



Industry Day for Team Submarine Technology Insertion Hardware Full and Open Competition

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Industry Day – 21 October 2009

- **Welcome**
 - Introduction
 - Rules of Engagement
- **Team Overview**
- **What is Technology Insertion (TI) Hardware?**
 - Notional Hardware Overview
- **The Environment**
 - Rapid COTS Insertion Model
- **Scope of the TI Hardware Effort**
 - Product Definition and Production
 - Contractor Roles
- **Procurement Overview**



Caution!!!



This briefing is for informational purposes only to enhance industry's understanding of the Team Submarine Technology Insertion Hardware procurement.

If issued, the formal solicitations are the documents upon which industry should rely on for the purpose of submitting a proposal.



Introduction

- **Welcome to the PMS 425 Team Submarine Technology Insertion Hardware Industry Day**
- **Please sign in at the registration desk**
- **Restroom locations / nearest exit information**
- **Purpose of this Industry Day**
 - Provide an element of Market Research
 - Inform Industry and seek feedback on potential contracting strategies

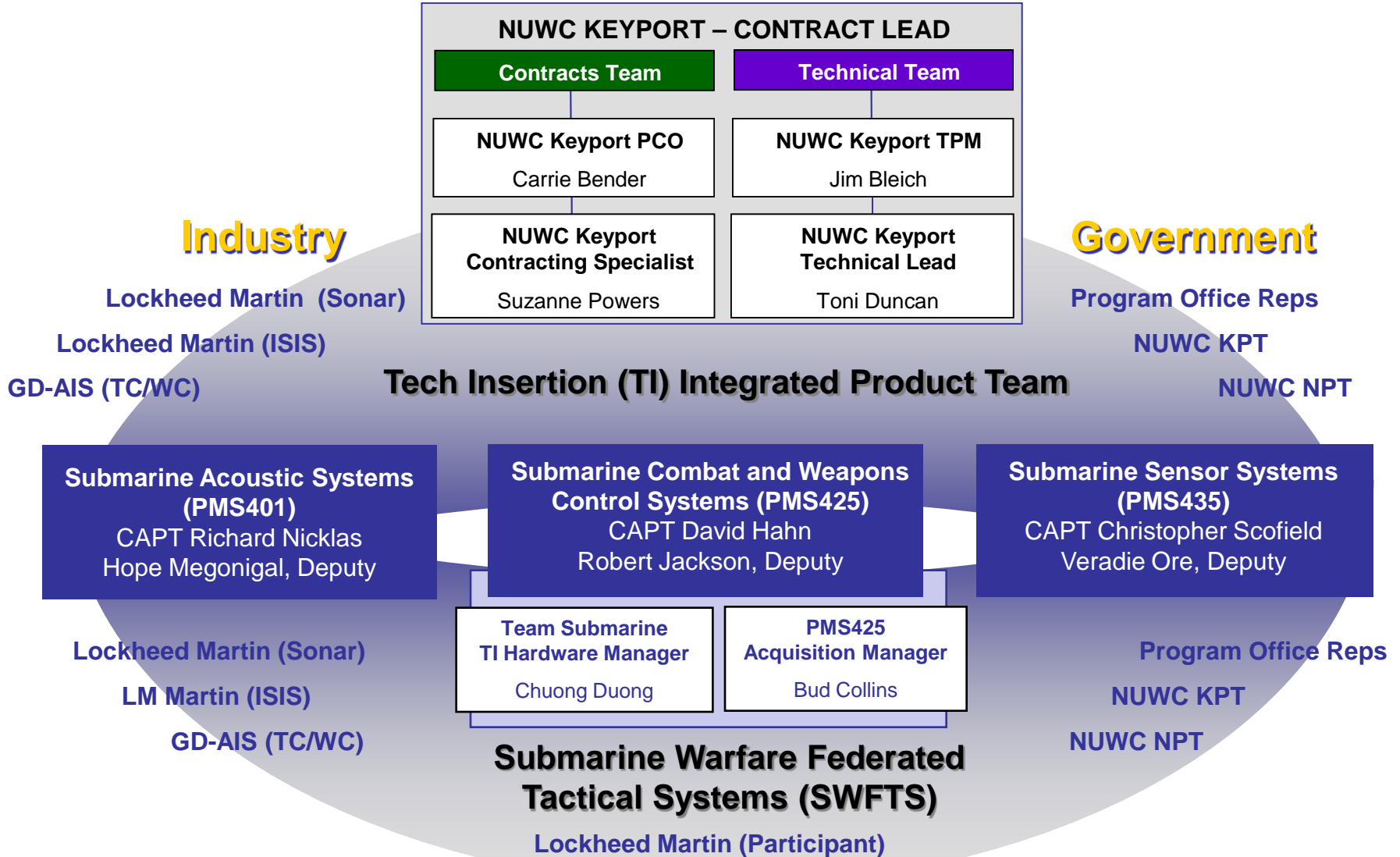


Rules of Engagement

- **Verbal questions will be entertained during this Industry Day**
 - Written questions may also be submitted anonymously to the question boxes by the end of Industry Day
 - Questions must be within the scope of the material covered at Industry Day
- **Responses to questions, verbal and written, will be posted to NECO prior to release of the draft RFP**
 - However, some questions regarding the provided material may be addressed directly in a solicitation and may not be posted to NECO
- **Industry Day slides will also be posted to NECO**
- **No side bar discussions with Government representatives will be held**
- **A solicitation may not be generated for this effort**



The TI Hardware Team



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What Is TI Hardware?

- **TI Hardware is a new competitive procurement**
 - It is not an extension of the legacy AN/UYQ-70 program
- **TI Hardware will provide the latest generation of display, processor and network units to Team Submarine systems**
 - Host for the TI-12 and TI-14 Technology Insertions
- **Anticipated components include**
 - Computer processing and memory
 - Data storage and extraction
 - Input/Output (I/O) interfaces to support the processing system designed around commercially available hardware and software
- **Procurements may include**
 - Upgrade kits, enclosures and / or full up systems for Seawolf, SSGN, 688/688i, VIRGINIA Class, COLLINS Class and future submarine systems/platforms
- **TI Hardware is not a program in and of itself**



Team Submarine Notional TI Hardware

VIRGINIA Class



SECD



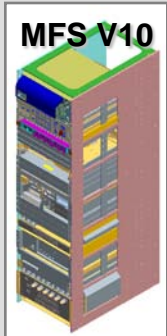
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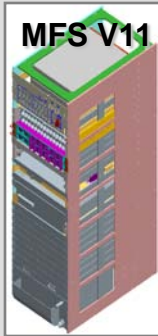
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VLSD V2



MFS V10



MFS V11



MFS V12



CWS(V)2



CWS V3

• Team Submarine

- Combat Systems
- Acoustic Systems
- Imaging/EW Systems
- Future Systems/Platforms

• COTS-based

- Servers
- Mass Storage
- HMI / HIS
- Graphics
- Networking
- Power
- Miscellaneous

• Leverages ILS source material

NOTE: ILLUSTRATED
HARDWARE IS NOT
ALL-INCLUSIVE

21/688/688i/SSGN Class



ECDWS



MFS 1/2



MFS 3



IEEE V8



IEEE V9



HDW



ATC



ATSP



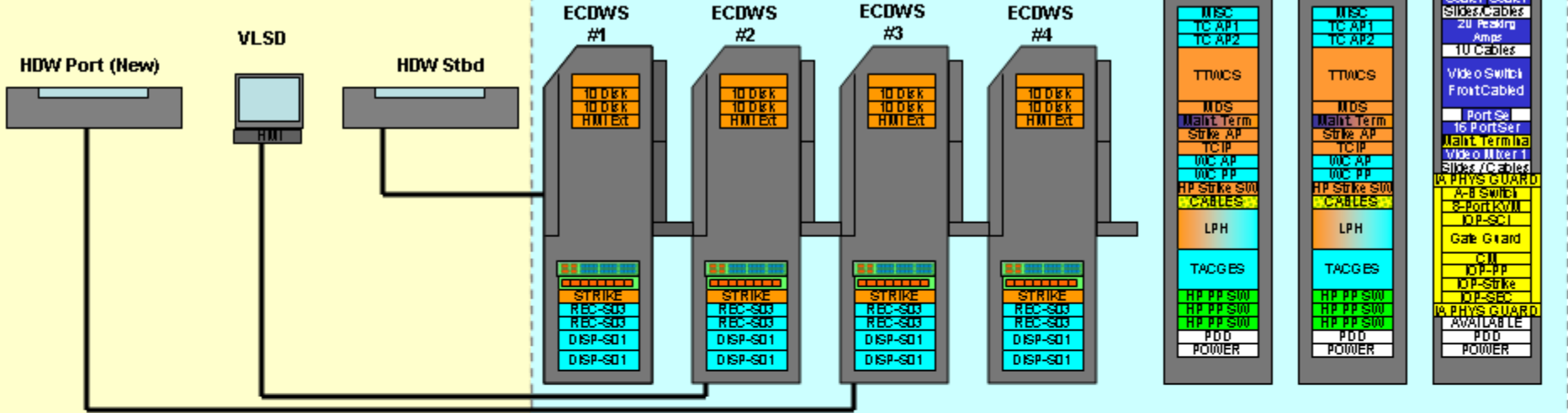
AEC

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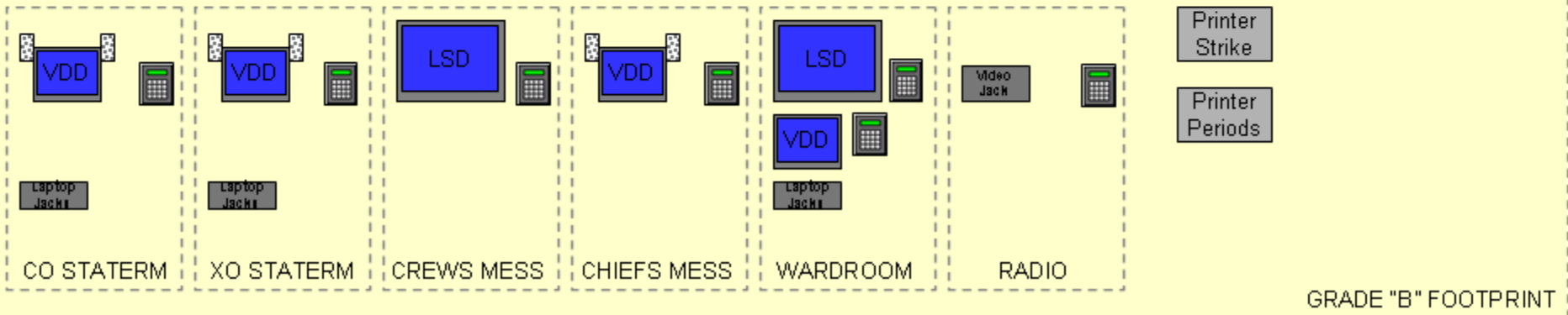


TI08 Tech Insertion BYG-1

Example: 688 / 688i TI Hardware



GRADE "A" FOOTPRINT

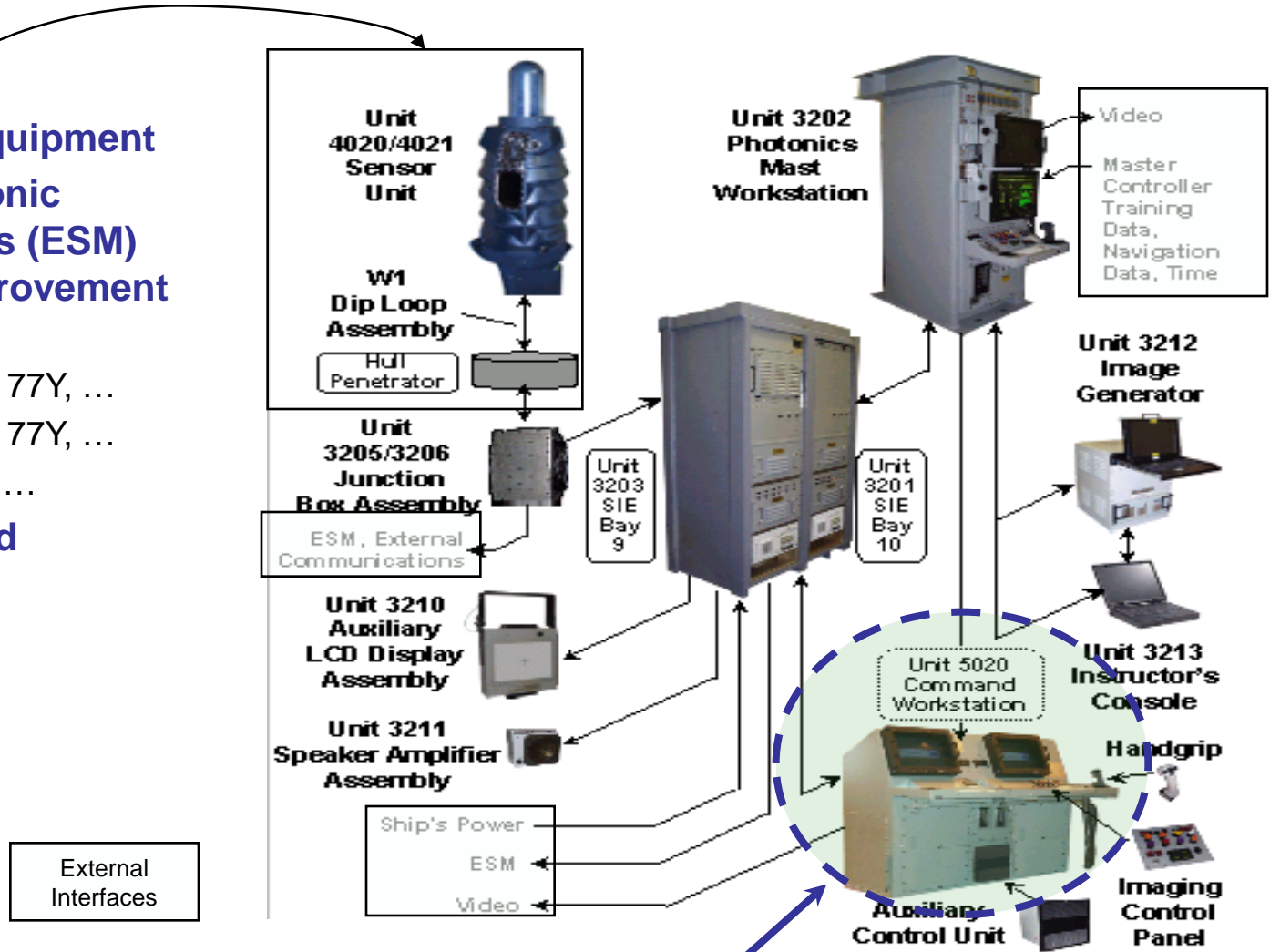


GRADE "B" FOOTPRINT



Imaging Equipment Overview

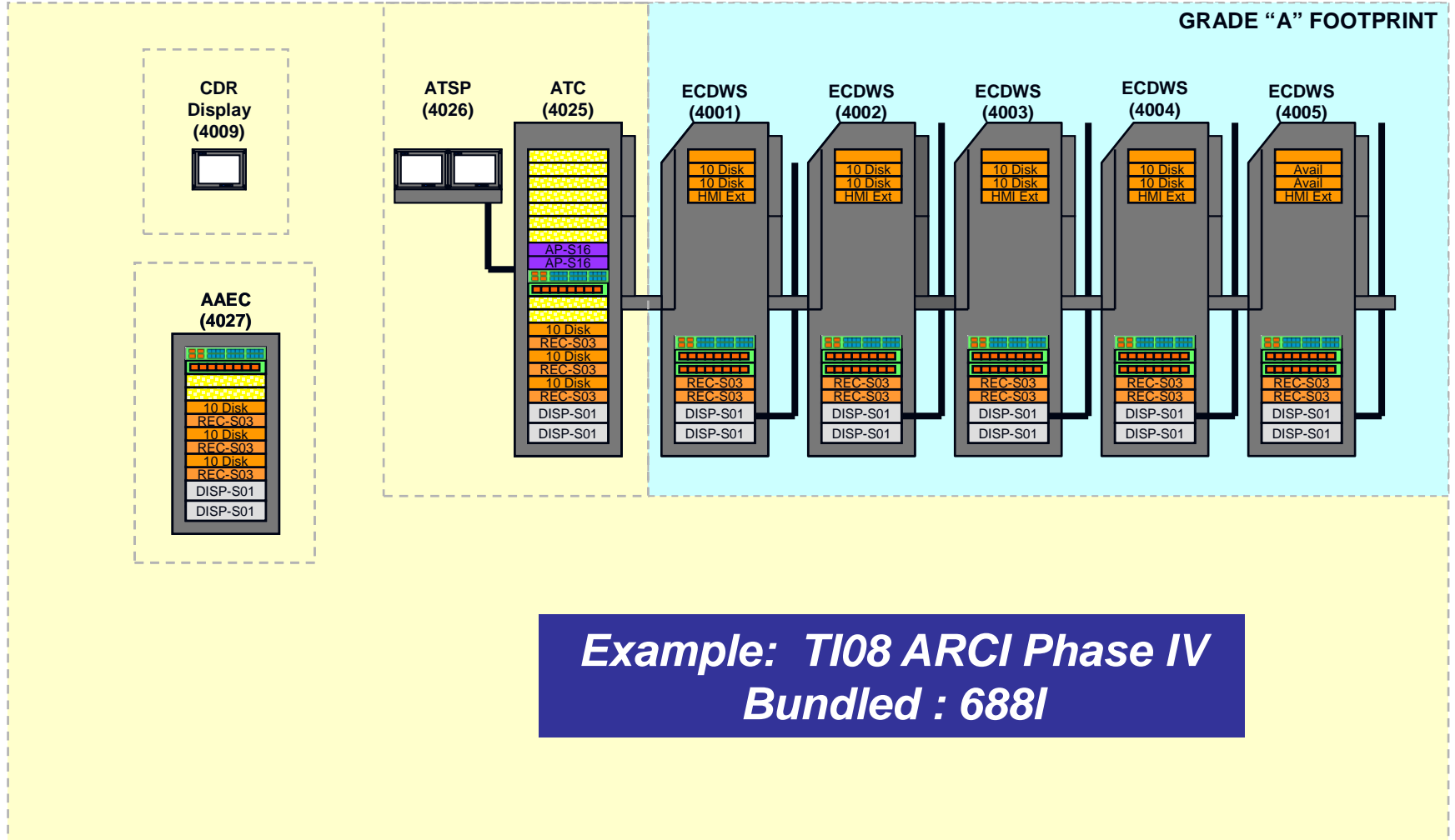
- **Photonics Sail Equipment**
- **Periscope Electronic Support Measures (ESM) Performance Improvement (PEPI)**
 - PEPI 1 SSN 77X, 77Y, ...
 - PEPI 2 SSN 77X, 77Y, ...
 - PEPI 3 77X, 77Y, ...
- **Photonics Inboard Equipment**



Example: TI Hardware



T108 Tech Insertion ARCI





Rapid COTS Insertion (RCI) Business Model

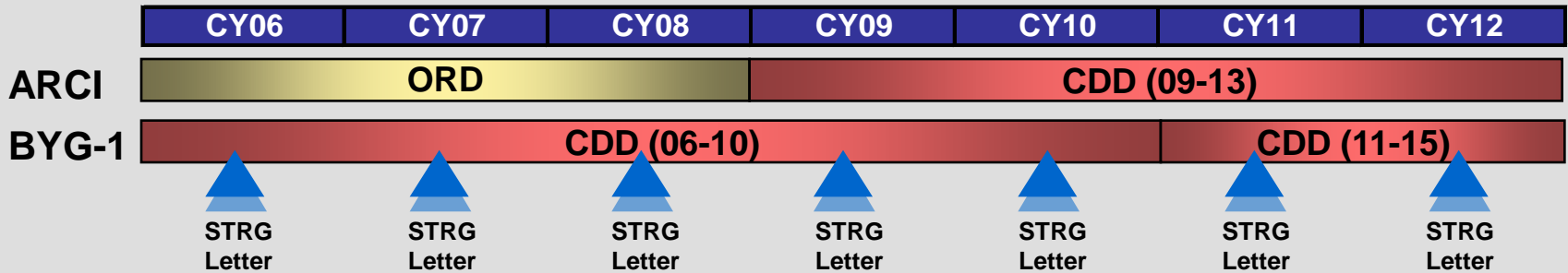


Why we do it...

- **Sustainment**
 - Keep pace with technology
 - Minimize obsolescence
- **Capability Insertion**
 - Threat pacing
 - New sensor/capability intro within existing footprint

How we do it...

REQUIREMENTS



PRODUCT DELIVERIES





Tech Insertion Approach

- **Standardize the method for regular upgrades**
 - Migrate technology on Model Year approach across platform types
 - Target every ~2 years
 - Incorporate plan for an individual platform technology upgrade cycle
 - Target every ~4/5 years (every other TI)
- **Generate cost savings**
 - Consolidate the number of processing, network & OS variants as technology allows
 - Utilize low cost commodity elements
 - Minimize non-recurring effort for hardware
- **Create efficiencies and reduce risk**
 - Provide the mechanical infrastructure to ease technology migrations
 - Minimize shipyard / platform impacts
- **Follow market trends of commercial products**
- **Incorporate redundancy to improve overall system reliability**



Implementation Results

- **Approximately 8-12 platform upgrades / year**
 - Also includes new construction units
- **Individual platform will receive every other TI**
 - Upgraded every 4-5 years
- **Drive SSGN, SEAWOLF and Guam platforms to have the same configuration**
 - Reduces non-recurring effort for hardware development, training and logistics products
- **First Technology Insertion (TI) introduction occurs 1st quarter every odd CY**
- **Sonar, Combat Control and Imaging installations are aligned**

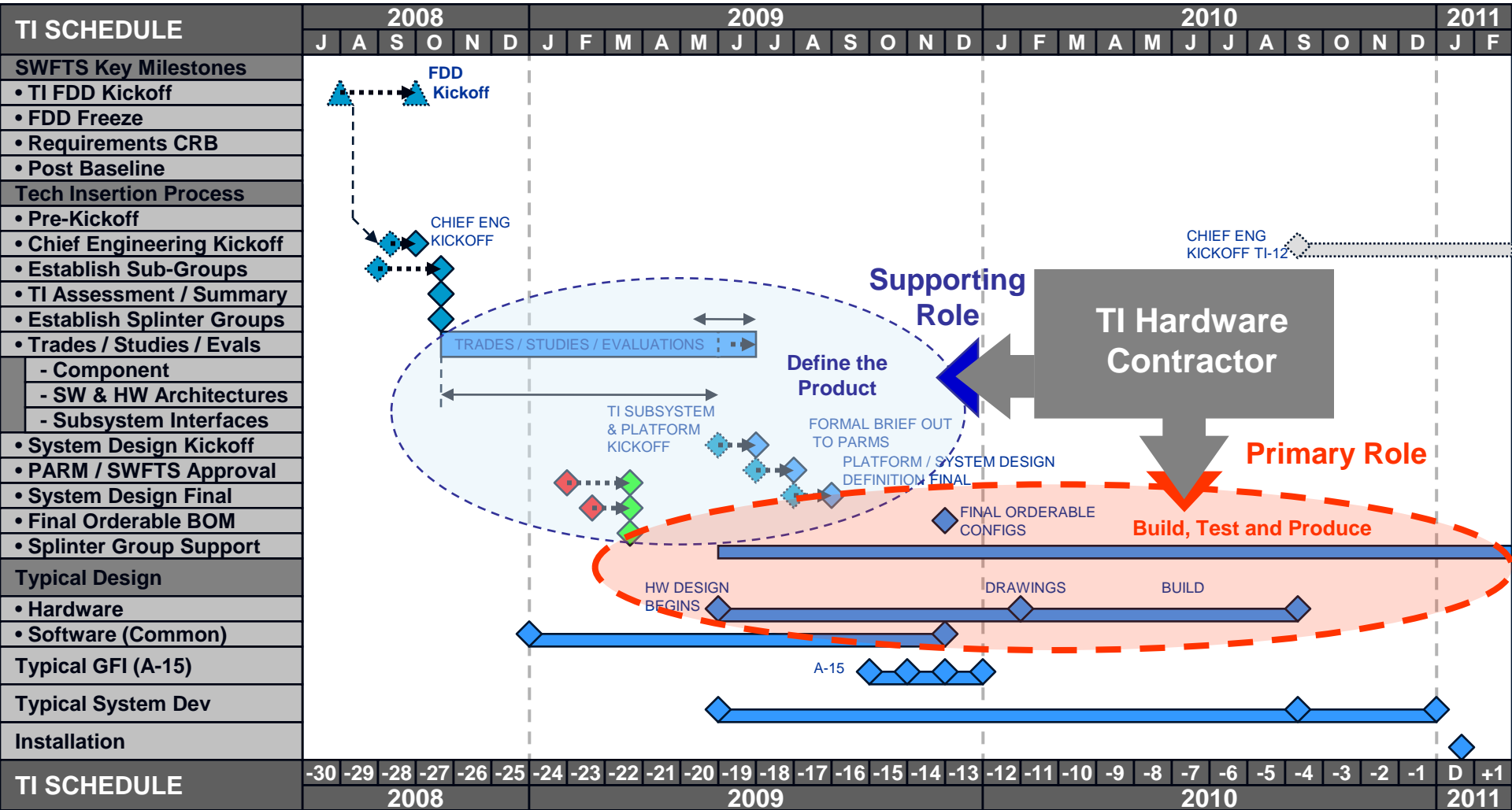


Technology Insertion Constraints

- **TIs are required to be completed in a typical upkeep**
 - Installation required to take <35 days
- **Installation planning in support of SHIPALT development is a 13-month process**
 - Government Furnished Information (GFI) is required starting 13 months prior to installation
 - System Architecture needs to be defined in advance of GFI submittal
- **Hotel Services (volume, power, weight and cooling) drive the amount of hardware that can be installed in a unit**
 - Migrating from 2Us to 1Us does not imply we can double the number of processors in the unit
 - Reduced power components and more efficient power supplies are key
- **Lead time**
 - Hardware must be readily available—kits or components required nine months After Receipt of Order (ARO)



Sample TI Schedule





Defining the Product

How do we tell you what we need?

INITIAL REQUIREMENTS

Program Offices establish requirements for their TI baselines

- Power, weight, cooling
- Installation
- Functionality / capability
- Cost threshold

Sonar, Combat (TC/WC) and Imaging PARMs

DESIGN AND DEVELOPMENT

Tech Insertion IPT Conducts Initial Design and Development

- Benchmarks products
- Establishes footprints and unit “stack-ups” within the footprint
- I/O requirements
- Product selection

- **PARM Reps**
- **System Developers**
- **TI Hardware Contractor**

TI Hardware Contract Relevancy

• CONTRACTOR EARLY INVOLVEMENT

- Participate in TI IPT and work with PARMs
 - Develop early design concepts and requirements
- Contractor will be provided with GFE:
 - Technical Data Package (TDP)
 - Installation Control Drawings (ICDs)
 - Configuration Item Specification (CIS)

• CONTRACT VEHICLE

- CPAF Delivery Orders for NRE
 - Technical Instruction

• DESIRE TO PROVIDE INCENTIVE FOR:

- Technology innovation, evolution and commonality
- Flexibility
- Teamwork
- Ease of construction / installation
- Ease of maintainability
- Reduced Total Ownership Cost



Building and Testing

Advancing from design to test

Upon design approval from the PARM and TI IPT

BUILDING & TESTING HARDWARE

- Develop build and test procedures
- Initiate logistics development
- Procure COTS HW for PARM Early I&T
- Build Engineering Development Models (EDMs)
- Develop plan for EQT; conduct EQT testing
- Accomplish performance testing against specifications
- Incorporate feedback into design and ILS
- Interface with PARMs and TI IPT on all efforts

TI Hardware Contractor

TI Hardware Contract Relevancy

- **CONTRACT VEHICLE**
 - CPAF Delivery Orders
 - Development / design NRE
 - Procurement of EDMs and advanced integration hardware
- **DESIRE TO PROVIDE INCENTIVE FOR:**
 - Flexibility
 - Teamwork / cooperation
 - Workmanship and reliability
 - First pass quality



Producing the Hardware

Finalizing, delivering and supporting the product

TRANSITION TO PRODUCTION

- Complete design
- Prepare final production drawing package for orderable configuration
- Complete ILS

TI Hardware Contractor

HARDWARE PRODUCTION

- Produce kits, enclosures or other hardware as required
- Factory Acceptance Testing
- Work with vendors (lead times, quality, etc.)

TI Hardware Contractor

INSTALLATION AND FIELD SUPPORT

- Install kits or hardware
- Provide support services for installed hardware

TI Hardware Contract Relevancy

• CONTRACT VEHICLE

- FFP-AF for production
 - Negotiation of Fixed Price for production orders
- CPAF Delivery Orders
 - Any remaining NRE efforts and installation and field support

• DESIRE TO PROVIDE INCENTIVE FOR:

- Quality
- Schedule
- Cost
- Workmanship and Reliability



The Procurement Concept

- **Type of Award**
 - Competitive
- **Contract Type**
 - ID / IQ for Engineering Services, Production, and Support
- **Contract Incentives**
 - Cost Plus Award Fee (CPAF) for Services
 - Technical Instructions
 - Firm Fixed Price – Award Fee (FFP-AF) for Production
 - Delivery Orders (DO): Separate DO for each Program Office for each TI
- **Period of Performance**
 - One Year Base Period
 - Four Option Periods
- **Industry Response**
 - Proposal due 30 days from final RFP release
 - Written volumes only



Additional Information

- **Industry Next Steps**

- Electronic Technical Information Center (ETIC) will be available December 2009
- ETIC availability and access procedures will be posted on NECO
 - Contains information to support solicitation response
- Provide feedback on contract structure and incentive types

- **Tentative Schedule**

- Draft RFP release as soon as possible
- Final RFP release planned early January 2010
 - 30 days for proposal
- Target 1st Qtr FY11 award



Backup Information



Team Sub TI Hardware Contract Overview



- **ID/IQ**
- **~80% Hardware Production**
- **~20% Engineering Services**
- **Overarching Statement of Work (SOW)**
 - After contract award work will be directed by Technical Instructions and Delivery Orders (DO)
 - There will be separate DOs for each Program Office for each Technical Insertion (i.e. TI-12)



Team Sub CLIN Structure

- **Tentative CLIN Structure**
 1. Production Orders (CLIN 1000)
 - Firm Fixed Price – Award Fee (FFP-AF)
 2. Data Submittals (CLIN 2000)
 - Not Separately Priced
 3. Other Direct Cost (CLIN 3000)
 - Cost Only, No Fee
 4. Engineering & Other Services (CLIN 4000)
 - Cost Plus Award Fee (CPAF)
 5. Royal Australian Navy (RAN) ODC (CLIN 5000)
 - Cost Only, No Fee
 6. Royal Australian Navy (RAN) NRE (CLIN 6000)
 - Cost Plus Award Fee (CPAF)



Team Sub TI Hardware CLIN Structure



- **ITEM/CLIN 1000 – Production Orders**
 - Firm Fixed Price – Award Fee (FFP-AF)
 - Production
 - Spares and Installation
- **One Orders CLIN covers entire Period Of Performance**



Team Sub TI Hardware CLIN Structure



- **ITEM/CLIN 2000 – Data Submittals**
 - Not Separately Priced
 - Data (CDRLs, Drawings, Technical Data Package, Integrated Logistic Support products, etc)



Team Sub TI Hardware CLIN Structure



- **ITEM/CLIN 3000 – Other Direct Costs**

- Cost only, no Fee

- Material, Travel and Subsistence in support of Item 4000
- Travel
- Misc materials
- Procure test / lab hardware for upgrades

- Structure

- Base Year 3000 (Supports Item 4000)
- Option Year 1 3001 (Supports Item 4001)
- Option Year 2 3002 (Supports Item 4002)
- Option Year 3 3003 (Supports Item 4003)
- Option Year 4 3004 (Supports Item 4004)



Team Sub TI Hardware CLIN Structure



- **ITEM/CLIN 4000 – Engineering Services**

- Cost Plus Award Fee

- Non Recurring Engineering (NRE)
- Requirements development
- Design / development and functional testing
- Advanced Production Units
- Environmental Quality Testing
- Final design
- Installation and field support

- Structure

- Base Year 4000
- Option year 1 4001
- Option year 2 4002
- Option year 3 4003
- Option year 4 4004



Team Sub TI Hardware CLIN Structure



- **ITEM/CLIN 5000 – RAN Other Direct Costs**

- Cost only, No Fee

- Material, Travel and Subsistence in support of Item 6000
- Travel
- Misc materials
- Procure test/lab Hardware for upgrades

- Structure

- Base Year 5000 (Supports Item 6000)
- Option Year 1 5001 (Supports Item 6001)
- Option Year 2 5002 (Supports Item 6002)
- Option Year 3 5003 (Supports Item 6003)
- Option Year 4 5004 (Supports Item 6004)



Team Sub TI Hardware CLIN Structure

- **ITEM/CLIN 6000 – RAN Engineering Services**
 - Cost Plus Award Fee
 - Non Recurring Engineering (NRE)
 - Requirements development
 - Hardware design / development and functional testing
 - Advanced Production Units
 - Environmental Quality Testing
 - Final design
 - Installation and field support
 - Structure
 - Base Year 6000
 - Option year 1 6001
 - Option year 2 6002
 - Option year 3 6003
 - Option year 4 6004

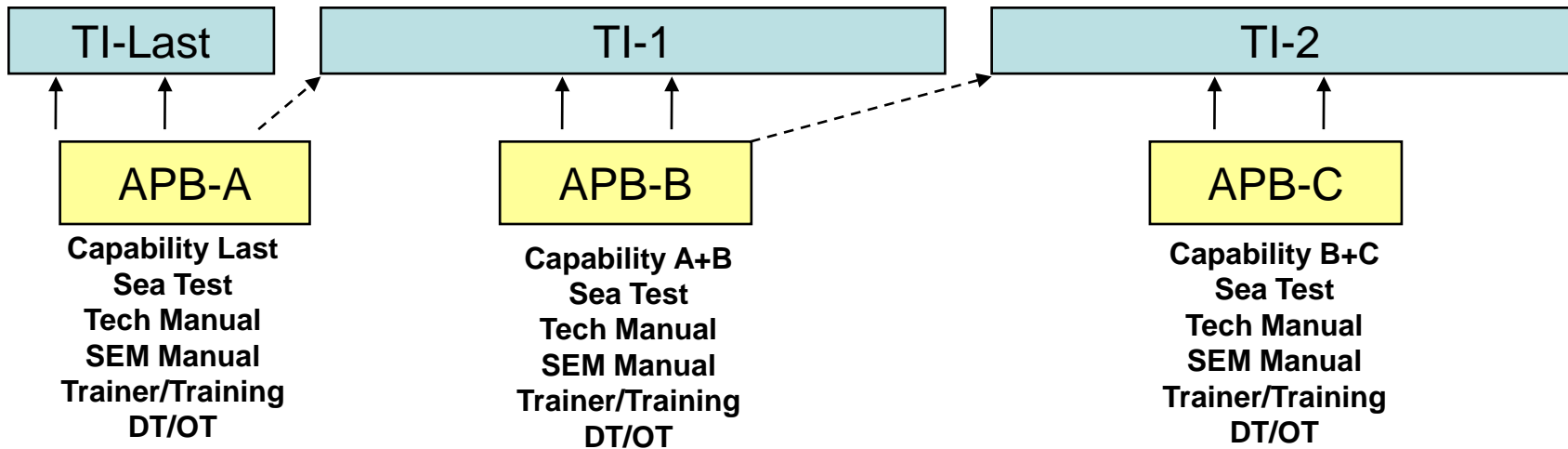


Rapid COTS Insertion Model

Team Submarine Perspective



Technical Insertion (TI) – Hardware Baseline
Advanced Processing Build – Software Baseline - Capability



Submarine Force Modernization Business Rules

- Applies to 688, Seawolf, SSGN, VA Class, Collins Class (RAN), and future classes
- Every ship gets every other TI – 4-6 yr modernization cycle
- Every TI supports two APBs
- Combat, Acoustics, Imaging, & EW modernize together with other system dependencies