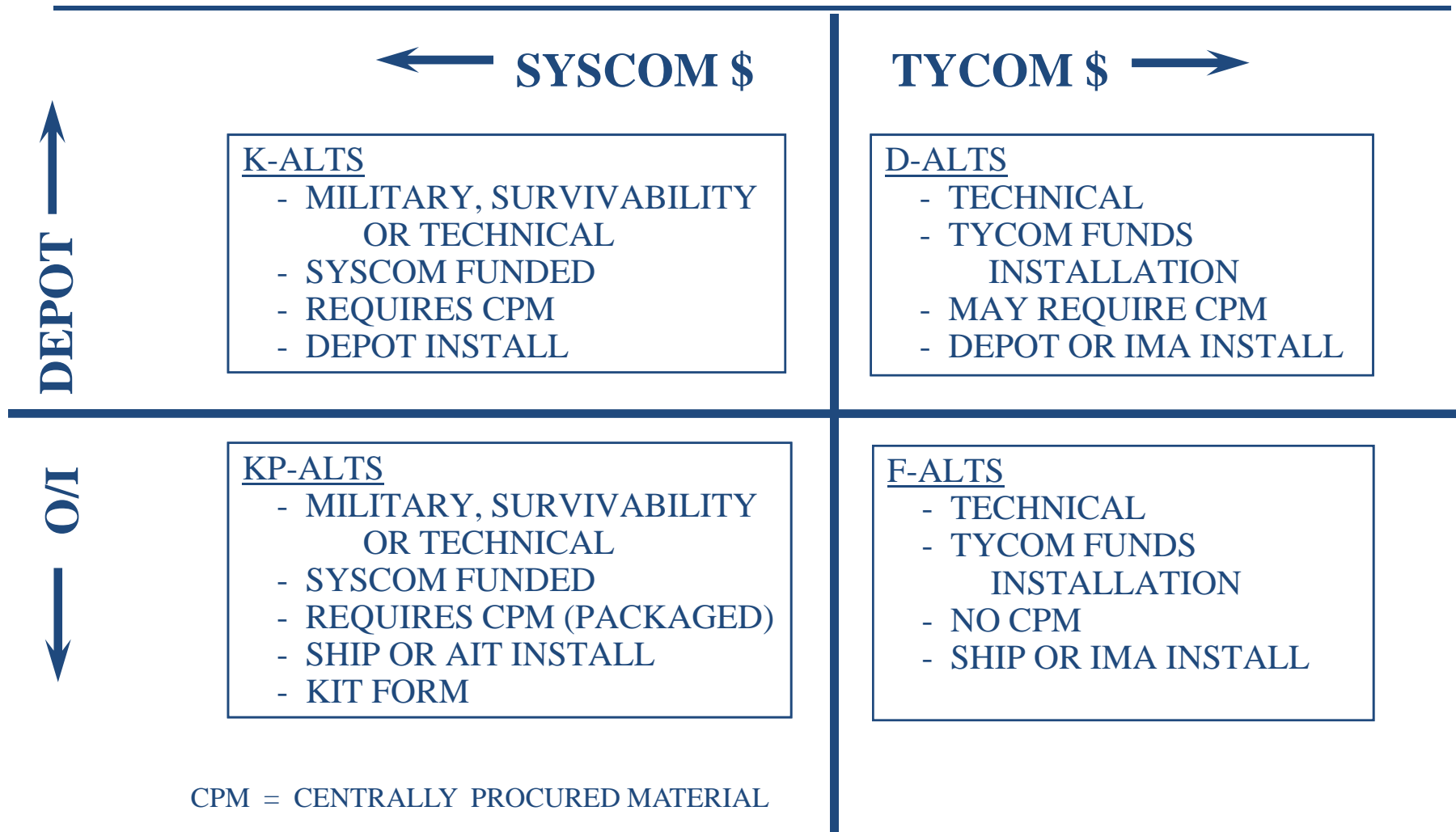
# Ship Alteration (SHIPALT)

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- Definition: Any change in hull, machinery, equipment, or fittings which involves change in design, materials, number, location or relationship of the component parts of an assembly
  - Any change to a system that transcends its own boundaries. It requires interface with other systems
- **Modernization is all changes, alterations, and arrangement variation from approved class plans or previously approved configuration**



# SHIPALT (Legacy)





# AER (Legacy)

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- Technical alteration approved by NAVSEA
- Has one or more of the following attributes:
  - Use of different materials for like or similar use and such materials are available from standard stock
  - Replacement of obsolete, worn-out or damaged parts with those of later or more efficient design
  - Strengthening of parts to improve reliability of parts/unit, provided no other changes in design are involved
  - Minor modifications involving no significant change in design but essential to prevent recurrence of unsatisfactory conditions or to reduce equipment maintenance costs



# Example Alterations (Legacy)

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- Typically, a CNO availability will feature a variety of alteration types:
  - K-ALTS
    - SSN3664(K) Switchboard Arc Fault Detector
    - SSN3817(K) Replace Pressurizer Heater Bundle Omega Seals
  - D-ALTS
    - SSN3227(D) Change Sanitary Tank TLI Systems
    - SSN3865(D) Install Vent Exhaust System for SNAP II Computer
    - SSN4018(D) Install Canned SPM
  - F-ALTS
    - SSN3583(F) Modify Strap Hangers on Hot Piping
  - AER
    - A&I N3005 Hull Array Grounding Strap Modification





# Documentation (Legacy)

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- Justification/Cost Form (JCF):
  - Prepared by NAVSEA 05 (or appropriate SYSCOM Engineering)
  - Approved by Ship Program Manager (SPM)
  - Addresses:
    - Purpose of alteration, applicable ships
    - Material requirements
    - Design, installation, and Integrated Logistics Support (ILS) requirements
    - Cost (Class F Estimate, or “Ball Park”)
- SHIPALT Record (SAR):
  - Usually prepared by the Planning Yard
  - Approved by Ship Program Manager
  - Provides greater detail:
    - Material and test equipment
    - Design, installation, and ILS requirements
    - Cost



# Planning Yard

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- Responsible to Program Manager for engineering in ship alteration development
- Responsible to Naval Shipyard (NSY) or Regional Maintenance Center (RMC) during alteration installation (or other Government representative)
  - Prepares SHIPALT Records (SARs) (Legacy)
  - Prepares Ship Installation Drawing (SIDs) (NMP)
  - Conducts alteration ship checks
  - Performs all engineering
  - Prepares all drawings
  - Validates entire alteration package
  - Provides on-site liaison support during availabilities
- May be a public or private yard



# Planning Yards

Planning Yard	Ship Class
Bath Iron Works (GD)	DDG-51, DDG-1000
Electric Boat Division (GD)	SSBN-726/826, SSGN-726, SSN-774
Huntington Ingalls Inc. (HII)	LCS
Ingalls Shipbuilding (HII)	CG-47, EDD 964, LHA, LHD, LPD-17
Military Sealift Command	T-classes, EMS, EPF, ESD, HST
Newport News (HII)	SSN-21, SSN-688, CVN-78
Norfolk NSY	CVN-68
Portsmouth NSY	SRDRS, DDS
Puget Sound NSY & IMF	MCM, LSD-41/49, LCC, ESB, AS-39, CONSTITUTION
Maritime Administration (MARAD)	ACS-1, AK-882

\*Subject to change Source: <https://www.nvr.navy.mil/nvr/>  
 Select Planning Yard (Hull) Assignment tab



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- Navy Modernization Program (NMP) Background
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# Navy Modernization Program Enhancements

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- Navy Modernization Program - a single, disciplined, decision process involving the customer
  - *Just 2 types of ship changes: Program (K-Alt) or Fleet (D-Alt) Alterations (vs. 40+ types)*
    - Determined by funding source, i.e., Program (SPM/PARM, etc.) vs. Fleet Alt (TYCOM)
  - A single, authoritative database for ship changes (NDE)
  - Change list is ranked/prioritized
  - Gate approvals by hierarchy of O-6, 1&2 Star, 3 Star Boards
  - Installation activities are determined by the level of complexity (O/I/D)
- A balanced Modernization Plan (MP) for all ships



# Navy Data Environment – Entitled Process (NDE-EP)

- Supports the Navy Modernization Program (NMP) SCD modernization process
- Collapses alteration types into two categories (Fleet and Program)
- Streamlines and consolidates a number of existing modernization practices, processes, meetings, and supporting documents
- Supplies a workflow process
- Provides a single, hierarchical decision-making process for modernizing ships



## 4.1.2 Navy Modernization Program (NMP)



# Ship Change Document (SCD)

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- The SCD replaces or absorbs the following forms:
  - Justification Cost Form (JCF)
  - Ship Alteration Record (SAR)
  - Engineering Change Proposal (ECP)
- It is the **single** authorized document for all ship changes in the **single** authoritative database known as the Navy Data Environment (NDE)
  - An SCD becomes a ship change once it receives authorization for procurement and installation after Decision Point 3 in the Entitled Process





# SCD Initiation and Submission

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- An **initiator** is anyone with a NDE account who initiates an idea (ship change) into NDE-EP via the SCD and include:
  - Program Offices
  - Port Engineers
  - In-Service Engineering Agents (ISEAs)
  - Group Staffs
  - Type Commanders (TYCOMs)
  - Regional Maintenance Centers (RMCs)
  - Government Planning Yard
- An idea is only an idea until an authorized **submitter** submits the idea for review and board approval/disapproval in NDE-EP via SCD:
  - Currently approximately 130 authorized submitters
  - Currently all stakeholder organizations have designated submitters
  - New submitters must be requested from NAVSEA 04
  - New submitter should have basic NMP training and SCD submitter training



# Approval

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- Program alterations are approved at the appropriate level based upon Acquisition Category (ACAT) designation and monetary threshold
- Fleet alterations
  - 3-Star Board
    - Set over all priorities
    - Approve Surface Ship Modernization Plan Program Objective Memorandum (POM) submission
    - Approves SCDs with projected costs exceeding \$200M
  - 1- & 2-Star Board
    - Adjudicates O-6 board issues
    - Approves SCDs with projected costs >\$50M and <\$200M
  - O-6 Board
    - Majority of decisions made at O-6 board
    - Staff decisions for higher level
    - Approves SCDs with projected costs <\$50M



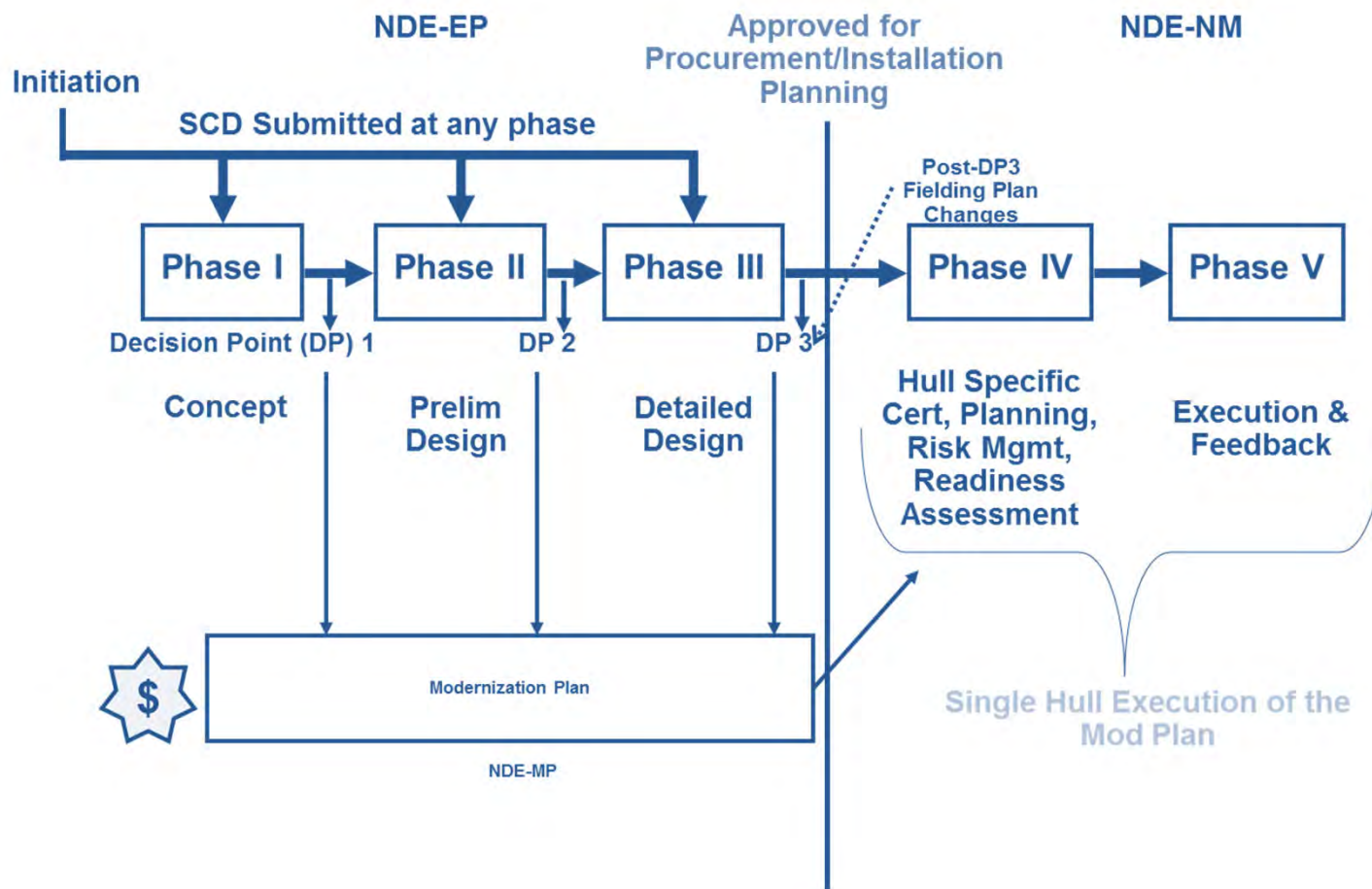
# Navy Data Environment – Navy Modernization (NDE-NM)

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- Provides an automated, integrated information support system to enhance the decision-making capabilities of NMP managers
- Tracks alteration development by category, ship class, and hull number
- Tracks planning and budgeting for programmed alterations. Tracks estimated and actual man-days, material costs, etc.
- Tracks logistics issues such as material status, alteration maturity including SAR (submarine only) status and SHIPALT Installation Drawing (SID) (all classes) status
- Tracks execution issues and schedules, which ships have which alts, and alteration installation schedules
- **Authoritative source for all CNO availability dates**



# SCD Development





# Public Law 102-396

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- Signed October 6, 1992 as part of the 1993 Department of Defense Appropriations Act
- **Prohibits use of funds to modernize** ships and ship systems that the Navy **plans to retire** or otherwise dispose of **within five years** of the scheduled completion of the modification
- Does not apply to safety modifications
- May be waived in the interest of National Security
  - SECNAV approval required (sometimes just notification)
  - Congressional Defense Committees must be notified in writing



# Summary

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- What are the goals of Navy modernization?
- What types of alterations are funded by SYSCOMs and TYCOMs under the legacy FMP system?
- What types of alterations are funded by Program Offices and TYCOMs under the NMP system?
- Which legacy documents have been absorbed by the Ship Change Document (SCD)?