



GENERAL DYNAMICS
Advanced Information Systems

**IBR Considerations for Agile Projects
with EVM**

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Outline

Roadmap for where we're headed

- Introductions and Agile Projects Context
- Foundational Considerations
- Contractual Impacts of EVM and Agile
- Observations
- Recommendations for PARCA
- Towards an IBR Checklist
 - Blank IBR Checklist template

Introductions and Agile Projects Context

Observations represent on-going multi-year software development efforts for DOD customers

- Enterprise solutions (major system acquisitions), and Mission systems
- All contracts require EVM.
 - IPMR on enterprise solutions, mission system is legacy CPR
- Differing levels of change for each effort introduces unique experiences for integration
 - Enterprise solutions sees substantial change
 - Mission system sees change, but all clearly defined via ECPs
- Mission system applies agile for internal development team organization only (not contractually required)
- All efforts utilize common agile tool, but employ it using individual engineering methodology
- Projects and following discussions employ the [Scaled Agile Framework \(SAFe\)](#) methodology.
 - [Epics > Features > Stories]

Foundational Considerations

Our stance on EVM and Agile, in brief

- Agile is not inherently incompatible with EVM, but does introduce some challenges
- Many organizations (customers and developers) are not ready to fully adopt agile and instead end up with 'odd' hybrids
- Agile as a mind-set is applicable and beneficial to the EVM domain as it is challenging the value of longstanding practices, but doesn't offer much new that good EVM implementations do not

Contractual Impacts of EVM and Agile

Integration Notes, Challenges, and Opportunities

- Few to no observed impacts to IPMR requirements for Agile projects.
 - Delivery requirements do necessitate careful attention to business processes to ensure timely delivery. Enforce need by and due dates.
- However, minor IPMR tailoring is required to integrate EVM and agile.
 - Waiver for freeze period requirements for EVM baseline is required and should be integrated at IBR
- Even where EVM is not present, agile programs need careful attention to cost management.
 - CFSR forecasting and MIL-STD WBS cost reporting are often required irrespective of EVM DFAR clause inclusion.
 - Most development efforts will be bounded by the needs to report using standard structures. MIL-STD-881C Appendix for Automated Information System, outlines Prime Mission Product, Custom Application Software 1-N
 - Reoccurring/non-reoccurring cost isolation for CSDR introduces complexity on top of basic WBS demands

Observations

Thoughts on the future of EVM, Agile, and Software Development

- Engineering team maturity is integral to not only program success, but low weight and quality EVM implementation.
- Agile engineering tools are often poorly configured to support program needs (EVM demands: auditability, reporting, data extraction).
- Agile teams often ‘buck’ initial EVM design agreements, processes as time progresses and challenges arise. (EVM vs. Agile views)
- Acquisition methods and processes introduce substantial complexity into projects (high volume of CLINs is common in an age of shared services/platforms).

Observations, Cont.

Thoughts on the future of EVM, Agile, and Software Development

- EVMS must adapt and find ‘least burden’ method to facilitate planning and scheduling.
- Customer inconsistency in decisions to modify baseline, in the face of changing agile priorities, often leads to erroneous baseline and burdensome EVM to agile implementations.
- Vocabulary, expectation, and reporting is still evolving in most organizations (common methodologies being adopted with maturity)
- In general, ‘elevated’ planning allows for sufficient insight and control of program. Industry converging on this already.

Recommendations for PARCA

Summary elements to consider as guidance to government program offices and industry

- Freeze period waiver language should be drafted to accommodate agile program needs for flexibility.
- Provide guidance on core elements of agile-to-EVM considerations that should be addressed as part of tailoring during IBRs with customer.
- Educate and reinforce best practices for scheduling and performance capture on Agile programs. [Scope oriented planning, sensible earned value weighting and methods.]

Towards an IBR Checklist

Items program teams need to address to reduce program risk

Scope

Are there Epics/Features that should be independently tracked?

Do agile roadmaps of Epics > Features trace back to the requirements matrices?

Is our schedule established in a manner that facilitates agile processes such as discovery?

Change

Is the program office ready to respond to baseline changes introduced by agile execution?

Will fixed duration releases be strictly held to or will flexibility for release sizing be employed?

How will engineering changes be prioritized and planned? (ad-hoc/new Epics or Features)

Performance

Describe how the team will maintain visibility when over-performing (doing more than originally planned) in development?

Outline the estimation techniques to be applied for development work and performance. (Quantifiable estimates should aim for veracity over conservatism.)

Does our plan and management strategy identify how we will work to ensure product quality? (DRs and assumptions)

Towards an IBR Checklist

Items program teams need to address to reduce program risk

Schedule

What start-up time have we assumed for establishing our agile baseline?
(also a good pre-IBR question)

Have we planned for learning and innovation sprints and accommodated for team rejuvenation?

Contractual Requirements

What is the process for user engagement to provide feedback about the product and features?

What technical performance measures (TPMs) are required, what ones are potentially duplicated, or missing from the agile/EVMS tracking?

Engineering Discipline

What common data elements have we built into our agile tool?

Have we defined the agile methodology (process, jargon, methods) to be applied?

Ownership

Have we defined stakeholder groups who will contribute to the agile program's baseline (dependencies)?

Have we a clearly defined the user base and communicated (or defined via our plan) where their contributions are needed?

Discussion

Questions and Go-backs

