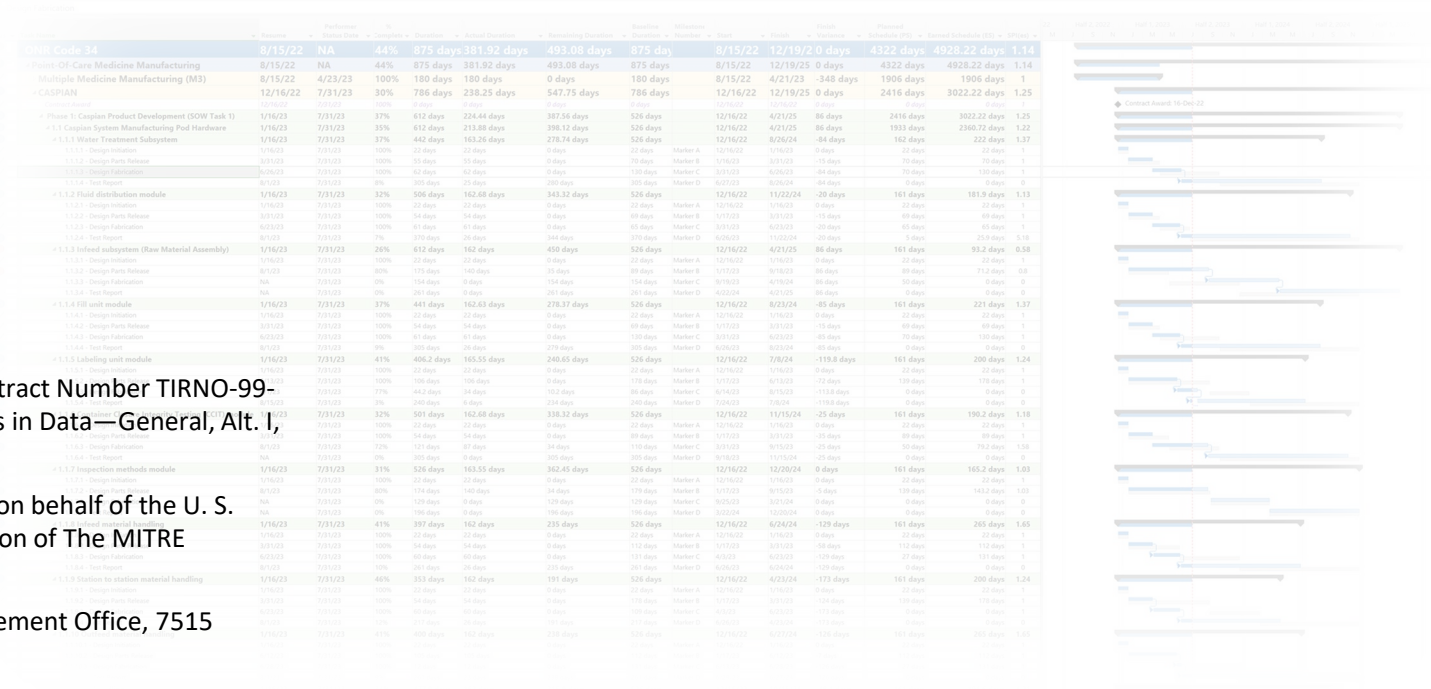
Timeboxed earned schedule approach (TESA): An innovative framework to program schedule management for programs within OTAs



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The Problem

Needs

- Schedule situational awareness at varied levels of abstraction:
  - SOW-specified tasks (with associated payment milestones)
  - Performer
  - Program/Project
  - Portfolio (perpetual)
  - Alternative decomposition hierarchies (e.g., technology architecture roadmap)

Constraints

- Negligible obligatory reporting requirements
- Limited schedule information
- Costs allocated to SOW-specified zero duration payment milestones but not requisite tasks
- Diversity in performers' schedule management practices and capability maturity
- No established schedule information protocols
- Need immediacy

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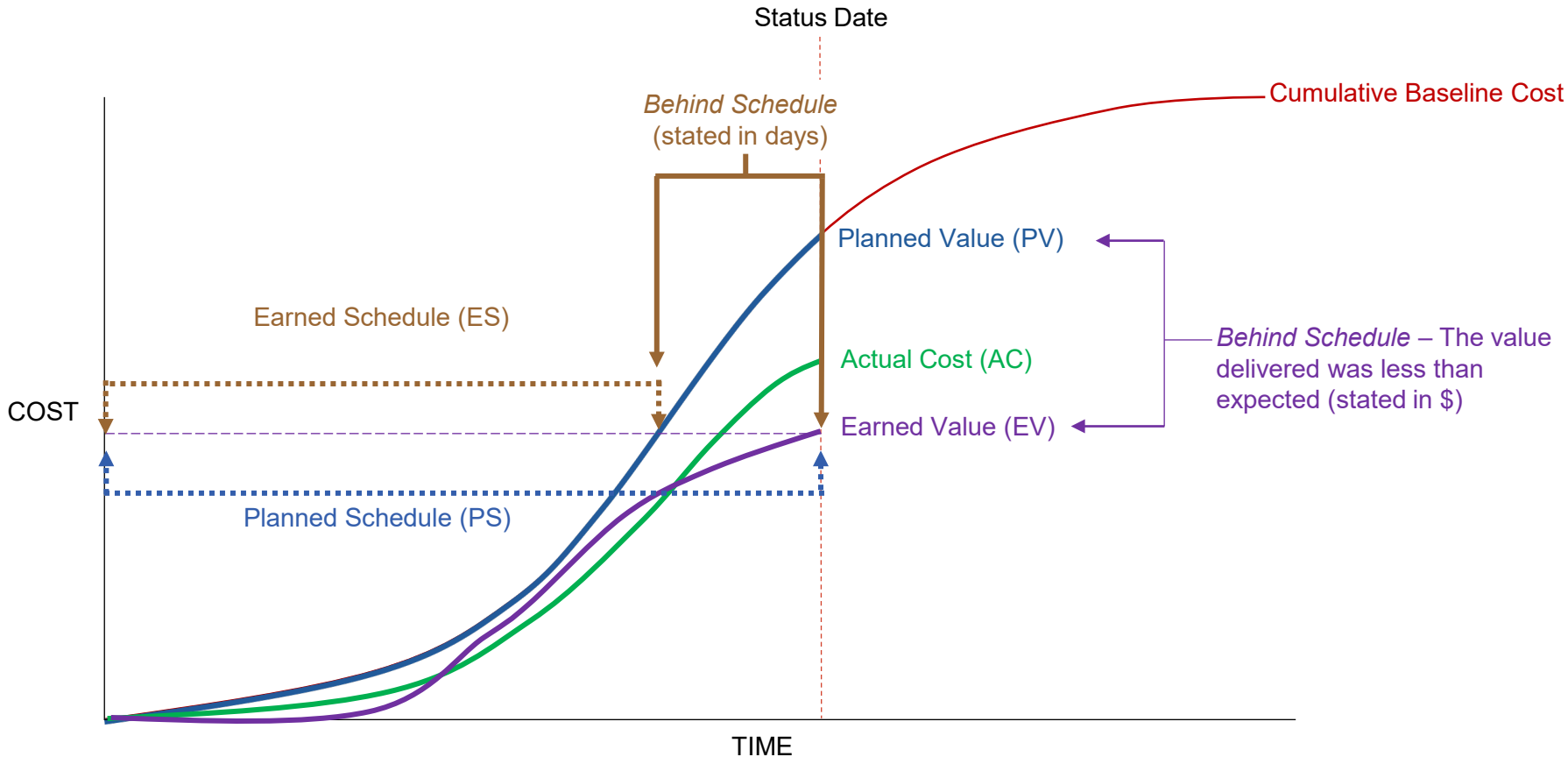
The Approach

Conceptual Framework

– Earned Schedule using duration as a cost-basis

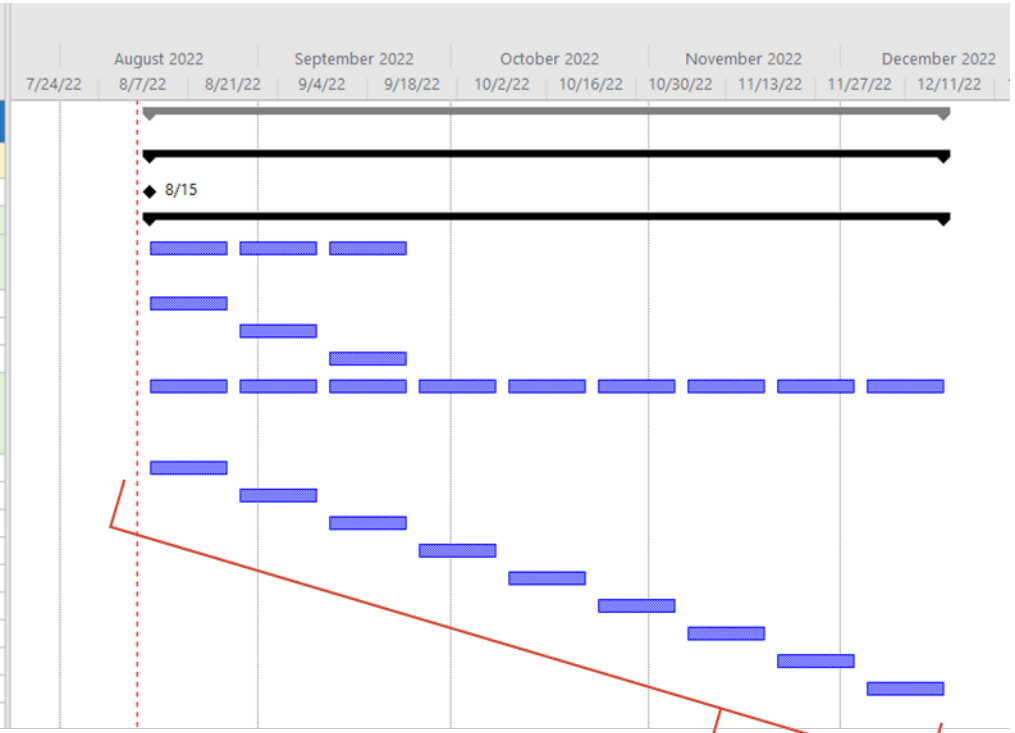


The Approach

Conceptual Framework

- Earned Schedule using duration as a cost-basis
- Agile timeboxing with objectives, providing finer duration granularity to increase schedule accomplishment resolution

	Task Mode	Task Name	Perfor	Milestone Number	Contract Line Item Number (CLIN)	Sub-line Item Number (SLIN)	Accounting Classification Reference Number (ACRN)	Start	Finish
0		**Program**						**8/15/22**	**12/16/22**
1		**Project**	[redacted]					**8/15/22**	**12/16/22**
2		Contract Award						8/15/22	8/15/22
3		**CLIN 0001**			**0001**			**8/15/22**	**12/16/22**
4		**MS 1: Completion of purchase plan of production equipment and materials**		**1**	**0001**	**101**	**AA**	**8/15/22**	**9/23/22**
5		MS 1: Time Box 1		1	0001	101	AA	8/15/22	8/26/22
6		MS 1: Time Box 2		1	0001	101	AA	8/29/22	9/9/22
7		MS 1: Time Box 3		1	0001	101	AA	9/12/22	9/23/22
8		**MS 2: Completion of route map and material security analysis for** [redacted]		**2**	**0001**	**102**	**AA**	**8/15/22**	**12/16/22**
9		MS 2: Time Box 1		2	0001	102	AA	8/15/22	8/26/22
10		MS 2: Time Box 2		2	0001	102	AA	8/29/22	9/9/22
11		MS 2: Time Box 3		2	0001	102	AA	9/12/22	9/23/22
12		MS 2: Time Box 4		2	0001	102	AA	9/26/22	10/7/22
13		MS 2: Time Box 5		2	0001	102	AA	10/10/22	10/21/22
14		MS 2: Time Box 6		2	0001	102	AA	10/24/22	11/4/22
15		MS 2: Time Box 7		2	0001	102	AA	11/7/22	11/18/22
16		MS 2: Time Box 8		2	0001	102	AA	11/21/22	12/2/22
17		MS 2: Time Box 9		2	0001	102	AA	12/5/22	12/16/22



The first timebox reflects the *Start* date for the related *body of work*

The last timebox reflects the *Finish* date for related *body of work*

The number of timeboxes is contingent on the number of reporting periods within the range of the *body of work Start* and *Finish* dates. The duration of each timebox should should not span more than two reporting periods.

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The Approach

Progress Data Capture

- If all timebox objectives have been completed, record the timebox as 100% complete [Optional: Provide the *Actual Finish* date]
- If work commenced on a new timebox, record the *Actual Start* date to signal the start of progress
- If a timebox is still in-progress,
  - Progress through the *Status Date* is assumed and applied (resulting in an auto-calculated update of *Actual Duration*)
  - The timebox owner provides either an estimate of the number of days needed to complete that timebox is provided (i.e., *Remaining Duration*) or a revised forecast *Finish* date (from which the *Remaining Duration* can be derived)
- Optional provision of contextual status narratives

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The Results

Project | Performer

OVERALL PROJECT PERFORMANCE SUMMARY

STATUS DATE: 7/31/23

BASELINE START: 12/16/22

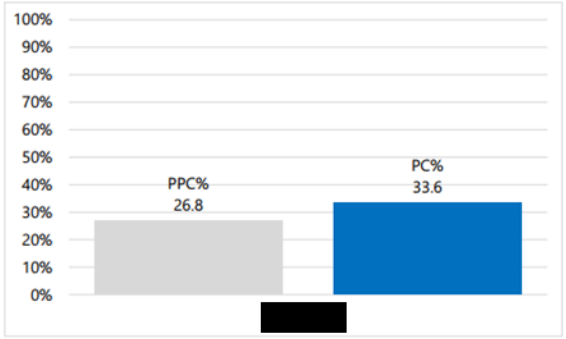
BASELINE FINISH: 12/19/25

FORECAST: BASED ON THE CURRENT 'EARNED SCHEDULE' SPI VALUE OF 1.25, THE PROJECT IS FORECASTED TO COMPLETE SIGNIFICANTLY AHEAD OF SCHEDULE ON ~WED MAY 14, 2025

The 'Earned Schedule' (ES) SPI is a ratio reflecting the rate at which project work is being completed. For example, an ES SPI value of 0.8 indicates that for each week (i.e., 5 days) from the beginning of the project through the current status reporting date, only 4 days of project work is being completed per week. If that trend persists, the project will continue to fall further behind schedule at a rate of 1 day per each week remaining in the project.

PLANNED PERCENT COMPLETE (PPC%) & PERCENT COMPLETE (PC%)

PPC% indicates what portion of the project should be complete according to the baseline schedule in contrast with PC%, the portion of the project that has been recorded as having actually completed



TOTAL BASELINE BUDGET:	$28,505,000
VALUE OF COMPLETED PAYMENT MILESTONES:*	$9,276,820
REMAINING PAYMENT MILESTONES VALUE:	$19,228,180

*To date, the performer has received $9,276,820 of the total COMPLETED PAYMENT MILESTONES value amount

Status Date: 7/31/23 Page 1 of 3

Project | Performer

MAJOR SOW DELIVERABLE PERFORMANCE

STATUS DATE: 7/31/23

Name	Start	Finish	SPI(es)	PC%	PPC%	ES Analysis Summary
Contract Award	12/16/22	12/16/22	1	100	100	Complete
1.1.1 [redacted]	12/16/22	8/26/24	1.37	42.13	30.74	Ahead of Schedule
1.1.2 [redacted]	12/16/22	11/22/24	1.13	34.58	30.61	On Schedule
1.1.3 [redacted]	12/16/22	4/21/25	0.58	17.72	30.61	Significantly Late
1.1.4 [redacted]	12/16/22	8/23/24	1.37	42.02	30.61	Ahead of Schedule
1.1.5 [redacted]	12/16/22	7/8/24	1.24	38.02	30.61	Ahead of Schedule
1.1.6 [redacted]	12/16/22	11/15/24	1.18	36.16	30.61	Ahead of Schedule
1.1.7 [redacted]	12/16/22	12/20/24	1.03	31.41	30.61	On Schedule
1.1.8 [redacted]	12/16/22	6/24/24	1.65	50.38	30.61	Ahead of Schedule
1.1.9 [redacted]	12/16/22	4/23/24	1.24	38.02	30.61	Ahead of Schedule
1.1.10 [redacted]	12/16/22	6/27/24	1.65	50.38	30.61	Ahead of Schedule
1.1.11 [redacted]	12/16/22	10/15/24	1.21	37	30.61	Ahead of Schedule
1.1.12 [redacted]	12/16/22	12/20/24	1.01	30.92	30.61	On Schedule
1.2.1 [redacted]	12/16/22	3/20/24	1.37	53.13	38.7	Ahead of Schedule
1.2.2 [redacted]	12/16/22	6/28/24	1.09	42.19	38.7	On Schedule
1.2.3 [redacted]	12/16/22	3/25/24	1.65	57.48	34.92	Ahead of Schedule
2.1.1 [redacted]	1/15/24	12/19/25	0	0	0	NA - Future activity
2.1.2 [redacted]	11/20/25	12/19/25	0	0	0	NA - Future activity
2.2.1 [redacted]	1/22/24	9/19/25	0	0	0	NA - Future activity
2.2.2 [redacted]	1/22/24	9/19/25	0	0	0	NA - Future activity
Period of Performance - End	12/19/25	12/19/25	0	0	0	NA - Future activity

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Project | Performer

ANTICIPATED MILESTONE PAYMENTS: 3-MONTH OUTLOOK*

STATUS DATE: 7/31/23

Name	SOW Deliverable	Milestone Number	Anticipated Invoice Amount	ES Analysis Summary
[redacted]			$3,244,780	On Schedule
CY Payment Milestone Month: 2023-08 (Aug)			$270,900	Ahead of Schedule
1.1.5.3 - Design Fabrication	1.1.5 [redacted]	Marker C	$90,300	Significantly Ahead
1.1.11.3 - Design Fabrication	1.1.11 [redacted]	Marker C	$180,600	Ahead of Schedule
CY Payment Milestone Month: 2023-09 (Sep)			$2,973,880	On Schedule
1.1.3.2 - Design Parts Release	1.1.3 [redacted]	Marker B	$963,200	Significantly Late
1.1.6.3 - Design Fabrication	1.1.6 [redacted]	Marker C	$180,600	Ahead of Schedule
1.1.7.2 - Design Parts Release	1.1.7 [redacted]	Marker B	$96,320	On Schedule
1.1.12.2 - Design Parts Release	1.1.12 [redacted]	Marker B	$1,733,760	On Schedule

*For the 7/31/23 *Status Date*, no milestone payments are forecasted for October 2023

NOTES

August 2023:

- The design reviews for 1.1.5 and 1.1.11 have been completed. [redacted] will provide a briefing during the August monthly update meeting to complete these milestone events

September 2023:

- A design overview of the Infeed Subsystem (1.1.3) should be complete by late August/early September
- A suitable subcontractor was found for 1.1.3 through a competitive source selection process
- OTA negotiations are underway. The results from this will include an increased OTA ceiling to $30,100,000
- [redacted] (1.1.6) build and test strategy will be ready during September
- The design overview for [redacted] (1.1.7) and [redacted] (1.1.12) will be ready by the end of September

Beyond September 2023:

- The main focus for the hardware and software will be in assembling the units together, conducting batteries of tests, and iterating on the designs
- The main focus for the project team, beyond the builds, will be establishing final product requirements, risk assessments, analysis, and regulatory discussions
- Plans for 2024 will be revisited in January to capitalize on knowledge/information gained through 2023

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The Results

- Suitable for contexts where:
  - Schedule performance understanding across a variety of summarization hierarchies is needed
  - Schedule information is limited
  - Diversity exists across performers' project schedule management practices and capability maturity
  - SOW project management obligations are negligible
- Offers a "light-touch" approach of minimal complexity providing situational awareness without major effort
- Does not require access to performer schedules for underlying bodies of work, protecting performers' proprietary work management methods
- Does not require dependency network logic or direct connection with source data
- Retains *earned value* management's cumulative analysis benefits that simplify evaluation of schedule accomplishment across multiple programs and projects to support various audiences' summarization needs (e.g., portfolio, program, performer, project, capability roadmap)

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