

NATIONAL RECONNAISSANCE OFFICE

National Defense Industrial Association / Integrated Program Management Division Meeting

6-7 February 2019

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NRO Earned Value Management Center of Excellence



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Agenda

- Reforming the Guidelines
- Over Target Baseline / Schedule
- Agile and Program Management
- Re-focused Integrated Baseline Review (IBR)





Reforming the Guidelines – What's Driving the Need to Update

- Continuing industry consolidation – acquisition of businesses without an EVMS asserted to be compliant with the Guidelines
- Evolving business and responsibilities of program control professionals
- Challenges associated with the integration of EVM and Agile philosophies/practices
- ISO 21508 – “Earned value management in project and programme management” (2018-04)
- Effects of data driven surveillance on government/ industry engagement
- **Ownership = Responsibility**

White paper available

Does EVM continue to be an enabler of success?

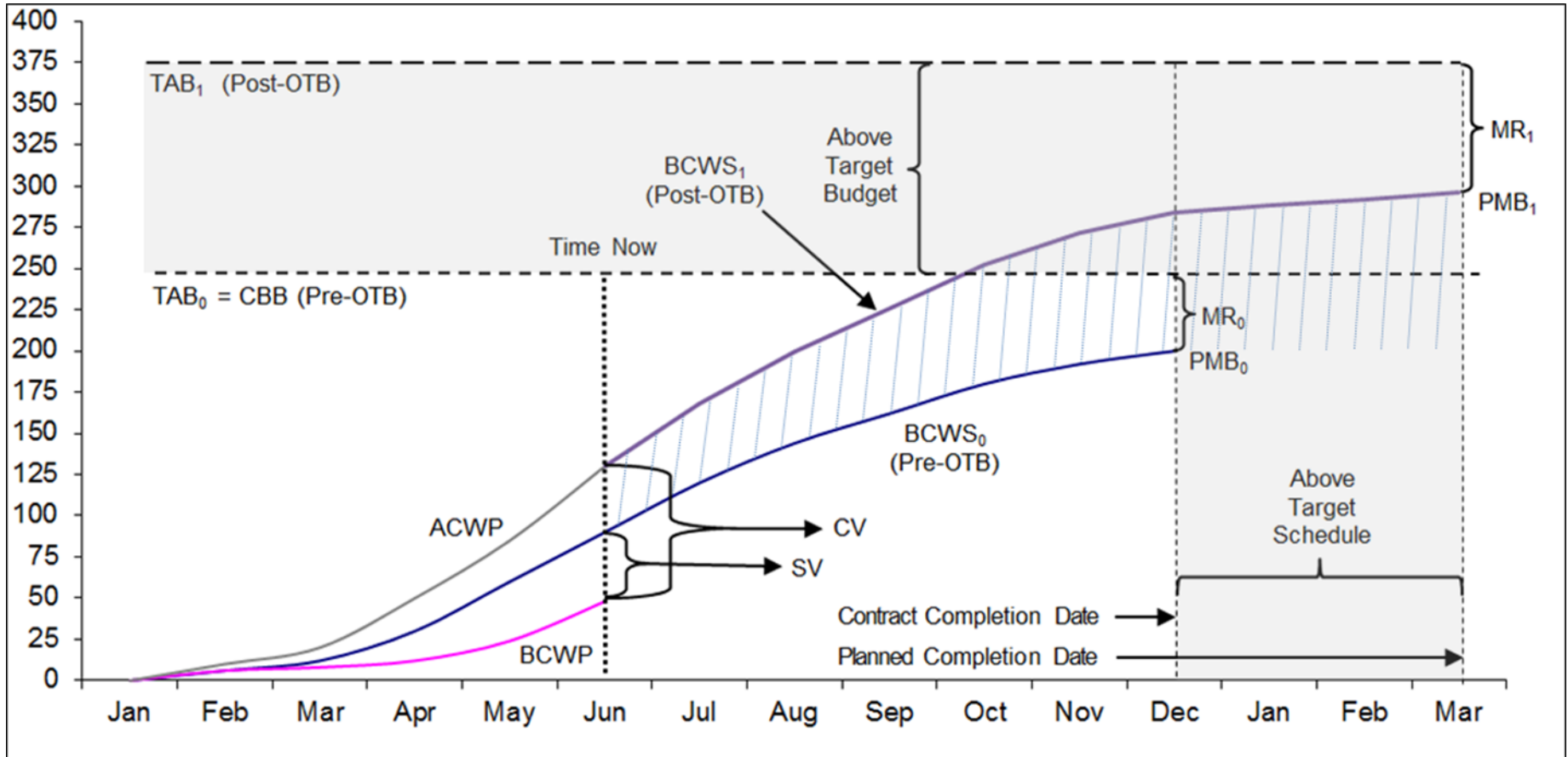


Over Target Baseline / Schedule

- NRO's Earned Value Management Center of Excellence (ECE) has established best practices
 - After contract award, the Contracting Officer, COTR, and the NRO EVM Focal Point communicate to ensure the contractor implements an effective and affordable EVMS that complies with the Guidelines and other EVMS contract requirements
 - The contractor notifies the Contracting Officer of any significant changes to the Performance Measurement Baseline prior to implementing the change
 - Prior to implementing an Over Target Baseline (OTB) and/or Over Target Schedule (OTS), the contractor submits to the Contracting Officer ground rules, assumptions, scope, impact, plans to adjust variances, potential reporting changes, documentation recommendations, and planned dates for implementation
 - The Contracting Officer approves the OTB/OTS prior to implementation
- Clarifying the Risk
 - Above Target Budget (ATB). The difference between the Total Allocated Budget (TAB) and the CBB caused by the implementation of an OTB.
 - Above Target Schedule (ATS). The difference between the new baseline dates established for performance measurement and the contractual dates caused by the implementation of an OTS.



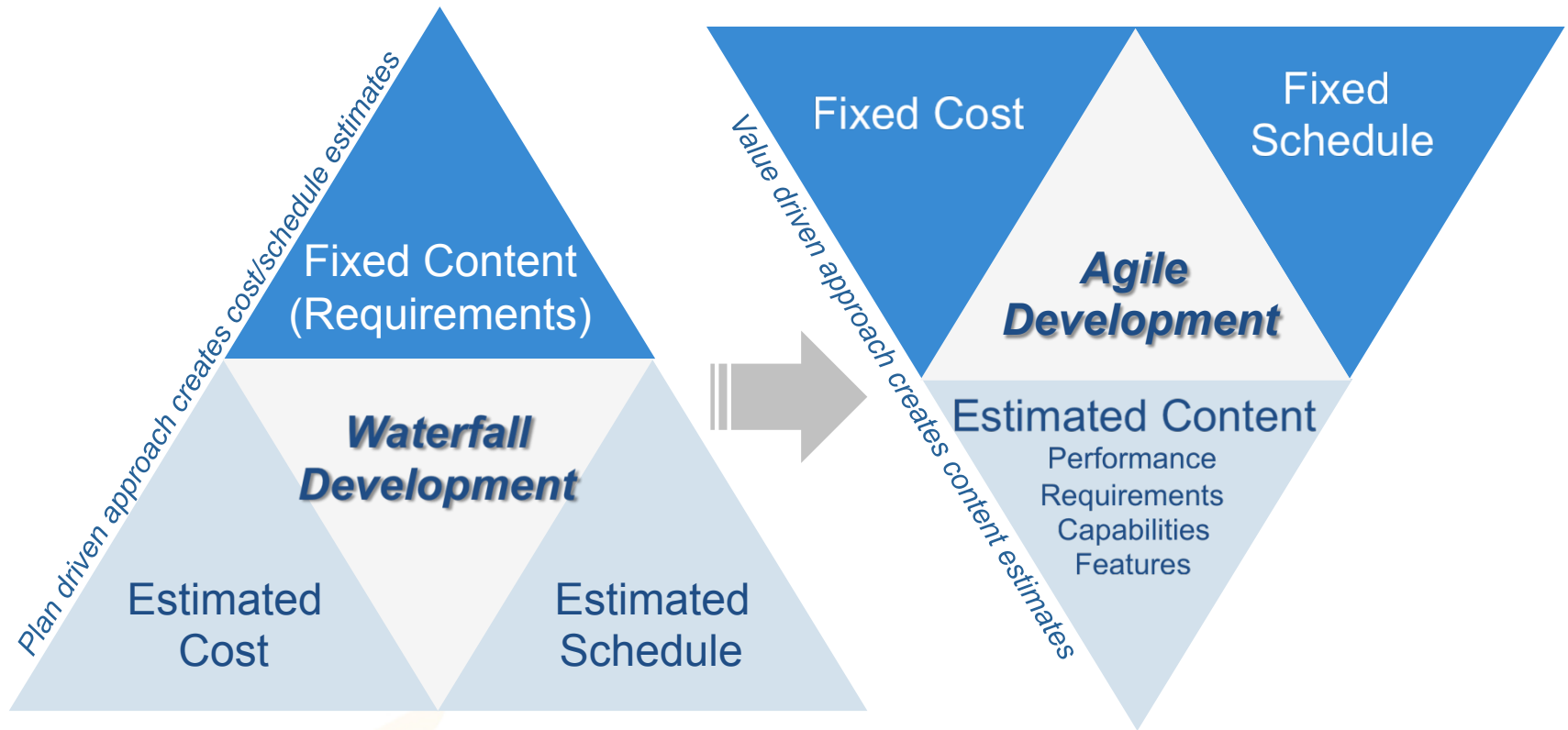
Above Target Budget/Above Target Schedule



Clarifying the Risk



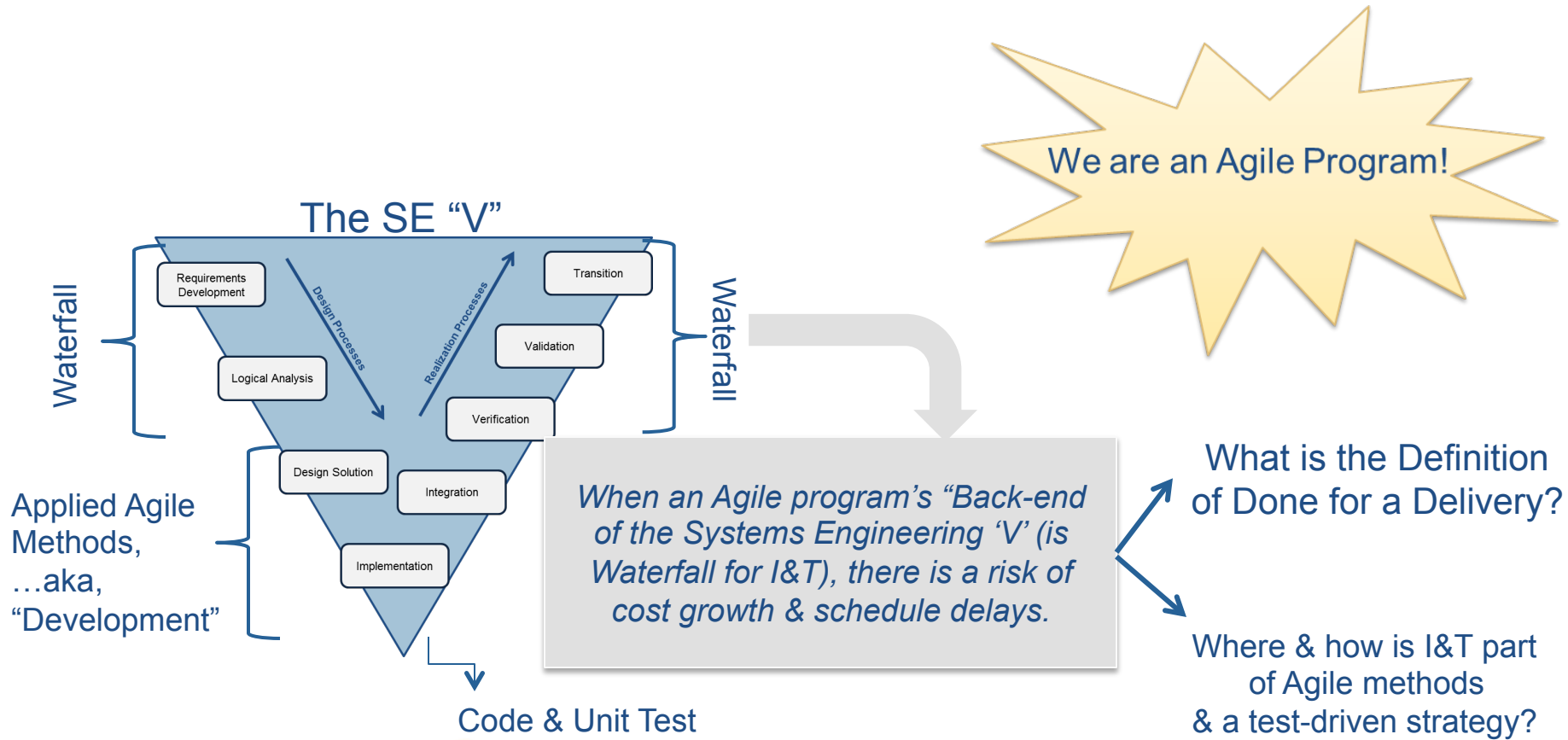
Agile and Program Management – The Iron Triangle



This is a typical description of the “Iron Triangle” that compares and contrasts Waterfall with Agile

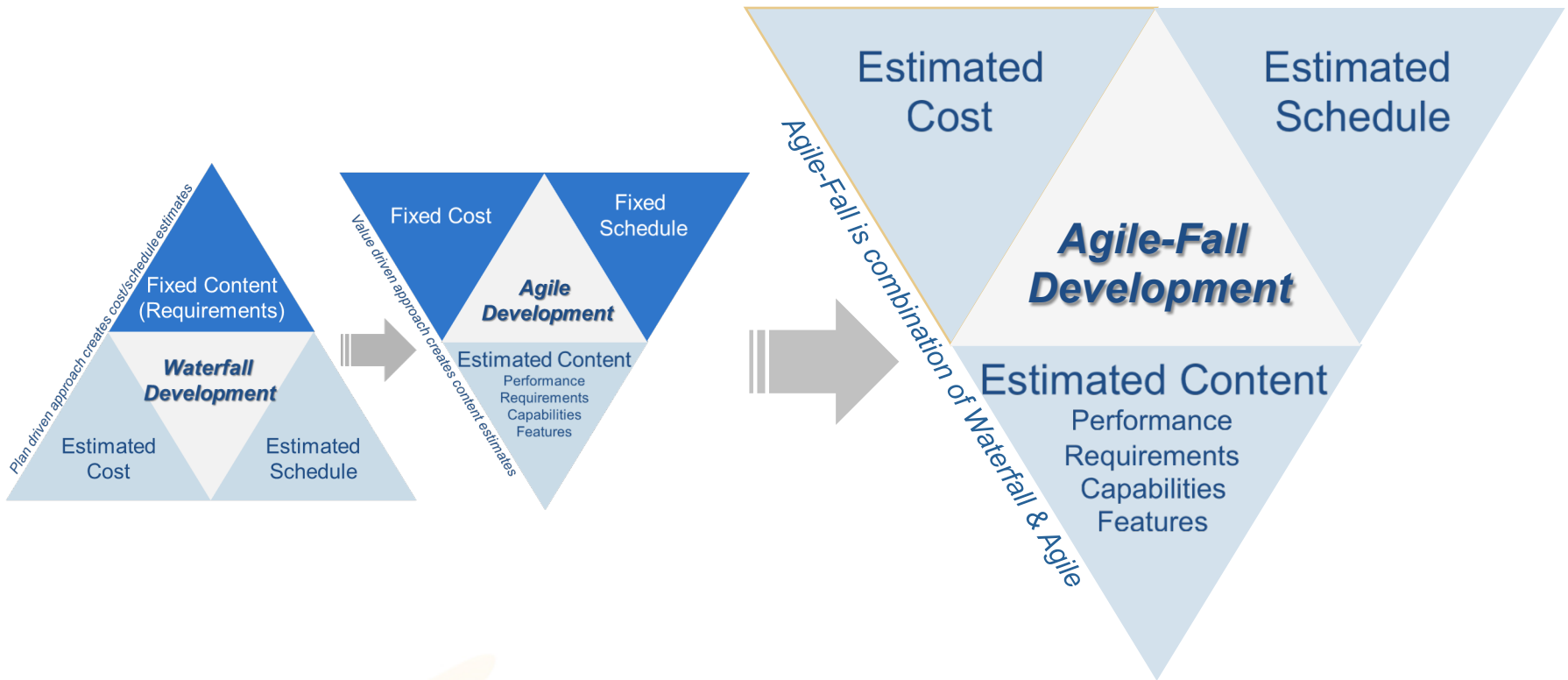


The “Agile-Fall” Challenge





The “Agile-Fall” Triangle

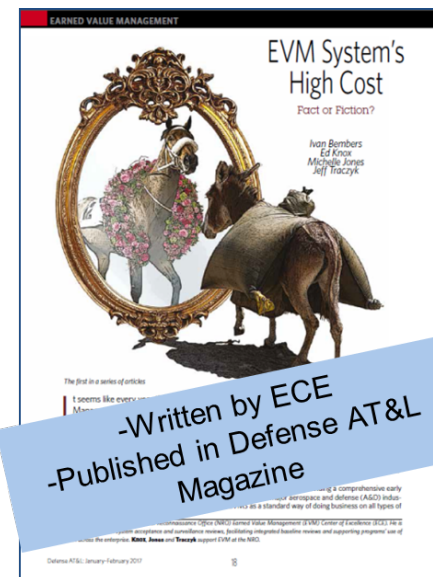
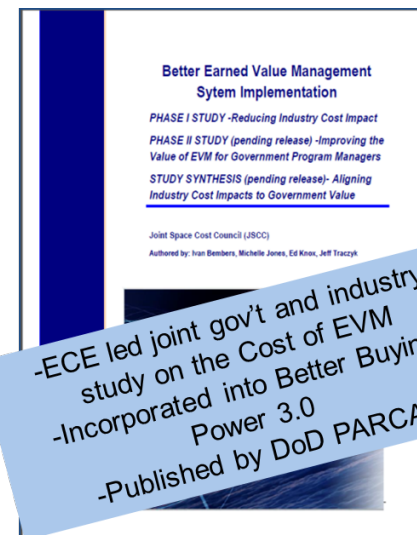


In a way, while a program may claim to be applying agile methods, Agile-Fall is a blend of both Waterfall and Agile. If not properly understood, it can actually be a blend of exactly opposite of what is intended or needed.



Refocused Integrated Baseline Review (IBR) Impetus for Change

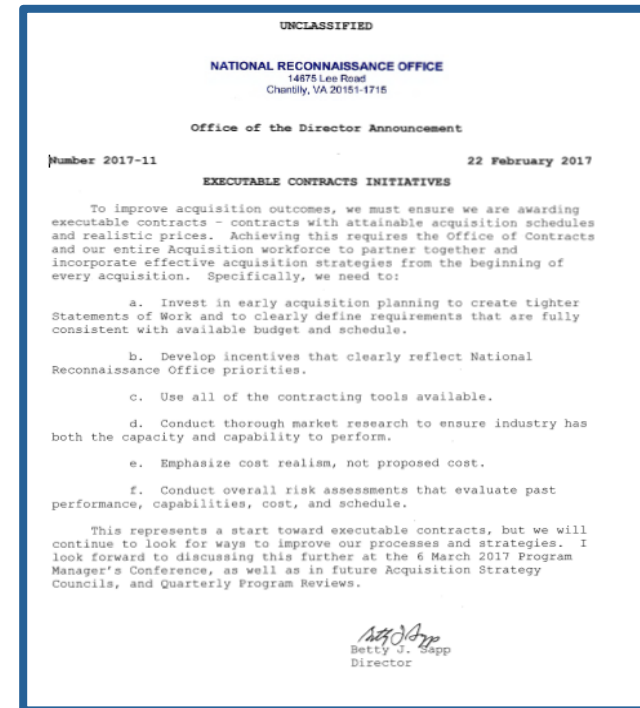
- JSCC Better EVM Implementation Study:
 - The Joint Space Cost Council Better EVM Implementation Study recommendations prompted the CAAG/ECE to refocus the IBR Process across the NRO
 - After preliminary reviews, the CAAG/ECE came to the same conclusion of the JSCC study that recent IBRs were **process reviews** and **data integrity checks** rather than technically focused reviews to assess baseline achievability of cost, schedule and performance contract objectives
- NRO Refocused IBR Pilots:
 - The JSCC study and IBR pilot feedback revealed that NRO program managers already highly value the IBR
 - The IBR pilot success proved to be an enterprise opportunity to improve advance warning of future program execution risk





NRO's Refocused IBR Process

- An enabling activity supporting the Director's "Executable Contracts Initiative"
- Responds to NRO's industry-partner feedback about the way NRO conducted IBRs
- Refocuses the IBR as a technical review of a contractor's plan to accomplish the authorized work
- Leverages industry-accepted project management practices





NRO's Refocused IBR Approach

The Review



The Outcome

- A Government program manager led activity assessing the contractor's plan to verify the authorized work¹ with:
 - Adequately defined work scope
 - Relationship to technical baseline
 - Schedule realism
 - Sufficient budgets & resources
 - Quality built into Definition(s) of Done
 - Procurement integrated into plan
 - Test-driven results (Rework, DRWO, Acceptance Criteria)
 - Effective Earned Value Techniques
 - Risk-reduced and adjusted baseline plan

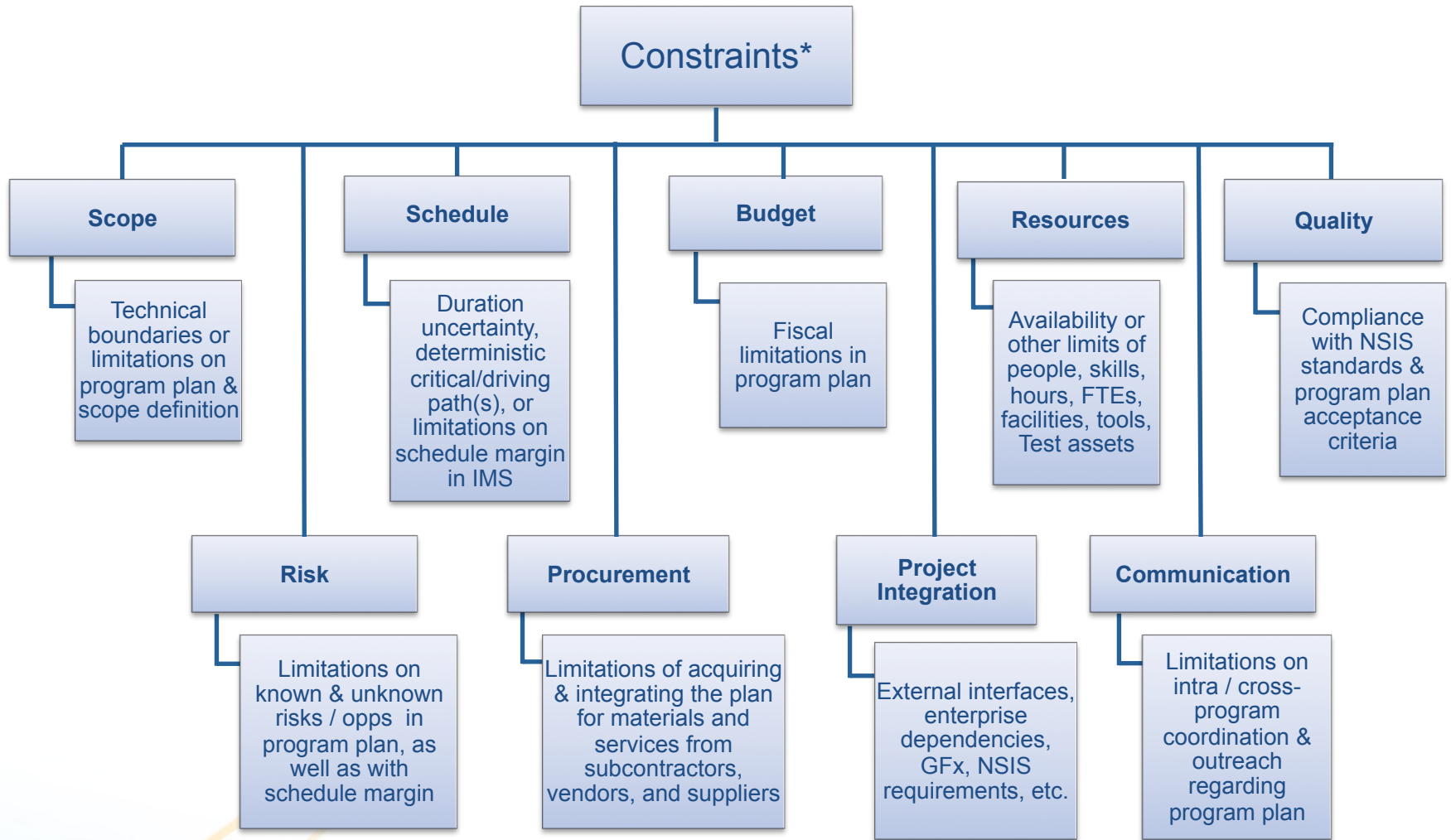
- A declaration...
 - The baseline is achievable
 - The baseline is not achievable
 - Baseline achievability cannot be determined

* Caveats & rationale supplement the declaration

DNRO, "I don't know why any program would not apply the refocused IBR approach."



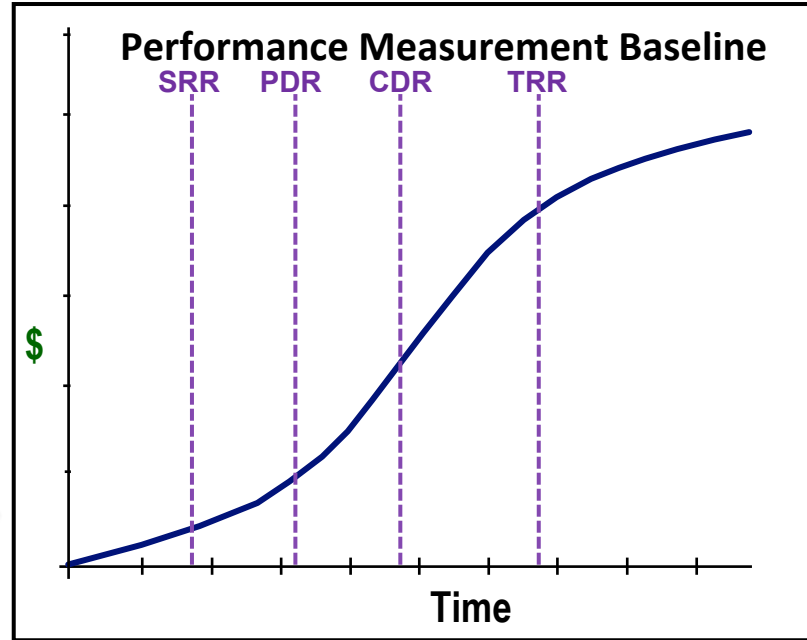
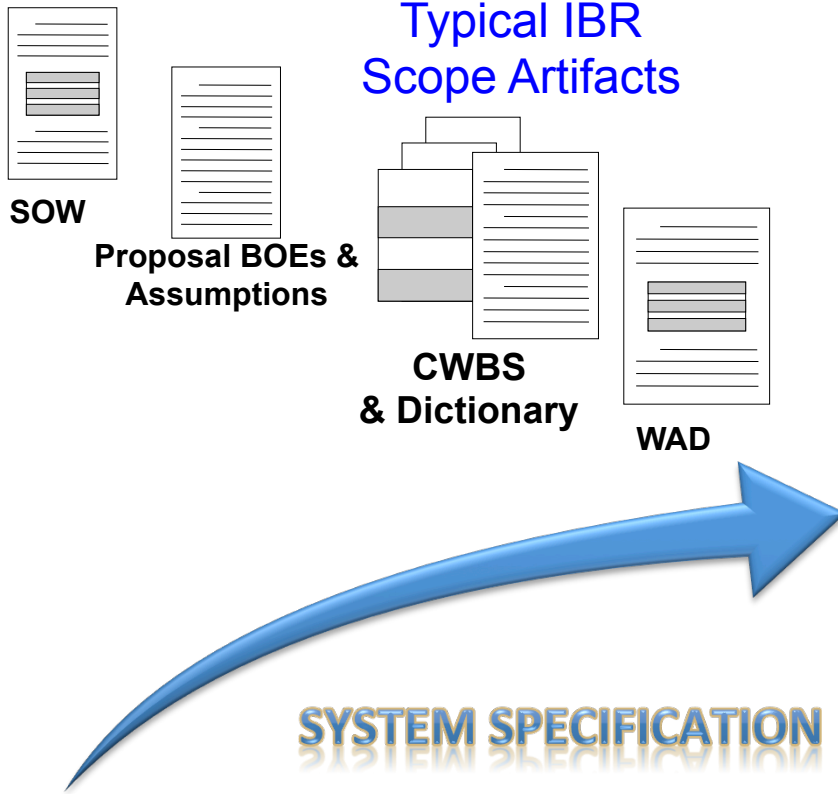
Industry-Accepted Project Management Constraints



* **Constraints:** Limitations and restrictions on the baseline plan and future performance that may require or drive Government/contractor planning assumptions and execution challenges



Relationship of the Technical Baseline and the Performance Measurement Baseline



Technical Baseline Artifacts

SYSTEM SPECIFICATION

CONCEPT OF OPERATIONS

INTERFACE CONTROL DOCUMENTS

PRODUCT ROADMAP

BILL OF MATERIALS

VERIFICATION AND TEST PLAN

The Technical Baseline is key to the IBR

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Back Up



Avoiding IBR Pitfalls

An IBR is not:

- Pass/fail review
- Process implementation review
- EVMS Surveillance review
- Monthly reviews (PMR, BMR)
- Design review
- Proposal evaluation and fact finding
- Approval of the PMB and MR

Focus is not on:

- Identifying *findings*
- Performing data traces
- *Interviewing* personnel
- Process demonstration
- Deriving a color-coded risk assessment
- Asking *fact finding* questions
- Identifying *liens*
- Taking ownership of the PMB, MR and data quality away from the contractor

We value the achievability assessment over focusing on management processes during the review.

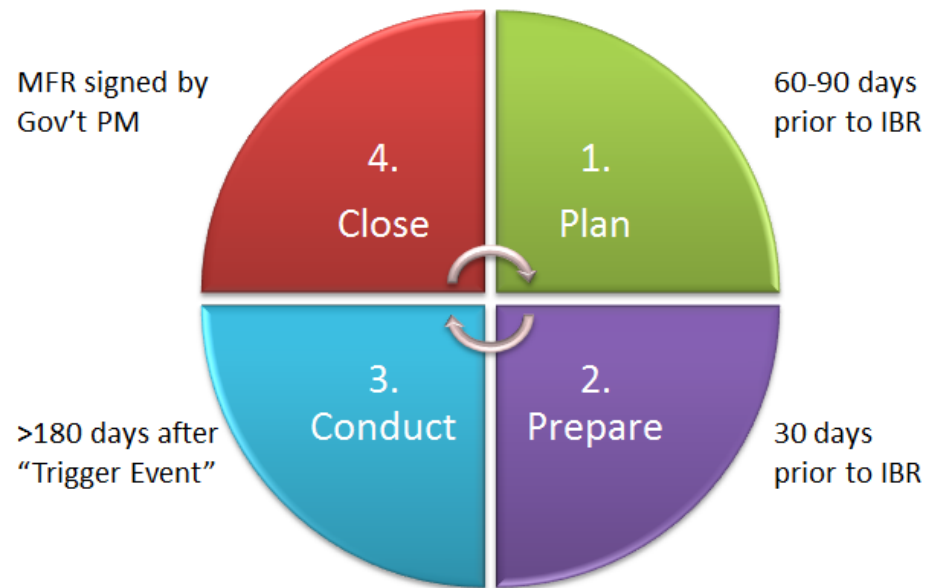


IBR Benefits and Key Activities

Benefits

- Focus on early assessment
- Create PM/COTR ownership and accountability
- Ensure early warning
- Accelerate course corrections
- Address concerns about cost growth, schedule delays and unmet Mission Partner & Oversight expectations

Four Phases



Today's IBR is not a "check the box" review. The focus shifted from "Did the contractor finish planning?" to "Is the plan achievable?"



Refocused IBR Approach

Close

- Document Activities, Actions, and Results in MFR
- Issue follow-up actions and resolve

Conduct In-Plant Activities

- In-brief
- Discussions
- Declaration of Baseline Achievability
- Out-brief



Plan

- Conduct CAAG/COTR meeting
- Establish the Government Team
- Develop IBR schedule

Prepare

- Prioritize Constraints/Hold Risk Perspectives Discussion
- Conduct IBR Training (Overview, Roles & Responsibilities, Mock CAM Discussions)
- Engage in Data Analytics
- Develop Discussion Questions

CAAG/ECE* is a
Key Resource throughout the Process



Exemplar Constraint Description - Scope

Constraint	How this Constraint Contributes to a Declaration of Baseline Achievability	Characteristics of an Achievable Baseline	Risks	Artifacts	To Prepare for the Review, Consider...
<p style="text-align: center; font-size: 2em; color: #0056b3;">Scope</p>	<p>The Review Team's evaluation of scope for this constraint enables insight into baseline plan artifacts. The team assesses that scope is fully and completely described for the authorized work. This constraint provides the IBR team with the opportunity to assess the scope definition and its decomposition of the contract work breakdown structure (CWBS), statement of work (SOW), contract deliverables (CDRLs), such as the CWBS Dictionary, and related contract requirements in relation to the technical baseline and the contractor's work authorization documents.</p>	<ul style="list-style-type: none"> • Completeness and Consistency of contract-level scope definitions with internal contractor baseline plan documents for the authorized work. • This includes evaluating the relationship of the technical baseline with the contract requirements and baseline plan artifacts, such as the work authorization document(s) with the contract SOW, CWBS, CWBS Dictionary. • Clarity and understanding of direction provided in scope statements prepared by the contractor PM and received by the CAM • Contractor planning ground rules and assumptions are understood and addressed in the baseline plan scope definition. Awareness and explanations of how BOEs/TDs evolved into current authorized work scope statements. 	<ul style="list-style-type: none"> • Inadequately bounded work scope definitions in CWBS Dictionary and/or work authorization documents • Authorized scope has not been allocated to a WBS element • Omission of authorized work scope in the CWBS Dictionary, control accounts, summary level planning packages • Unauthorized scope has been planned, • Scope Change is adequately modified and reflected as a result of authorized changes to the contract (for contract actions) and control accounts (for in-scope changes to the contract that are out of scope to the control account) 	<ul style="list-style-type: none"> • Conformed contract (latest modification) • Contract SOW • Contract WBS & Index • Contract WBS Dictionary • Work authorization document(s) • Technical baseline and associated artifacts • PM, IPT Lead, and CAM planning assumptions • Proposal basis of estimates and task descriptions • CDRLs 	<ul style="list-style-type: none"> • The CWBS and CWBS Dictionary consistent with the SOW • The Contract Work Breakdown Structure (CWBS) and CWBS Dictionary are consistent with the SOW • The CWBS is product-oriented and is related to the NRO's Standard WBS (SWBS) • The CWBS and dictionary represent all of the authorized work to be accomplished • The CWBS and any contractor extensions fully reflect the authorized work. • The technical baseline is related to the authorized work scope in the Performance Measurement Baseline • The control account work authorization document(s) fully and adequately describe the authorized work • The control account work authorization(s) scope statement(s) embody a bounded <i>definition of done</i>. • The baseline plan adequately contains authorized work scope and is measurable, testable, traceable, complete, and acceptable to stakeholders



Three Key Parameters for evaluating the Baseline Plan

1. Contractor baseline plan assumptions

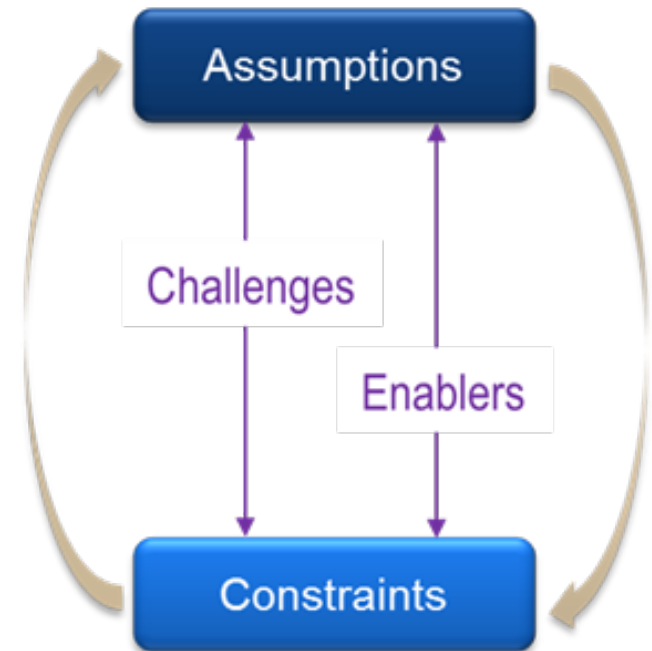
- A factor in the planning process that is considered to be true, real, or certain, without proof or demonstration

2. Project management constraints

- A limiting factor that affects the execution of a project, program, portfolio, or process

3. Challenges and enablers

- Challenges
 - Factors, conditions or scenarios that may reduce the likelihood of achievability
- Enablers
 - Ideas, investments, initiatives that may increase the likelihood of achievability





Making It Happen...ECE¹ IBR Leadership & Engagement

- Policy and guidance
- Tools
- Analysis
- Training and workshops
 - Formal
 - One-on-one
- Direct engagement with NRO Program Offices
 - Outreach and planning
 - Leadership and engagement
 - Improved collaboration with IBR stakeholders



Enabling Success

1. NRO's Earned Value Management Center of Excellence (ECE). The ECE is the IBR process-owner.



Scope Worksheet

- Initiates IBR planning
- Enables the Government team to think through IBR objectives, focus areas and review priorities
- Used to gain consensus and communicate agreed-to focus areas

- Contract Data
- Trigger Event
- CLINs
- Contract Value Subject to Review
- SOW Focus Areas
- Known Risks/Opportunities
- Project Management Constraints
- Points-of-Contact
- Training
- Additional Information/Notes/Comments

Integrated Baseline Review (IBR) Scope Worksheet

Section 1: Contract Data

Section 2: Scope

CLIN #	Contract Type	Description	POP	Subject to Review (Y/N)
TOTAL				

CLIN #	Contract Cost	Total Fee	Total Contract Value	Subject to Review
TOTAL				

Section 3: Risk and Opportunities

Section	Paragraph #	Title

Section 4: Additional Information/Notes/Comments

Section 5: Additional Information/Notes/Comments

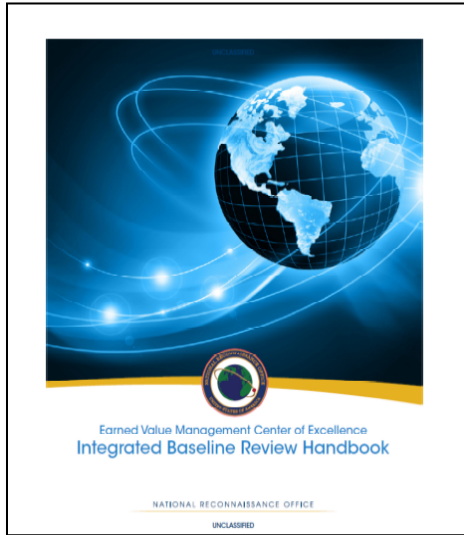
Section 6: Additional Information/Notes/Comments

It's a Project Charter for the IBR



IBR Tools

IBR Guide



WBS/SOW/CDRL Worksheet

This Table is (enter classification level)

WBS Dictionary Version "X" (as of insert date)

SOW Paragraphs and CDRLs (insert as of date)

Copy and insert Element Codes and Element Descriptions from CWBS (latest version) CDRL.

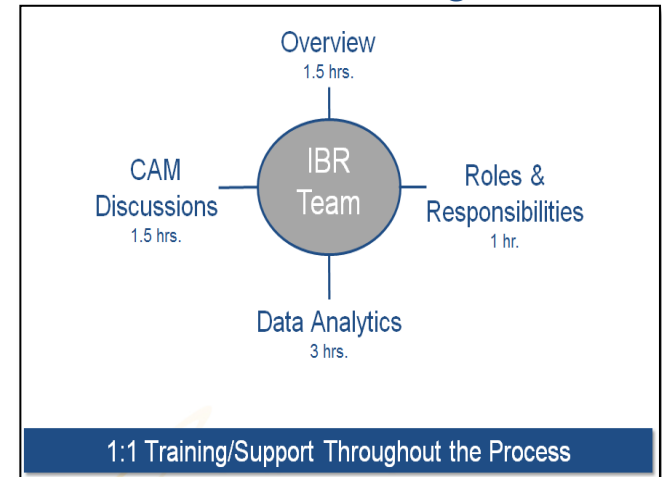
Element (CWBS) Code (number)	Element (CWBS) Description	Count	1	1.1	1.2	Count	A001	A002	A003
1	Space System (SS)	0				0			
1.1	SS SEIT/PM and Support Equipment 1...n (specify)	0				0			
1.1.1	SS Systems Engineering	0				0			
1.1.2	SS Assembly, Integration, & Test	0				0			
1.1.3	SS Program Management	0				0			
1.2	Space Vehicle (SV) 1...n (specify)	0				0			
1.2.1	SV SEIT/PM and Support Equipment	0				0			
1.2.1.1	SV Systems Engineering	0				0			
1.2.1.2	SV Assembly, Integration, & Test	0				0			
1.2.2	Bus	0				0			
1.2.2.1	Bus SEIT/PM and Support Equipment	0				0			
1.2.2.1.1	Bus Systems Engineering	0				0			
1.2.2.1.2	Bus Assembly, Integration, & Test	0				0			
1.2.2.1.3	Bus Program Management	0				0			
	Count		0	0	0		0	0	0

NOTES:

WBS/Activity Worksheet

MS Count	Name	Information	Tab	10618 MS Factory System Integration Start	10619 MS Factory Test Dry Runs Start
0	Program X		TAB 1		
0	1.1.1	17 TOTAL EVENTS	TAB 2	0	0
0	1.1.4	8 TOTAL EVENTS	TAB 3	0	0
0	1.1.9	3 TOTAL EVENTS	TAB 4	0	0
32	8.2.2	20 TOTAL EVENTS	TAB 5	1	4
0	8.5.4	19 TOTAL EVENTS	TAB 6	0	0
Unique ID	Name	Type	BL Fin	Finish	
0	10618	Factory System Integration Start	MS	10/2/2018	10/2/2018
3	10619	Factory Test Dry Runs Start	MS	1/2/2019	1/2/2019
2	10621	Factory Acceptance Test (FAT) Start	MS	3/28/2019	3/28/2019
2	11239	PSR Meeting - Conducted	MS	6/28/2019	6/28/2019
0	14193	HW PSR	MS	3/11/2019	3/11/2019

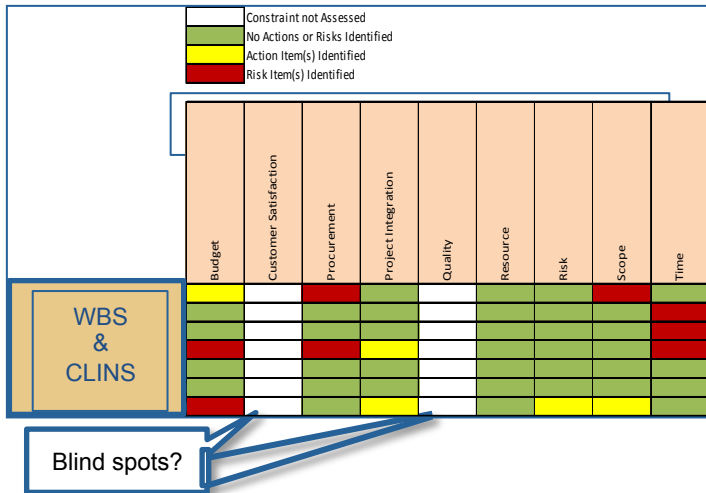
IBR Training



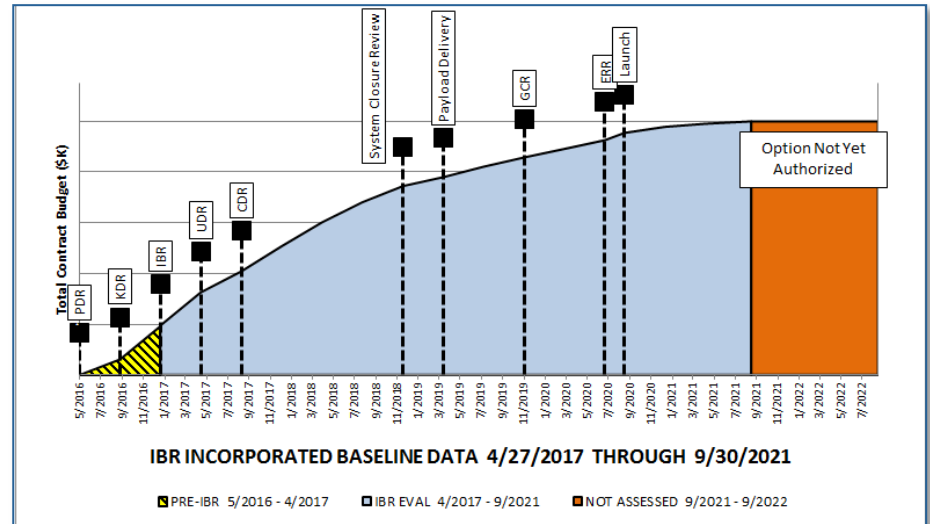


IBR Tools, Cont'd

Constraint Matrix



Budget Profile with Milestone Overlay



CAM Discussion Quad

UNCLASSIFIED

WBS ID:	GPOC:
WBS Name:	CAM:
Achievability Questions:	Observations:
<input type="checkbox"/> Achievable <input type="checkbox"/> Unachievable <input type="checkbox"/> Unknown	
Risks:	Action Items:

UNCLASSIFIED Over for Notes: ➔

Question Worksheet

ID #	CA / WBS	Artifact (IMS, WBS Dictionary, CAP, etc)	Constraint (Scope, Time, Budget, etc.)	Author	GPOC Approved	Contractor POC	Government Comment / Question	Contractor Response	Status (Open / Closed)	Closure Date	Closure Comments
001	1.02.03.03.08	RAM, CAP, WAD	Budget	Jones	Yes - Smith	White	Hours/Dollars do not match between RAM and CAP/WAD for 1.2. Which is correct?	Thank you for identifying this problem. The CAP/WAD are correct. We are in the process of correcting the RAM.	Closed	1/2/2018	Received updated RAM and verified hours/dollars now match between all 3 documents.



Next Steps

- Continue enabling NRO use of refocused IBR approach
- Inform/educate our industry partners
- Balance “technical focus” with PM/COTR concerns about Contractors’ EVMS health and CAM competencies
- Ensure currency of our IBR policies and products
- Scale and right-size IBR readiness and preparations with effective outcomes
- Continue to conduct IBR Retrospectives
- Leverage the power of Next generation IPM analysis tools, such as Empower™

Continuous Process Improvement