

UNCLASSIFIED

Initiatives for Cost Analysis in the Department of the Navy

Presented to

Society of Cost Estimating and Analysis

Washington, D.C. Chapter Luncheon



CAPT Jim Baratta, USN

Deputy Director, NCCA

Office of the Deputy Assistant Secretary of the Navy (Cost and Economics)

21 October 2009

UNCLASSIFIED



UNCLASSIFIED

DON Cost Estimating Background – brief history

- **1999 to 2003 the DON cost estimating community was "downsized" drastically**
 - Part of down/right-sizing of the overall acquisition workforce
 - Independent DON cost org (NCCA) experienced 72% manpower reduction
 - Loss of experience base, reliance on outsourcing to contractors
 - Decimation of ability to grow an organic government cost estimating workforce
 - SYSCOM cost organizations were unable to retain full cost estimating services
 - Basic services retained for ACAT I programs only (all except NAVAIR)
 - EVM, O&S cost analysis to zero capability at NAVSEA, SPAWAR, MARCOR
- **From 2004-2007, DON MDAPs recognized/visibility of significant cost overruns**
- **Presumption: The budget reflected the program's true estimated costs**
 - If the budget was correct, then the **cost estimate must have been wrong...**
 - The “easy target”: ***fix the cost estimators, fix the cost estimates***

UNCLASSIFIED

- 2 -



UNCLASSIFIED

DON Cost Estimating Background – problem analysis

- **SECNAV (Sec. Winter) directed ASN(FM&C) and ASN(RDA) – Jan 2008**
 - Too much “in the news” regarding cost growth of DON programs
 - Review the Department's cost estimating organizations
 - Improve the DON's cost and budget credibility
 - Emphasized the Department's major ACAT ID programs
- **Completed detailed gap analysis study of the cost community – Jan-Apr 2008**
 - Inconsistencies across SYSCOM resources, core functional cost support
 - Lack of central authority /advisory to SECNAV, CNO across all programs
 - Contractor/ outsourcing of some key government functions, perception issue
 - Inconsistent cost reporting and visibility/ insight across programs/ACATs
 - Disconnect between budget and official cost estimates
 - Inconsistent application of non-advocate/ independent cost reviews
 - OPNAV N813F independent assessment functions lost
 - Cost data collection not applied or endorsed consistently across programs

UNCLASSIFIED



UNCLASSIFIED

DON Cost Estimating Background – broader picture

- ASN(RD&A)-directed 1-star, 2-star, SES-level attention by all stakeholders
 - Cost Estimating, Budgeting/Programming, Requirements
 - Engineering/Technical, Acquisition/Program Management
- **Findings:**
 - Probability of Program Success (PoPS) criteria is ineffective
 - No insight for decision makers; misleading presentation of cost “confidence”
 - Cost uncertainty at early program phases is a result of unreliable inputs
 - Technical, programmatic and requirements; maturity, variation issues
 - Much of the cost growth is a function of non-estimating issues
 - Schedule, technical and programmatic accounted for >50% of growth
 - Mismatch between budgeting, programming and estimating processes
- **Cost growth is a multi-discipline issue, endemic in the overall process**
 - Not limited to “cost estimating,” but that is where it readily appears!

UNCLASSIFIED



Recommended Focus Areas from Senior Analysis Team

- Look at POPS reporting and cost estimate presentation to leadership
 - Fix those “insight” disconnects for a more meaningful indicator
- Review “S-curve” understanding and usage
 - Gain a better view of the potential upper-range bounds of cost risk
- Add “technical/programmatic” non-advocate reviews
 - Remove some of the “optimism” from program definitions
- Improve SE process and early acquisition phase flow
 - Attain a higher maturity before committing to a program
- Align budgeting and programming expectations
 - Reduce the risk of “cost growth surprises” – funding and budget policy?

Addressed by Cost Estimating team

Addressed by Chief SYSENG team

TBD



UNCLASSIFIED

DON Actions and Outcomes – Policy Changes

- **SECNAV 5223.2 issued Dec 2008 – overhaul of DON Cost Estimating/Analysis**
 - Increased independent cost estimating oversight, insight, roles and processes

- **ASN(RD&A) re-alignment of the Gate Review processes**
 - Update of SECNAV 5000.2 aligned with DoDI 5000.02 from Dec 08
 - Addressed engineering rigor/reviews earlier in the governance processes
 - Enables improved understanding of technology maturity and risk

- **ASN(RD&A) overhaul of the PoPS insight tool**
 - Clear and objective reporting standards across all acquisition disciplines
 - Counter the former/present “sea of green” optimistic reporting

- **Concurrent DON cost estimating guidance**
 - ASN(FM&C) and ASN(RD&A) Service Cost Positions, Cost Review Boards

UNCLASSIFIED



UNCLASSIFIED

DON Actions and Outcomes – Cost Organization Changes

- **SYSCOM Cost Organizations increasing resources**
 - Support to all ACAT and non-ACAT programs
 - Gradually adding EVM and O&S cost support
 - Migrating to demand-based funded entity, primarily government in-house
 - NAVAIR 4.2 the “model” for SYSCOM cost organizations

- **NCCA staffing tripled from 2003 range (from 15 to 45 government)**
 - Brought former outsourced analysis back into government
 - Added Division for ACAT ID Cost Assessments
 - Established a DON Chief Economist position
 - Increased cost research and data collection capability
 - Re-established government cost estimating intern program

UNCLASSIFIED

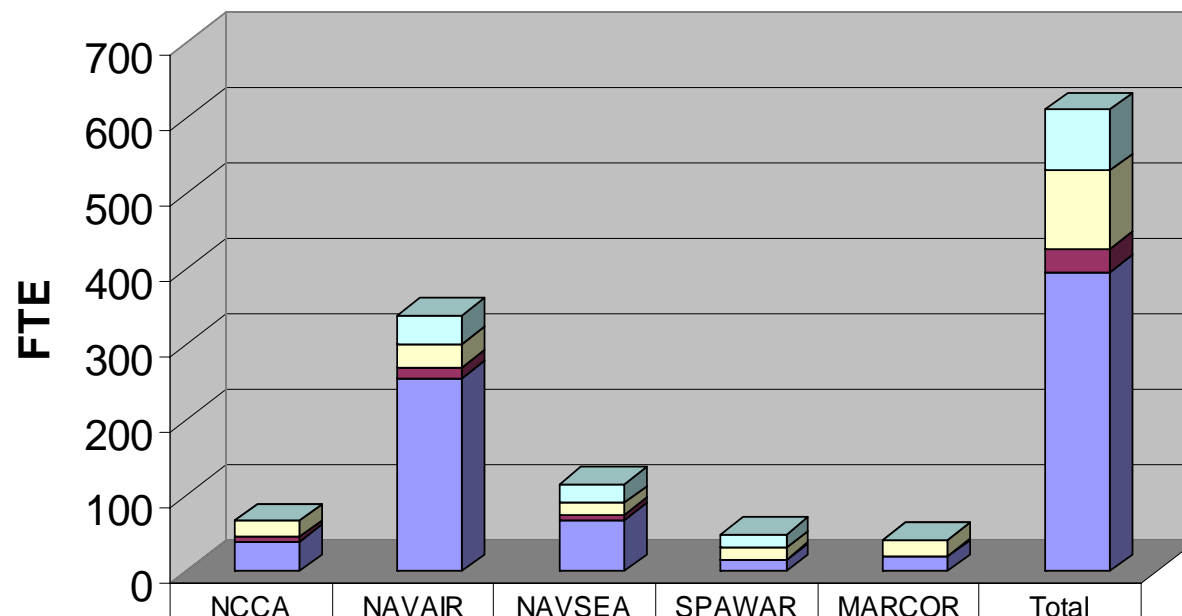
- 7 -



UNCLASSIFIED

Department of the Navy Cost Estimating Community

(as of May 2009)



	NCCA	NAVAIR	NAVSEA	SPAWAR	MARCOR	Total
Field Activities	0	38	25	18	0	81
Contractors	21	30	15	15	22	103
Admin/staff	6	15	7	2	1	31
Analysts	39	255	68	14	19	395

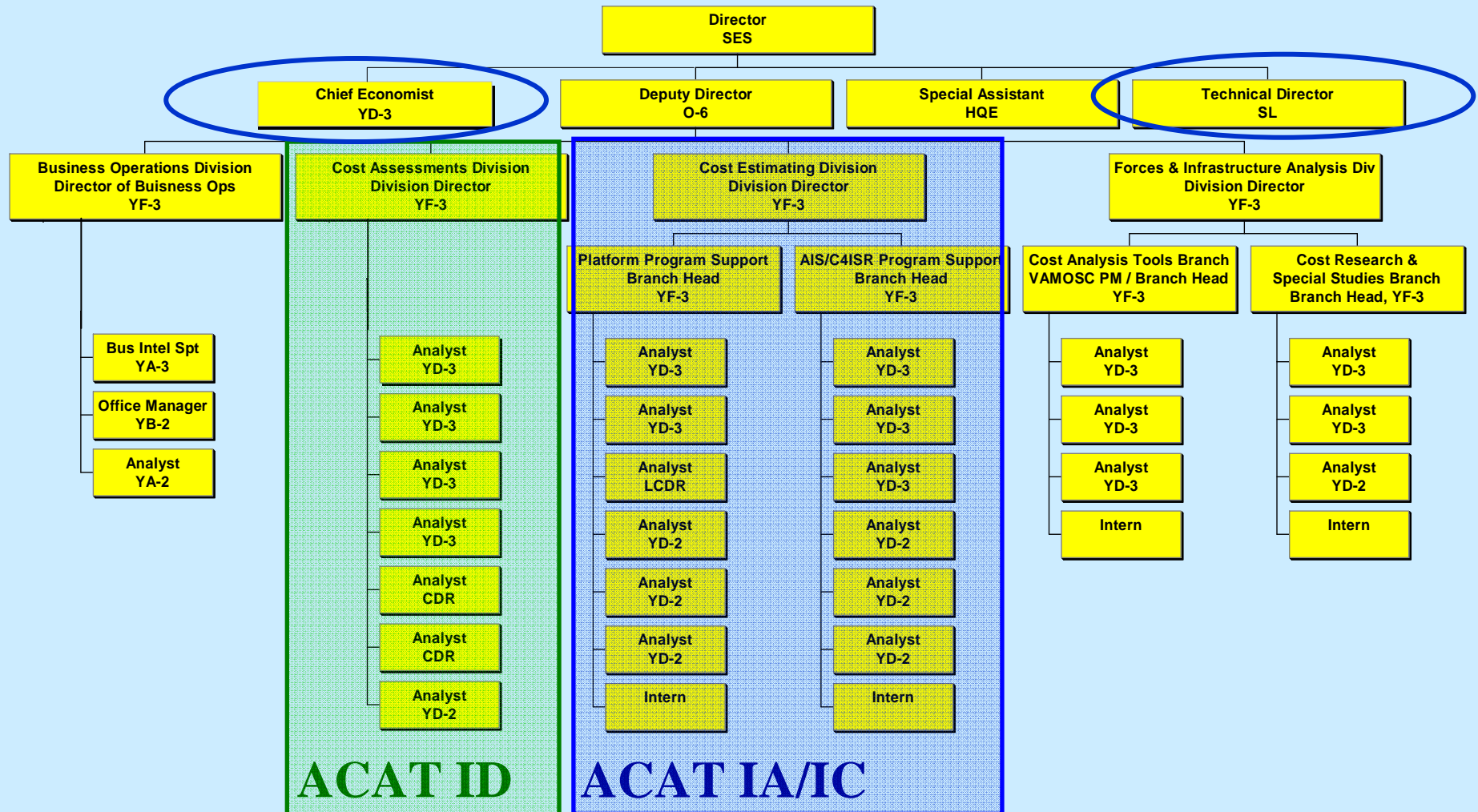
- **NCCA** provides independent estimating for DON programs
 - Provides SECNAV/OPNAV/HQMC-level cost analysis support
- **SYSCOMS** establish Program Manager's estimates for DON programs
 - Provide program/PEO-level cost analysis support
 - SYSCOMs not equally resourced to provide same services (SECNAVINST signed Dec 08)
- **600 FTE** across the DON (~83% government, 17% contractor)

UNCLASSIFIED



UNCLASSIFIED

NCCA Organization



UNCLASSIFIED



UNCLASSIFIED

So...what's changed by the SECNAVINST?

- **Senior leadership directed to use SYSCOM/NCCA cost information**
 - Milestone decisions, programming, budgeting
- **NCCA Director designated as DASN (C&E)**
- **NCCA as “Principal Advisor” on Cost and Economic issues**
 - Increased role in Gate Reviews, joint programs, non-program analyses
 - Independent assessments of SYSCOMs for ACAT IDs, Nunn-McCurdys
 - Includes independent evaluation of risk and uncertainty
- **NCCA and SYSCOMs collaborate on common DON cost position (SCP)**
 - Official DON position on a program’s cost
 - NCCA to provide the “independent assessment” prior to OSD/CAPE review

UNCLASSIFIED



UNCLASSIFIED

So...what's changed by the SECNAVINST? (cont.)

- **Program Managers, Resource/Programmers formally directed**
 - Use cost estimates developed by cost organizations for planning/budgeting
 - Document decisions counter to cost org estimates
 - Required to get SYSCOM-level technical/programmatic review of CARD
 - CARD required for all ACAT programs (not just ACAT I)
 - Need SYSCOM approval before outsourcing for cost support
- **SYSCOMs directed to provide more cost functions and support**
 - EVM support, O&S cost estimating, support beyond just ACAT ID programs
 - Working capital-funded model used as a preferred option at SYSCOMs
 - Not just cost, but TECHNICAL/engineering review of CARD, program docs
 - Approval and oversight of any PM “outsourcing” for cost estimating support

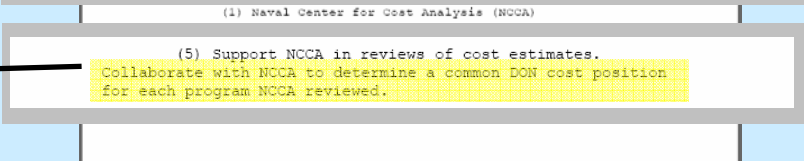
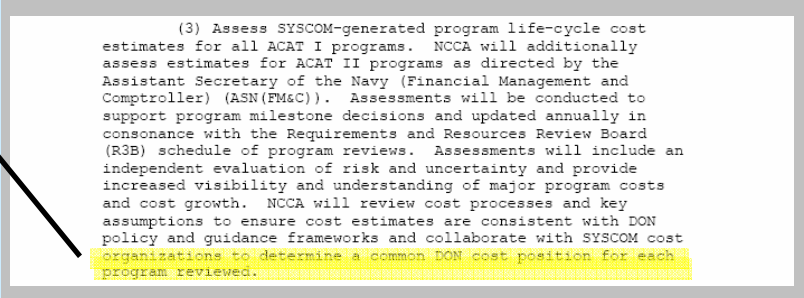
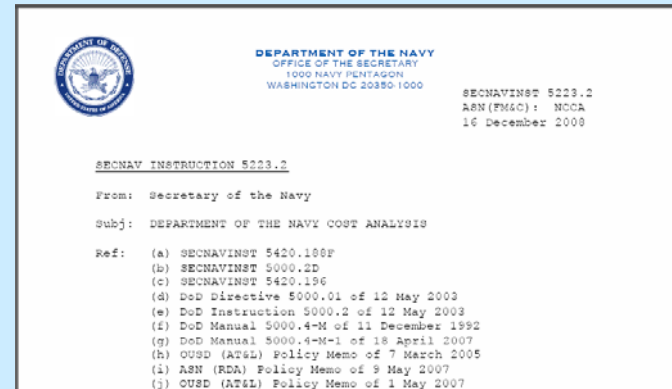
UNCLASSIFIED



UNCLASSIFIED

SECNAV 5223.2 DON Cost Analysis

- NCCA shall:
 - Determine a common DON cost position
 - Provide insight into:
 - Cost drivers
 - Cost risk and uncertainty
 - Total Ownership Cost
- SYSCOMs shall:
 - Support NCCA in reviews
 - Collaborate with NCCA to develop a common DON cost position



Common DON cost position = Service Cost Position

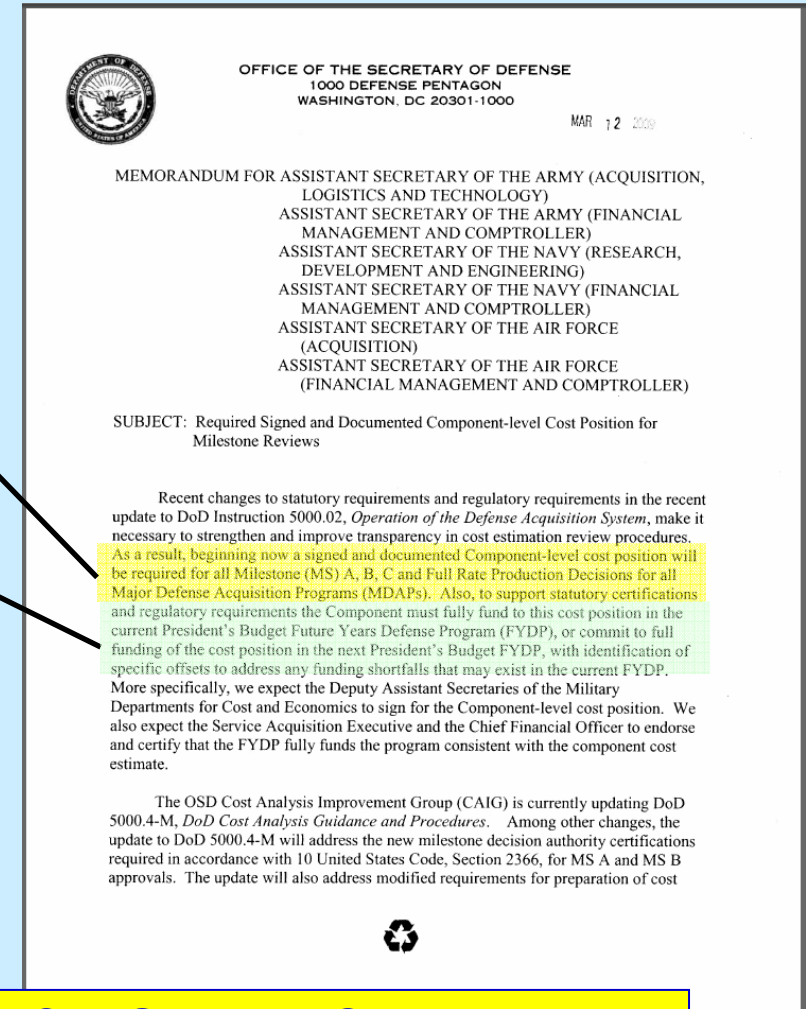
UNCLASSIFIED



UNCLASSIFIED

Component Cost Position OSD CA&PE Guidance

- From OSD CA&PE (formerly OSD CAIG) memo “Required Signed and Documented Component-level Cost Position for Milestone Reviews” dated March 12, 2009:
 - “A signed and documented Component-level cost position will be required for all MS A, B, C, and Full Rate Production Decisions”
 - “We expect the Deputy Assistant Secretaries of the Military Departments for Cost and Economics to sign for the Component-level cost position.”
 - Service Acquisition Executive and the Chief Financial Officer to endorse and certify that the FYDP fully funds the program consistent with the component cost estimate.



Component-level Cost Position = DON Service Cost Position

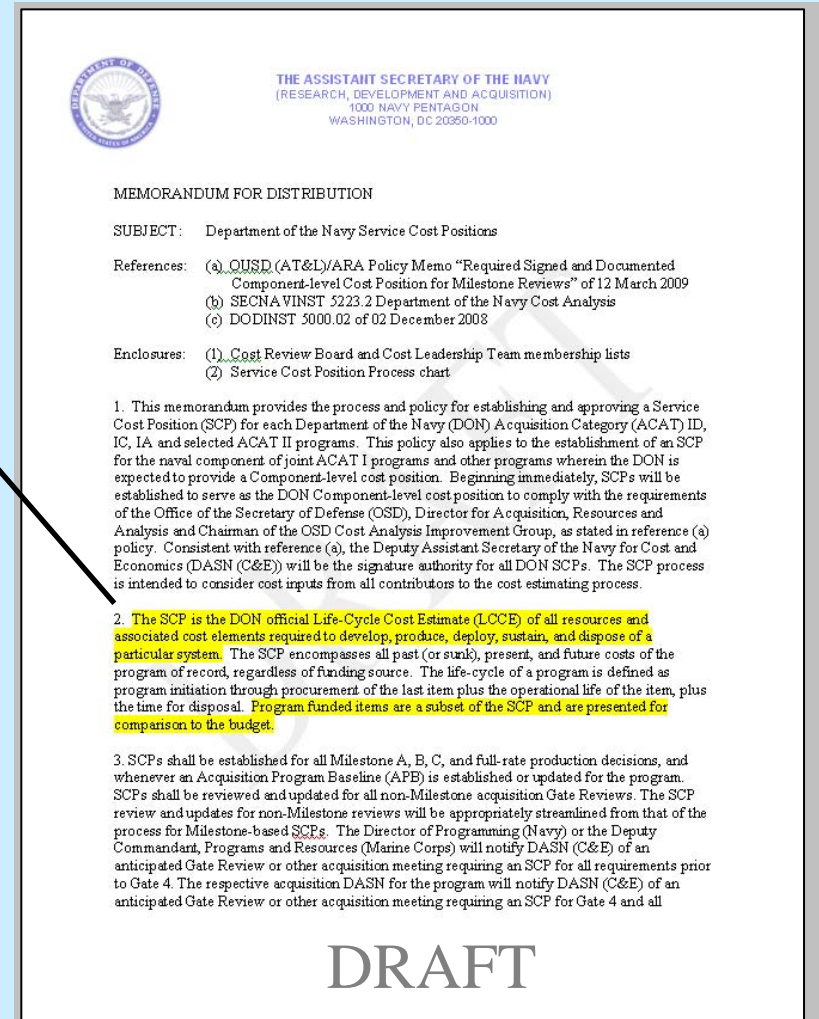
UNCLASSIFIED



UNCLASSIFIED

Service Cost Position ASN (RD&A) and ASN (FM&C) Guidance

- From the ASN (RD&A) and ASN (FM&C) memo “Department of the Navy Service Cost Positions” draft:
 - “The SCP is the DON official Life-Cycle Cost Estimate (LCCE) of all resources and associated cost elements required to develop, produce, deploy, sustain, and dispose of a particular system.”
- Establishes Cost Review Boards
- Stakeholder Review of CARD
- Increased, early insight across all DON equities
 - Life Cycle Support Management / TOC
 - Budgeting and Programming
 - Requirements
 - Acquisition, Program Management
 - Cost Estimating

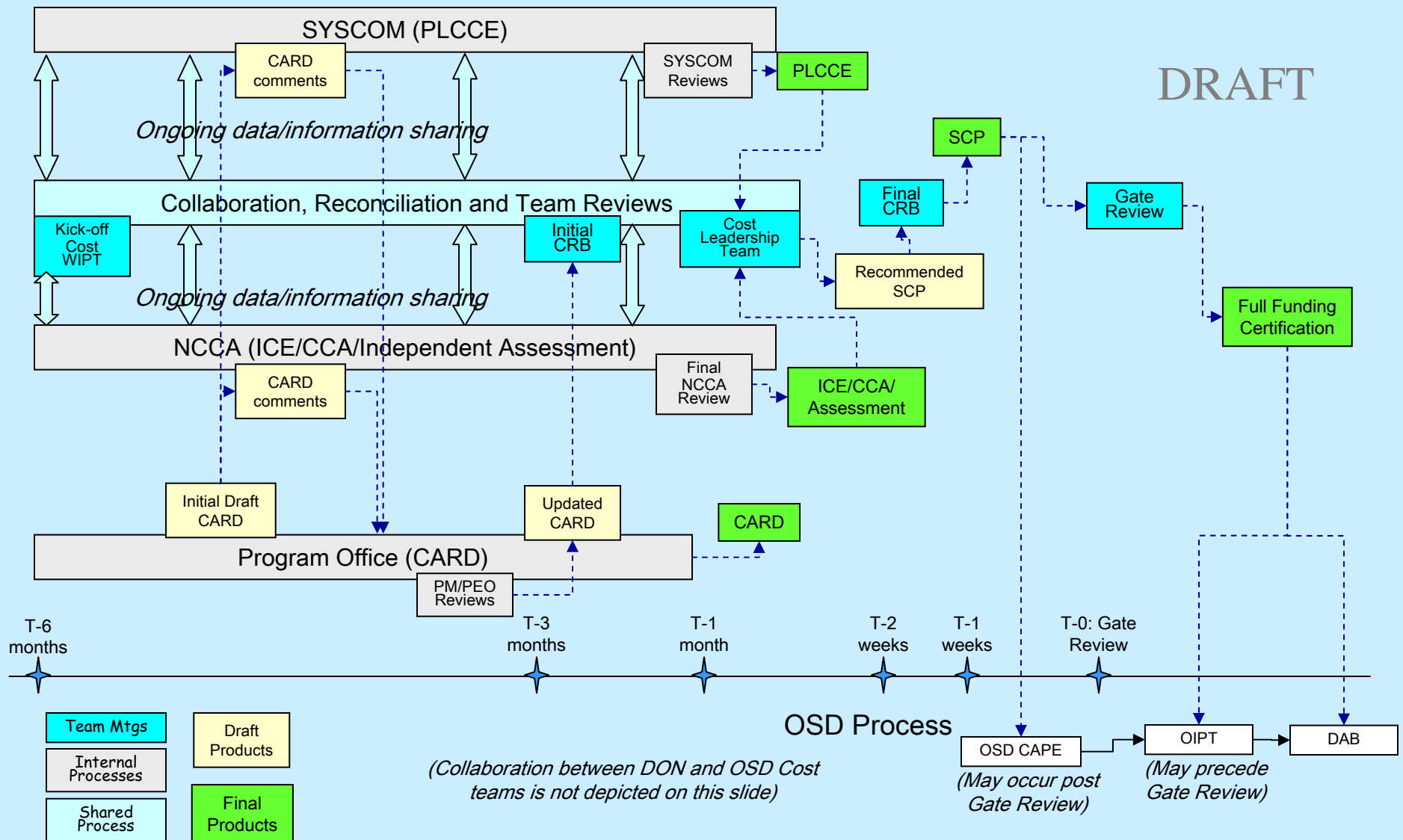


UNCLASSIFIED



UNCLASSIFIED

DON Service Cost Position Process



DRAFT

UNCLASSIFIED



UNCLASSIFIED

Pass 1 Gates

Gates 1, 2, and 3

“Requirements” Gates

- Led by CNO or CMC
- Starts prior to Material Development Decision, ends after Gate 3
- Leads to:
 - Approving the ICD
 - Approving AOA guidance
 - Selecting an AOA “optimal” alternative
 - Approving a CDD
 - Developing a CONOPS
 - Approving System Design Specification (SDS) Development Plan

UNCLASSIFIED

- 16 -



UNCLASSIFIED

Pass 2 Gates

Gates 4, 5, and 6 “Acquisition” Gates

- Led by ASN(RDA)
- Starts after Gate 3, ends after Milestone B (initial EMD phase)
- Leads to:
 - Approving the SDS
 - Approving release of the RFP
 - Assessing readiness for production
 - Assessing sufficiency of the EVMS PMB
 - Assessing the IBR
- Follow-on Gate 6’s pre- and post-Milestone C and FRP DR
 - Serve as Configuration Steering Boards and review program health

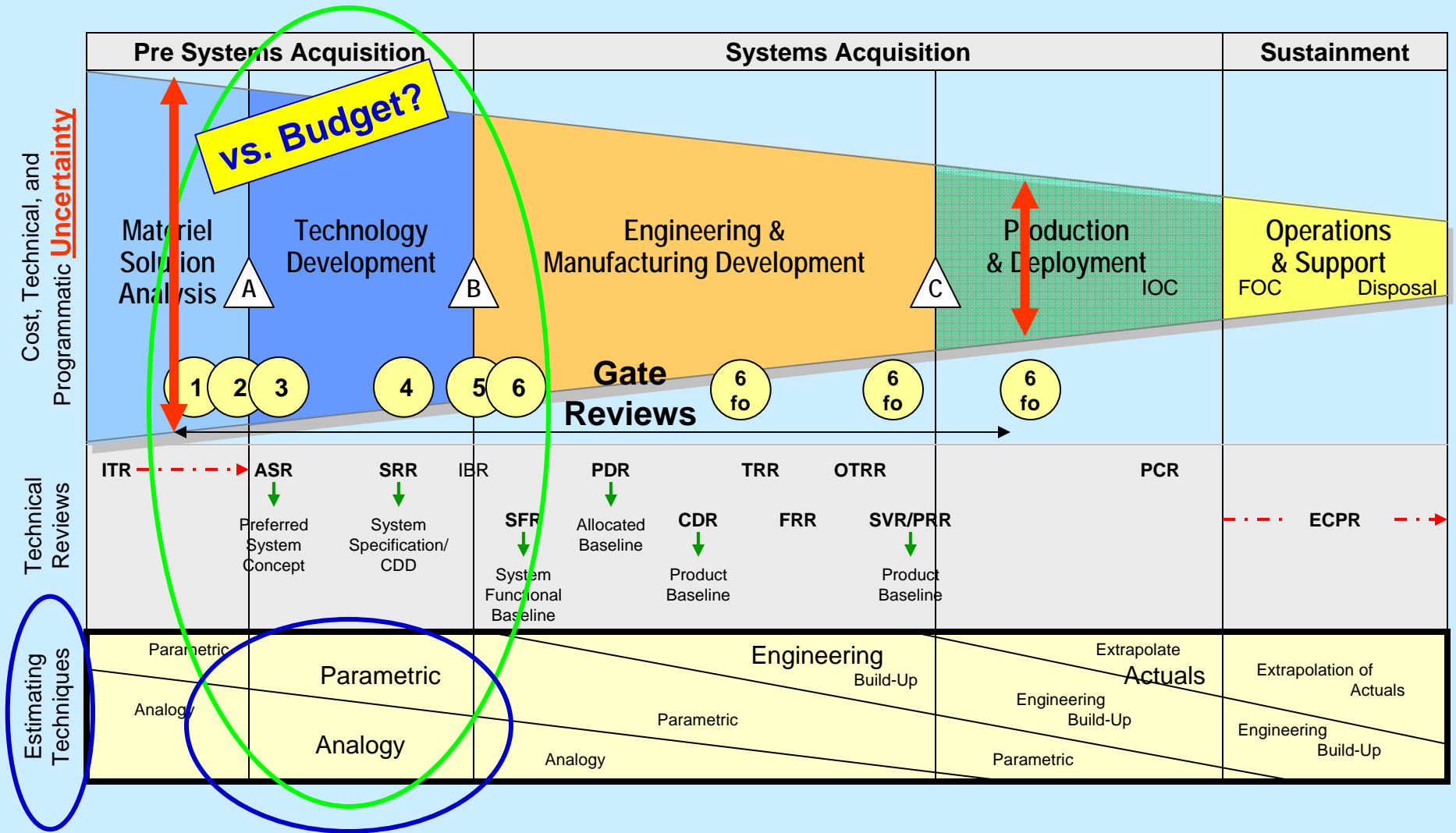
UNCLASSIFIED

- 17 -



UNCLASSIFIED

Cost Estimate Maturity vs. Gate Reviews



UNCLASSIFIED



UNCLASSIFIED

Former POPS 1.0 Cost Estimating Criteria

METRIC	CRITERIA	<u>GATE 1</u>	<u>GATE 2</u>	<u>GATE 3</u>	<u>GATE 4</u>	<u>GATE 5</u>	<u>GATE 6</u>
C O S T	Plan to conduct cost estimates has been developed; all stakeholders actively involved	GREEN - Plan for cost estimates have been developed; all stakeholders involved					
		YELLOW - Plan for cost estimates are being developed; key stakeholders involved					
		RED - Plan for cost estimates NOT been developed					
E S T	Cost estimate range to address potential capability alt. have been developed and dropped	GREEN - developed and approved					
		YELLOW - developed and not approved					
		RED - developed and not approved					
A T I N G	Initial independent CE has been accomplished by an org. outside the PORC. Less than 10% diff. btwn the P.O. and initial ind.cost estimator. Diff. in assumptions and methodologies have been resolved.	GREEN - ahead of schedule	GREEN - ahead of schedule	GREEN - ahead of schedule	GREEN - ahead of schedule	GREEN - ahead of schedule	GREEN - ahead of schedule
		YELLOW - behind schedule but not affecting planning/execution	YELLOW - behind schedule but not affecting planning/execution	YELLOW - behind schedule but not affecting planning/execution	YELLOW - behind schedule but not affecting planning/execution	YELLOW - behind schedule but not affecting planning/execution	YELLOW - behind schedule but not affecting planning/execution
		RED - behind sched. & affecting planning/execution	RED - behind sched. & affecting planning/execution	RED - behind sched. & affecting planning/execution	RED - behind sched. & affecting planning/execution	RED - behind sched. & affecting planning/execution	RED - behind sched. & affecting planning/execution
C O S T E S T I N G	Cost Estimate confidence level is about 75%	>75%	>80%	>85%	>90%	>95%	
		25-75%	50-80%	60-85%	75-90%	80-95%	
		<25%	<50%	<60%	<75%	<80%	
C O S T E S T I N G	Initial independent CE has been accomplished by an org. outside the PORC. Less than 10% diff. btwn the P.O. and initial ind.cost estimator. Diff. in assumptions and methodologies have been resolved.	difference. All diff. have been resolved	difference. All diff. have been resolved	difference. All diff. have been resolved	difference. All diff. have been resolved	difference. All diff. have been resolved	
		YELLOW: 10-30% difference. All diff. are resolvable	YELLOW: 10-30% difference. All diff. are resolvable	YELLOW: 10-30% difference. All diff. are resolvable	YELLOW: 10-30% difference. All diff. are resolvable	YELLOW: 10-30% difference. All diff. are resolvable	
		RED: >30% difference. All diff are NOT resolvable	RED: >30% difference. All diff are NOT resolvable	RED: >30% difference. All diff are NOT resolvable	RED: >30% difference. All diff are NOT resolvable	RED: >30% difference. All diff are NOT resolvable	

“Is there a Plan to get an Estimate?”

“Confidence Level” is NOT the S-Curve C.I. – It is PM’s subjective

“Are CE activities on-schedule?”

78 Criteria had “cost estimating” linkage (across all Gates); only 19 of those were captured in the Cost Estimating Metric.

UNCLASSIFIED



UNCLASSIFIED

PoPS 2.0 Criteria – Program Description

COST ESTIMATING

COST ESTIMATING: Stability of program definition and documentation, availability of reliable and relevant cost data, maturity of program technology, use of best practices in cost estimating processes, use of independent cost estimates, and cost estimate metrics.

COST ESTIMATING CRITERIA

Program Description Information. Major program documents (CDD, CONOPS, CARD) have been approved by independent* technical or functional oversight authorities and updated with latest information. Other defining documents for the program (SDS, IMS, Acquisition Strategy) are completed. All documents are mature, stable, and thoroughly detailed to form a basis for the cost estimate, with only few minor changes since completing the previous estimate. Technology of the capability being acquired is adequately mature to allow a reliable cost estimate.

All major documents (CDD, CONOPS, CARD) are independently* approved. All other defining documents (SDS, IMS, Acquisition strategy) are completed. All documents have been updated, received and reviewed by an independent cost agency and approved for completing the cost analysis. Only minor, if any, changes to the program since the last cost estimate. All systems and major subsystems assessed at or above TRL7 (or TRL6 for satellite technologies).

One or more major documents (CDD, CONOPS, CARD) is awaiting independent* approval. One or more defining document has minor gaps or inconsistencies which may affect the cost estimate. Moderate volatility has affected the program since completing the last cost estimate (e.g., >5% but <10% change in quantities, 6 month to 1 year change in schedule/milestones, changes in scope of events, non-KPP/KSA changes in requirements). All systems and major subsystems assessed at or above TRL6.

One or more major documents (CDD, CONOPS, CARD) is incomplete or has not been reviewed by the independent* authority. One or more defining document lacks in significant detail or is incomplete. One or more defining document has not been updated to reflect present program definition. Significant volatility in the program since completing the prior estimate (e.g., >10% change in quantities, >1 year change in milestones/ schedule, significant change in scope of events, or significant modification of KPP/KSA/capability requirements). Any system or subsystem is assessed below TRL6.

“How good is the program description? Tech Maturity?”



PoPS 2.0 Criteria – Cost Data

5.8.2 **Cost Data.** The cost estimating organization(s) had access to an adequate volume of reliable and relevant cost data for creating the estimate. Historical actual cost and technical data (e.g., technical descriptions, drawings, etc.). Historical actual cost and technical data (e.g., technical descriptions, drawings, etc.) existed that was homogenous to the technical and program description of the program. Actual data (e.g., CPRs, BOM, Rate data) for this program and contractor was collected to a sufficient level of detail.

“Is relevant, reliable data available?”



Reliable, relevant cost data was available. Relevant similar historical programs or systems existed, with reliable, valid cost data, which were used to formulate the estimate. Actual contractor or program cost data allowed establishing mathematical significance in the estimate. All elements and aspects of the cost estimate were able to be credibly calculated.



A limited amount of reliable, relevant cost data was available. Relevant similar historical programs or systems existed, but some of that cost data was deemed unreliable for this program. Actual contractor or program cost data allowed establishing mathematical significance in the estimate. All major elements and aspects of the cost estimate were able to be credibly calculated.



Reliable data was not available. Actual program or contractor cost data was incomplete, insufficient, or unreliable. Rate data, BOM, and CPRs were not established or could not be verified to support the estimate. Major elements or aspects of the estimate could not be credibly calculated due to lack of reliable cost data.



PoPS 2.0 Criteria – Estimate Comparisons

5.8.4 Cost Estimate stability and comparisons. The cost estimate* for the Average Procurement Unit Cost (PAUC), Program Acquisition Unit Cost (PAUC), and each appropriation for the program significantly changed since the last Gate Review, Milestone (MS) Review, or other officially reviewed estimate. Independent Naval Center for Cost Analysis (NCCA) estimate or assessment [Acquisition Category (ACAT) I] confirms the program estimate*.

“Estimate vs ICE? Stable est over time?”

The NCCA (ACAT IC/IA only) and System Command (SYSCOM) Cost Organization estimates* have remained within 5% of the last Gate Review, MS Review, or other officially reviewed estimate, and have not exceeded the MS A estimate by more than 10%. The SYSCOM Cost Organization estimate* is within 5% of the NCCA independent estimate (ACAT IC/IA only). A service cost position** is established and approved.



The NCCA (ACAT IC/IA only) or SYSCOM Cost Organization estimate* has grown by >5% but <15% since the last Gate Review, MS Review, or other officially reviewed estimate, or has exceeded the Milestone A estimate by more than 10% but less than 20%. The SYSCOM Cost Organization estimate* is not within 5% but is within 15% of the NCCA independent estimate (ACAT IC/IA only). A service cost position** is being established but is not approved.



The NCCA (ACAT IC/IA only) or SYSCOM Cost Organization estimate* has grown by >15% since the last Gate Review, MS Review, or other officially reviewed estimate, or has exceeded the MS A estimate by more than 20%. The SYSCOM Cost Organization estimate* is not within 15% of the NCCA independent estimate (ACAT IC/IA only). A service cost position** is not being established, or significant unreconciled differences exist between the NCCA assessment and the SYSCOM cost estimate (ACAT ID only).

KILLER BLOW





UNCLASSIFIED

PoPS 2.0 Criteria - Process

“CE Process, Team, Analysis?”

5.8.3 **Cost Estimating Process.** The cost estimate was completed with conformance to accepted best practices. All steps of the estimating process were completed: government led cost teams were established and functioning; appropriate estimating methodologies were selected; appropriate cost element structures and cross elements were established; cost and schedule drivers were identified; key technical and programmatic assumptions were established and validated; cost data was collected, analyzed, and normalized; data outliers, trends, and sources were reviewed; the point estimate was time-phased and mathematically checked for errors; risk, uncertainty, and sensitivity analyses were conducted and validated; appropriate internal and external reviews validated the estimate; the estimate was formally and thoroughly documented.



Cost team led by qualified government cost estimators meets regularly; estimating methodology is appropriate for this phase and for available data; cost element structure reflects all elements of the program's life cycle costs; all cost and schedule drivers are reported in the cost estimate; key technical and programmatic assumptions were verified; cost data was analyzed, normalized and processed; data sources, trends and outliers were reviewed and appropriately considered in the estimate; point estimate contains no mathematical errors or inconsistencies in phasing; risk, uncertainty, and sensitivity analyses were conducted and are sufficiently mature; internal and external reviews were conducted and validated the estimate; independent NCCA and SYSCOM headquarters reviews of the estimate were completed; estimate documentation is complete and detailed.



Cost team is led by government personnel who are not cost estimators, or does not meet regularly; estimating methodology is not appropriate for this phase and for available data; cost element structure reflects key elements of the program's life cycle costs; key technical and programmatic assumptions were verified; cost data was analyzed, normalized and processed; data sources, trends and outliers were reviewed and appropriately considered in the estimate; point estimate contains only minor

UNCLASSIFIED



UNCLASSIFIED

PoPS 2.0 Criteria - Measures

“Assessment of Risk/Uncertainty?”

5.8.5 Cost Estimate measures. Measures of statistical significance validate the credibility of the estimate.



The coefficient of variation of the cumulative distribution function curve (S-curve) of the estimate for each appropriation is greater than 25% and less than 35%.



The coefficient of variation of the cumulative distribution function curve (S-curve) of the estimate for any appropriation is less than 25% but greater than 15% or less than 50% but greater than 35%.



The coefficient of variation of the cumulative distribution function curve (S-curve) of the estimate for any appropriation is less than 15% or greater than 50%.

UNCLASSIFIED



UNCLASSIFIED

POPS 2.0 Cost Estimate Information Presentation

- **Actual Values of the cost estimates (SYSCOM or SCP)**

PLUS

- **Key assumptions in the estimate**
 - Compare to CARD and other program documentation
- **Significant cost drivers and sensitivity analysis**
 - Prioritize and highlight drivers that are most sensitive to cause cost changes
 - Highlight items which are directly KPP-related cost drivers
- **Major cost risks, limitations or significant uncertainties of the estimate**



UNCLASSIFIED

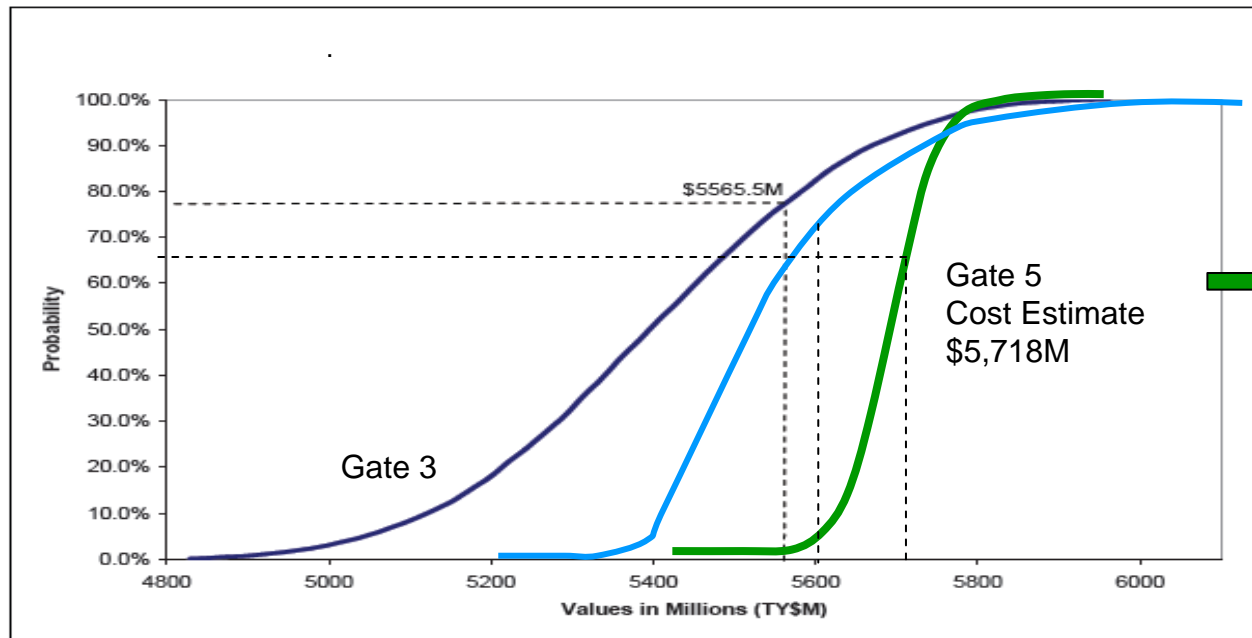
POPS 2.0 Cost Estimate Risk Presentation



Program Planning / Execution

COST ESTIMATING

S - Curve RDT&E (one for each appropriation)



% tile	SM
90%	\$5661M
80%	\$5592M
70%	\$5522M
60%	\$5453M
50%	\$5406M
40%	\$5337M
30%	\$5291M
20%	\$5221M
10%	\$5129M

Gate 5
Cost Estimate
\$5,718M

Cost Estimate Completed by:

Notes: Any pertinent information that cannot be readily gathered from the data table above can be included in this text box. It provides an easy method of conveying more details than the data table may allow.

	CV	CI
Gate 3 (Dec 07)	32.4%	78%
Gate 4 (Apr 09)	28.9%	71%
Gate 5 (May 10)	22.4%	65%



UNCLASSIFIED

Other DON Cost Estimating Initiatives

- **Annual DON Cost Analysis Symposium (3rd annual)**
 - September each year, usually held at Quantico
- **DASN(C&E) writing cost estimating best practices into a DON standard**
 - Based on GAO, NAVAIR 4.2, SCEA, AFCAA guidance/references
- **Cost Estimating Metrics and “track record”**
 - Similar to NRO cost agency effort; creating NCCA performance metrics
- **Govt-Industry Cost IPT**
 - Share perspectives, issues on cost estimating; not program-specific
- **Improving common cost databases**
 - VAMOSC, J-CARD, IMS/NCCM, JIAT with AFCAA, Army, SYSCOMS
- **Standardization of cost risks and uncertainty analysis early in program**
 - S-Curves are not capturing the full story – but widely accepted/directed

UNCLASSIFIED

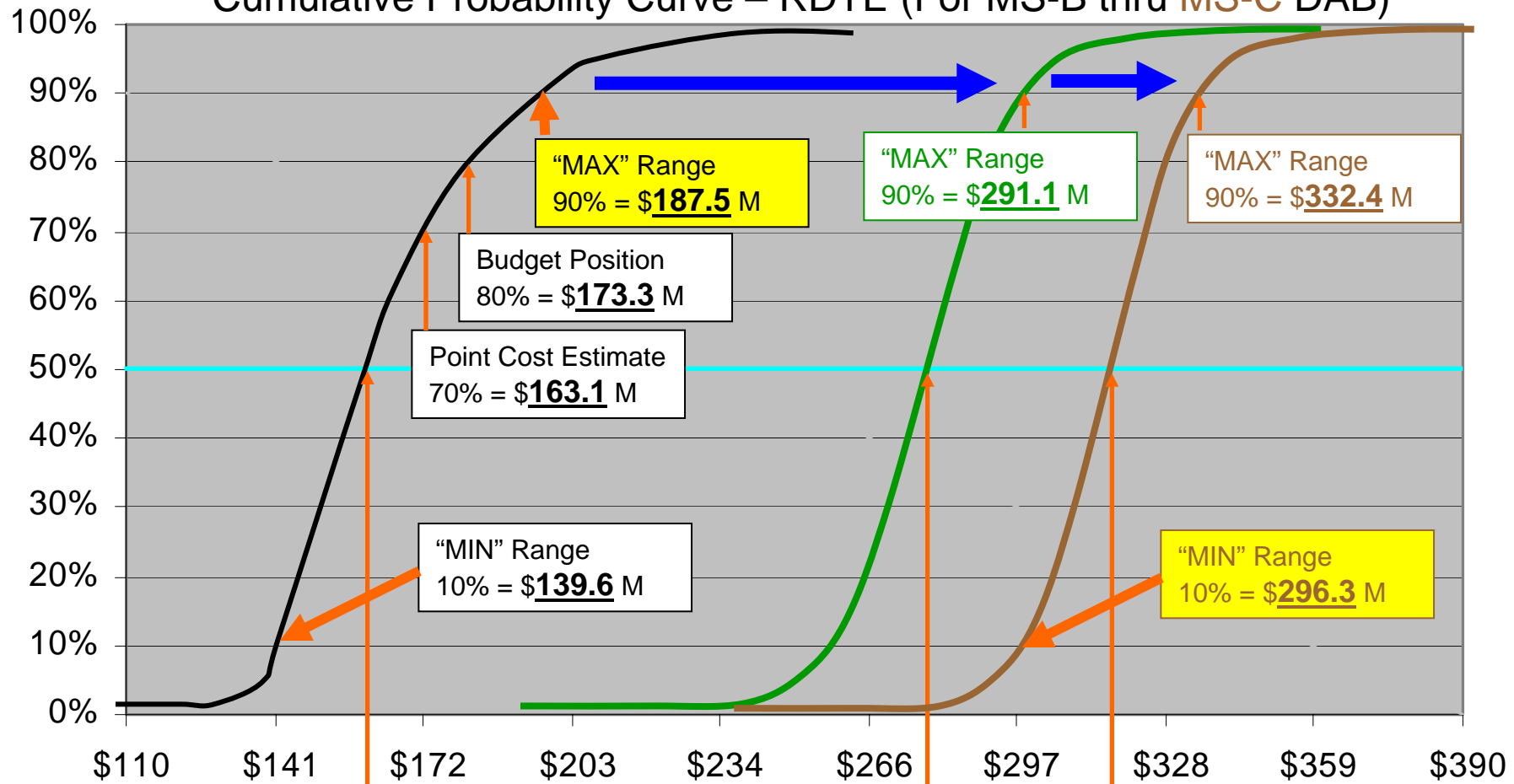
- 28 -



UNCLASSIFIED

Actual program – what we need to fix

Cumulative Probability Curve – RDTE (For MS-B thru MS-C DAB)



- MS-B Stated Cost Risks:**
1. Data Link Software
 2. Kr Labor Rates
 3. Software Productivity
 4. SEPM

Jun 07 MS-B

50% = \$153.7 M

COV=9.9%

Feb 09 MS-C

(PEO review)

50% = \$274.7 M

COV=4.6%

Mar 09 MS-C

(Gate Review)

50% = \$314.5 M

COV=4.1%

What drove cost growth:

1. Related Data Link Program
2. System T&E Complexity
3. EAC "Growth"

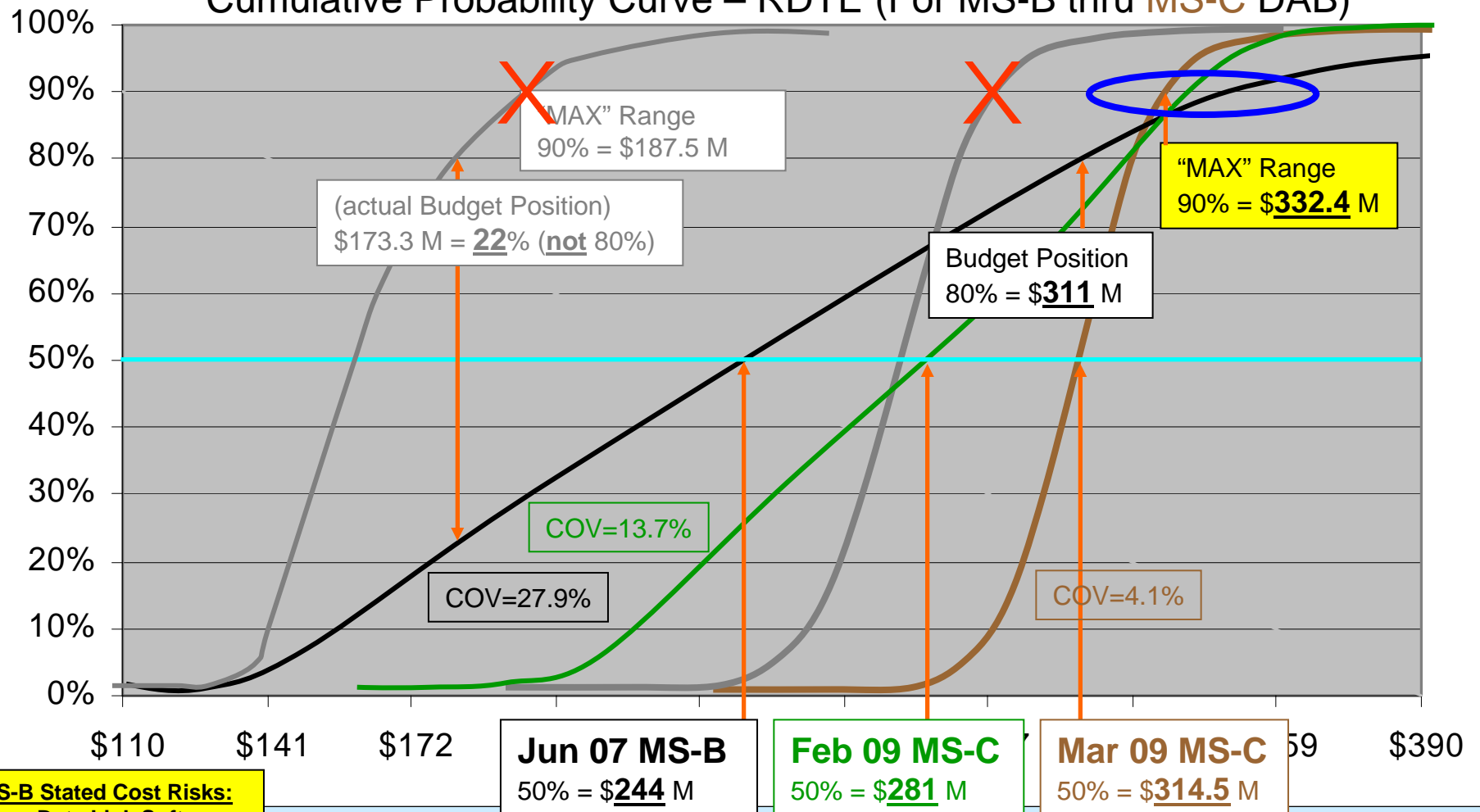
UNCLASSIFIED



UNCLASSIFIED

Upper cost-risk range: What we should be thinking

Cumulative Probability Curve – RDTE (For MS-B thru MS-C DAB)



MS-B Stated Cost Risks:

1. Data Link Software
2. Kr Labor Rates
3. Software Productivity
4. SEPM

- **Max Range:** true cost risk “upper end”– stable over time? Decreasing? Increasing?
- **S-Curve:** steepens as risks are understood/absorbed; reality: “min range” may grow.
- **Initial Budget:** allow normal maturing of program cost risk through the acquisition phases.

UNCLASSIFIED



UNCLASSIFIED

Cost Estimating Questions that still remain

- **MS-A Certification**
 - Technology maturation? Requirements stability?
 - Reliable data this early in the acquisition life cycle?
 - “Best practice” methods versus cost estimate confidence?
 - Preference towards fixed-price type contracts? Affect on risk sharing?
 - Are future costs really understood? Enough to “baseline” costs within 25%?
- How to best meet WSARA expectations?
 - Budget cycles versus Milestone estimates versus annual certifications
 - **“Fund to 80% confidence interval”? Budget implications?**
- Service role versus CAPE role – especially in MAIS programs?
 - Standards of CAPE “quality assessment” of Services’ estimates?
- **Cost Estimating community/organization resources (people, systems)**
- Will the “new process” result in more effective, early programming and budgeting?
- **Metrics of cost estimating performance – and adjusting processes to those?**

UNCLASSIFIED



UNCLASSIFIED

Summary

- Initiatives span across many disciplines (e.g., engineering, life-cycle management, program oversight, cost estimating)
- DON cost organizations, cost and acquisition policies, and best practices have significantly changed to provide insight and control
- Efforts moving forward will provide additional opportunity to reduce the chance of unbridled cost growth in DON programs
- There's more work to be done, and questions to be answered, to "get it right"

UNCLASSIFIED

- 32 -



UNCLASSIFIED

Cost Estimating in History

a couple thousand years ago...

Warfighter

Requirements

“Suppose one of you wants to build a tower? Will he not **first** sit down and **estimate the cost** to see if he has enough money to complete it?

PM

Prime Contractor

Budgeteers

For if he lays the foundation and is not able to finish it, everyone who sees him will ridicule him!”

The favorite “local” newspaper

Congress, OSD

- Jesus

(Luke 14:28-29)

UNCLASSIFIED

- 33 -



UNCLASSIFIED

Questions?



CAPT Jim Baratta, USN
james.baratta@navy.mil
703-692-4886

UNCLASSIFIED



UNCLASSIFIED

Precision

(Courtesy of Mr. John Cargill, AFCAA)

- “It is the mark of an educated mind to rest satisfied with the degree of precision which the nature of the subject admits and not to seek exactness where only an approximation is possible.”- *Aristotle*
- **What our boy, Aristotle, really meant to say was:**
 - “Do not pretend to know more than you do.”
 - “Do not carry extra decimal places past the noise or uncertainty around your inputs”
 - “You got risk and uncertainty – let your COV reflect it”
 - “Close enough for Government work”
 - “And above all, don’t ‘verticate’ the S-Curve (CDF)!” (attributed to LtGen Hamel, USAF)

UNCLASSIFIED



UNCLASSIFIED

DASN(C&E)/NCCA

Roles and Responsibilities

- **Serve as Principal Advisor to DON leadership (e.g., ASN FM&C, ASN RD&A) on cost issues:**
 - Prepare Independent Cost Estimates (ICEs) for ACAT IC programs
 - Prepare Cost Assessments (CAs) for ACAT ID programs
 - Prepare Component Cost Estimates (CCEs) for ACAT IA Major Automated Information System (MAIS) programs
 - Chair Cost Review Board (CRB) to present the results of cost estimates and the Service Cost Position (SCP)
 - Assess SYSCOM-generated Program Life-Cycle Cost Estimates for ACAT I, ACAT IA and directed ACAT II programs
 - Perform non-advocate assessments for programs incurring Nunn-McCurdy breaches (MDAP) or Critical Changes (MAIS)
 - Review cost, economic, and business case analyses presented to SECNAV, CNO, and CMC
- **Serve as DON's representative to USD Acquisition Technology and Logistics (USD AT&L) and OSD Cost Assessment and Program Evaluation (CA&PE)**

UNCLASSIFIED

- 36 -