MANAGING IRREDUCIBLE SCHEDULE RISK

Rick Price

NDIA

Systems & Mission Engineering Conference

CLEARPLAN

23 October 2019

Tampa, Fla

CLEARPLAN

Program Control & Earned Value Management

Discussion Objectives

- Provide insight into a risk category that may be easy to overlook but can undermine achieving a program's requirements if not managed.
- Address the concept of schedule margin, it's use in managing irreducible schedule risk, and it's inclusion in Earned Value Management documentation and best practices.
- Interchange of ideas on how best to address this topic in risk & opportunity management processes.

Program Success in the Presence of Risk

- On-time delivery is a key program performance metric. Success on most development programs includes three key elements:
  - 1) the solution must work
  - 2) it needs to be delivered within budget
  - 3) it must be delivered on-time
- Risks to achieving these three elements can be categorized as either reducible or irreducible.
  - Reducible risks are those you can reasonably define, plan, and budget actions to eliminate or reduce the risk to an acceptable level
  - Irreducible risk is defined as risk that is either impossible or impractical to buy-down or eliminate.
- On development programs considered “schedule critical”, irreducible schedule risks cannot be ignored. They must be managed. One accepted and proven approach is through planning and managing schedule margin.

Irreducible Schedule Risk and Schedule Margin

- From *Increasing the Probability of Success with Continuous Risk Management (11 March 2018):*
  - *Irreducible schedule risk is handled with schedule margin which is define as the amount of added time needed to achieve a significant event with an acceptable probability of success*
  - *Schedule margin is not allocated to over-running tasks, rather is planned to protect the end item deliverables*
  - *The schedule margin should protect the delivery date of major contract events or deliverables. This is done with a task in the IMS that has no budget (BCWS). The duration of the task is derived from reference classes or Monte Carlo Simulation of aleatory uncertainty that creates risk to the event or deliverable*

SCHEDULE MARGIN-A BRIEF HISTORY

- Schedule margin (reserve) is defined as a clearly identified activity in a schedule that has no associated work nor budget.
- Schedule margin has been an accepted/mandated practice on NASA programs for decades.
- Use of schedule margin on DOD programs has been a source of contention for many years.
- DOD oversight agency published an initial position paper in June 2010 that stated: "Schedule margin is not a defined element of work and therefore does not belong in the schedule as a task."
- Within the last 5 years, DOD agencies have accepted schedule margin as an optional technique for managing schedule risks
  - Began with release of the IPMR Implementation Guide in Jan 2013
  - Culminated with government/industry agreement in Feb 2015, codified in the IPMR Implementation Guide update (for 81861A) in Feb 2016

CURRENT DOD DOCUMENTS

- IPMR DID (DI-MGMT-81861A) 3.7.2.4. Schedule Margin states: “Schedule margin is an optional technique used for insight and management of schedule risks. Schedule margin is represented by a task or tasks within the IMS with no assigned resources (budget or ETC) and is established as part of the baseline. … Schedule margin is associated with schedule risk as part of a formal risk management plan.”
- The IPMR DID (DI-MGMT-81861A) Implementation Guide states: “Schedule margin tasks are intended to represent the time necessary to account for schedule risks/uncertainties… intended to improve program management’s ability to accurately plan, forecast and manage scheduled work…traceable to the program’s risk management system.”
- The NDIA Planning and Scheduling Excellence Guide (PASEG) states: “Schedule Margin duration should be justifiable and traceable to the program’s risk management system.”
- The Earned Value Management Interpretation Guide (EVMSIG) states: “Schedule margin, an optional management method for accommodating schedule contingencies, must be traceable to the risk register…”
- DCMA’s current EVMS Test Metric Specification 06I101b states: “Schedule margin…must be traceable to the risk register…”
  - Industry has been told the EVMSIG and Test Metric are currently under revision from “risk register” to “risk management process”

Schedule Margin-Integration with Risk Management Process

- Options (open discussion)
  - Watch List
  - Risk Register
  - Generic risk management process description
  - Applied to residual risk

Next Steps-Risk Management Practitioners

- Further engagement with NDIA IPMD
- Address this topic with your Program Planning/Scheduling and/or Program Controls organizations
- Explore the potential impacts of irreducible schedule risks on your programs and how best to handle
- Invite Program Planning/Scheduling SMEs to participate in your risk management processes if not already engaged
- Share!

Reference Links

- https://www.slideshare.net/galleman/increasing-the-probability-of-success-with-continuous-risk-management
- https://www.acq.osd.mil/evm/assets/docs/IPMR_Implementation_Guide.pdf
- https://www.acq.osd.mil/evm/assets/docs/DoD_EVMSIG_14MAR2019.pdf
- https://www.ndia.org/-/media/sites/ndia/meetings-and-events/divisions/ipmd/links-and-reference/paseg_v4-final2.ashx?la=en