



Parts Standardization & Management Committee (PSMC)

Program Manager
Enterprise Commonality Office (NAVSEA 06C)

28 APRIL 2015

Mission:

We design, build, deliver and maintain ships and systems on time, on cost for the United States Navy.

Vision:

We are the Nation's team accountable for the health of its Navy

- We must purposefully operate to ensure the U.S. Navy can protect and defend America.
- We must be supported by a modern, efficient industrial base.
- We must be a world-class employer of choice that inspires innovation.
- We must set the value-added standard for acquisition, engineering, business and maintenance.



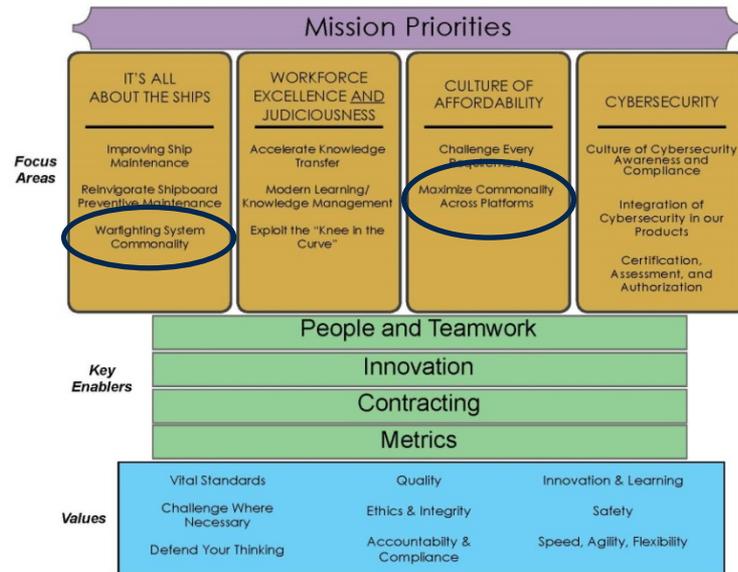
STRATEGIC FRAMEWORK

MISSION

We design, build, deliver and maintain ships and systems on time and on cost for the United States Navy.

VISION

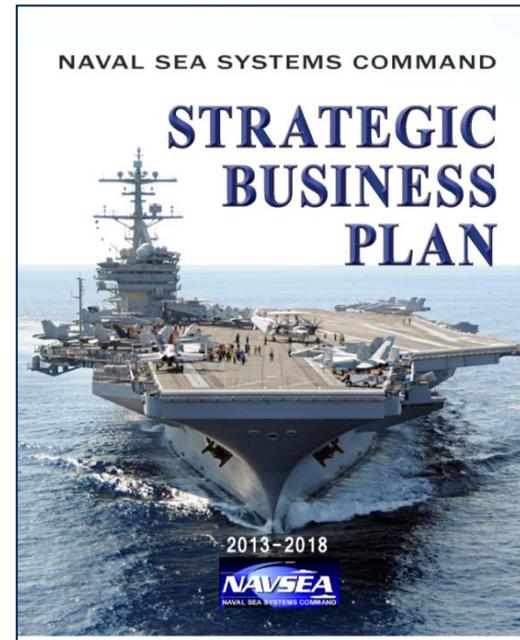
We are the nation's team accountable for the health of the Navy's ships. We purposefully operate to ensure the U.S. Navy can protect and defend America. We must be supported by a modern, efficient industrial base. We must be a world-class employer of choice that inspires innovation. We must set the value-added standard for acquisition, engineering, business and maintenance.



2 NAVSEA Strategic Business Plan 2013 - 2018 Second Edition

NAVSEA's Mission Priorities is Culture Of Affordability, which focuses on:

- **Challenging Every Requirement**
- **Reestablishing the Ship Characteristics Improvement Board and**
- **Maximizing Commonality Across Platforms.**
- **Warfighting Systems Commonality**



Variation Reduction and Commonality Timeline



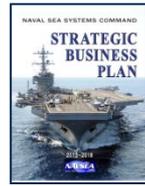
HM&E Analysis (Deep Dives)

NAVSEAINST 4120.8 Commonality Handbooks

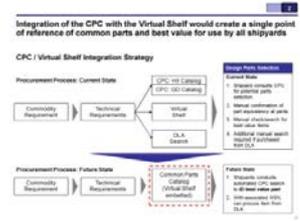
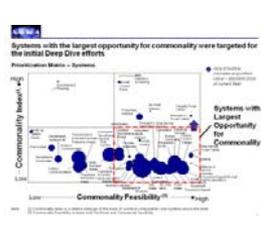
NSRP VS CPC Implementation

Commodity Contract Contract Clauses SECNAV 5000.2

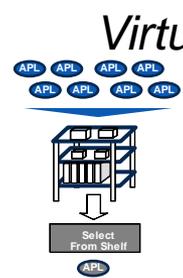
Defense Acquisition Guidebook



NAVSEA Strategic Business Plan SECNAV 5000.2 - Gate Review Process Electric Motors - Watertight Doors Contract Guidebook for PMs Better Buying Power 2.0

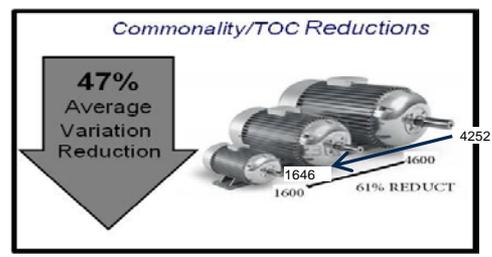


2008 - 2013 Deep Dive assessed 58% of ship systems - Identified 178 spec reduction and 47% variant reduction opportunities



Ship-Based System	Sub-System	% Reduction Opportunities
Drumming	Flange Seals	+25%
	Seals	+25%
	Seals	+25%
Mechanical Control Systems	Seals	+25%
	Seals	+25%
Electronics	Board Connectors	+100%
	Board Connectors	+100%
Load Control - Power Panels	Load Control	+100%
	Load Control	+100%
CR Based Panels	Control Panels	+100%
	Control Panels	+100%
Switchgear	Switchgear	+100%
	Switchgear	+100%
Sub-Systems	Sub-Systems	+100%
	Sub-Systems	+100%
Climate Controls	Climate Controls	+100%
	Climate Controls	+100%
UPS & Motor Controllers	UPS & Motor Controllers	+100%
	UPS & Motor Controllers	+100%
Propulsion Systems	Propulsion Systems	+100%
	Propulsion Systems	+100%
Coverage/Charging	Coverage/Charging	+100%
	Coverage/Charging	+100%
Ship Controls	Ship Controls	+100%
	Ship Controls	+100%
Cabin/Inhab Systems	Cabin/Inhab Systems	+100%
	Cabin/Inhab Systems	+100%

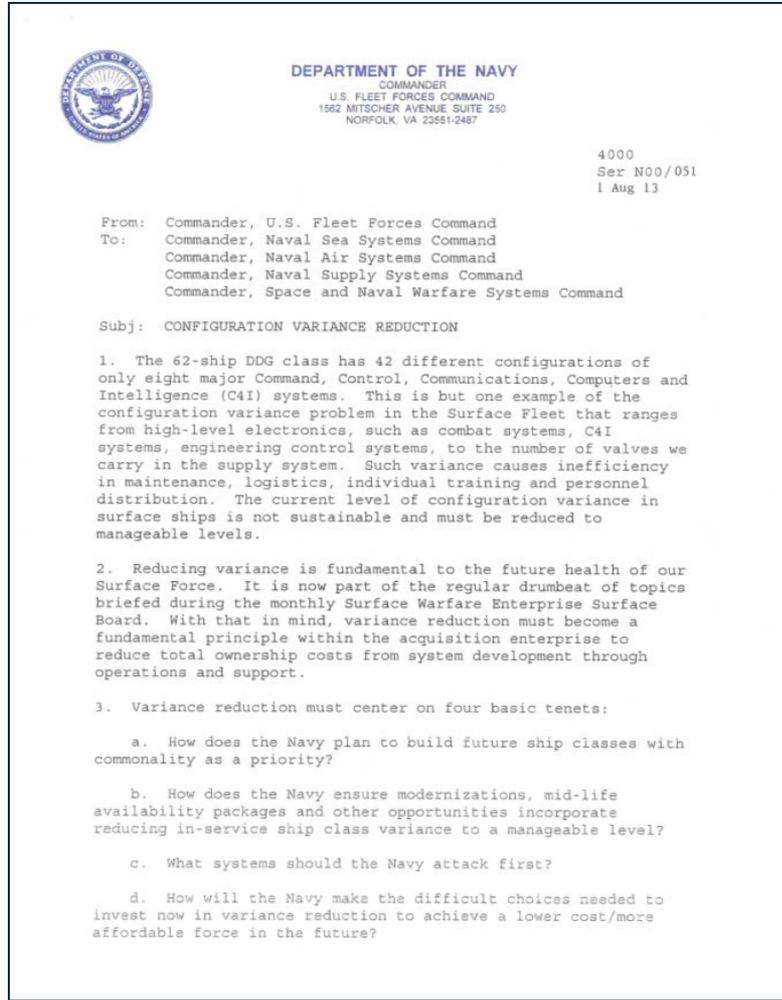
Parts Based System	Sub-System	% Reduction Opportunities
Ship Controls	Ship Controls	+100%
	Ship Controls	+100%
Selector Component (Drive Systems)	Selector Component	+100%
	Selector Component	+100%
Electrical Distribution	Electrical Distribution	+100%
	Electrical Distribution	+100%
Mechanical Control Systems	Mechanical Control Systems	+100%
	Mechanical Control Systems	+100%
Fluid Systems	Fluid Systems	+100%
	Fluid Systems	+100%
Compressed Air Systems	Compressed Air Systems	+100%
	Compressed Air Systems	+100%
Energy Storing/Supply	Energy Storing/Supply	+100%
	Energy Storing/Supply	+100%
Lifting and Movement Control Systems	Lifting and Movement Control Systems	+100%
	Lifting and Movement Control Systems	+100%
AR/BA & Power Conversion	AR/BA & Power Conversion	+100%
	AR/BA & Power Conversion	+100%
Valves	Valves	+100%
	Valves	+100%
Voltage Conversion	Voltage Conversion	+100%
	Voltage Conversion	+100%
Hydraulics	Hydraulics	+100%
	Hydraulics	+100%
Pneumatic Equipment	Pneumatic Equipment	+100%
	Pneumatic Equipment	+100%



2010 - present: Implementation process established to drive cross platform commonality



Program	# of Recs Under Review	Review Feedback Target			Recommendation Review Status					
		Q1 2012	Q1 2013	Q1 2014	Int. SCM / Shipyard Validation	imp.	Future Work	Requires Additional Review Long Term Opt.	Adopting	Devolving
DDG	75	5	23	11	11	-	11	25	1	-
Ford Class	105	11	33	-	1	-	4	8	-	-
LHA	122	40	15	42	9	-	42	-	14	-
Nimitz Class	85	85	-	-	-	-	-	-	-	-
CR and VA	34	34	-	-	-	-	-	-	-	-



U.S. Fleet Forces Command Letter - Configuration Variance Reduction

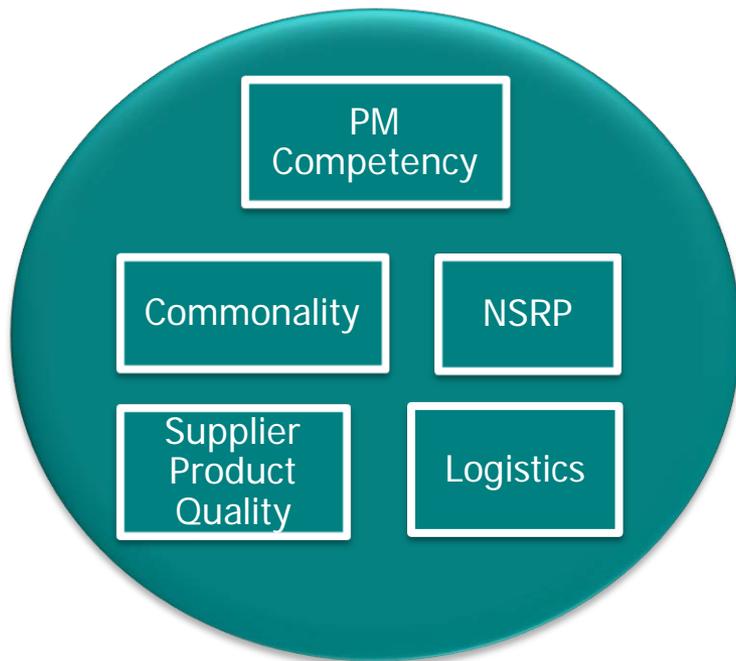
Example: 62- Ship DDG Class – 42 different configurations of 8 major C4I systems. Variation not sustainable.

- **Variance Reduction:**
 - Fundamental to future health of the Surface Force.
 - Fundamental principle for acquisition enterprise from systems development through operations and support.
- **Commonality** - investment in our Surface Force and surface wholeness and reduced cost in TOC by actions taken today will greatly benefit our Surface Force in the future.
- **Four tenets to be addressed:**
 - Plan for future ship classes?
 - Modernizations & Mid-life Upgrades?
 - Prioritize systems to attack?
 - Difficult choices to invest in now?

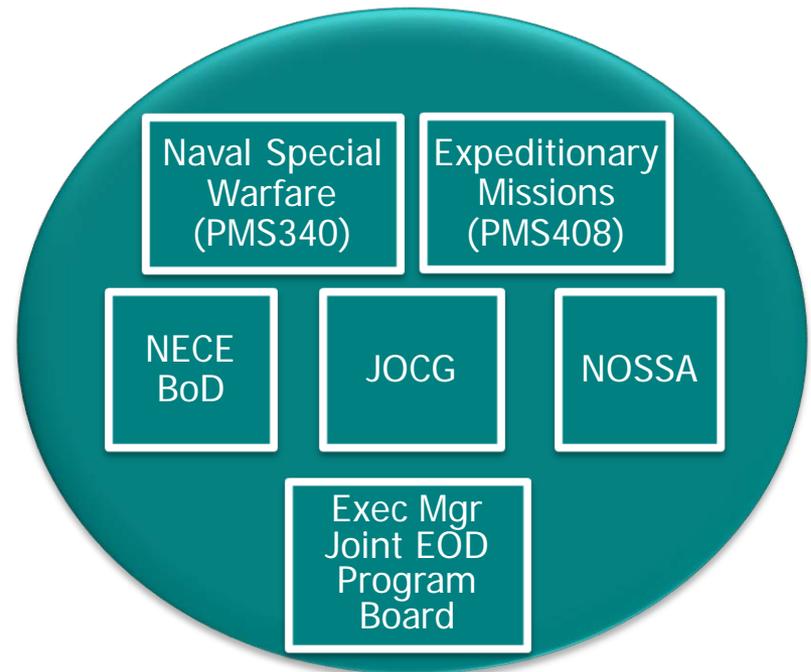
Variation is not sustainable

Established April 2014 to reduce Fleet variance and standardize acquisition and commonality across People, Parts, and Processes

Acquisition & Commonality



Expeditionary Warfare / Ordnance



With characteristics of both a PEO and a NAVSEA Directorate, SEA 06 has a unique charter to effect change across NAVSEA.

NAVSEA 06 MISSION



Sample:



Enterprise Commonality Program Office



Focus on reducing “variation”

- Working with Fleet, PEOs, and SEA 05 to develop and implement commonality initiatives
 - Variation reduction in processes and requirements
- Cost reduction through Strategic Material Management and elimination of excessive requirements in specifications and standards
- Policy and guidance document analysis, modification and development to eliminate cost and waste in all facets of system development

Recent Actions and Successes

- Virtual Shelf development and improvement, enabling proven cost savings
- Engagement with Industry, ASN(RDA), and PEOs
- Generated standard contract language to achieve commonality goals – being implemented today
 - NAVSEAINST 4120.8A - Commonality Instruction update
- NAVSEA Commonality Handbook update

Staffing

One permanent billet and ten (10) rotational assignments:
one from each PEO; five from SEA 05 – Changing NAVSEA culture

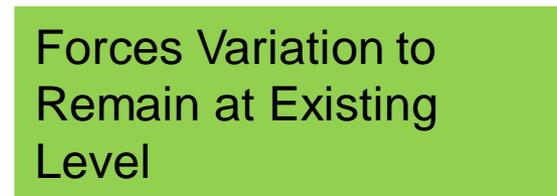
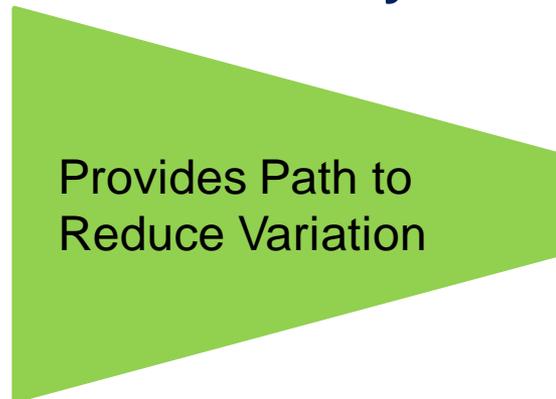
Facilitates collaboration between NAVSEA & Affiliated PEOs, Warfare Centers, Public & Private Shipyards, the Logistics Community, the Coast Guard and Original Equipment Manufacturers

Commonality is the cross-platform implementation of systems, architectures, processes, and standards that results in reduced configuration variation and lowers Total Ownership Costs.

Commonality

vs

Standardization



Commonality attacks the **design decisions** that drive variation

Standardization **prevents** further proliferation

Commonality accomplishes variance reduction in Navy procurement through use of a central repository (Virtual Shelf) that is available to Ship Design Managers, Contractors and Shipbuilders

Commonality is an approach to Engineering that accounts for cross-program variation and TOC reduction

What Commonality IS

- A reduction of many parts/systems to fewer
- A critical examination of necessary variation
- An effort applied at the logical level of design
- An effort in part designed to reduce program risk
- A validated approach justified with a business case

What Commonality IS NOT

- Does not eliminate all variation (e.g. not necessarily reduce to one option)
- Does not sacrifice required performance, safety or required quality
- Does not apply to all levels of design – instead effort will be applied where it makes the most sense
- Does not in any way impede technology
- Does not impact every system or where there is no justification

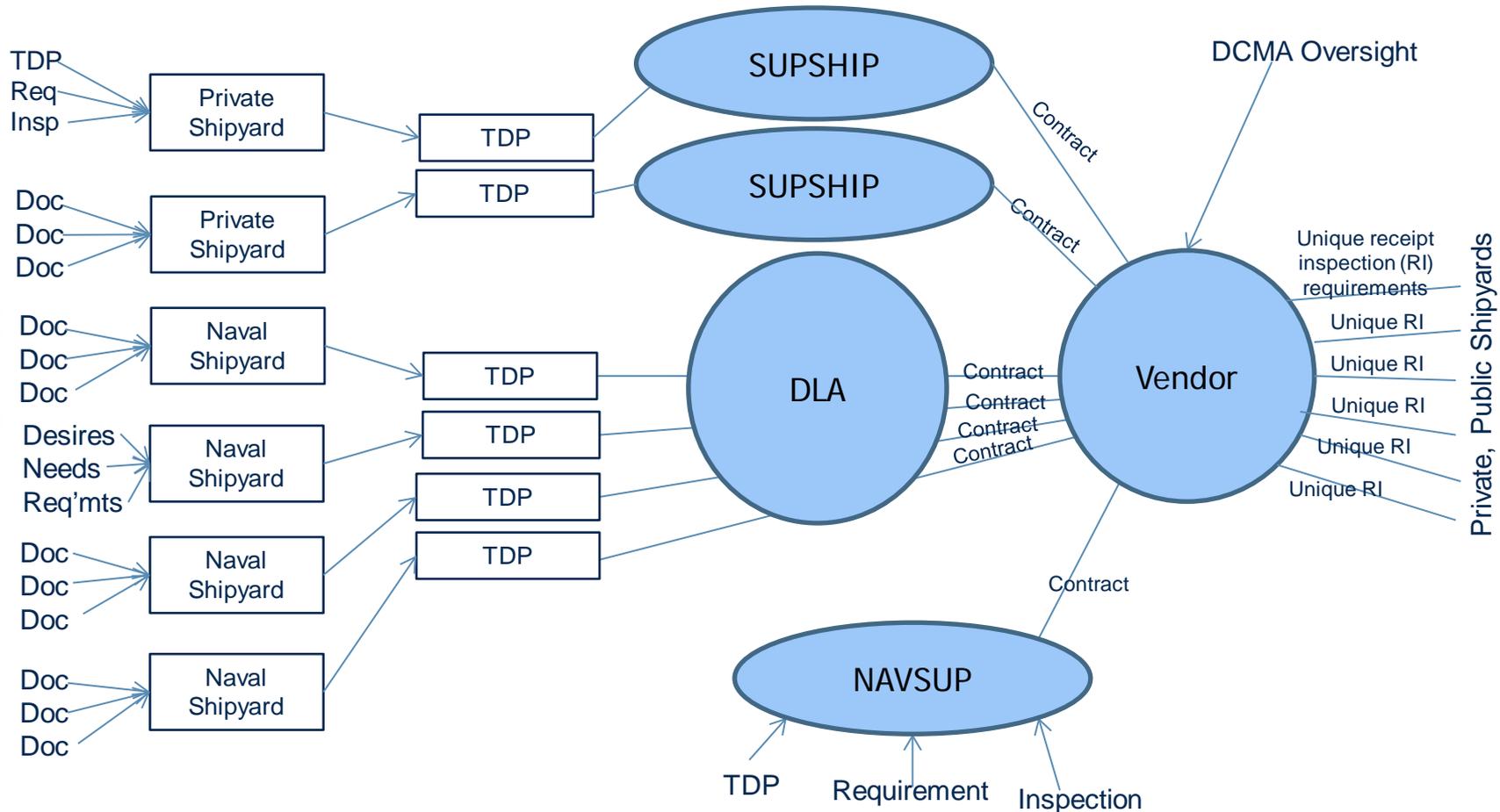
“Commonality...Where It Makes Sense”

Industry-Wide Cost Driver Variation in the Fleet

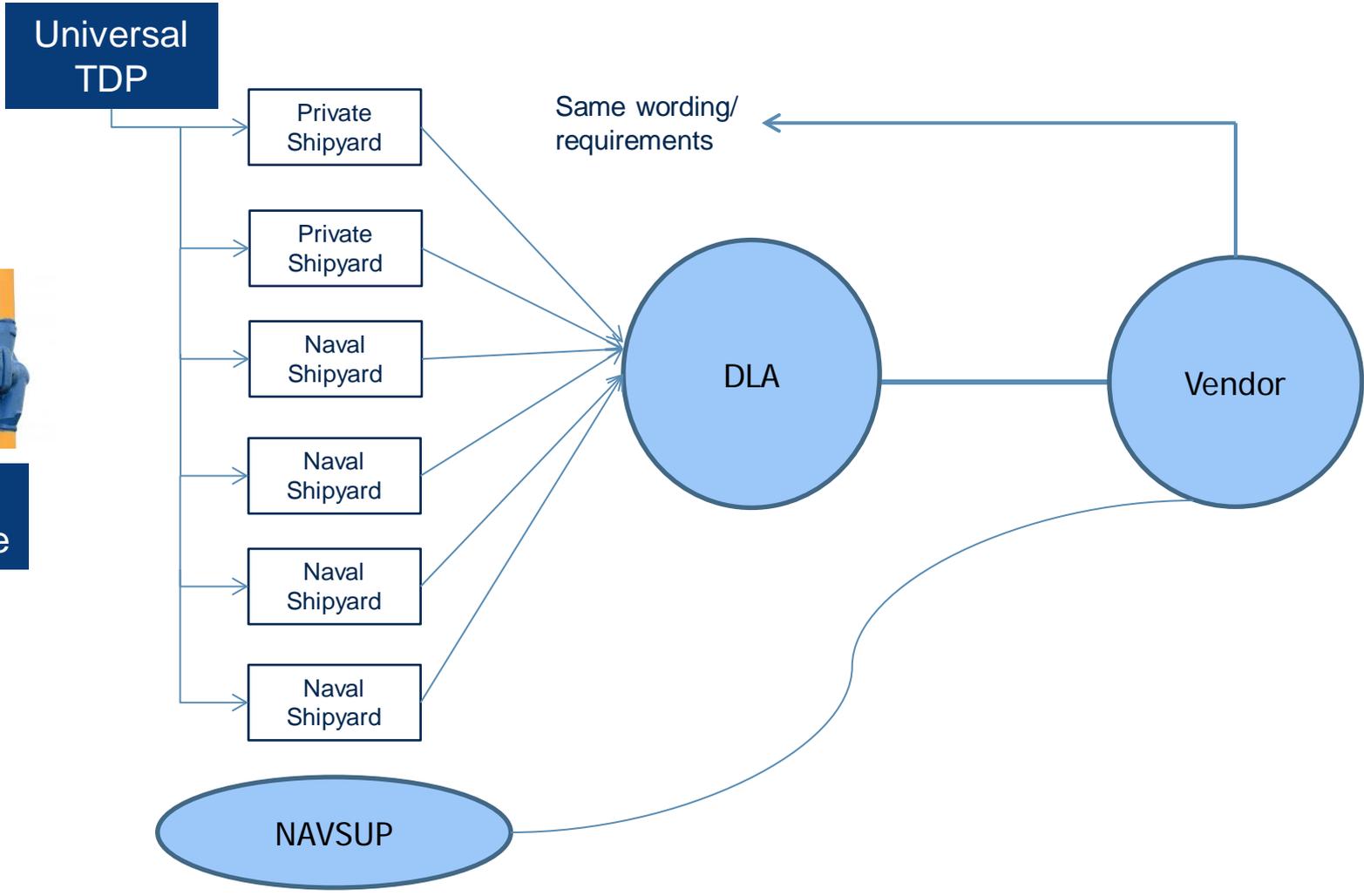
- A/C Plants:
36 Major Variants
- Centrifugal Pumps (Surface Ships):
 - Fresh Water –
273 models with 56 Different Suppliers
 - Sea Water –
316 models with 35 Different Suppliers
- Steering Control Systems (Surf)
25 Major Variants
- Boat Davits (7M & 11M RHIBs):
22 Configurations (8 OEMs)
(Just to handle RHIBs!)
- Major C4I Systems (DDG):
42 Configurations of 8 Major Systems
- Machinery Control Systems (Surface Ships):
94 Unique VME Cards
24 Unique Workstations
18 Different UPS

Commonality   **TOC** 

Lack of Commonality Leads to Multiple Requirements and Contracts



Future Business Model: Streamlining Requirements & Contracts



SHIP / SYSTEM ACQUISITION COST SAVINGS

- VIRTUAL SHELF
 - Common Parts
 - Lower TOC
 - Validated Cross Platform Use
- STRATEGIC MATERIAL MANAGEMENT
 - Best Value / Lower TOC on Major Systems (A/C Plants, Air Comp, Gas Turb)
- LABOR HOUR REDUCTIONS
 - Design (Ex. WTDs, MCS)
 - Process (Ex. Painting, Welding)

OPERATIONAL FLEET IMPACTS

- TRAINING BURDEN REDUCED
 - LOK of # of Systems Reduced
 - Fewer Procedures to Train On
 - Schoolhouse Material
- LOGISTICS BURDEN REDUCED
 - Fewer Technical Manuals
 - Reduced Parts Inventory
 - Less PMS / Administration
- MODERNIZATION SAVINGS

Continue to generate and foster partnerships

- Industry
 - Understand NAVSEA's approach to implementing commonality
 - Identify opportunities for applying commonality
 - Explore and seek opportunities with industry partners
 - Revisit promising technologies not implemented from previous projects
- Navy
 - Identify cost drivers at the program level
 - Follow through on implementation
 - Identify and attack "customer factors" that are cost drivers
 - Revisit promising technologies not implemented from previous projects



Points of Contact



- NAVSEA Acquisition and Commonality Directorate (SEA 06) Director:
(202) 781-0104
- NAVSEA SEA 06 Executive Director:
(202) 781-0985
- SEA 06C Enterprise Commonality Program Manager:
(202) 781-1779
- Enterprise Commonality Office E-mail:
NSSC_COMMONALITY@navy.mil