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Earned Value Management Consulting & Training

Surveillance Reviews vs. Integrated Baseline Reviews (IBRs)

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Introductions

Sam Kitchin

- Augur Technical Director
- 10+ Years of Experience
  - Cost, Schedule, and Performance Management (incl. EVM)
  - ICEAA Certified CCEA®
- Have conducted IBRs for both DOE & DOD
  - Monthly EVM Analysis, IBR Training

Dave Ingalls

- Augur CEO and Co-Founder
- 15+ years providing
  - Cost engineering and schedule analysis services
  - Certified Earned Value Professional by AACE
- Supports DoD and DOE providing expertise on project controls, schedule management, and IBRs

Purpose & Background

- Clarify differences in focus & intent for two types of reviews using Earned Value: IBR and Surveillance
  - Present the value of each type of review and highlight unique considerations
  - Set Program Management expectations to facilitate future efforts
  - Highlight unique considerations

- Background for brief was Department of Energy project review
  - Project hosted each type of review, done in short succession
  - Experience in reviews highlighted differences in purpose

Brief focuses on DOE; concepts generally apply to other agencies

Common Reviews for EVM

Earned Value Reviews

- Certification Review
  - Evaluation of EVM system implementation against all EIA-748 guidelines
  - Validation of EVMS Description; acceptance applicable to multiple projects
  - Confirmation of system's ability to provide meaningful performance data
  - New projects under certified EVMS, subsequent Implementation Reviews
- Surveillance Review
  - Routine or For-Cause event to confirm continued compliance
  - Focus on high-risk guidelines or previously identified issues
  - Some surveillance activities moving to automated, data-driven approach

Project Review (that uses Earned Value)

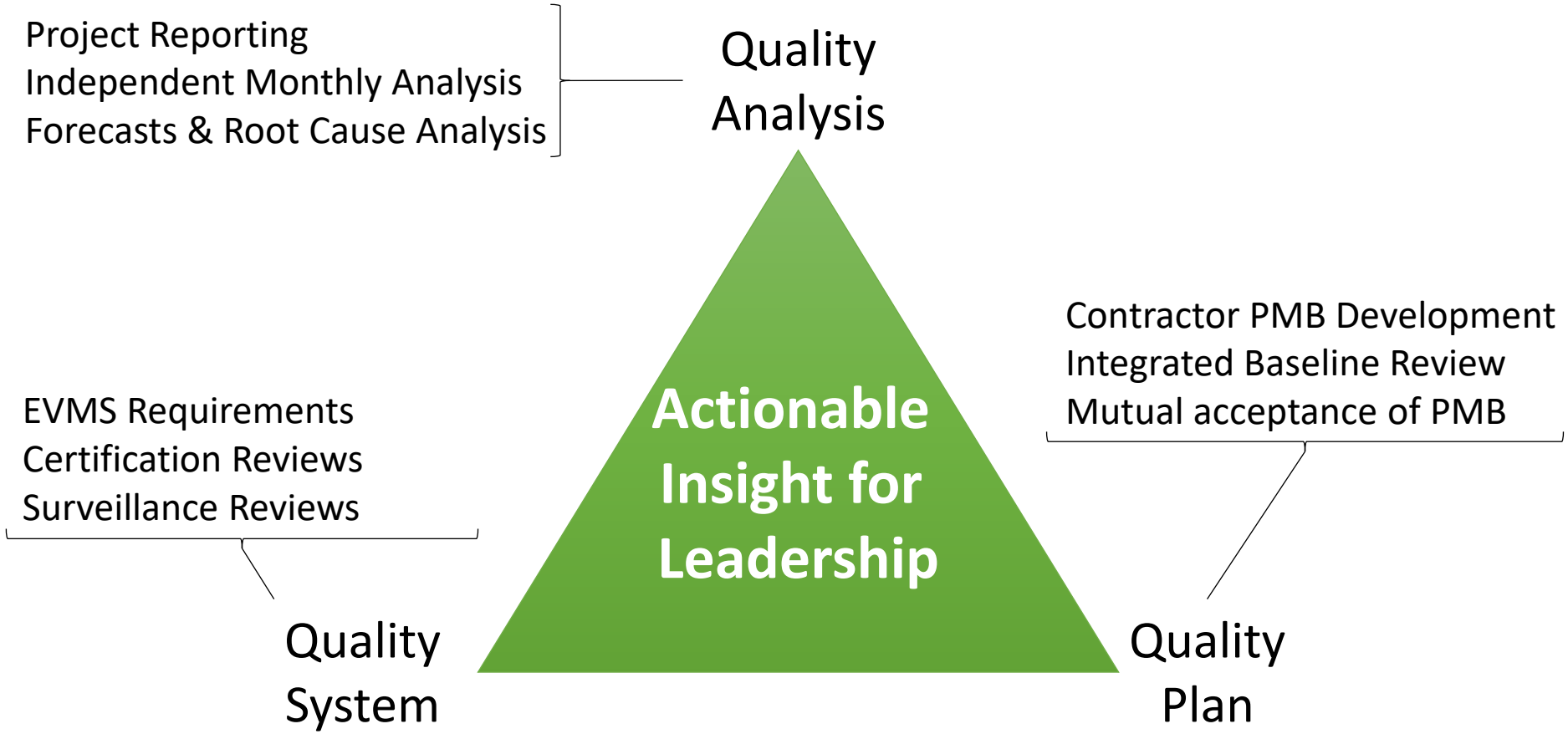
- Integrated Baseline Review (IBR)
  - Joint review to evaluate Performance Measurement Baseline (PMB) plus the sufficiency of risk-based Management Reserves (MR)
  - Establish mutual understanding of technical, schedule, budget baselines
  - Confirm PMB will provide actionable data; classify risks and opportunities
  - Final step is baseline acceptance – provides measuring stick for project

Other Reviews vs. IBR

EVMS Review	• PM-30 Control / DCMA • Focus on process: Audits/Checklist of how the organization uses the Management System to comply with EVMS guidance • Includes Certification & Surveillance Reviews
EIR	• DOE PM-20 Control; External Independent Review (Gate Review) • Focus on validating baseline prior to Congressional commitment • Evaluate lifecycle parameters before establishing Gov. Baseline • Unique DOE process
IBR	• Federal Project Director / Project Management Control • Focus on risk and executability of Performance Measurement Baseline (PMB) • Joint assessment of scope, budget, schedule, and risk

The EVM Foundational Triangle

- Meaningful EVM requires a strong foundation



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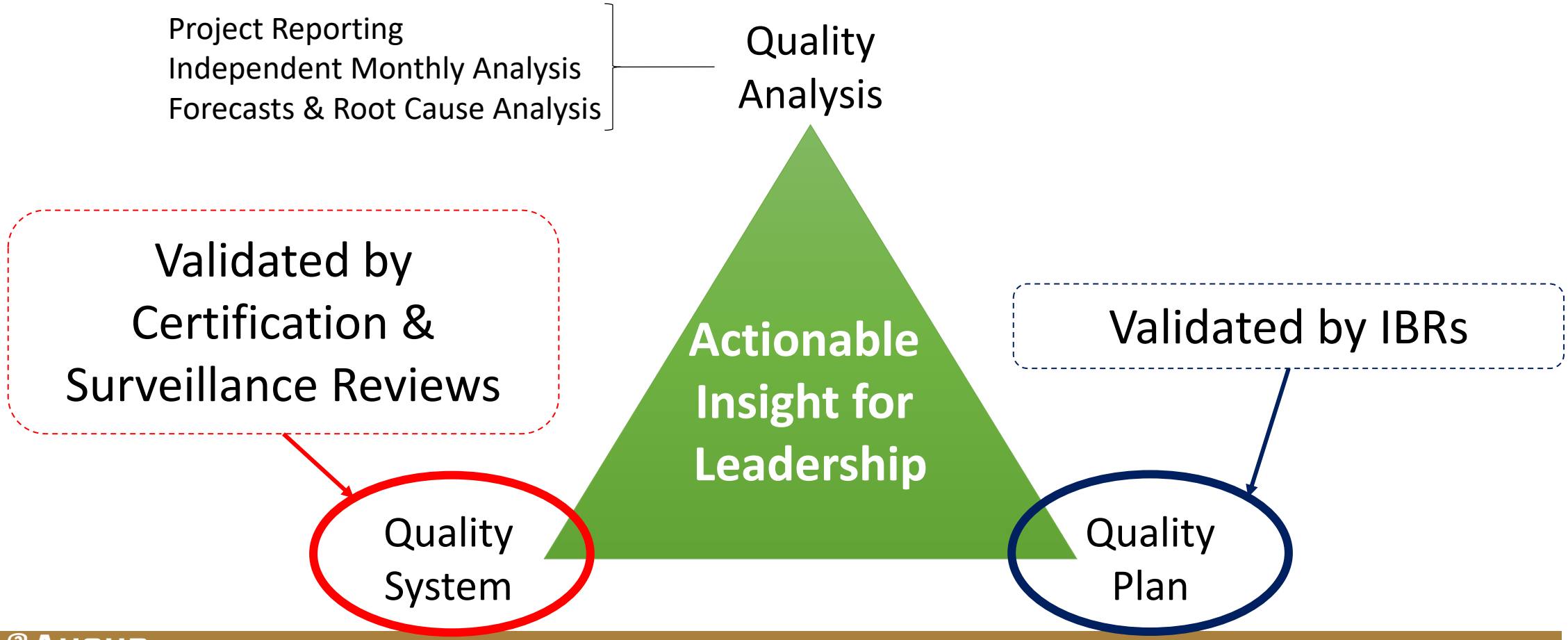


Both Parts of the Foundation are Essential

Good EVMS without a strong PMB

- Plan & forecast quickly deviate
- Scope may be missing or wrong
- Poor identification of risks
- EVMS does not prevent Garbage-In → Garbage-Out

A strong PMB without a good EVMS

- Fail to generate timely reporting
- Errors in reporting data/metrics
- Limited insight into root cause
- Creates distrust of EVM data

DOE PM  Project Team

EVM System Description is Keystone

Surveillance Review

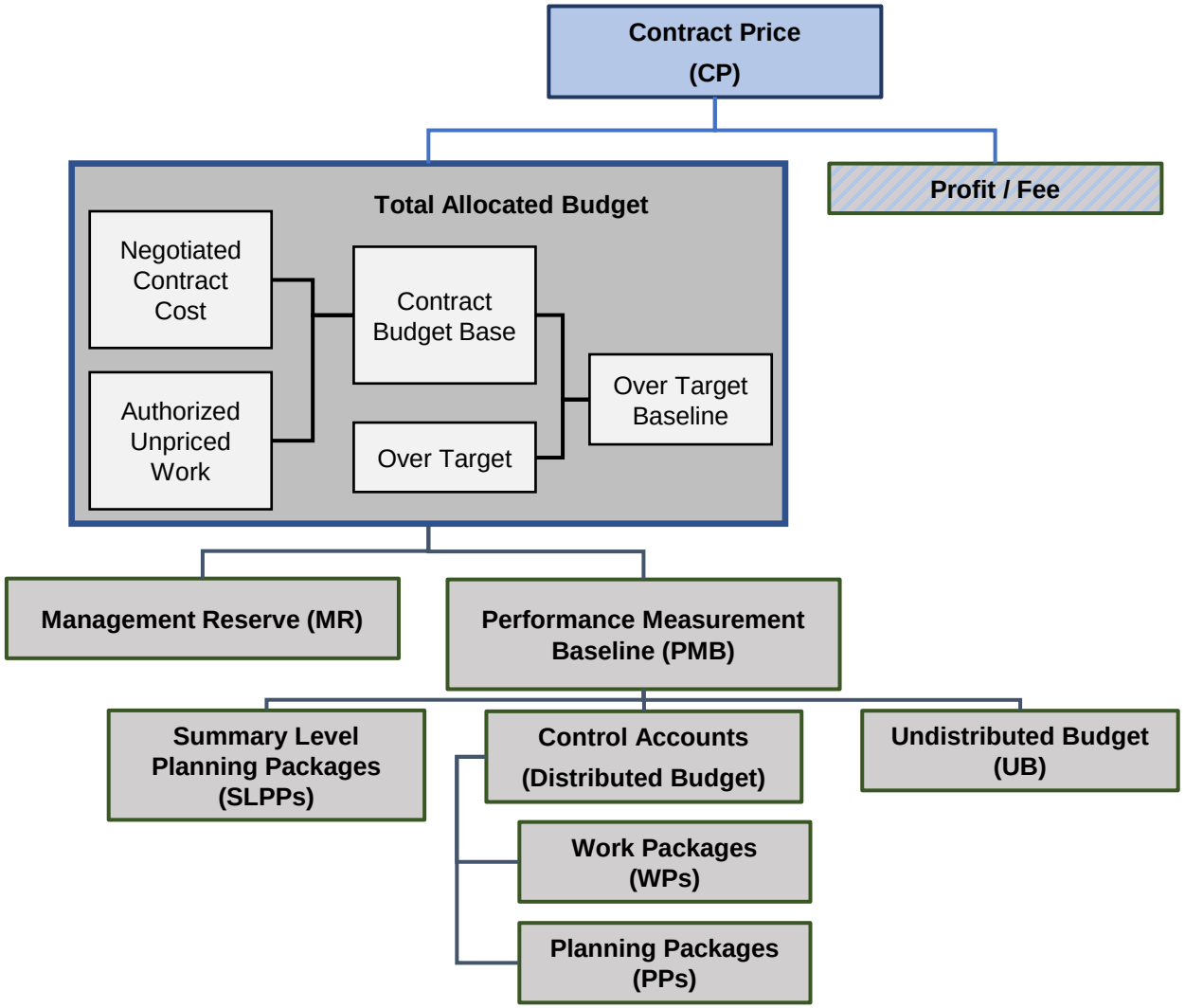
- Focus is on site
- Is SD compliant with requirements?
- Is the data trustworthy?
- Where are issues?
- What corrective steps are needed?

Integrated Baseline Review

- Focus is on project
- Does PMB adhere to EVM SD?
- Are EV Techniques properly applied?
- Does the team effectively use EV data?
  - Do CAMs understand SD & use EV?
  - Are cadences well defined?

Certification Review evaluates SD. For Surveillance Review & IBR, SD is the rulebook

What is the PMB?



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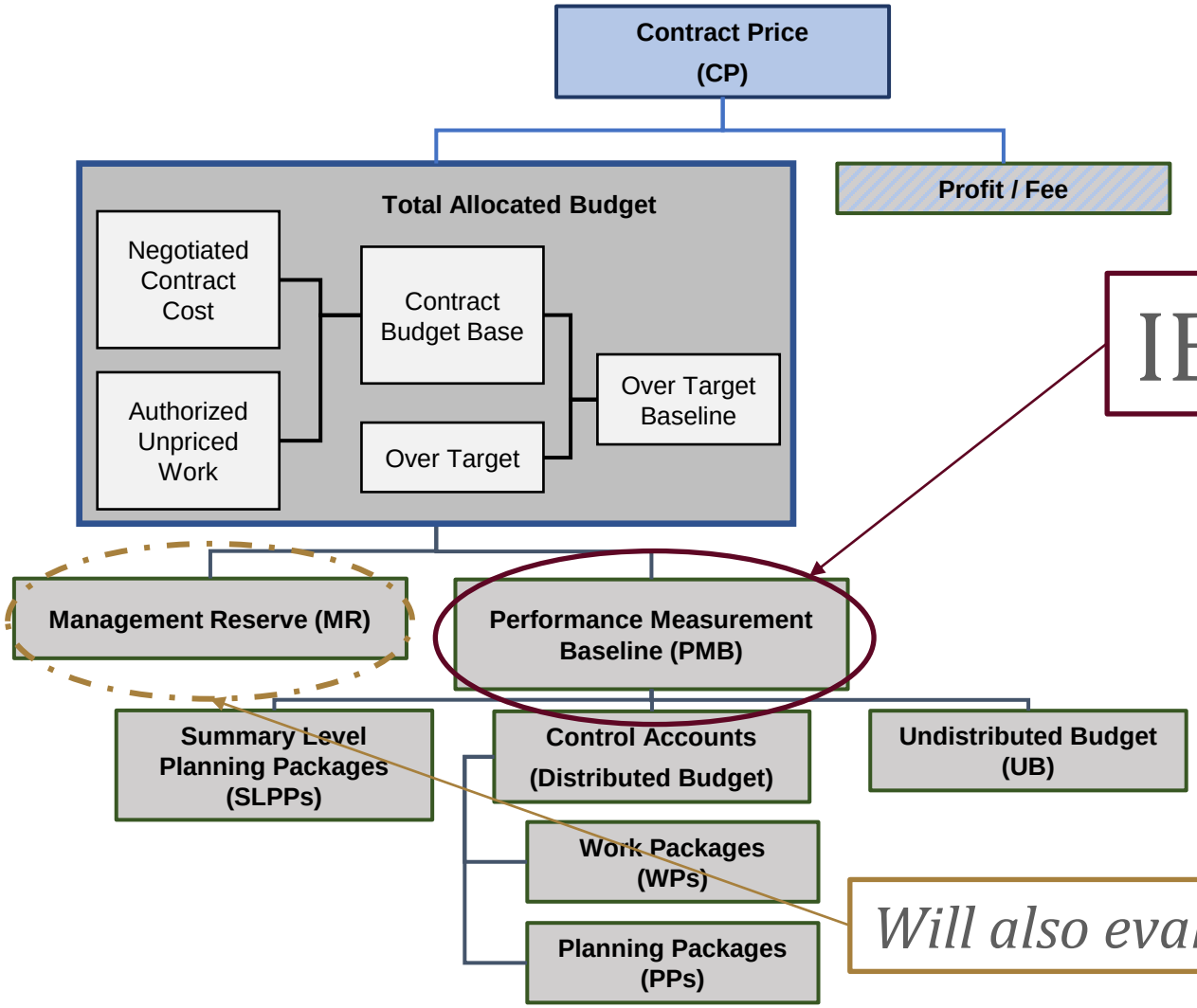


IBRs evaluate the PMB

Will also evaluate sufficiency of MR relative to PMB risk

Contingency vs. Management Reserve

- Two terms whose meaning may vary by community or industry
- In general, "Contingency" refers to reserve held by the owner or customer

Government Contingency

- Held by the DOE and Includes:
  - Cost Contingency
  - Schedule Contingency
- Provides for Contract Scope Changes
- Ensures adequate funds are available for all project work

Contractor's Management Reserve

- Held by the Contractor and controlled by the Contractor's Project Manager
  - Management Reserve
  - Schedule Margin
- Cannot be used to cover cost overruns
- Used for unforeseen new work that is within the contract scope
- Does not need the Government's approval for use

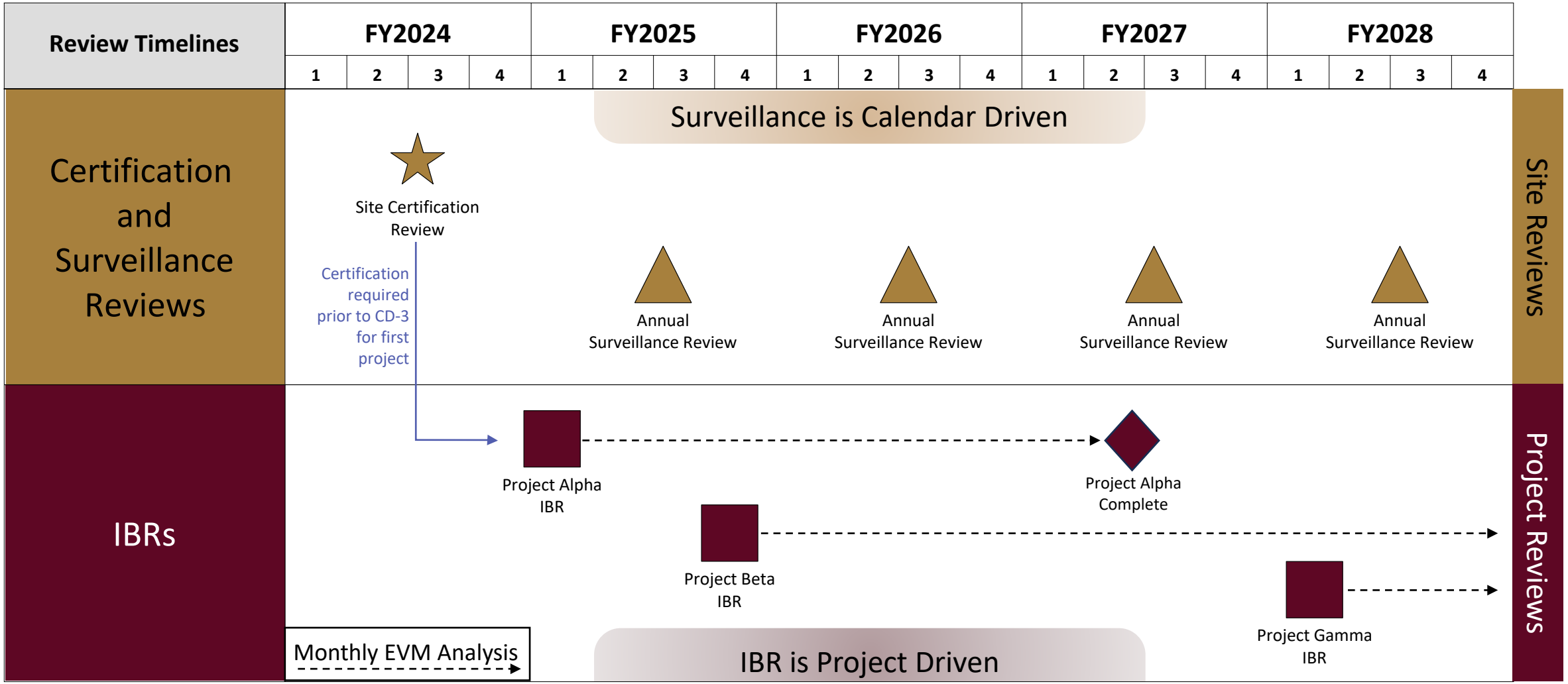
Guides and Documents

- National Defense Industrial Association (NDIA) Guide to the IBR
  - Comprehensive guide to IBR best practices and processes
  - Describes activities before, during, and after event
- DOE O 413.3B (currently change 7)
  - Defines DOE EVMS applicability requirements
  - Upcoming open window for new revision
- DFARS clauses require EVM for contracts meeting certain criteria
- EIA-748 (32 Guidelines)
- EVMS Compliance Review Standard Operating Procedure
  - Similar function of DCMA's Earned Value Management System Interpretation Guide (EVMSIG)

DOE Stakeholders

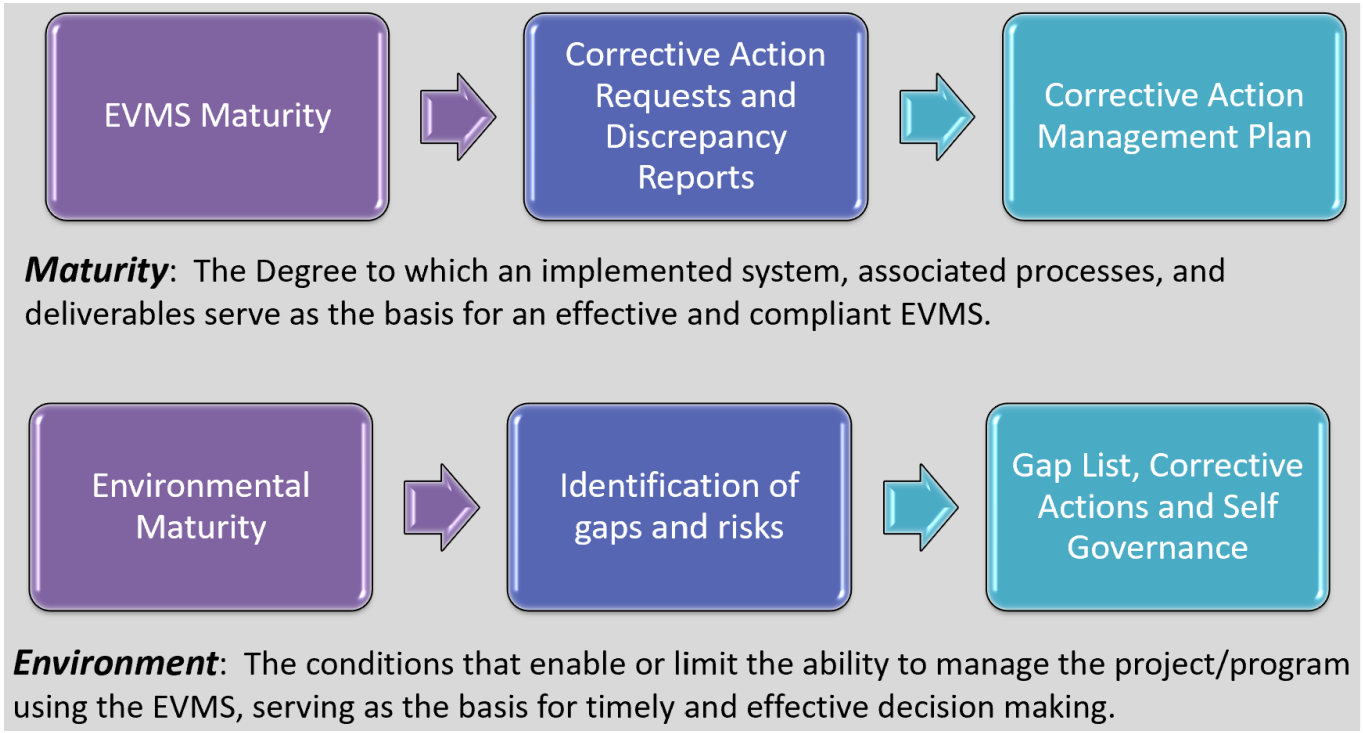
FPD	Ultimately owns the product and baseline
FPD Support Staff	Conducts integrated baseline reviews Delivers findings and artifacts
M&O	Builds EVMS compliant with requirements Develops and executes baseline
DOE Office of PM	Establish Certification & Surveillance Review process Performs EVMS Certification & Surveillance Reviews

Review Timing



EVMS Surveillance & Certification Deep Dive

- Focus on effective implementation of an Integrated Project Management system using a compliant Earned Value System
- Uses data-driven approach to evaluate EVMS & Environmental Maturity
- EVMS Maturity = Guideline Compliance & Trustworthy Data
- Environmental Maturity = Value of EVM to support fact-based decision making.



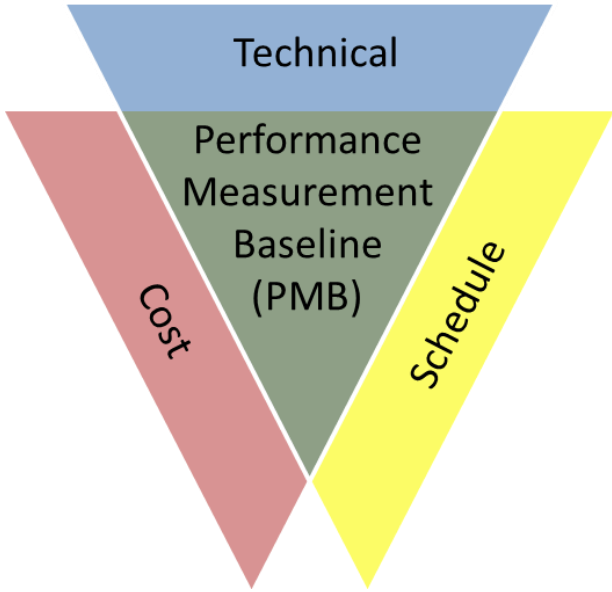
Surveillance Review - Scorecard

REVISIONS & DATA MAINTENANCE (GLs 28-32)	Metric Frequency: Monthly	Quarterly	Annual	P-IBR	Initial > Annual	
Guideline 28: HR Incorporate Changes in a Timely Manner						
Definition: Incorporate authorized changes in a timely manner, recording the effects of such changes in budgets and schedules. In the directed effort prior to negotiation of a change, base such revisions on the amount estimated and budgeted to the program organizations.						
Attributes: **28X1:** Authorized work scope/budget changes are incorporated in the PMB and the Integrated Master Schedule (IMS) as soon as practicable. **28X2:** UB is distributed to or removed from control accounts or SLPP's as quickly as practicable.						
Key Process: Change Incorporation	**Cross Process:** NA					
Typical Sources of Objective Evidence:						
a. Contract Modifications and amended Statement of Work (SOW)						
b. Baseline change documentation						
c. Work Breakdown Structure (WBS), Organizational Breakdown Structure (OBS), Responsibility Assignment Matrix (RAM), Work Authorization						
d. Program Change Control Logs						
e. Internal management reports						
f. Internal Contract level authorization (above control account work authorization)						
g. Integrated Program Management Report (IPMR) / Contract Performance Report (CPR)						
h. Integrated Master Schedule (IMS)						
Attribute:	**Verification Points**				**Documented Application:**	
28X1	a. Verify authorized contractual work scope/budget changes are accurately incorporated in the PMB and the Integrated Master Schedule (IMS) as soon as practicable per the system description.				**Check (i):** Authorized contractual change is documented in work authorization documents at the Control Account level. **Sample (i):** Exhibit (ai1) showing the contractor capability to associate authorized contractual change to a specific WBS / OBS convergence at the	

Source: NDIA IPMD Surveillance Guide (2021)

IBR Intent

- Integrated Baseline Review is a ***joint review*** including Government and Contractor personnel to evaluate the PMB
- The intent of the review is to verify/assess:
  - Integrated Technical, Schedule, & Budget baseline
  - Identification and classification of risks and opportunities
- IBR is a <u>mutual</u> review of the project PMB
  - Ensures common understanding of contractor plan
  - Achievable PMB that will provide actionable EVM data
  - Checks completeness of artifacts
  - Evaluates barriers to execution



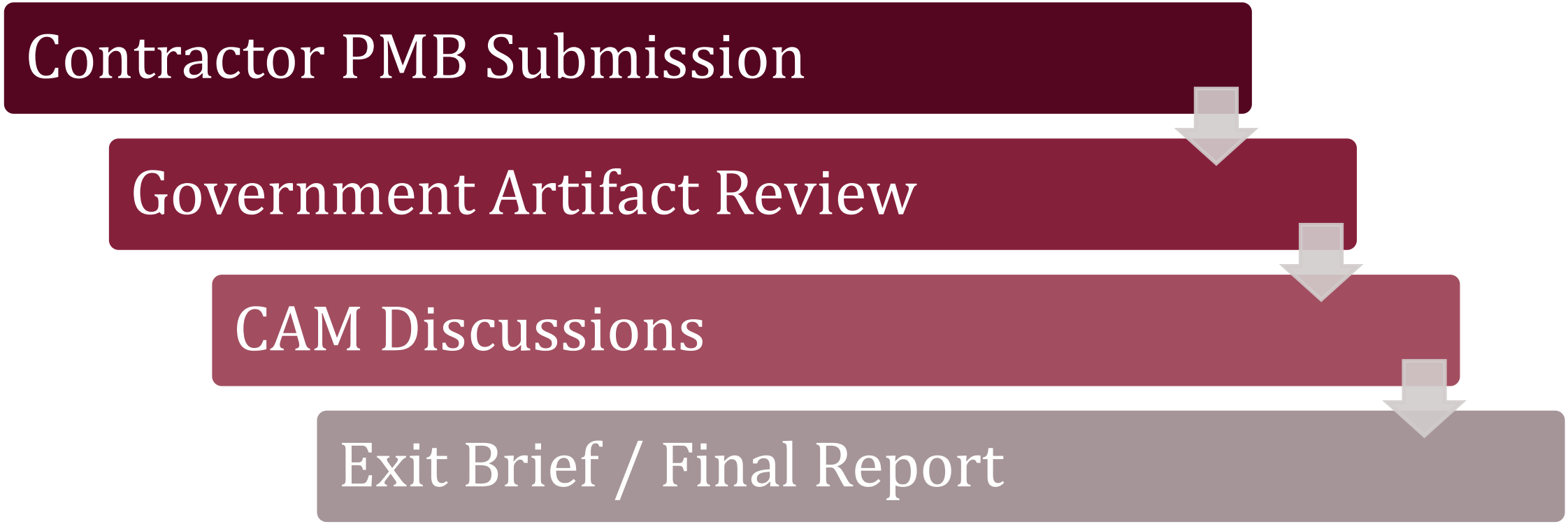
Fundamentally, an IBR is an evaluation of PMB risk

IBR Breakdown

- Preparation is critical
  - Contractor submits PMB artifacts for government review
  - Artifact review may shape event focus or spark critical questions
  - Communication is key during preparation stage (IBR Plan)
- IBR Event
  - CAM discussions with in-depth evaluation of cost, schedule, & scope
  - Handoffs between CAMs are crucial
- Results & Closeout
  - IBR concludes with Exit Brief and/or Final Report
  - Findings are categorized as Critical, Non-Critical, and Administrative
  - In successful IBR, everyone gains better understanding of PMB & risks

Key Components of an IBR

- IBR focuses on the PMB for a particular project
  - Essential elements occur before and after the actual “event”



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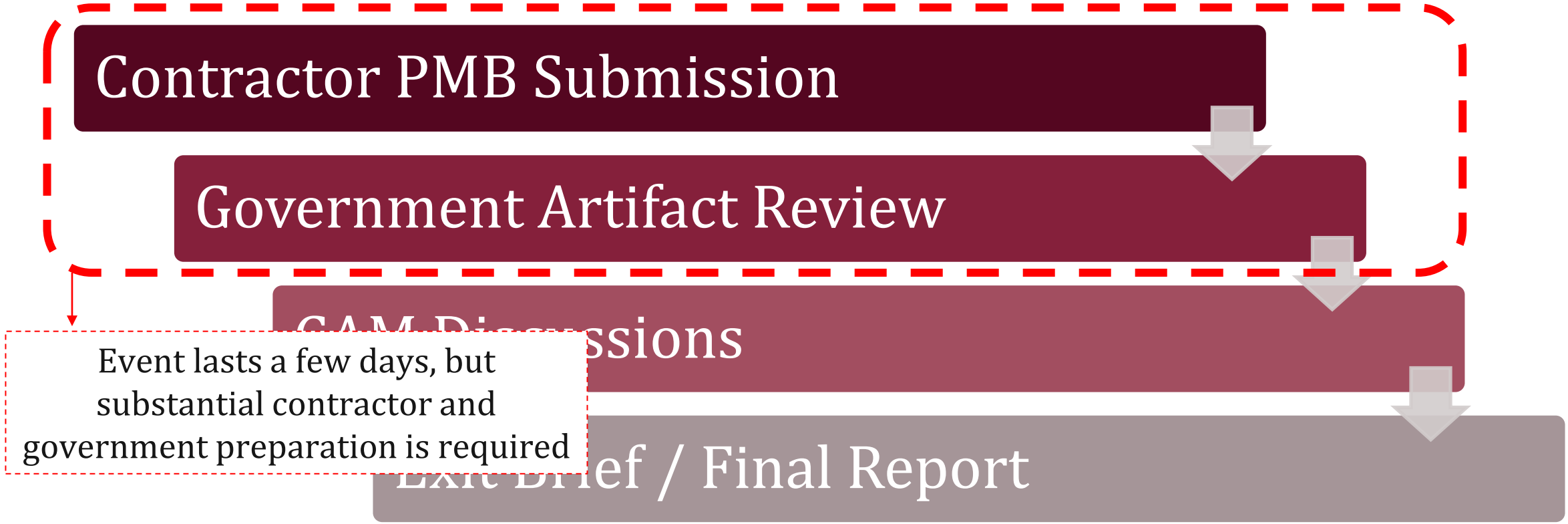

IBR Scorecard

CAM Area / Eval. Cat	Technical	Schedule	Resources	Cost	Management Processes
Project Management					
Project Engineering					
Procurement					
Construction (Main Site)					
Construction (Support Facilities)					
Commissioning					

*Note, CAM Areas & color scores are all nominal; graphic for presentation purposes only

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Each CAM area receives red/yellow/green score across every evaluation category

...But what is scoring criteria?

*Note, CAM Areas & color scores are all nominal; graphic for presentation purposes only

Scoring Criteria – Schedule

Low (Green)

- Low risk in adequacy of time required to achieve the project schedule objectives
- Nearly all task plans have reasonable durations, minimal float, and logical work sequence supporting key milestones
- Schedule construction consistent with industry best practices; schedule achieves vertical and horizontal traceability
- Task relationships/functional hand-offs clearly identify program critical path and driving paths to major milestones

Medium (Yellow)

- Medium risk in adequacy of time required to successfully achieve the project schedule objectives
- Minority of task plans have reasonable durations, demonstrate minimal float, follow a logical work sequence, and support key milestones. However, these deficiencies do not significantly impact schedule milestones or critical path
- Some schedule construction 'warnings', but schedule is capable of forecasting downstream impacts to critical path

High (Red)

- Inadequate time allocated to achieve the project schedule objectives at an acceptable level of risk
- Significant schedule omissions for contract work scope, task interdependencies, or external dependencies
- Failure to demonstrate adherence to scheduling best practices. No valid critical path to assess schedule risk impacts.

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Scorecard reflects an assessment of PMB risk

Conducting Reviews

- Reviews focus on different aspects of project
- Surveillance Review
  - Focus on *process* risk
  - Closure of observed EVMS implementation issues
- IBR
  - Focus on *program* risk
  - Risk and executability within PMB
  - Schedule and cost achievability
  - Assessing if EAC and schedule forecasts are realistic

Conclusion

- Surveillance Reviews and IBRs have different purposes

Surveillance Review	Integrated Baseline Reviews
Evaluate EVMS	Evaluate PMB
PM-30/DCMA leads	FPD/Project Management leads
Focus on site with lead project	Focus on project
Timing is calendar driven	Timing is aligned to project milestones

- Ultimately both support meaningful, actionable EVM data
  - EVM requires a good plan and a good system
  - Initial investment yields long term benefits