



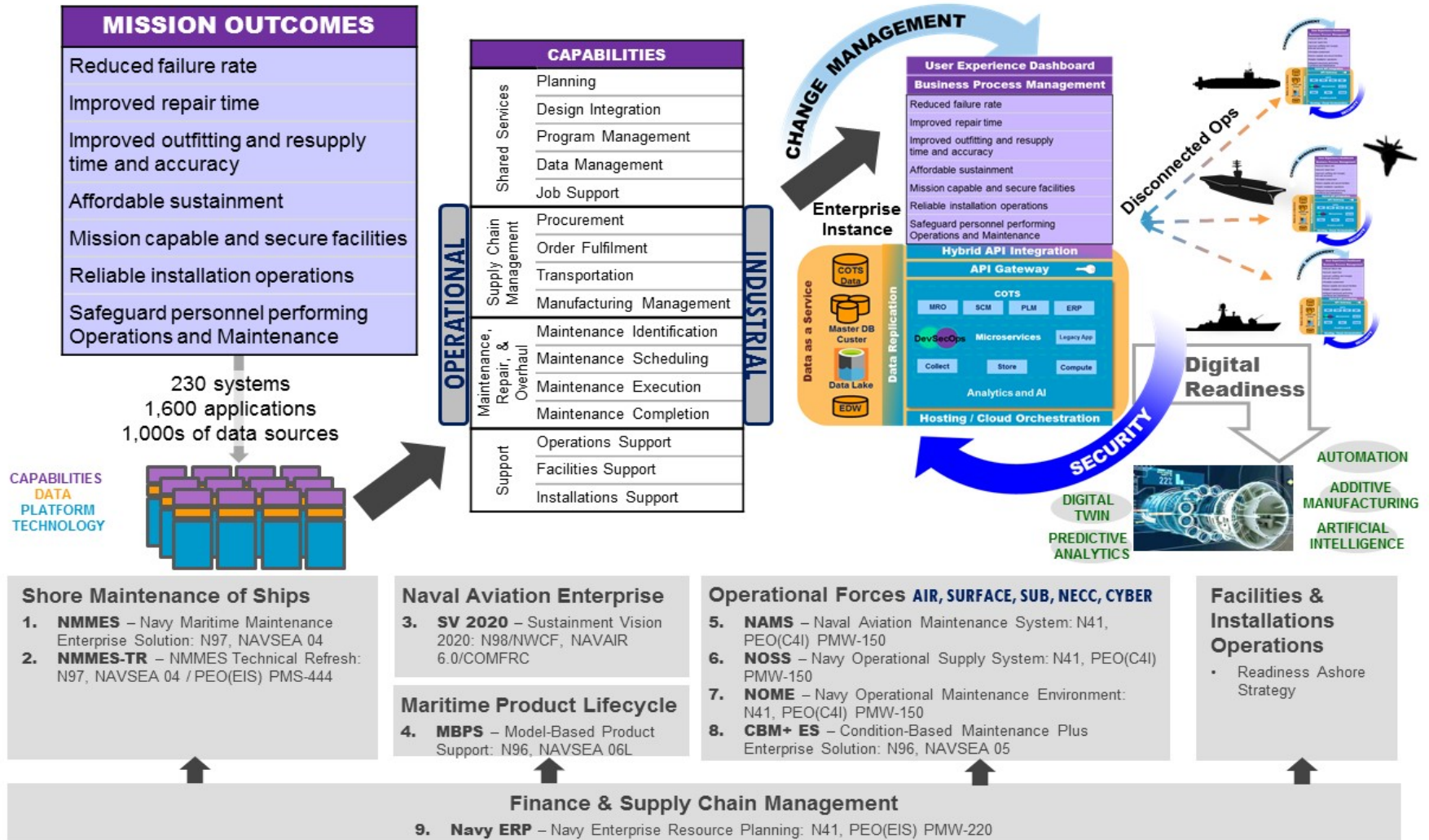
# Model Based Product Support (MBPS)

General Overview

SEA06L 06/30/2020



# OPNAV Engineering Technical Reference Framework (ETRF) Vision





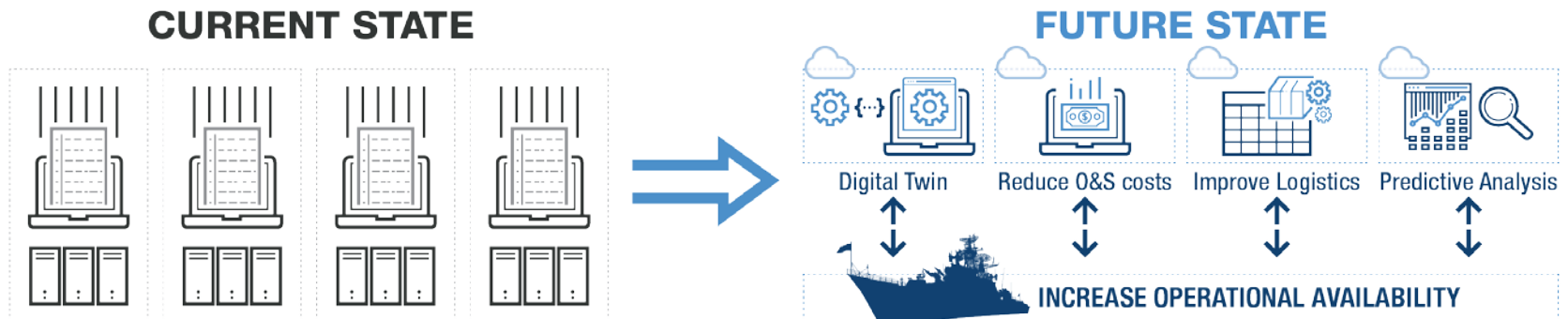
# Logistics Digital Transformation POAM

		FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27
<b>Data Analytics / Digital Platform</b> 	<b>AWARE</b> <i>Agile Warfighter Analytics Readiness Environment</i> RS: N41 PMO: PEO(C4I) PMW-150	 UNCLASSIFIED (IL4/5)	 SECRET (IL6)						
		Legend:  Contract IOC FOC							
<b>Operational Forces Supply &amp; Maintenance</b> 	<b>NOBLE</b> <i>Naval Operational Business Logistics Enterprise</i> RS: N41 PMO: PEO(C4I) PMW-150	 Limited Deployment OTA	 IOC Afloat IOC Ashore	CONTINUOUS DEPLOYMENTS			 FOC		
<b>Maritime Weapon Models &amp; Support</b> 	<b>MBPS</b> <i>Model-Based Product Support</i> <b>CBM+ Enterprise Solution</b> <i>Condition-Based Maintenance Plus ES</i> RS: N96 PMO: SEA 06 SEA 05	 Prototype / MVP OTA	 IOC	CONTINUOUS DEPLOYMENTS		 FOC			
		 MVPs	 IOC	CONTINUOUS DEPLOYMENTS			 FOC		
<b>Shore Maintenance of Ships</b> 	<b>NMMES</b> <i>Navy Maritime Maintenance Enterprise Solution</i> <b>NMMES-TR</b> <i>NMMES Tech Refresh</i> RS: N97 PMO: SEA 04 SEA 04/PEO(EIS) PMS-444	 NMMES: MSE v1.2	 NMMES: Digital Shipbuilding Integration	 TR IOC (Incr 1)	 TR FOC (Incr 1)	 TR IOC (Incr 2)	 TR FOC (Incr 2)	 TR FOC (Incr 3)	
		 NMMES-TR: Contract Award				 TR IOC (Incr 3)	 TR FOC (Incr 4)		
<b>Aviation Sustainment</b> 	<b>Aviation Digital Sust</b> RS: N98 PMO: PEO CS	 IOC	CONTINUOUS DEPLOYMENTS					 FOC	

# MBPS Problem Statement



As stated in the MBPS Business Capability Requirements Document (BCRD)

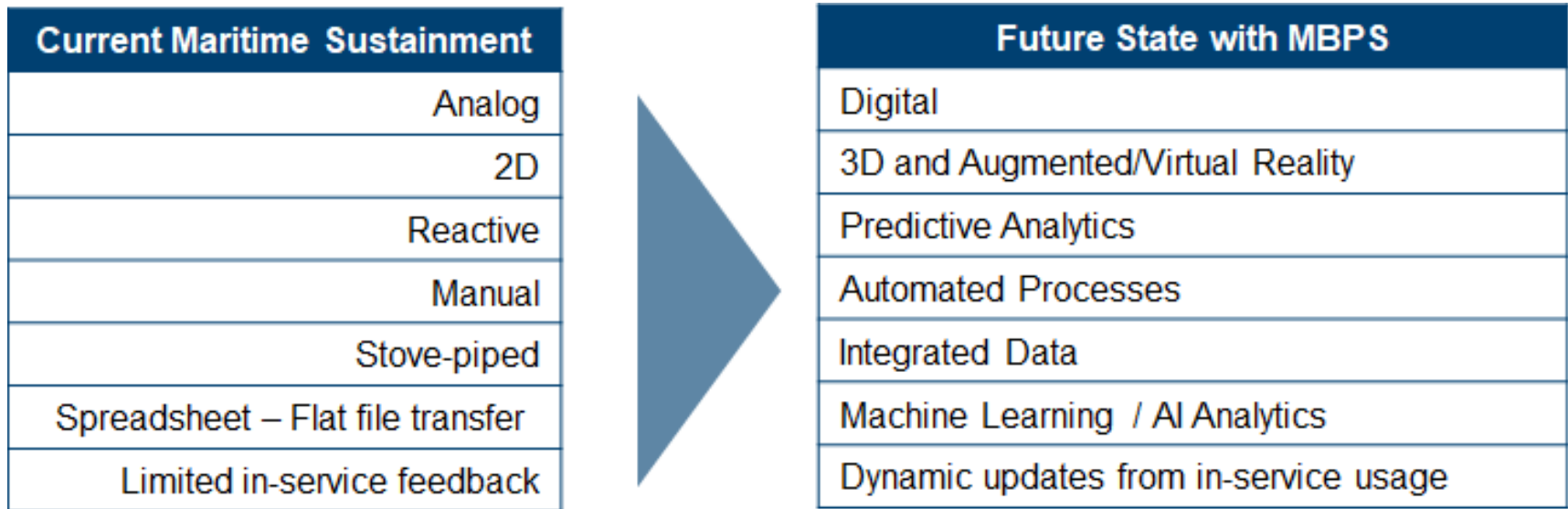
- 
 The Navy's current **logistics data systems** that provide configuration management, provisioning, readiness modeling and technical data management support for ships and weapon systems **are outdated**.
- 
 These systems are at the end of their useful life, are no longer supportable. Combined with **unacceptable sustainment costs, cyber vulnerabilities, software obsolescence, rapidly changing/emerging technologies, lack of common data standards and interfaces**, and outdated business processes, it greatly inhibits the ability to effectively and cohesively perform supply and maintenance functions.



*Increasing weapon system uptime while reducing support costs requires a Digital Transformation of NAVSEA Logistics*

# Current and Future State

-  MBPS supports IT Replacement effort to modernize NAVSEA's provide configuration management, provisioning, readiness modeling and technical data management Logistics IT systems to enable the advanced warfighter readiness capabilities
-  MBPS represents a **seismic shift** in the way the entire NAVSEA workforce will execute the processes necessary to sustain ships and submarines



*CTD funding line supports current in-service capabilities in addition to technology refresh (MBPS) efforts*



# MBPS Digital Transformation (BCAT II)

- MBPS is a Business Capability Acquisition Category Level II (BCAT II) currently in Phase 1 with Phase 2 completion expected by the end of prototype development period during Q2 FY21
- SEA06L is executing an Other Transaction Authority (OTA) to initiate an incremental approach for prototype development

*MBPS is executing an OTA Prototype Acquisition approach targeted to deliver operational capabilities in FY21*

# MBPS Capability Overview

## Navy Product Data Management (NPDM):

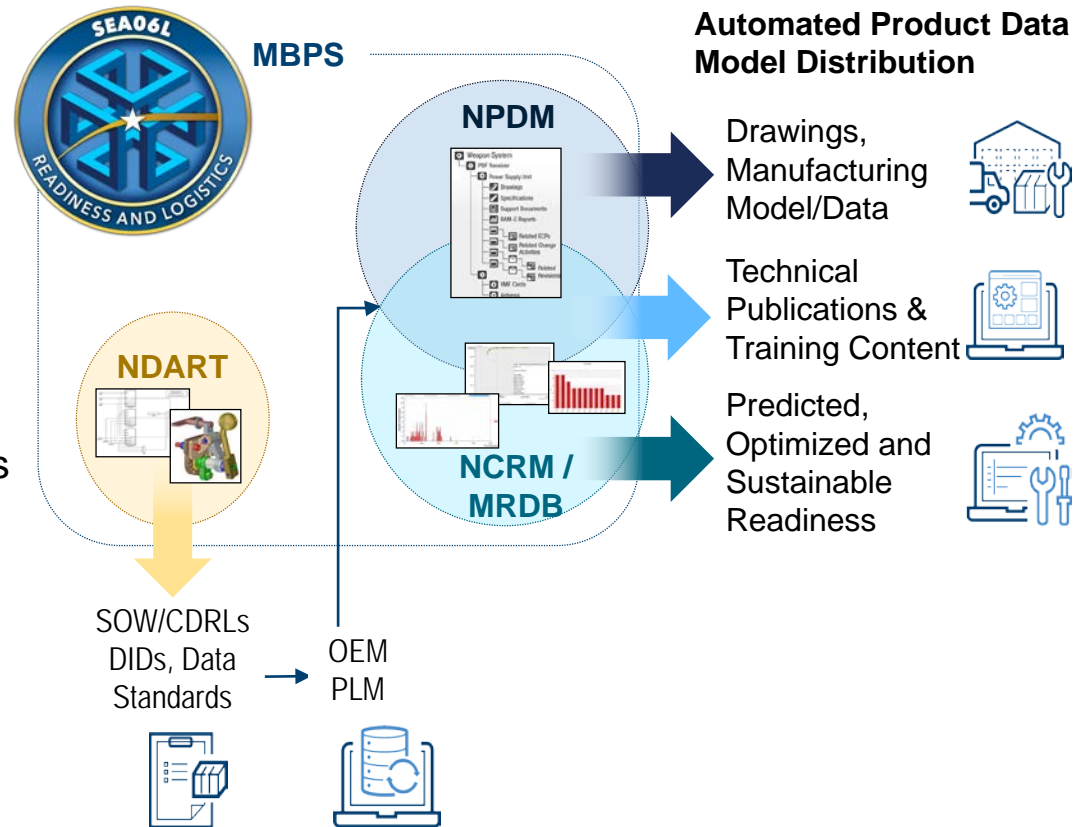
- Configuration manage, sustain, and provide enterprise access to all components of legacy and future standards-based Navy Weapon System Technical Data Packages (TDP)

## Navy Common Readiness Model (NCRM)

- Analyze, report, predict, and optimize weapon system readiness and O&S cost throughout the life cycle

## Navy Data Acquisition Requirements Tool (NDART)

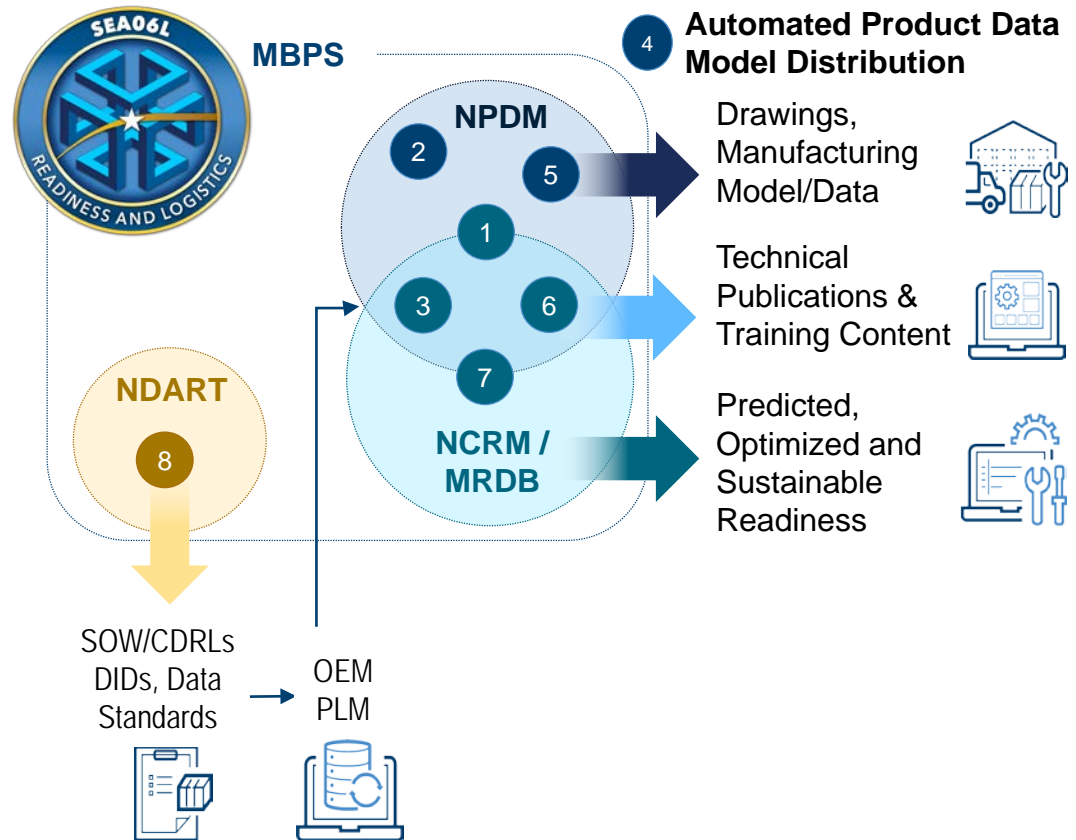
- Common data standards, requirements and acquisition approaches to procure technical and product data



*MBPS is comprised of three primary capabilities providing enterprise product data and readiness analytic services*

# MBPS to In-Service Systems Alignment

- 1 **System Shipboard Config Status**  
• CDMD-OA, RADWEB
- 2 **Configuration Mgmt & Modernization**  
• NDE (in planning)
- 3 **Provisioning Parts Information**  
• ICAPS
- 4 **Ship & Shore Tech Data Viewing**  
• ATIS
- 5 **Ship Drawings**  
• NSEDR
- 6 **Org & Depot Maint Procedures**  
• TDMIS, NAVLOGTD, PMSMIS (in planning)
- 7 **Readiness/Mission Models**  
• NMMAT, MRDB, RBS
- 8 **Tech Data Contract Requirements**  
• SMART-T

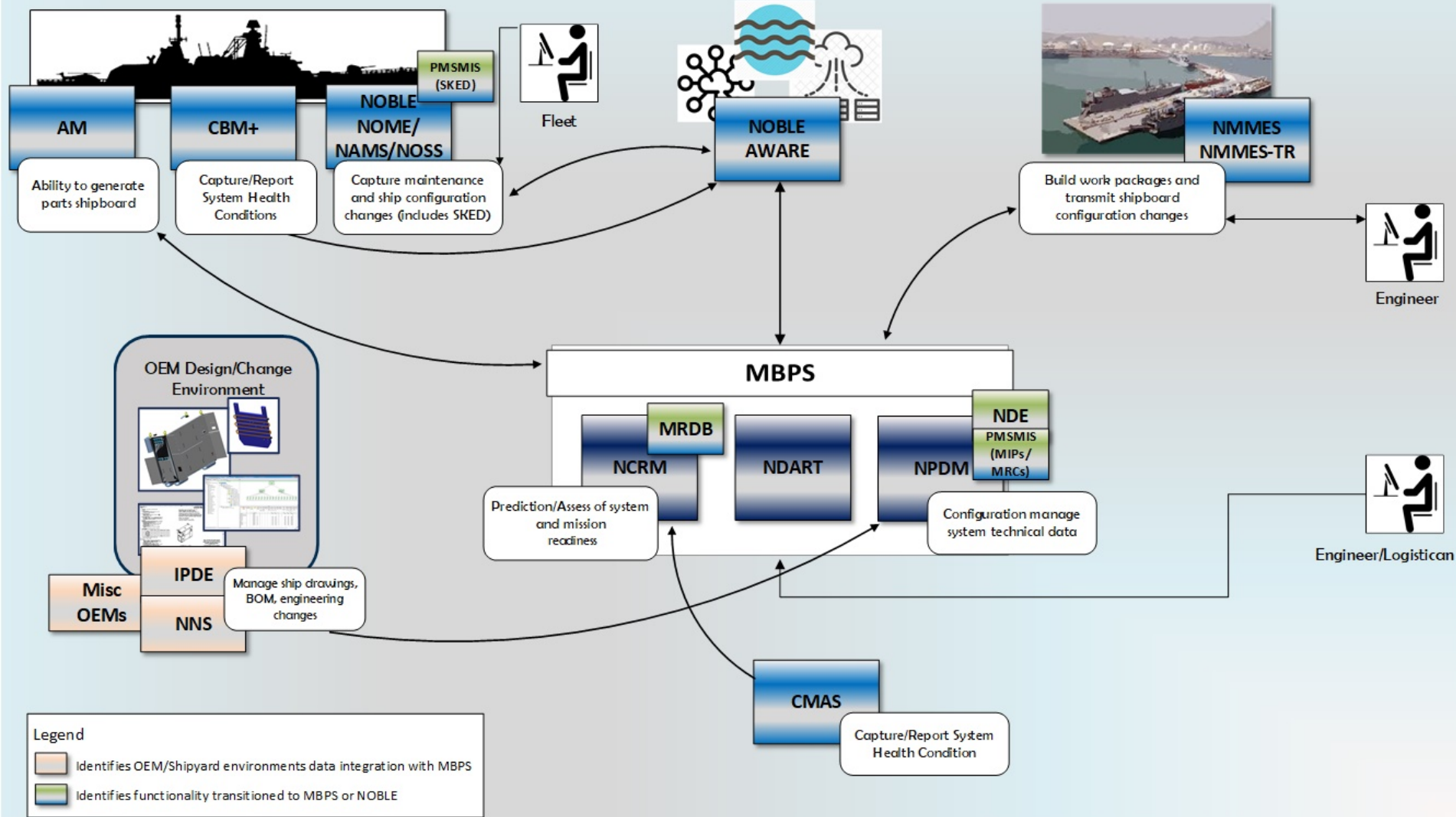


*MBPS will replace critical systems and applications. Other maritime logistics IT systems may be replaced as part of the future state.*

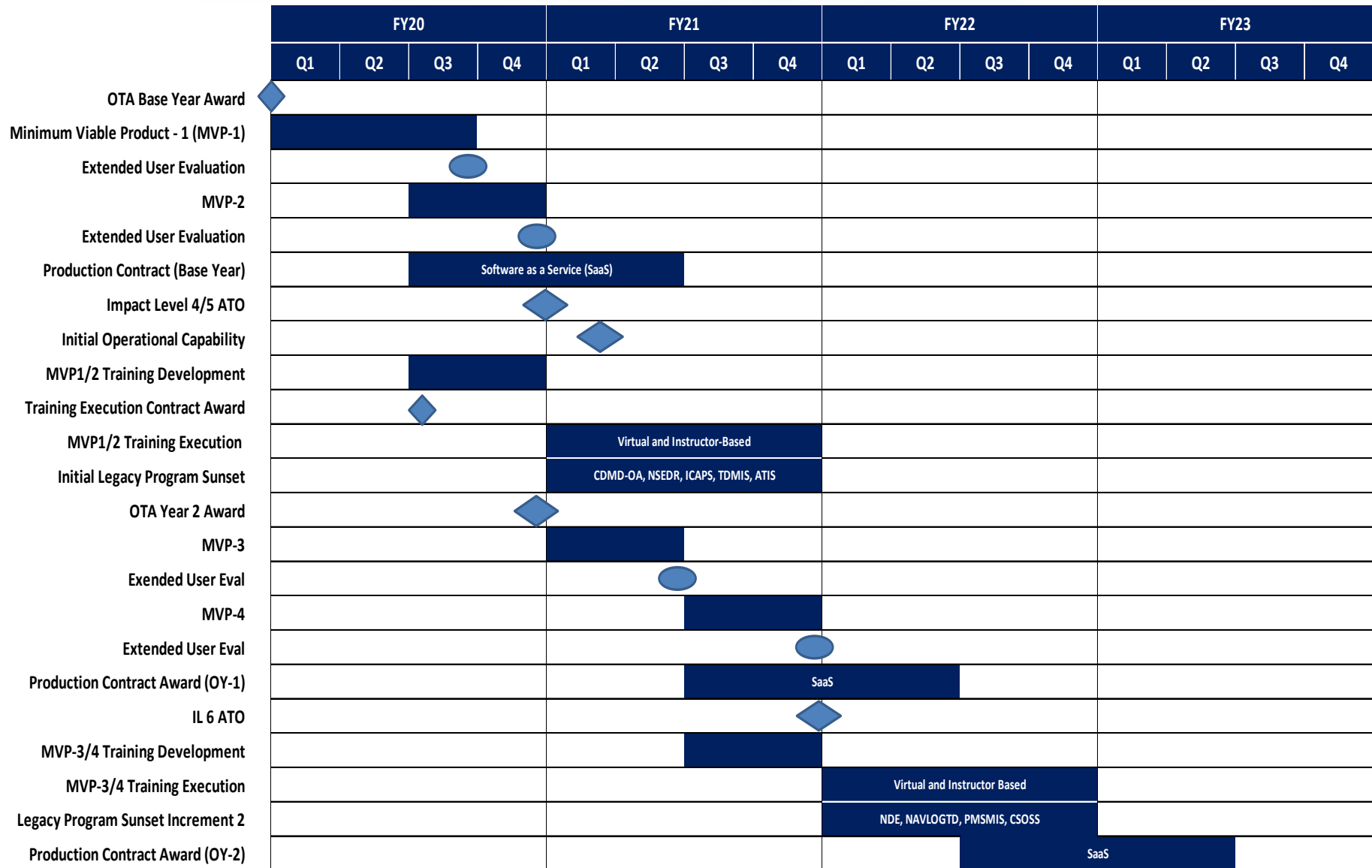


# Future MBPS Critical Touchpoints

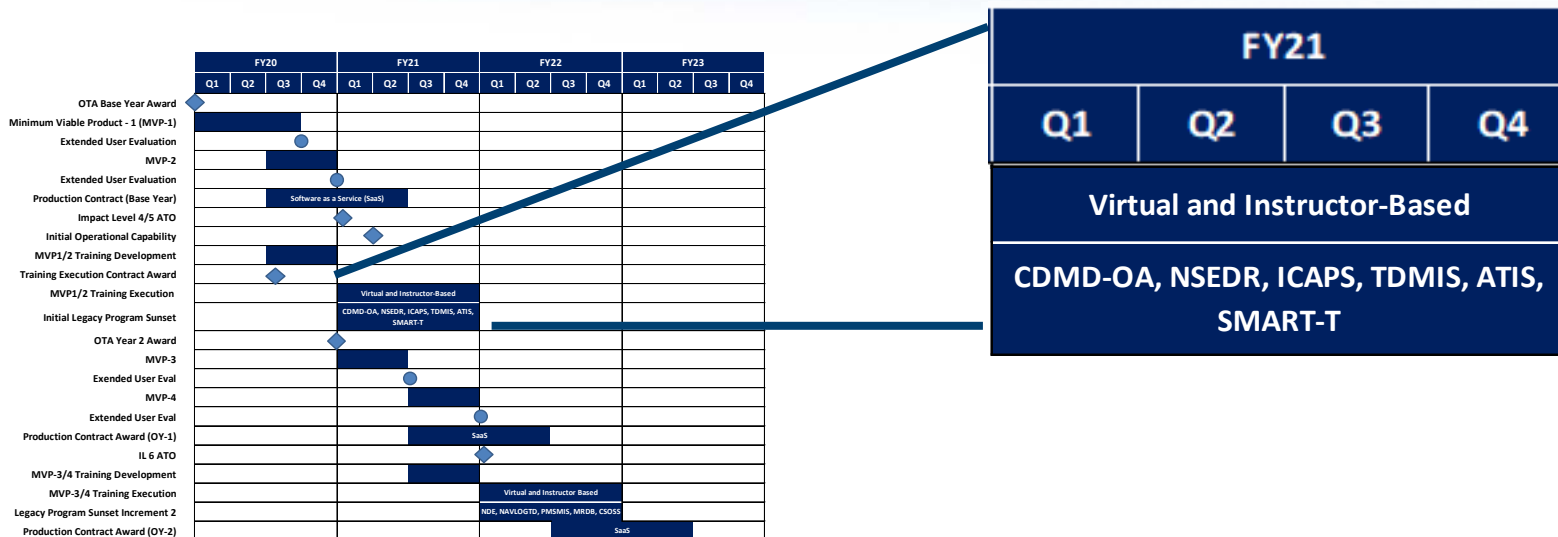
## MBPS Post MVP-1 & 2



# MBPS (BCAT II) Program Schedule



# Legacy System Replacement and Training Schedule (MVP 1 / 2)



- ★ FY21 legacy system concurrent operation and/or replacement schedule still in progress with MBPS vendor (Accenture)
  - Aligning to capability maturity from MVP-1 and current MVP-2 progress
  - Systems will not be shut down until end user training is executed and data V&V occurs
  - Legacy systems availability planned for several months after transition to the MBPS environment in case fail-over is required
  - CDMD-OA planned as the first legacy system to sunset (highest \$, foundational functionality)
  
- ★ Training deployment schedule being developed in concert with legacy system replacement schedule
  - Training development occurring in parallel to MVP software configuration
  - Training execution contract awarded April 2020



# Model Based Product Support Overview

MBPS increases weapon system uptime and reduces Operating and Support (O&S) costs through readiness analytics and enterprise product data

The Navy maritime Model Based Product Support (MBPS) program will increase weapon system uptime and reduce support costs by providing:

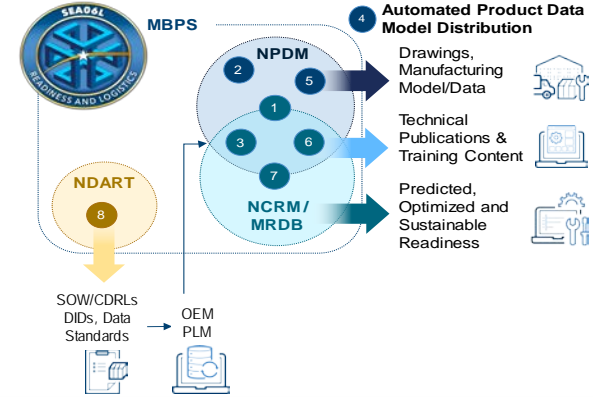
- A decision support capability to relate resources (\$) to readiness
- A maintenance and supply resource optimization model to dynamically meet mission readiness requirements
- Management and delivery of accurate, integrated, and modern 3D product data necessary to execute maintenance and supply actions on ships and submarines
- Common standards, requirements, and acquisition approaches for product and technical data

MBPS is a Program of Record (PoR) with a Business Capability Acquisition Category (BCAT) II designation. It is comprised of 3 primary capabilities: Navy Common Readiness Model (NCRM), Navy Product Data Management (NPDM), and Navy Data Acquisition Requirements Tool (NDART)

MBPS will replace critical systems/applications. Other maritime logistics IT systems may be replaced as part of the future state.

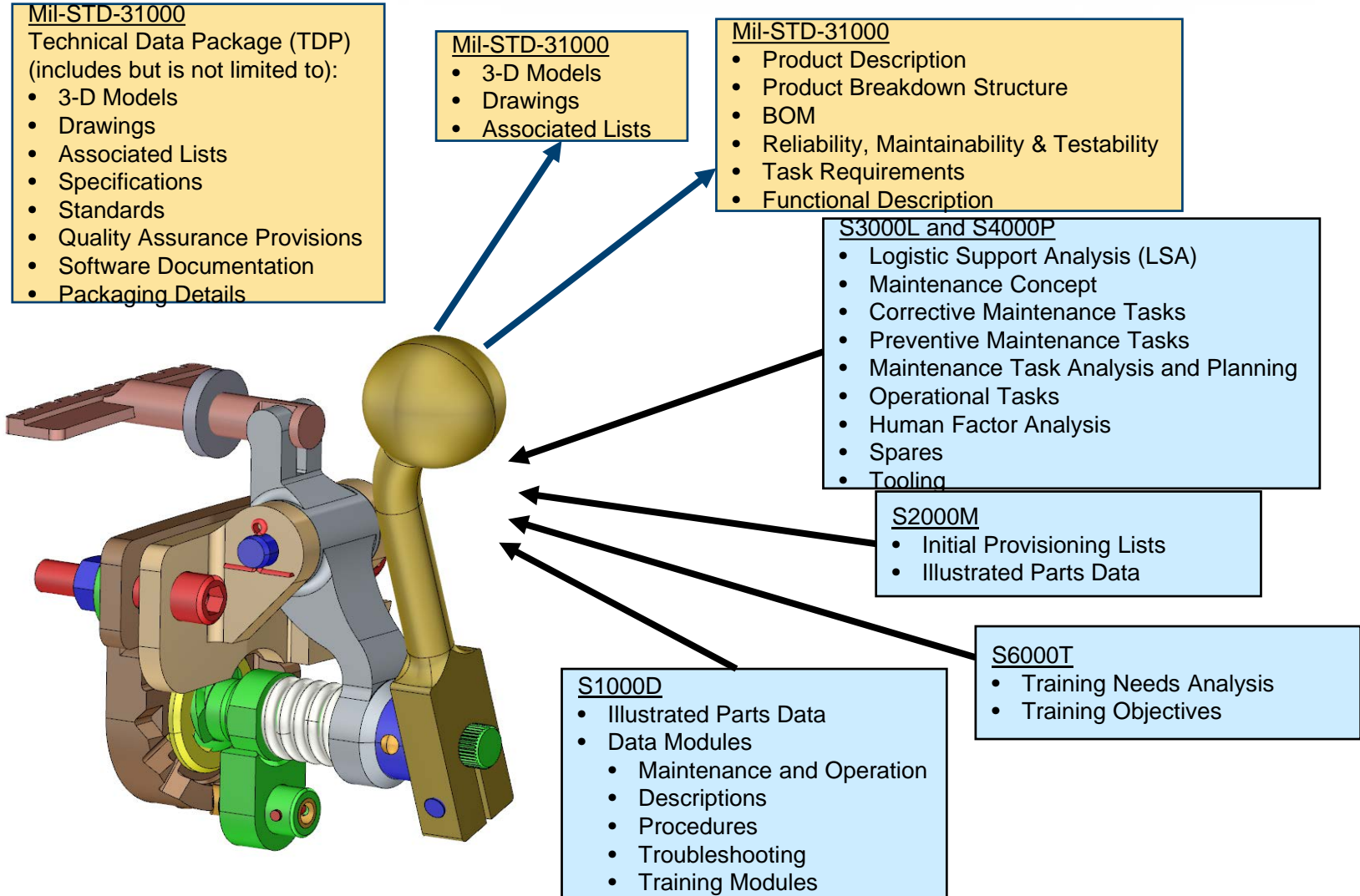
### MBPS to Legacy Systems Alignment

- 1 System Shipboard Config Status
  - CDMD-OA, RADWEB
- 2 Configuration Mgmt & Modernization
  - NDE
- 3 Provisioning Parts Information
  - ICAPS
- 4 Ship & Shore Tech Data Viewing
  - ATIS
- 5 Ship Drawings
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- 6 Org & Depot Maint Procedures
  - TDMIS, NAVLOGTD, PMSMIS
- 7 Readiness/Mission Models
  - NMMAT, MRDB, RBS
- 8 Tech Data Contract Requirements
  - SMART-T



	FY20				FY21				FY22				FY23			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
OTA Base Year Award	◆															
Minimum Viable Product - 1 (MVP-1)	■															
Extended User Evaluation MVP-2					●											
Extended User Evaluation MVP-2					■											
Production Contract (Base Year)					■											
Impact Level 4/5 ATO	◆															
Initial Operational Capability	◆															
MVP1/2 Training Development	■															
Training Execution Contract Award	◆															
MVP1/2 Training Execution					■											
Initial Legacy Program Sunset					■											
OTA Year 2 Award	◆															
MVP-3					■											
Extended User Eval MVP-4					●											
Extended User Eval MVP-4					■											
Production Contract Award (OY-1)									■							
IL 6 ATO	◆															
MVP-3/4 Training Development					■											
MVP-3/4 Training Execution					■											
Legacy Program Sunset Increment 2									■							
Production Contract Award (OY-2)													■			

# Product Model Data - Specifications



# IT Systems in MBPS Baseline

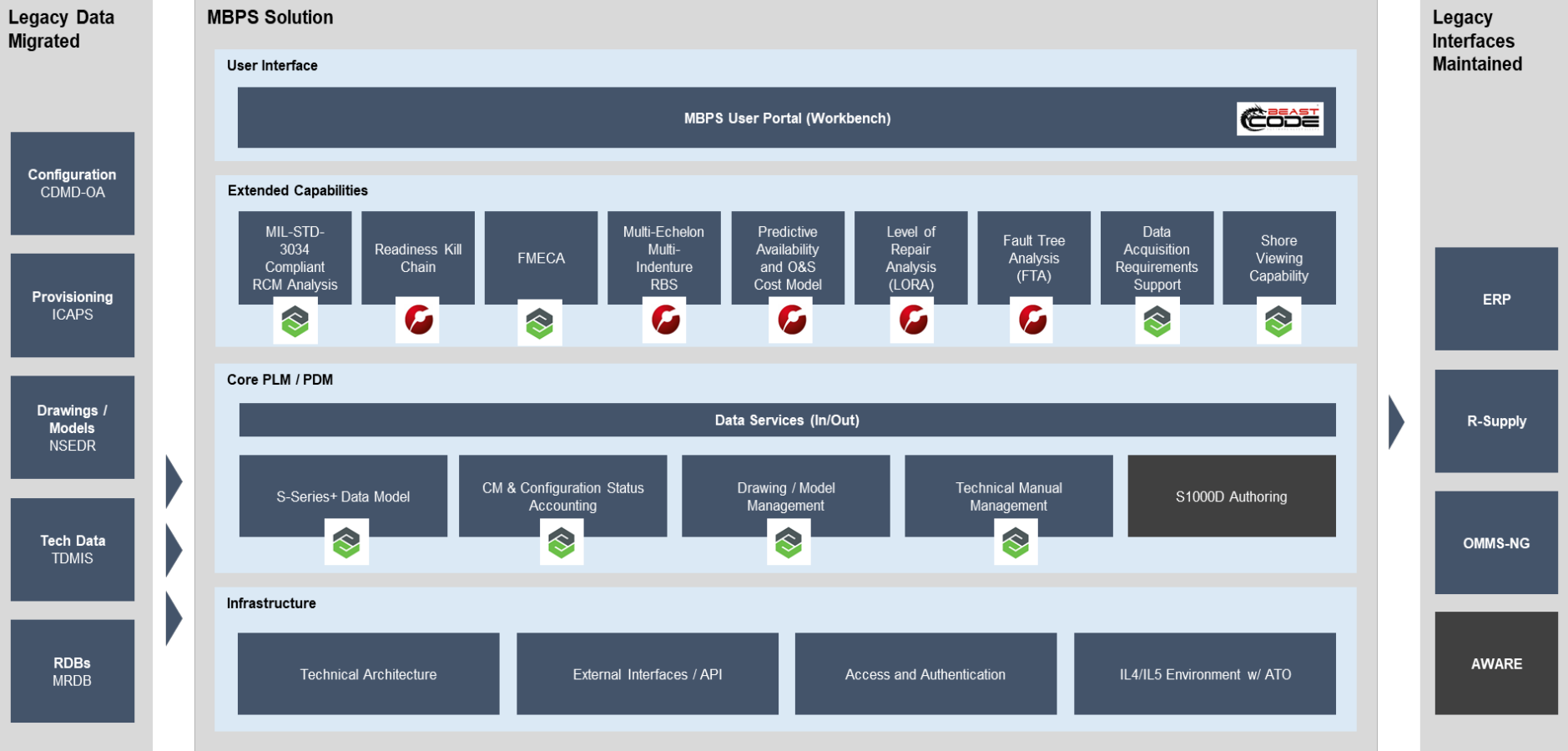
- SEA06L IT Systems under Command Tech Data (CTD) funding line included in FY20 MBPS Baseline:
  - 1. Configuration Data Manager's Database – Open Architecture (CDMD-OA)
  - 2. Revised Alternative Dataflow WEB (RADWEB)
  - 3. Advanced Technical Information Support (ATIS)
  - 4. Naval Ships Engineering Drawing Repository (NSEDR)
  - 5. Technical Manual Management Information Systems (TDMIS)
  - 6. Streamlined Modular Acquisition Requirements Tailoring Tool (SMART-T) .
  - 7. Naval Logistics Technical Data (NAVLOG-TD) Repository
  
- Additional applications outside of CTD funding line included in MBPS Baseline:
  - 8. Interactive Computer-Aided Provisioning System (ICAPS) – SEA 06L program, N9 Outfitting Account funded (FY 20 Baseline)
  - 9. Navy Maintenance Figures of Merit (MFOM) Modeling Analysis Tool (NMMAT) – USFF, USFF funded (FY20 Baseline)
  - 10. Material Readiness Database (MRDB) – SEA 21 program, N96 funded (FY21 Baseline)
  - 11. Readiness Based Sparing Availability Centered Inventory Model (ACIM) – NAVSUP, Navy Working Capital Funded (FY20 Baseline)
  
- Non-SEA 06 Applications identified for replacement outside of current MBPS baseline:
  - 1. Program Support Data (PSD) Automated Reporting and Tracking System (PARTS) –SEA 06L, N9 funded (FY21 Baseline)
  - 2. Planned Maintenance System Management Information System (PMS-MIS) – SEA 04RM, N96 funded (FY21 Baseline)
  - 3. Navy Data Environment (NDE) – SEA 04RP, N96 funded (FY21 Baseline)



# MVP-1 and MVP-2 Planned Capabilities


NPDM	NCRM	Infrastructure	NDART	Enabling/Supporting Capabilities
Document and 3D model management capability for all maritime technical manuals and drawings <i>(Replaces NSEDR and TDMIS)</i>	Predictive Availability and Operations and Support (O&S) Cost model and simulation capability configured for systems, ships/subs, and strike groups <i>(dependent on model availability)</i>	Unclass (IL4), UNNPI (IL5) Authority to Operate for MVP-1 and MVP-2 Capabilities	SOW, CDRL, and DID output capability for acquisition programs	Training analysis and content developed and ready for delivery for all MBPS deployed capabilities
Shore viewing capability for all formats of maritime 3D models, drawings, and technical manuals including S1000D <i>(Replaces ATIS ashore)</i>	Readiness Kill Chain capability	Legacy interfaces maintained and tested (ERP, OMMS-NG, R-Supply, REMAD)		Vendor required cyber testing completed for all MBPS deployed capabilities
Configuration Status Accounting (CSA) capability for all communities currently utilizing CDMD-OA <i>(Replaces CDMD-OA)</i>	Failure Modes, Effects, and Criticality Analysis (FMECA) capability	Data import and export capability for CDMD-OA and ICAPS data sets implemented in support of distribution to ERP, legacy ICAPS, OMMS-NG, and R-Supply		Full S-Series+ data model configured in NPDM to include mapping of current CDMD-OA and ICAPS data sets to the S-Series data model
Legacy CDMD-OA and ICAPS data converted into S-Series data model within MBPS	Reliability Centered Maintenance (RCM) analysis capability in compliance with MIL-STD-3034A	Data export capability for configuration-based technical publications		All CDMD-OA and ICAPS/ERP data sets moved to NPDM with configuration management capability implemented to support
Support of S-Series+ including S2000 (Provisioning), S3000 (Logistics Support Analysis), and S4000 (Preventive Maintenance) data standards for new programs. Near term stand alone S1000D authoring capability (NAVLOGTD). <i>(Replaces ICAPS)</i>	Multi-Echelon Multi-Indenture Readiness Based Sparing (RBS) <i>(Replaces TIGER/ACIM)</i>			
	Reliability Block Diagram (RBD) development and configuration management capability <i>(Replaces portion of MRDB)</i>  Model creation capability from S3000L output of NDPM  Level of Repair Analysis (LORA) capability  Fault Tree Analysis (FTA) capability			

# MBPS High-Level Capability Architecture (MVP-1/2)

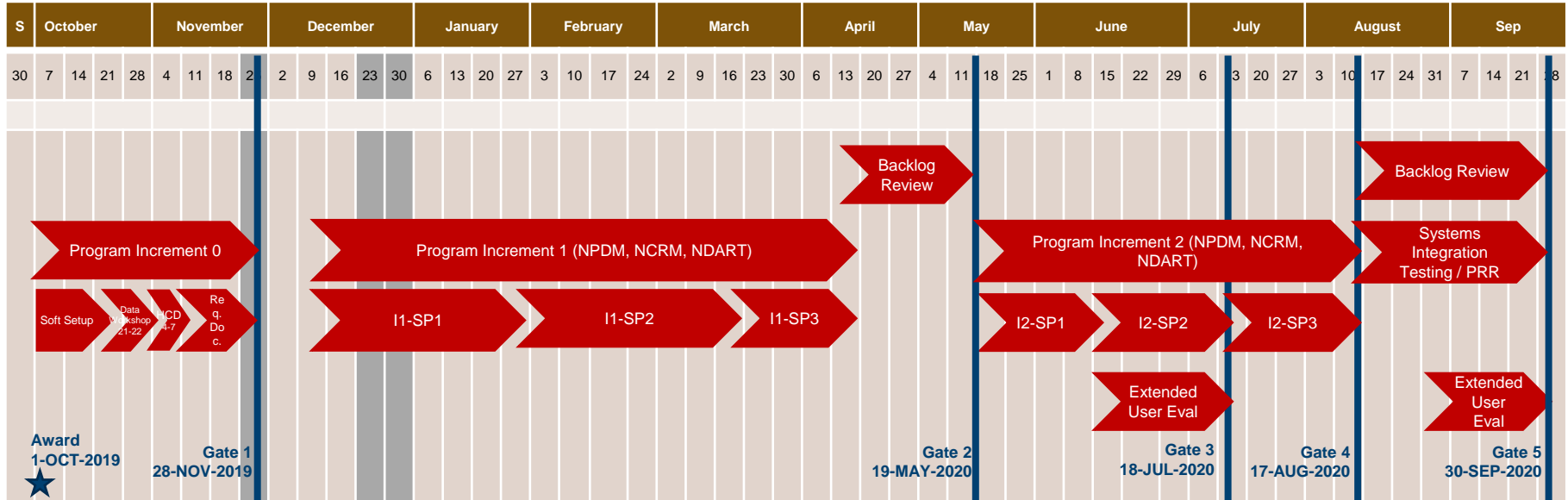


PTC software: 

Beast Code software: 

Systecon software: 

# MBPS Program Schedule (Revised 6 APR)



### Summary of Impacts:

- PI-1 Extended User Testing shifts from Sprint 4 to **Sprint 6** to allow development of additional end-user ready functionality
- Start dates for Sprints 2-7 adjusted to account for additional planning activities at start of Sprint 2
- Program Gates 2-5 adjusted to align with new dates for Extended User Testing and Sprints



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## Human-Centered Design

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## NAVSEA Product Support and Logistics Wiki

<https://wiki.navsea.navy.mil/display/LOG>

## MBPS Demo

[confluence.di2e.net/download/attachments/502385099/MBPS\\_LOGCOP\\_NPDM\\_DEMO\\_MAY20.mp4?api=v2](https://confluence.di2e.net/download/attachments/502385099/MBPS_LOGCOP_NPDM_DEMO_MAY20.mp4?api=v2)



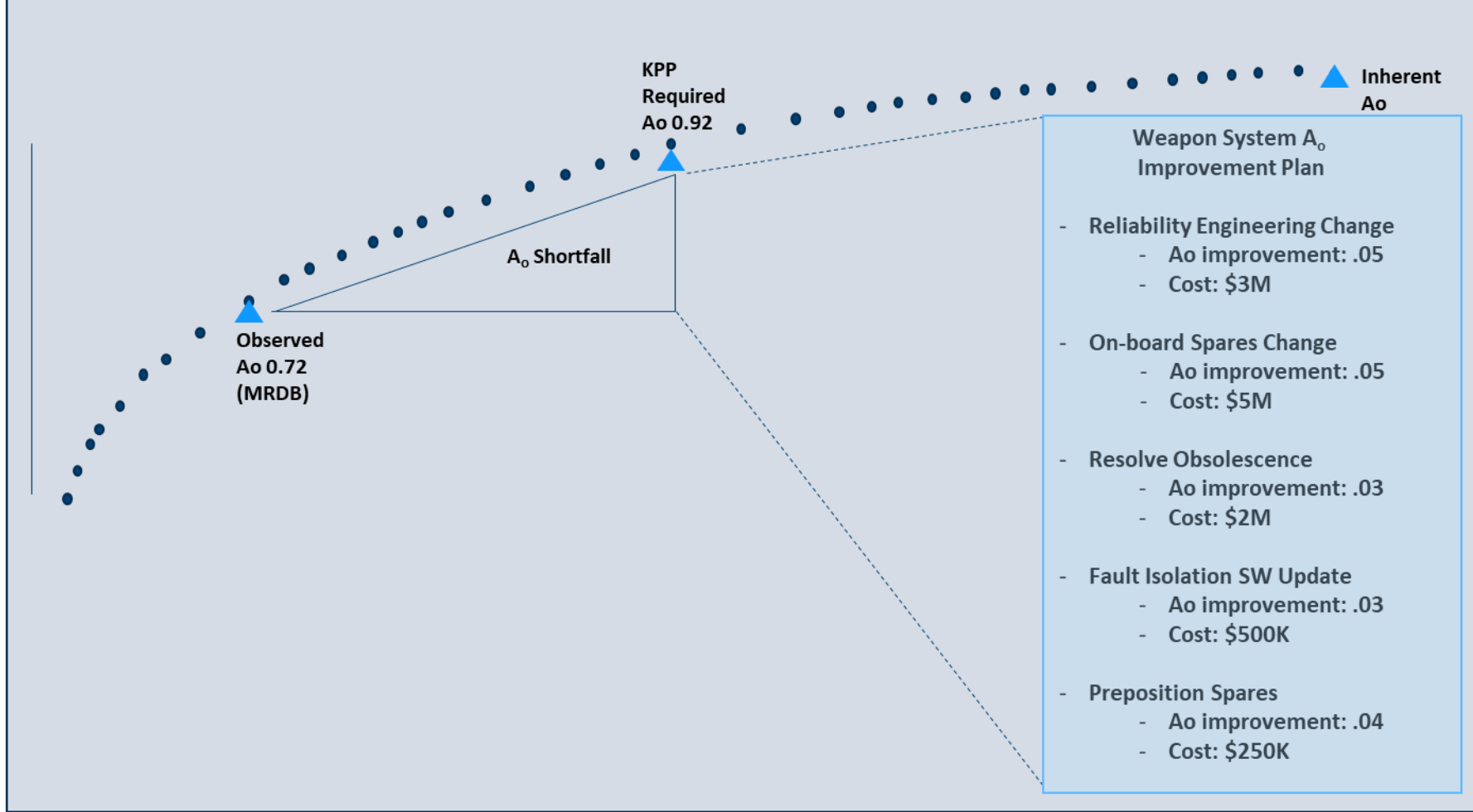
# Back-Up



# Readiness Review Example

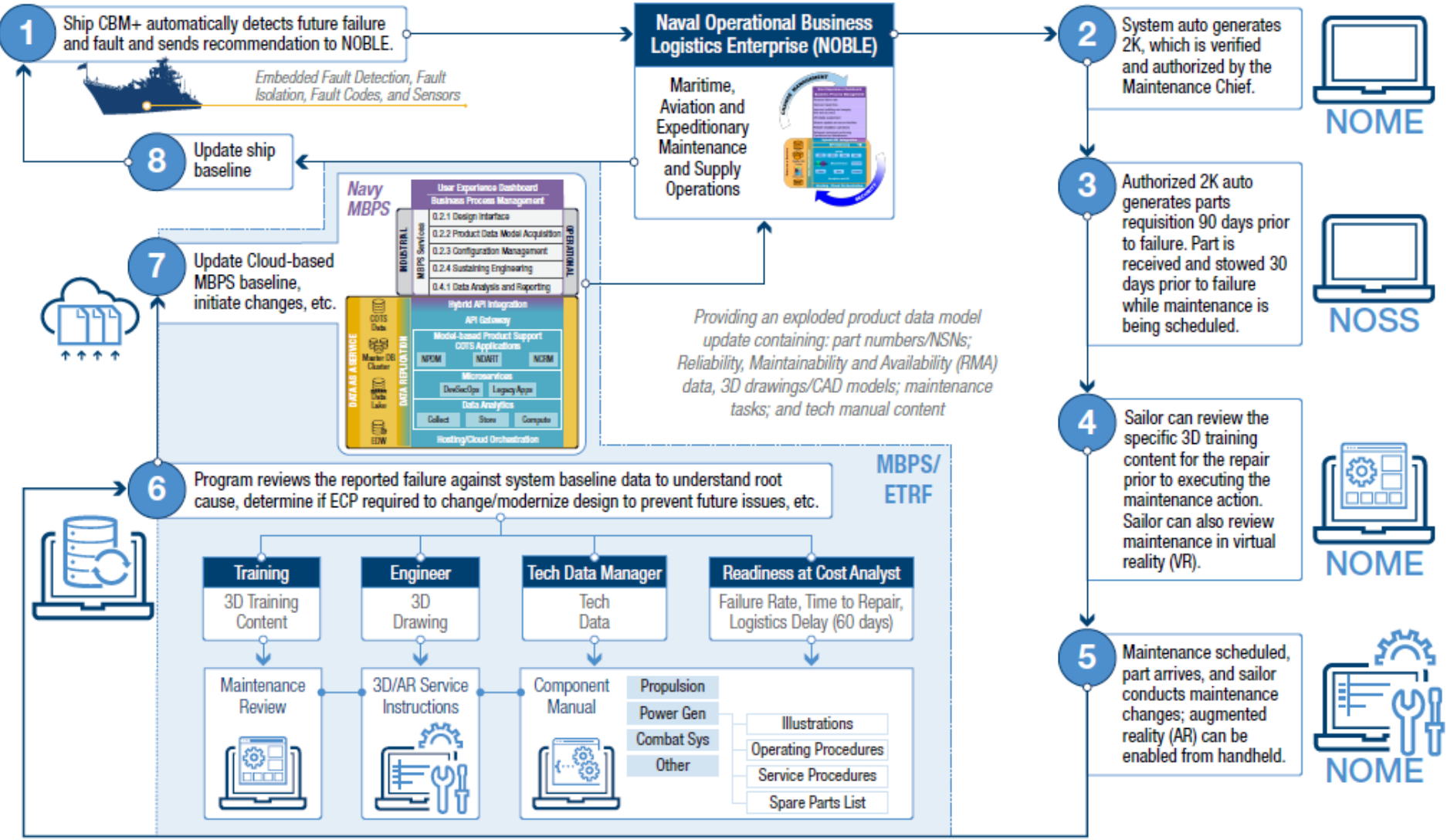
## Navy Common Readiness Model Results Electronic Warfare System (example)

A<sub>o</sub>



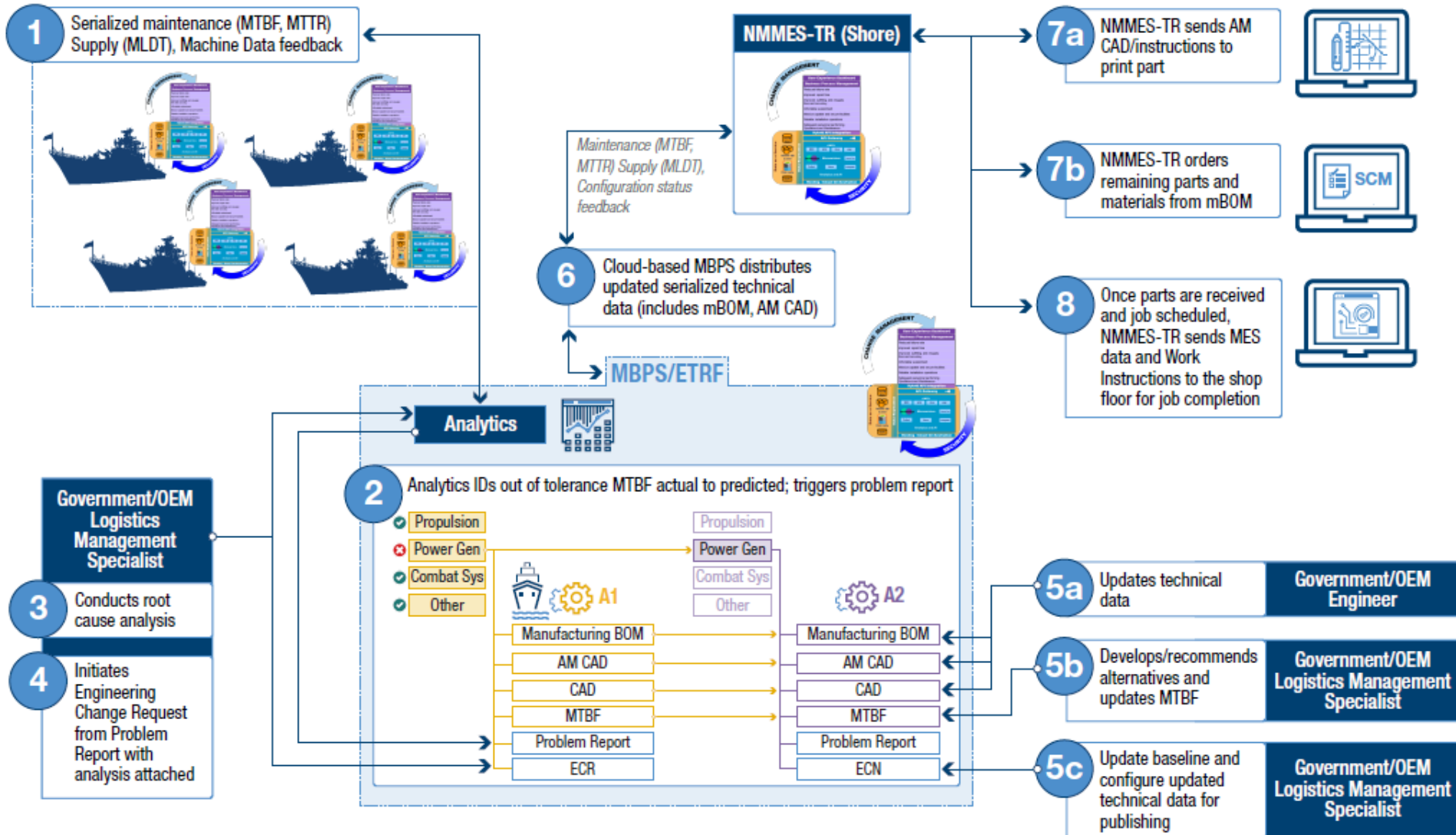
Cost \$

# MBPS Shipboard Maintenance Scenario



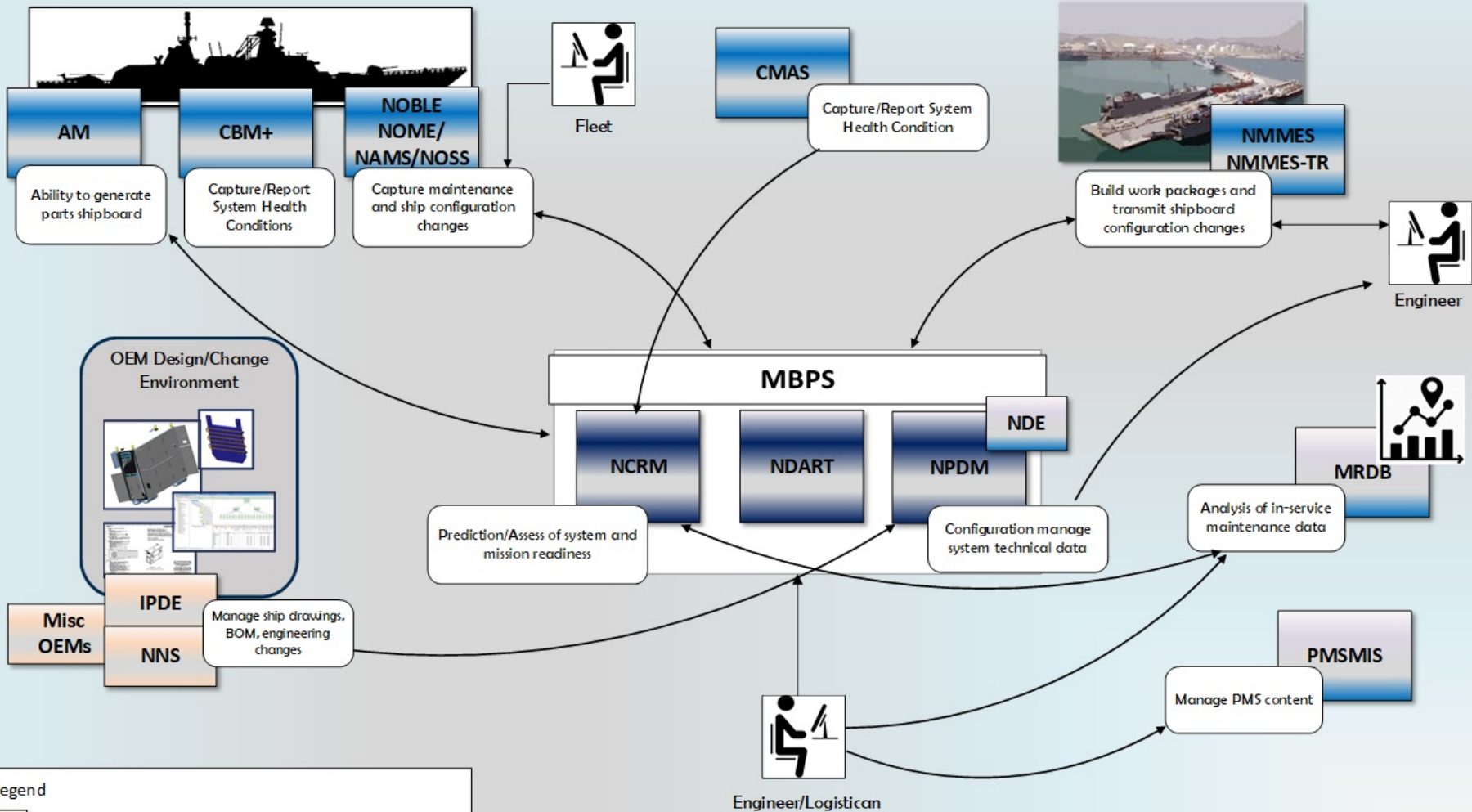


# MBPS Shore Modernization Scenario



# Current MBPS Critical Touchpoints

## MBPS MVP-1 & 2



**Legend**

- Identifies OEM/Shipyard environments data integration with MBPS
- Identifies functionality proposed to transition to MBPS