

*Accurate  
Credible  
Defensible*



# Government Furnished Equipment (GFE) Department of Navy Cost Analysis Symposium (DoN CAS)

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Naval Sea Systems Command 05C4



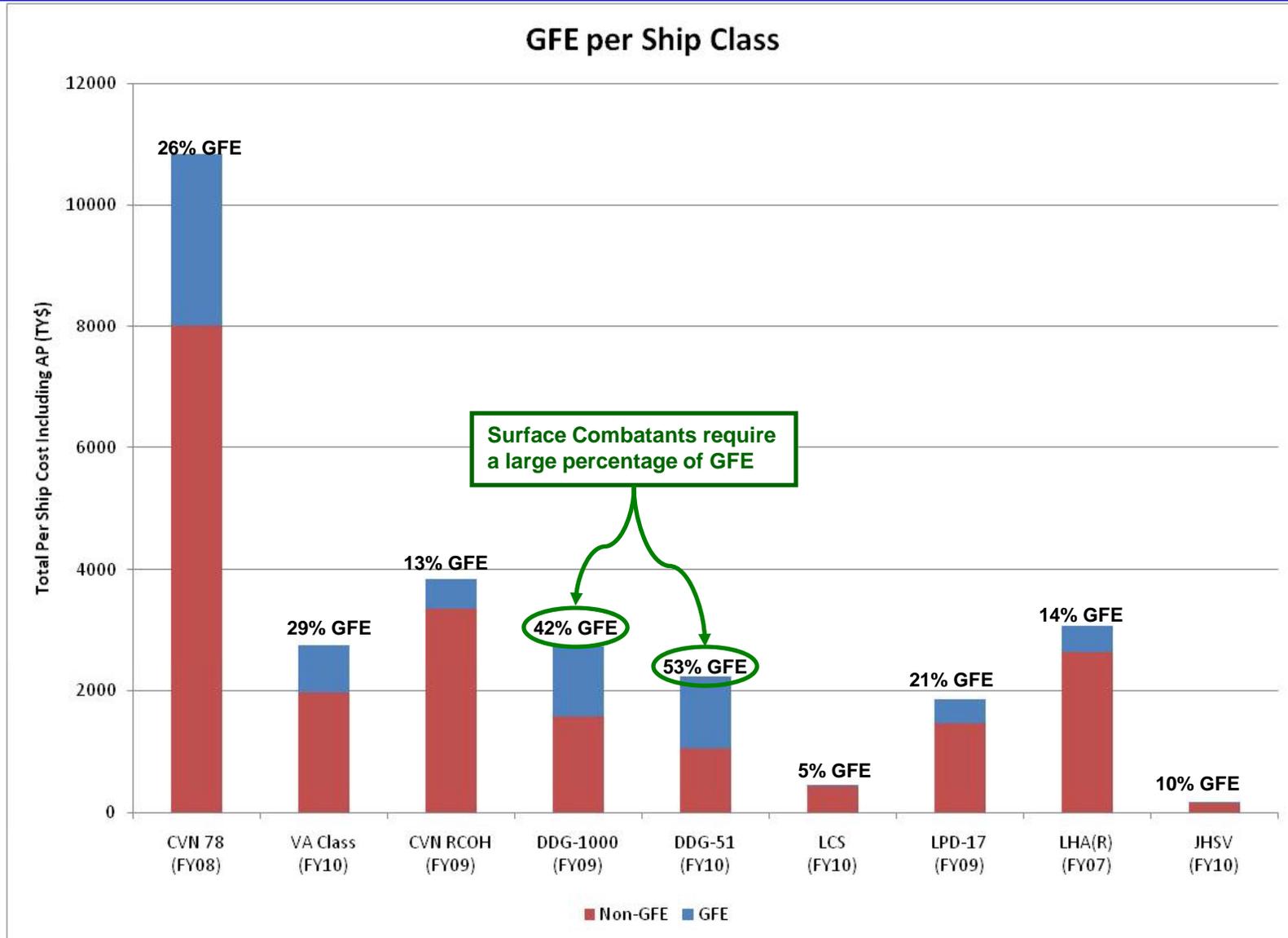


## Agenda



- ASN/RDA Perspective
- PARM/SHAPM Summit History
- Revised Process Flow
- Revised Timeline and Milestones
- Basis of Estimate Overview
- Way ahead

# Percentage of GFE per Class



# ASN RDA Perspective

## Assistant Secretary of the Navy (ASN) (Research, Development & Acquisition (RDA)) Perspective:

- Cost estimates need to be more credible, defensible and transparent
- Focus on cost drivers for better handle on cost
- Need to improve estimate documentation
- SEA 05C needs to perform independent assessments of the GFE estimates
- Need consistency in estimates for hardware and non-hardware GFE
- Collaboration amongst the Stakeholders
  - Leverage cross functional skills and experience





# SHAPM/PARM SUMMIT HISTORY



## SHAPM/ PARM SUMMIT I (NOV 2009)

- Cross Functional Collaboration with PEO IWS, PEO Ships, PEO Carriers, PEO Subs, PEO C4I (SPAWAR)
- Agreement on the Need for GFE Policy and Process Change
- Reviewed the existing process and area of continuous improvements
- Data call issued to all Stakeholders to provide comments on established policy and processes

## SHAPM/ PARM SUMMIT II (FEB 2010)

- Conducted One-on-One Meetings with PEO's
- Developed the framework for GFE Policy and Process
- Developed new 7300 form, Updated 7300 instruction, instruction manual and new time-phased process in support of POM budget cycle- Feedback from PARM Summit I from stakeholders
- Data call issued to all Stakeholders to provide comments on newly established policy and processes

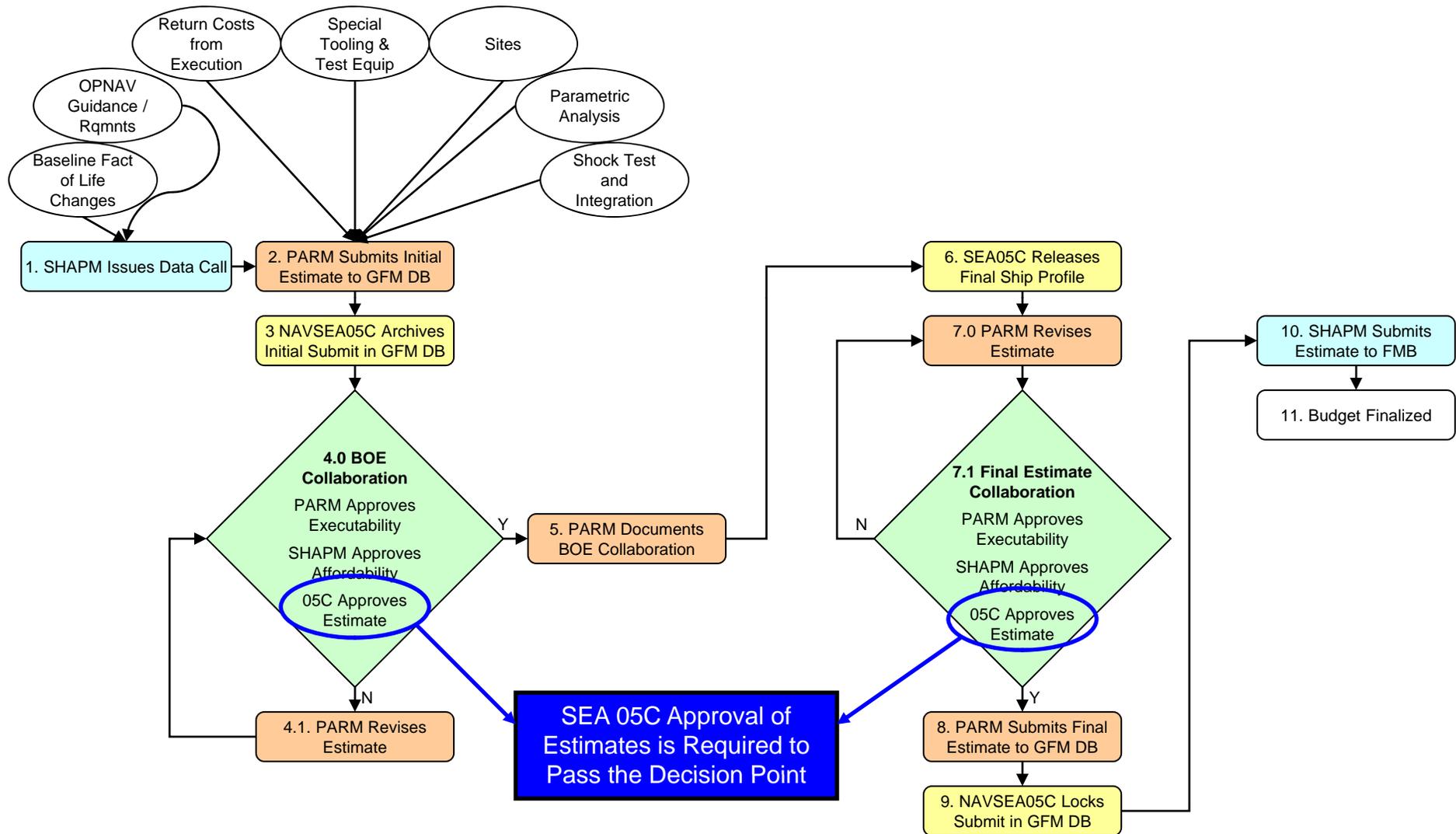
## SHAPM/ PARM SUMMIT III (MAY 2010)

- Agreement on updated process flow and timeline
- Adjudicated final comments on stakeholder roles/responsibilities and WBS definitions
- Target for final approval and publication by end of July

## EXECUTIVE REVIEWS (JUL-AUG 2010)

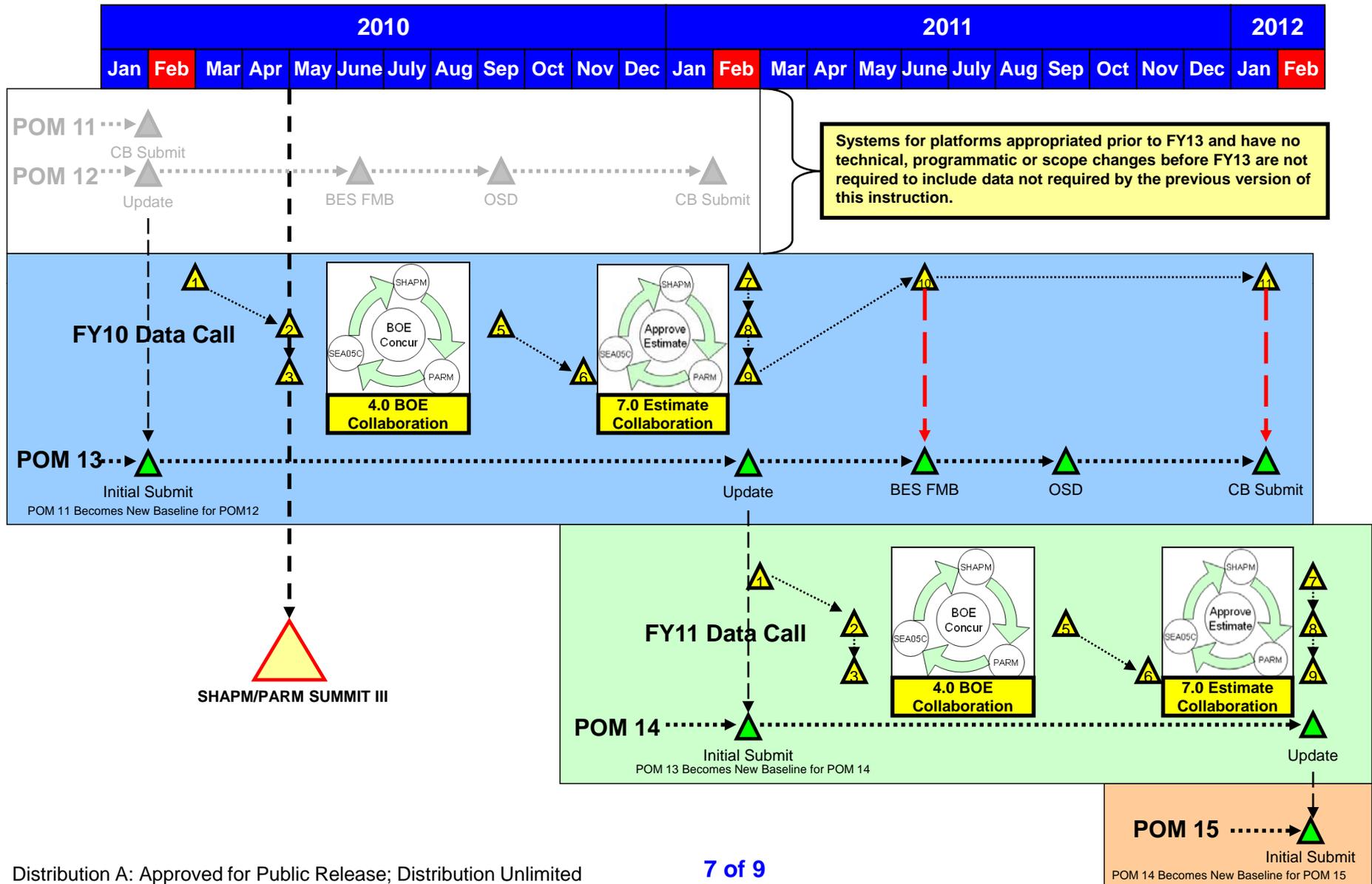
- Concurrence received in 1-on-1 Meetings held between Mr. Sumrean and the Executive Directors of the NAVSEA PEOs: Mr. Deegan (PEO IWS), Mr. Sumerall (PEO SHIPS), Mr. Deligne (PEO CARRIERS), and Mr. Evans (PEO SUBS)
- Concurrence received in 1-on-1 Meetings held between Mr. Sumrean and other Navy SYSCOMs: RDML Burroughs (PEO C4I), RDML Brady (SPAWAR) and Mr. Burgess (NAVAIR)

# GFE Process Flow



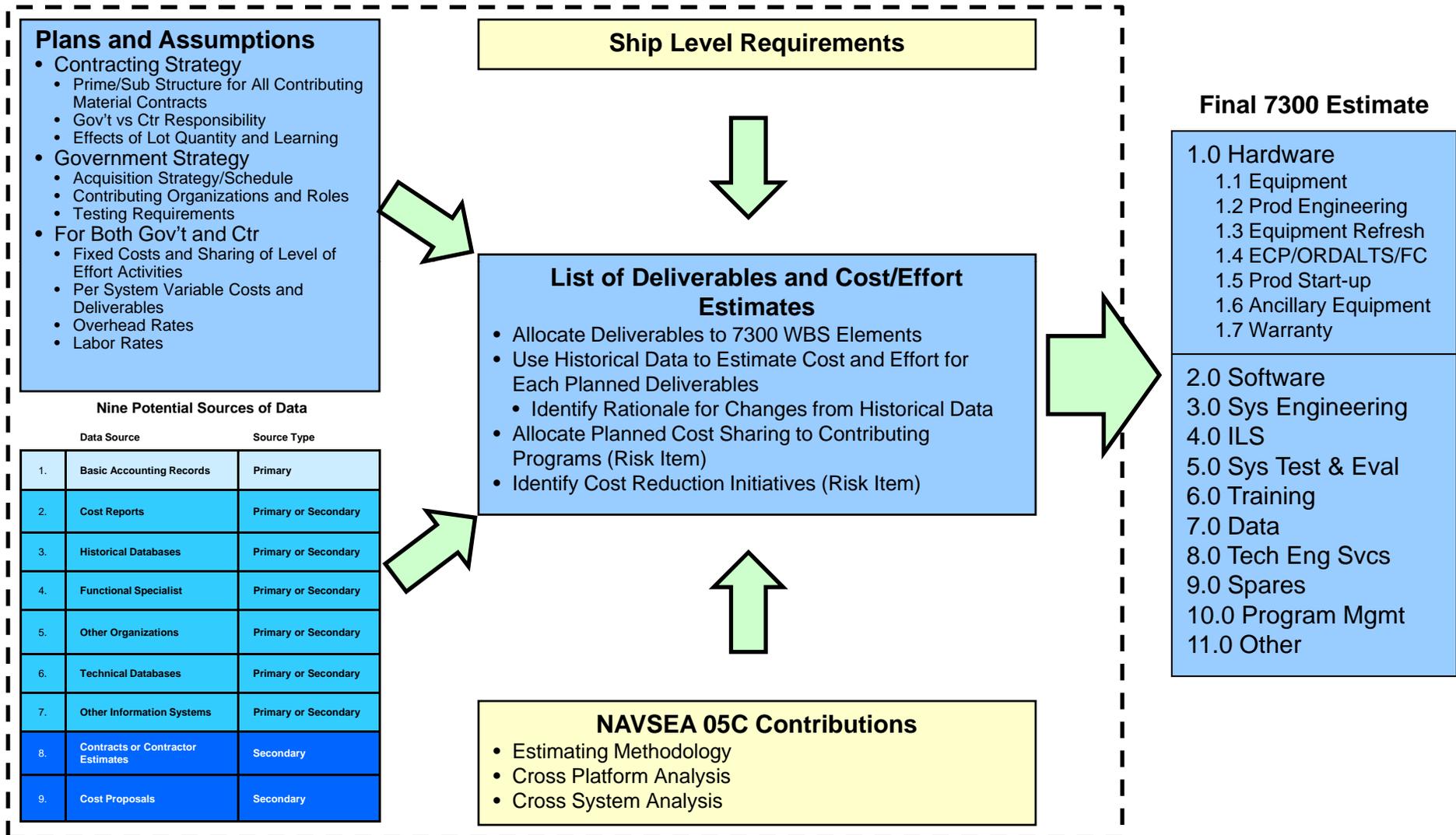
The SEA 05C Approved Estimate Will Be Submitted to FMB

# GFE Timeline and 26-Month Data Flow



# Basis of Estimate

## Effort Documented for Basis of Estimate





## Way Ahead



- Perform a Lean Event to streamline the GFM submittal process
- Implement Revised Process for POM 13



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Back-up



## Back-up Slides



- Flow Chart Element Descriptions
- Roles and Responsibilities
  - SEA 05C
  - SHAPM
  - PARM
- 7300/5 Form

# Flow Chart Element Description

1. SHAPM Issues Baseline Data Call for POMXX Through POM XX+3 (Feb/Mar FYXX) per OPNAV defined guidance
  - Includes initial equipment list, and delivery schedule
2. PARMS Submit Initial Estimate with BOEs (Apr/May FYXX)
  - PARMS submit initial estimate into the GFM Database with BOE (Apr/May FYXX)
3. NAVSEA 05C Archives Submission into the GFM database (May FY XX)
4. Basis of Estimate Collaboration (Jun to Aug FYXX)
  - PARM Approves Executability
    - PARMS determine system availability of hardware at required costs, and the scope of work funded by the ship is sufficient to field the system.
  - SHAPM Approves Affordability
    - SHAPM determines equipment configuration that meets ship requirements and within cost estimates
    - SHAPM ensures all ship level costs are included (i.e. site(s) equipment, shock, special tooling and test equipment etc.)
  - NAVSEA 05C Approves Estimate
    - NAVSEA 05C approves the Basis of Estimate reflects historical performances, accounts for lessons learned and accounts for risks with risk mitigation plans.
- 4.1 PARM Revises Estimate as Required
  - PARM revises estimate to reflect scope and update BOE changes emerge from the collaboration meeting.
5. PARM Documents BOE Collaboration Outputs and Signs Off On Agreed Upon Outputs (Sep FYXX)
6. NAVSEA 05C Releases Final Ship Profile for Estimate (Nov FYXX) per OPNAV defined guidance
7. Final Estimate Collaboration (Dec FYXX to Jan XX+1)
- 7.0 PARM Revises Estimate as Required
  - PARM Approves Executability
    - PARMS determine system availability of hardware at required costs, and the scope of work funded by the ship is sufficient to field the system.
  - SHAPM Approves Affordability
    - SHAPM determines equipment configuration that meets ship requirements
    - SHAPM ensures all ship level costs are included (ie site(s) equipment, shock, special tooling and test equipment etc.)
  - NAVSEA 05C Approves Estimate
    - NAVSEA 05C approves the final estimate follows the Basis of Estimate established in the BOE Collaboration and any scope changes that affect risk are documented.
    - NAVSEA 05C will provide risk curves on selected systems
8. PARMS Submit Final Estimate (Feb FYXX+1)
  - PARMS submit final estimate into the GFM Database
9. NAVSEA 05C Locks Submission into the GFM Database (FY XX+1)
10. SHAPM Submits Budgets Reflecting Cost Estimates to FMB (Feb FYXX+1)
11. Budget Finalized (Jan FYXX+2)



# NAVSEA 05C Roles and Responsibilities



- Validate the latest 7300 estimate that is locked in step 9 of the process.
- Participate in evaluating the GFM cost estimates prepared by the PARMs for use by NAVSEA, PEOs and program offices to support:
  - System procurement budgets
  - Analysis of Alternatives (AoA) studies
  - Program Office Life Cycle Cost Estimates (PLCCE)
  - Other cost estimates and analyses
- Provide risk curves on selected high interest systems. Systems to be identified during the Basis of Estimate Collaboration period.
- Maintain database and provide customer support for update of equipments, profiles, and other data elements as outlined in the GFM Cost Tracking System Users Manual.
- Ensure hardware and software for the NAVSEA GFM Cost Tracking System is compliant with Navy Marine Corp Intranet (NMCI) and Navy/NAVSEA specifications and requirements.



## SHAPM Roles and Responsibilities

- Provide GFM capability requirements to the PARMs and appropriate information, such as proposed Required Delivery Dates (RDD) for equipment deliveries, schedule “A”, Ship Project Directive (SPD) series or equivalent defining quantity, makes/models, etc.
- Submit a 7300 for all GFE items during each POM submission for all platforms in execution and all platforms approved within the FYDP.
- Request specific data calls as required to support PEO objectives.
- Review, evaluate, and, if necessary, modify the GFM cost estimates with participation from PARMs and SEA 05C. Validate the basis of programmatic and technical requirements and estimating assumptions.
- SHAPM request cost validation for selected developmental system from NAVSEA SEA05C.
- Support and defend the GFM cost estimate at POM,
- Budget, SCN Ship Execution Review (SER) and other reviews as necessary.
- Coordinate and assist in developing the Ship Combat Systems Integration cost estimate with appropriate PEOs within the Systems Commands.
- Ensure consistency and completeness of the 7300/5 form and final configuration of completed 7300/5 into the GFM database.
- Provide funding for maintaining the NAVSEA GFM Cost Tracking System.



## PARM Roles and Responsibilities

- The PARMs are responsible for developing and maintaining cost estimates for equipment, sub-systems and systems under their cognizance. PARMs are not required to resubmit 7300s for systems with no technical, programmatic or scope changes; existing 7300 estimates will be considered accurate. PARMs are not required to update 7300s for systems on platforms that are appropriated before FY13 and have no technical, programmatic or scope changes before FY13 to include data not required by the previous version of this instruction. For systems on platforms that are appropriated before FY13 and have technical, programmatic or scope changes in FY13 and beyond are required to comply with all the data requirements outlined in this instruction.
- Prepare the online NAVSEA 7300/5 Form Part 1 reflecting detailed cost estimates in accordance with definitions described in the WBS dictionary and reflecting the Program Manager's, and where applicable, the Warfare/Systems Integrators' interpretation of the individual hull requirements.
- Provide backup information and documentation on estimating methodology and any specifics associated with the equipment cost estimate. This is an extremely important step, considering the technology environment where an equipment suite may not be procurable from one fiscal year to the next due to Commercial off the Shelf (COTS) obsolescence.
- If the 7300 estimates are re-negotiated with the Ship Program Manager, it is the responsibility of the individual PARMs to revise/update the cost estimate within the NAVSEA GFM Cost Tracking System.
- The Warfare/Systems Integrator shall prepare and submit an individual integration cost estimate for each platform in accordance with NAVSEA Form 7300/5 Part 2



# 7300 Form Part I



Part One												
GOVERNMENT FURNISHED EQUIPMENT UNIT COST ESTIMATE (In Thousands of Dollars)												
DOLLARS:	SHIP AND HULL #:	EST CAT:	SHAPM (Sig. Date):	PREPARED BY: (Name, Code, Phone Number)			DATE:		REVISION #:			
			PARM (Sign. Date)	SIGNATURE:					SYSTEM RDD:			
PROD LEAD TIME:	CONTRACT NO:	CONTRACTOR:		CONTRACT TYPE:	CONTRACT AWD DATE:	APPROPRIATION: <b>SCN</b>			TOTAL QTY BUY (UNITS):			
EQUIPMENT:					MATERIAL SUPPORT DATE:			SHIP DELIVERY DATE:				
DESCRIPTION:					NUMBER OF SYSTEMS PER SHIP:							
			Prior Hull Actual	FY10	FY11	FY12	FY13	FY14	FY15	FY16	Cost to Complete	TOTAL
<b>Non-Recurring Costs</b>				0	0	0	0	0	0	0	0	0
[WBS Element], [Effort]												0
[WBS Element], [Effort]												0
[WBS Element], [Effort]												0
[WBS Element], [Effort]												0
[WBS Element], [Effort]												0
<b>Recurring Costs</b>				0	0	0	0	0	0	0	0	0
<b>1. Hardware/Major Equipment</b>				0	0	0	0	0	0	0	0	0
1.1 Equipment				0	0	0	0	0	0	0	0	0
a.												0
b.												0
c.												0
d.												0
1.2 Production Engineering												0
1.3 Equipment Refresh/Obsolescence												0
1.4 Engineering Change Proposals/Ordals/Field Changes												0
1.5 Production Start-Up, etc.												0
1.6 Ancillary Equipment				0	0	0	0	0	0	0	0	0
1.6.1 Shipping and Installation Fixtures												0
1.6.2 Special Test Equipment												0
1.6.3 Other												0
1.7 Warranty												0
<b>2. Software</b>				0	0	0	0	0	0	0	0	0
2.1 Software & Licensing												0
2.2 Computer Program Support												0
<b>3. Systems Engineering</b>				0	0	0	0	0	0	0	0	0
3.1 Systems Engineering Services												0
3.2 Quality Assurance, Reliability and Maintainability (QA&RMA)												0
3.3 Configuration Management												0



# 7300 Form Part I (Cont'd)

	Prior Hull Actual	FY10	FY11	FY12	FY13	FY14	FY15	FY16	Cost to Complete	TOTAL
<b>4. Integrated Logistics Support</b>		0	0	0	0	0	0	0	0	0
4.1 Supply Support										0
4.2 Support Equipment										0
4.3 Manpower and Personnel										0
4.4 Packaging, Handling, Storage and Transportation										0
4.5 Maintenance Planning										0
4.6 Training and Training Support										0
4.7 Technical Data										0
4.8 Computer Resources										0
4.9 Facilities										0
4.10 Other										0
<b>5. System Test and Evaluation</b>		0	0	0	0	0	0	0	0	0
5.1 Equipment INCO & Test Shipyard Tech Assist										0
5.2 Software T&E										0
5.3 Land Based Testing										0
5.4 Onboard T&E										0
5.5 Certification T&E										0
5.6 Shock Test										0
5.7 System TRR										0
5.8 Joint Interoperability Test and Certification (JITC)										0
5.9 Information Assurance										0
5.10 Weapon System Explosives Safety Review Board (WSESRB)										0
5.11 Initial Operational Test and Evaluation										0
5.12 Follow-on Operational Test and Evaluation										0
5.13 Other										0
<b>6. Training (Change in Configuration - Lead Crew Only)</b>										0
<b>7. Data</b>		0	0	0	0	0	0	0	0	0
7.1 Development of System Documentation										0
7.2 Maintenance and Upgrade of Documentation										0
<b>8. Technical Engineering Services/Ship Installation</b>		0	0	0	0	0	0	0	0	0
8.1 Contract Field Services										0
8.2 Government Field Services										0
8.3 Schedule "B" Services										0
8.4 Alteration Installation Team (AIT)										0
8.5 Shipboard Certifications										0
<b>9. Spares and Repair Parts</b>		0	0	0	0	0	0	0	0	0
9.1 Initial Installation & Checkout (INCO) Spares										0
9.2 Replenishment INCO Kits										0
9.3 Interim Spares										0
9.4 Battle Spares/System Trainer										0

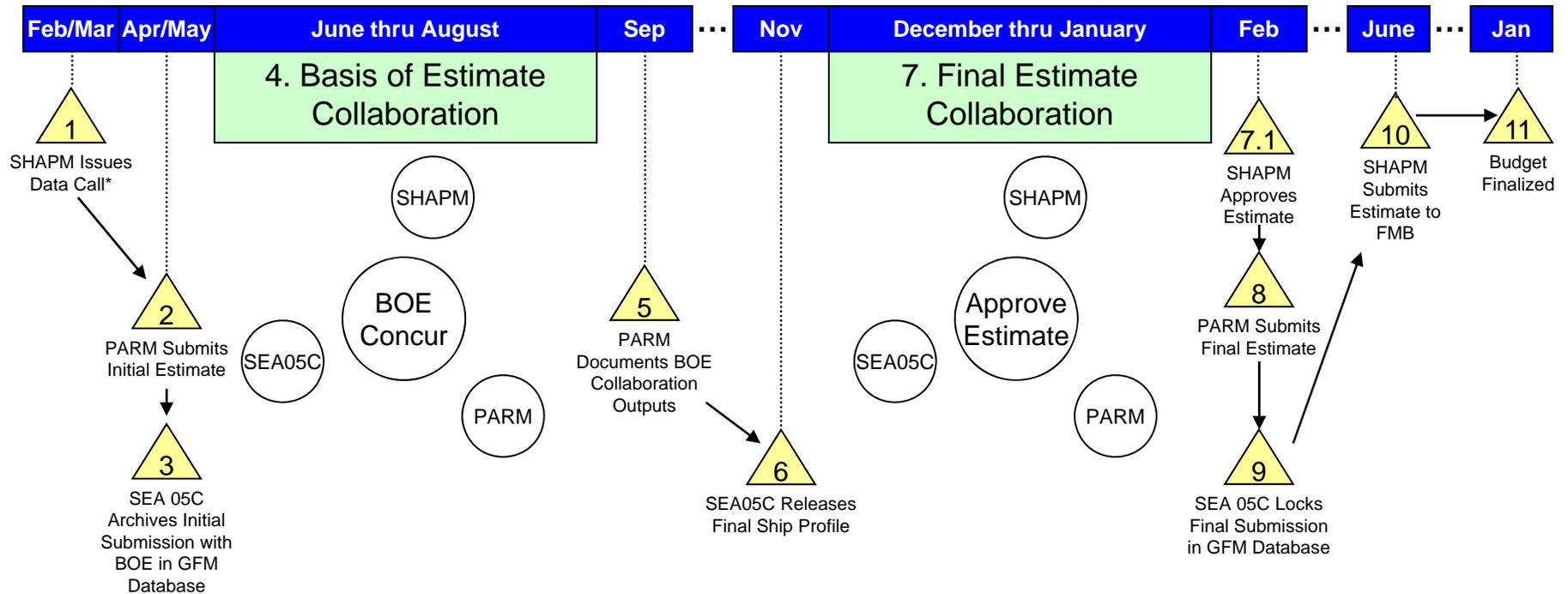


# 7300 Form Part I (Cont'd)/ Part II

	Prior Hull Actual	FY10	FY11	FY12	FY13	FY14	FY15	FY16	Cost to Complete	TOTAL
10. Program Management		0	0	0	0	0	0	0	0	0
10.1 Contract Advisory Assistance Services (CAAS)		0	0	0	0	0	0	0	0	0
10.1.1 Management Support Services										0
10.1.2 Engineering Support Services (ESS)										0
10.1.3 Studies and Analysis										0
10.2 Non CAAS Engineering Support Services (ESS)										0
10.3 Government Program Management										0
11. Other Cost										0
<b>TOTAL (Recurring and Non Recurring):</b>		0	0	0	0	0	0	0	0	0
Comments:										
NAVSEA 7300/4 (Rev. 07/2006) THIS FORM SHALL BE PREPARED BY THE PARMs/SHAPMs										

WARFARE/SYSTEM INTEGRATOR												
	Prior Hull Actual	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	CTC	TOTAL
<b>Non-Recurring Costs</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
[WBS Element]. [Effort]												-
[WBS Element]. [Effort]												-
[WBS Element]. [Effort]												-
[WBS Element]. [Effort]												-
[WBS Element]. [Effort]												-
<b>1. Ship's Combat System (CS) Integration and Engineering</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.1 CS Design Integration and Engineering												-
1.2 CS Documentation												-
1.3 CS Configuration Management												-
1.4 CS Test Requirements, Procedures & Plans												-
1.5 CS Test Coordination and Conduct Support												-
1.6 On-site Tech Residents												-
1.7 Combat System Ship Qualification Test (CSSQT) Planning												-
<b>2. Other Costs</b>												-
<b>TOTAL</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Comments:												

# GFE Timeline and Milestones



The SEA 05C Approved Estimate Will Be Submitted to FMB

\*Data Call in FY XX is in preparation for budget submission POM/PR XX+3 (ie Data Call in FY10 is in preparation for PR13)



# Basis of Estimate Assumptions



<b>Description:</b>	Define technical capabilities, base architecture and major hardware components Provide systems schematics or functional diagram
<b>Cost Estimating assumptions:</b>	Labor rate and work index- Man hours for skilled and labor hours Provide resource management(RMS)staffing by FY Provide Direct/Indirect cost Provide Fixed /Variable cost Provide Historical data - provide as many data inputs as available Provide Integration strategy- complexity , % carryover usage  Provide Software development strategy- provide outline of scope of work for integration. Identify industry standard software, hardware usage. Outline new development level of effort Provide In house v/s contract work- FTE assumptions, time v/s planned heads by deliverables Provide base cost assumptions of inflation rate, productivity, material pricing etc Provide Material type and quantity
<b>Manufacturing Assumptions:</b>	Define supply chain strategy. Provide value chain for the system Outline manufacturing process flow chart Provide production cycle time
<b>Quality and test Strategy</b>	Test equipments, fixtures and gauges Destruction testing v/s analytical testing, number of test planned Reliability assumptions , service parts required
<b>Material Planning and Logistics</b>	Define assumptions for material cost , inventory and procurement strategy Show Step down pricing strategy- price/volume curve Identify logistics cost assumptions
<b>Support Activities:</b>	Define all support activities related to the system- Identify FTE assumptions
<b>Open Issues/Challenges:</b>	

# Basis of Estimate (Details)

## 7300 WBS Elements

<b>1.0 Hardware</b> 1.1 Equipment 1.2 Prod Engineering 1.3 Equipment Refresh 1.4 ECP/ORDALTS/FC 1.5 Prod Start-up 1.6 Ancillary Equipment 1.7 Warranty
<b>2.0 Software</b> 3.0 Sys Engineering 4.0 ILS 5.0 Sys Test & Eval 6.0 Training 7.0 Data 8.0 Tech Eng Svcs 9.0 Spares 10.0 Program Mgmt 11.0 Other

## BOE Requirements

For Each Major Subcomponents

- Data From Last 5 Production Lots
  - Contract Numbers/Mods
  - Average Unit Cost per Lot
- ECPs and DMS Issues with Cost Impacts
- Shore Sites/Test Equipment
  - Include Cost Sharing with Other Funding Sources

For Each WBS Line Item

- List of Deliverables
  - Examples: data packages, training material, testing events and software licenses
- List Engineering Activities
  - Examples: systems engineering for hull specific spatial constraints and providing software support for hull combat system specific trouble reports (TRs)
- Provide Historical Data for Analogous Tasks
  - Examples: scope, duration, man year requirements and a division of fixed versus variable costs
- List of major fact of life changes and data to support the cost impact
  - Example: Base Relocation And Closure (BRAC) and associated rates tables
- List Management Challenges for Cost Reduction

## Nine Potential Sources of Data

	Data Source	Source Type
1.	Basic Accounting Records	Primary
2.	Cost Reports	Primary or Secondary
3.	Historical Databases	Primary or Secondary
4.	Functional Specialist	Primary or Secondary
5.	Other Organizations	Primary or Secondary
6.	Technical Databases	Primary or Secondary
7.	Other Information Systems	Primary or Secondary
8.	Contracts or Contractor Estimates	Secondary
9.	Cost Proposals	Secondary