



Mastering Mission Success

Tracking Scope, Schedule, and Cost in an Open, Agile, Digital World

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Introductions



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NOTE: The content of this presentation has been approved for public release



Topics

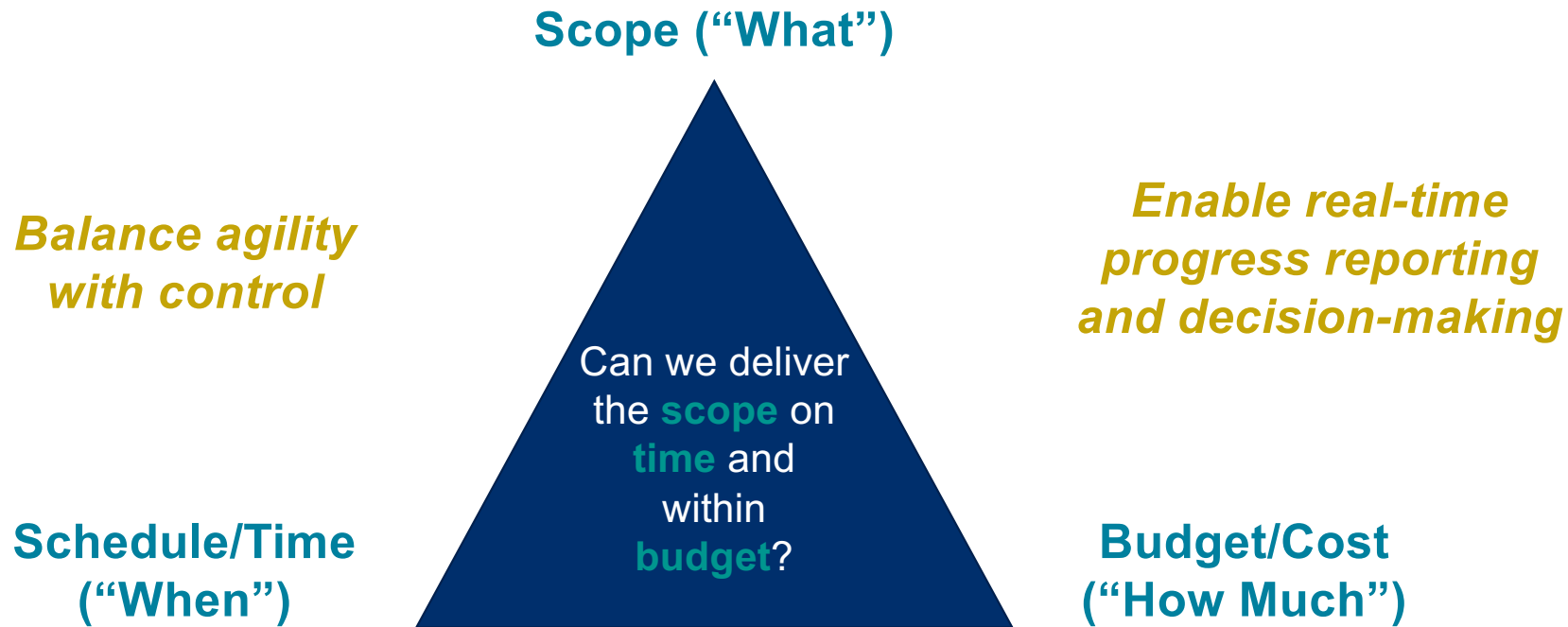
- Introduction
 - Why Agile PPM
 - What is Agile PPM
 - Lean-Agile Operating System
- Agile PPM in Practice
 - Executing PPM activities within an agile execution model
- Closing
 - Summary
 - Resources
 - Q&A

***Enabling effective
Program
Performance
Management in an
agile context***

Introduction



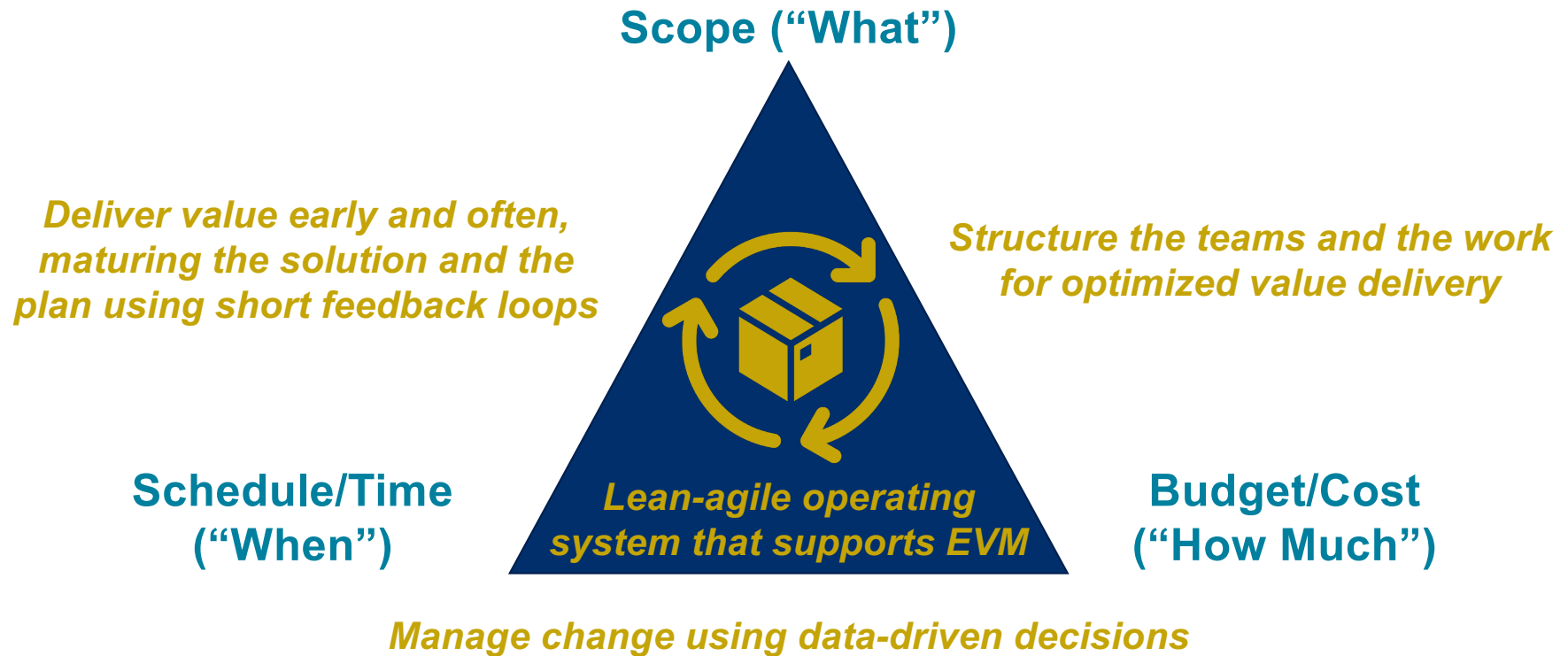
Why Agile Program Performance Management (PPM)?



Deliver innovative and affordable technical solutions on time and within budget



What is Agile PPM?



Predictable performance driven by feedback



Lean-Agile Operating System

Guide and support the teams – enable consistent accelerated, and high-quality execution

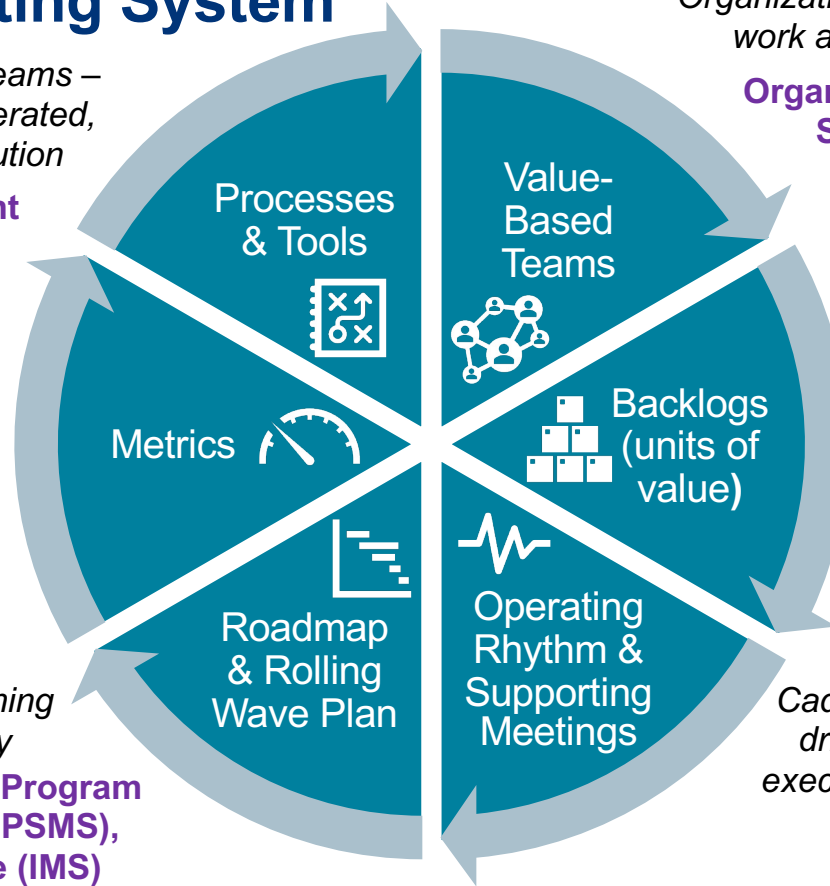
Program Management Plan (PMP)

Measure what matters – focus and make decisions

Earned Value (EV) Metrics

Incremental multi-level planning provides flexible variability

Integrated Master Plan (IMP), Program Summary Master Schedule (PSMS), Integrated Master Schedule (IMS)



Organization designed to flow work and deliver value

Organization Breakdown Structure (OBS)

Single source of truth that provides clear priorities and aligns teams on the value to be delivered

Work Breakdown Structure (WBS)

Cadence and synchronization drive effective and efficient execution and reduce variability

Accounting month

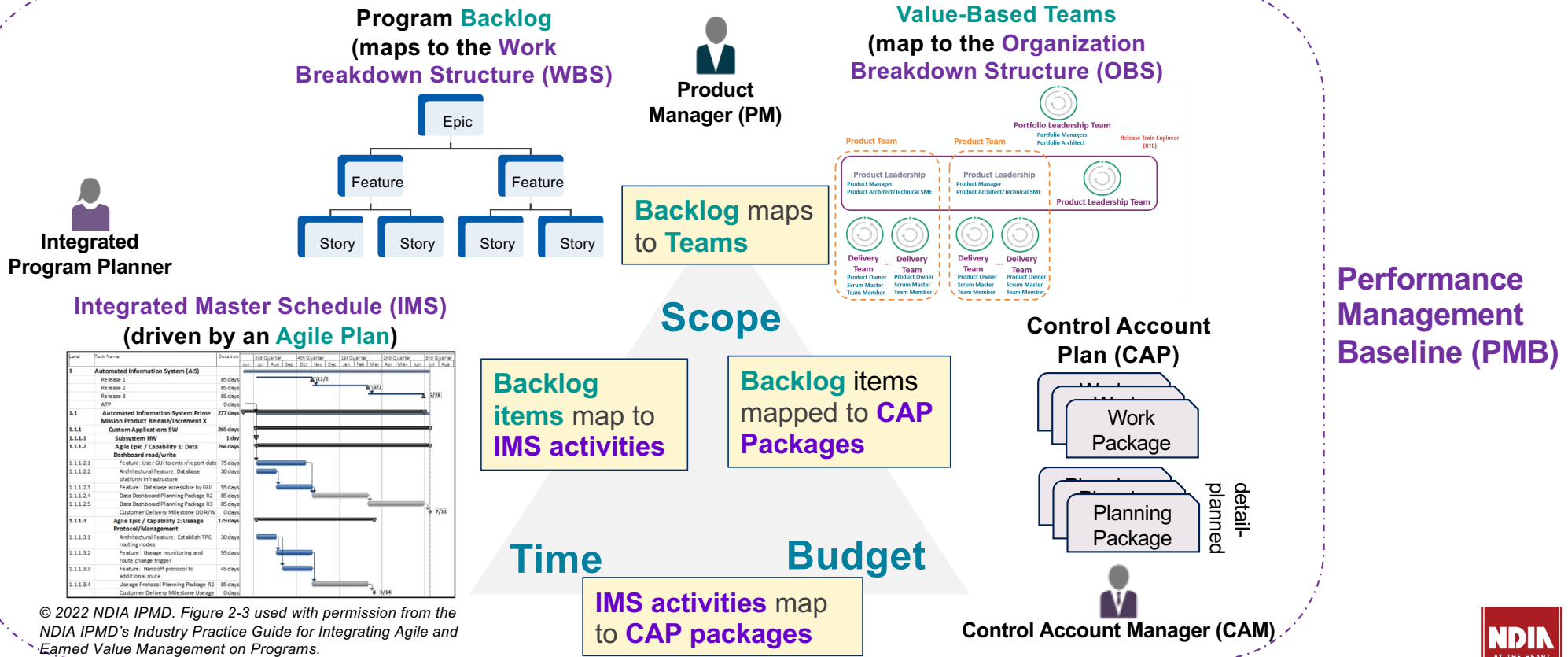
An execution model for effective Agile PPM

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Agile Earned Value Management (EVM)



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Integrate scope, time and budget to effectively track program performance

Agile PPM in Practice

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Key Program Performance Management (PPM) Activities

Program Proposal

Establish the Program Plan

- Prepare the Program Backlog (Scope)
- Prepare the Program Roadmap (Time)
- Structure the Teams

PPM: IMP, WBS, OBS
Agile: Backlog, Roadmap, Teams

Program Start-Up

Establish the Performance Measurement Baseline (PMB)

- Prepare the Integrated Master Schedule (IMS) (Scope and Time)
- Prepare the Control Account Plan (CAP) (Budget)

PPM: IMS, CAP
Agile: Agile Plan

Program Execution

Manage the Performance Measurement Baseline (PMB)

- Measure progress
- Forecast cost performance
- Manage baseline changes

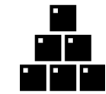
PPM: PMB
Agile: Agile Plan

Agile execution model is integrated with the PPM activities

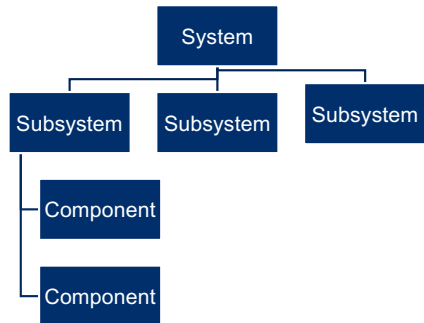


Prepare the Program Backlog

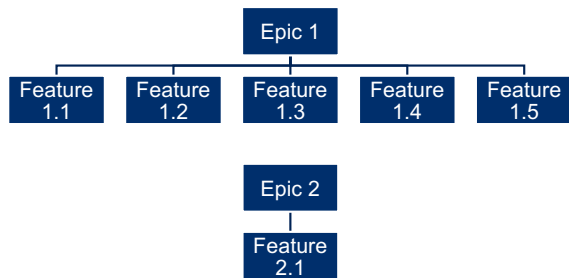
Backlog definition has a broad impact on program performance



Establish the Program Plan



System Architecture that reflects the Weapon Open System Architecture (WOSA)



Program Backlog

ID	Description	Acceptance Criteria / Definition of Done	Size	Order	WBS
Epic 1	Improve Collection Reliability	a. New vendor COTS collector chosen using revised spec b. Minimal Viable Product (MVP) COTS collector c. Fully certified final product	Very Large	High Priority	See below
Feature 1.1	Release Collector MVP COTS	a. Development COTS units shipped b. Collect COTS-related technical data	Medium	High Priority	1110
Feature 1.2	Release Collector MVP Software	Sufficient re-host of LM software to collect fingerprint and request match from fielded system <i>Cannot be combined with Feature 1.1</i>	Small	High Priority	1120
Feature 1.3	Qualify Collector COTS	Complete all COTS-specific qualification	Medium	After 1.1	1110
Feature 1.4	Implement Full Collector Capability	All LM software capability re-hosted successfully to new COTS platform	Medium	After 1.2	1120
Feature 1.5	Release Fully Qualified Collector	Complete all system qualification	Medium	After 1.3, 1.4	1130
Epic 2	Improve Matching Confidence	a. New approach for improving characterization of options b. No degradation of other capability/ performance without customer approval	Medium	High Priority	See below
Feature 2.1	Improve Matching Confidence	<i>Same as Epic 2, since only one feature needed. Added for consistent backlog/WP mapping</i>	Medium	High Priority	1210

Backlog items are relatively sized

Backlog items are mapped to the WBS

Backlog items are ranked/ordered

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Provides clear priorities and alignment on the value to be delivered (contract scope)

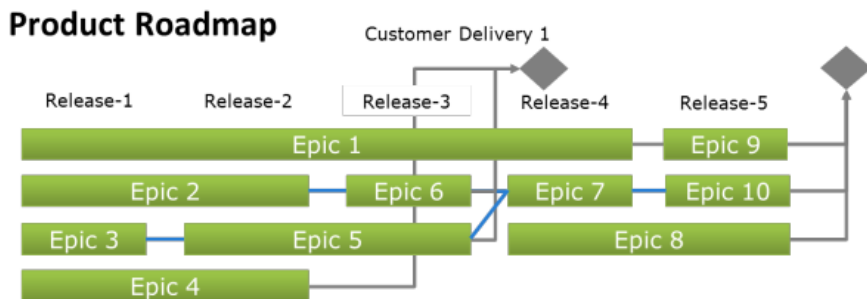


Prepare the Program Roadmap

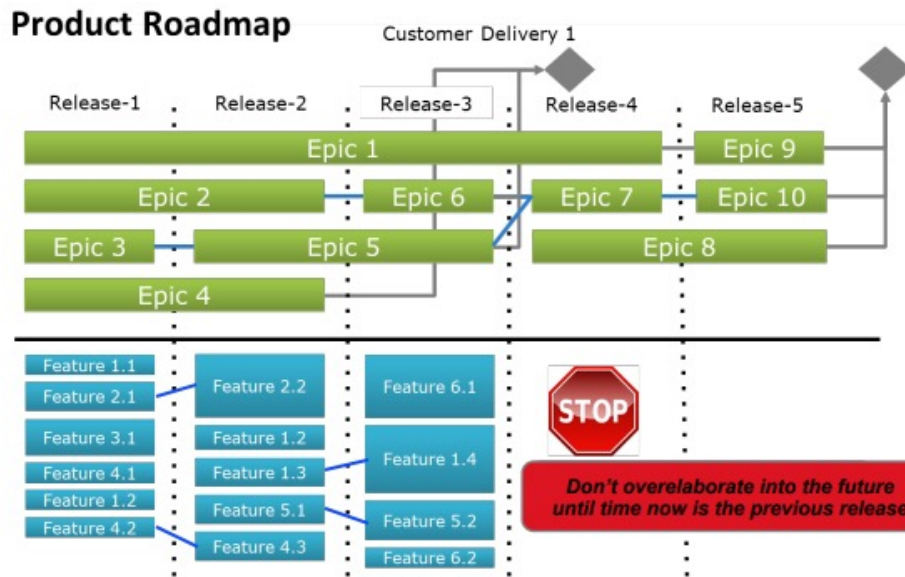


Establish the Program Plan

Initial Roadmap



More Detailed Roadmap



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The **Program Roadmap** should reflect the **Integrated Master Plan (IMP)**, if used

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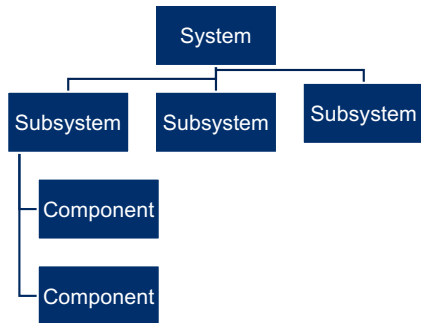
Maps program backlog items (scope) onto program period of performance (time)



Structure the Teams

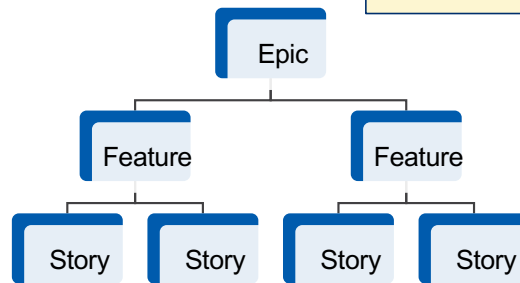


Establish the Program Plan

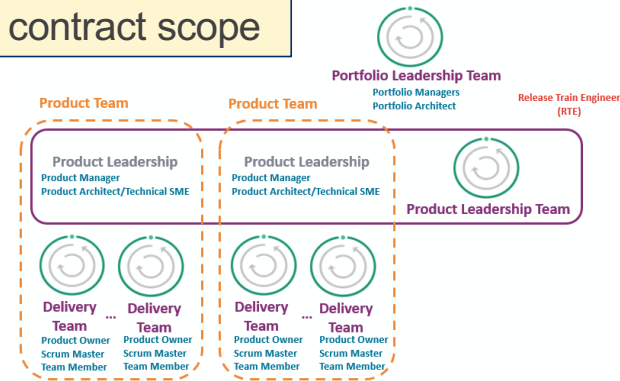


System Architecture
Reflects the Weapon Open System Architecture (WOSA)

Teams are accountable for delivering specific contract scope



Program Backlog
Reflects the Work Breakdown Structure (WBS)

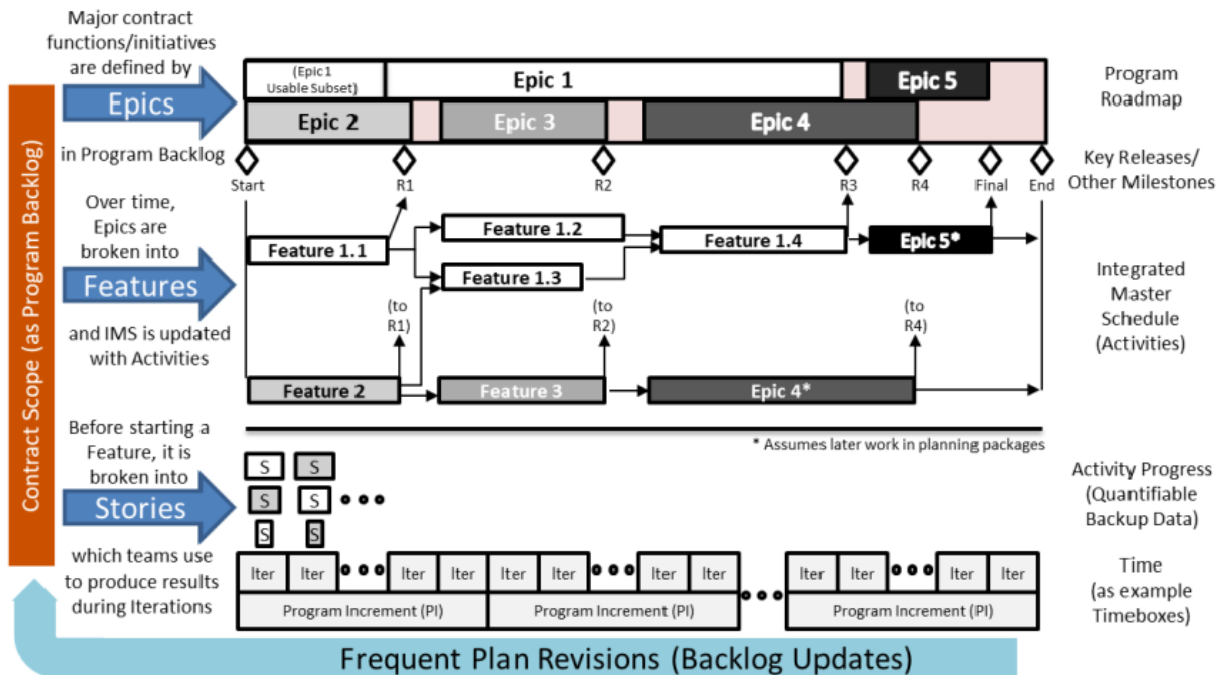


Value-Based Teams
Reflect the Organization Breakdown Structure (OBS)

The work (**backlog**) and the people doing the work (**value-based teams**) are organized into units of value that support iterative and incremental delivery and are aligned with the System Architecture

Teams and work aligned for optimized value delivery

Prepare the Integrated Master Schedule (IMS) Using the Roadmap



The **IMS** reflects the initial **roadmap** and describes the approach for incrementally delivering the contract scope within the period of performance.

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Time-phasing of effort that supports critical path tracking

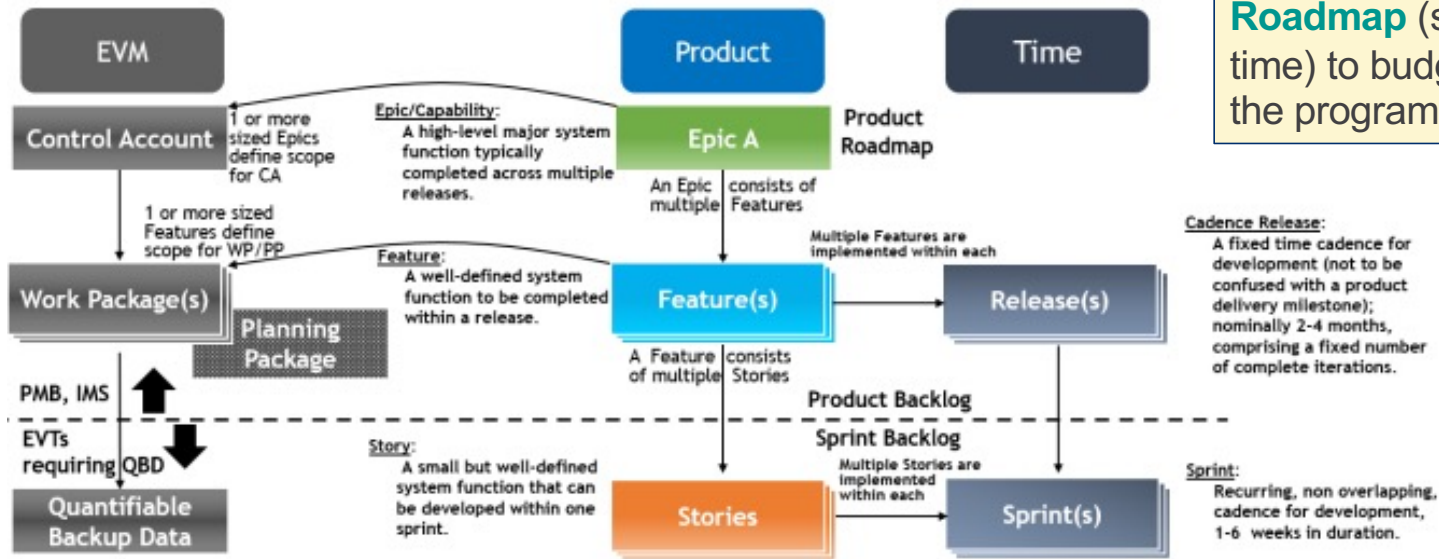


Prepare the Control Account Plan (CAP) Using the Roadmap



Establish the Performance Measurement Baseline (PMB)

The CAP maps the Roadmap (scope and time) to budget to create the program spend plan



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Allocates budget for scope over time



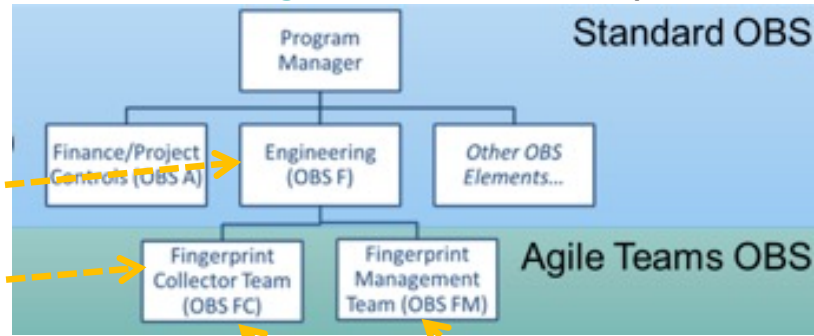
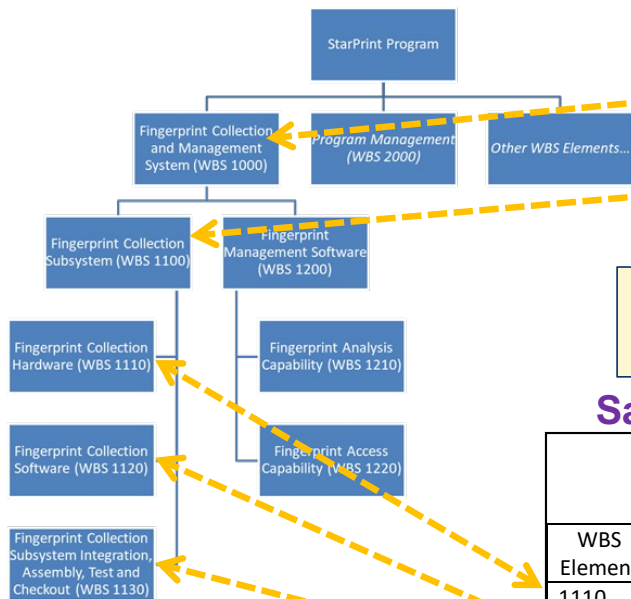
Authorize Work to the Responsible Organization



Establish the Performance Measurement Baseline (PMB)

Sample OBS (reflected in the Agile Team Structure)

Sample WBS (reflected in the Program Backlog)



Teams are accountable for delivering specific scope within a specific budget

Specific teams (OBS elements) are authorized (issued charge numbers) to work on specific contract scope (WBS elements)

Sample Responsibility Assignment Matrix (RAM)

WBS Element	WBS Element Title	Budget (\$M)	OBS Elements		
			Team:	FC: Collector	FM: Management
			CAM:	S. Ubsystem	S. Software
			1.1	0.5	
1110	Fingerprint Collection Hardware	0.7	CA1110FC		
1120	Fingerprint Collection Software	0.3	CA1120FC		
1130	Fingerprint Collection IAT&C	0.1	CA1130FC		
1210	Fingerprint Analysis Capability	0.2		CA1210FM	
1220	Fingerprint Access Capability	0.3		CA1220FM	

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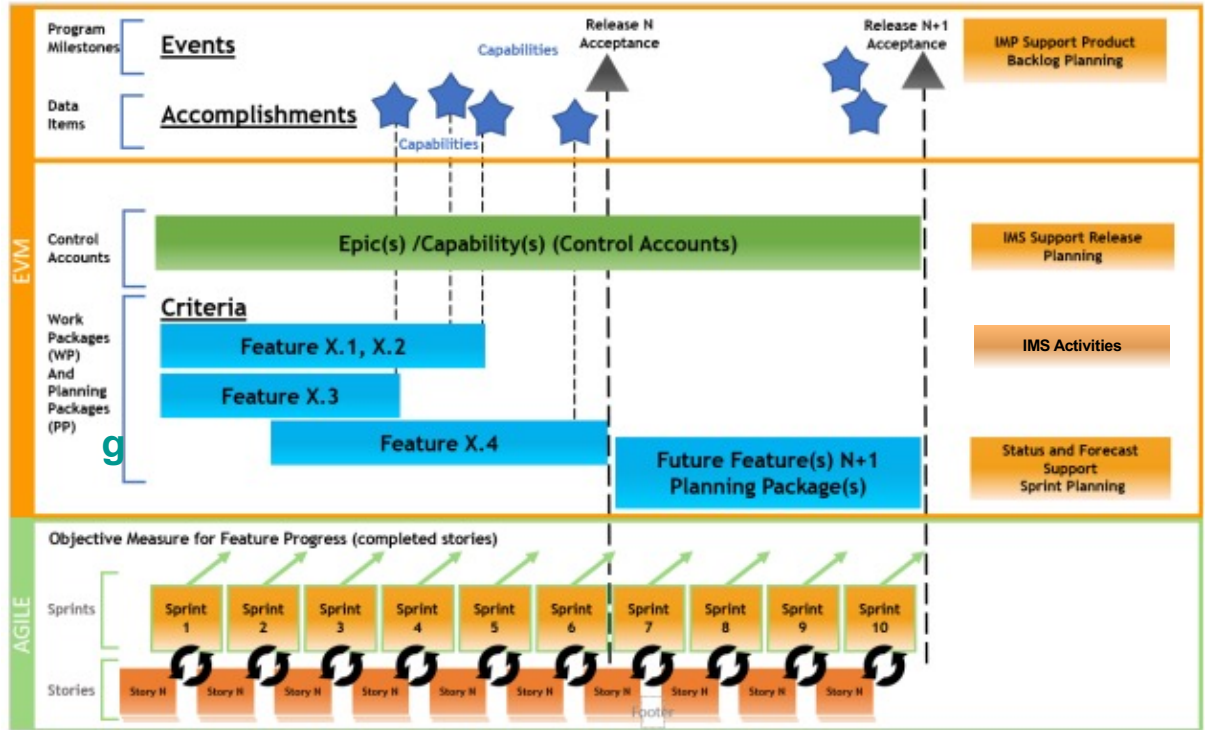
The Agile Plan Provides the Foundation of the Performance Management Baseline (PMB)



Establish the Performance Measurement Baseline (PMB)

Roadmap includes key events that guide execution

Backlog items map to Work/Planning Packages, clarifying the budget for the work



Backlog items mapped to IMS activities, enabling critical path calculation

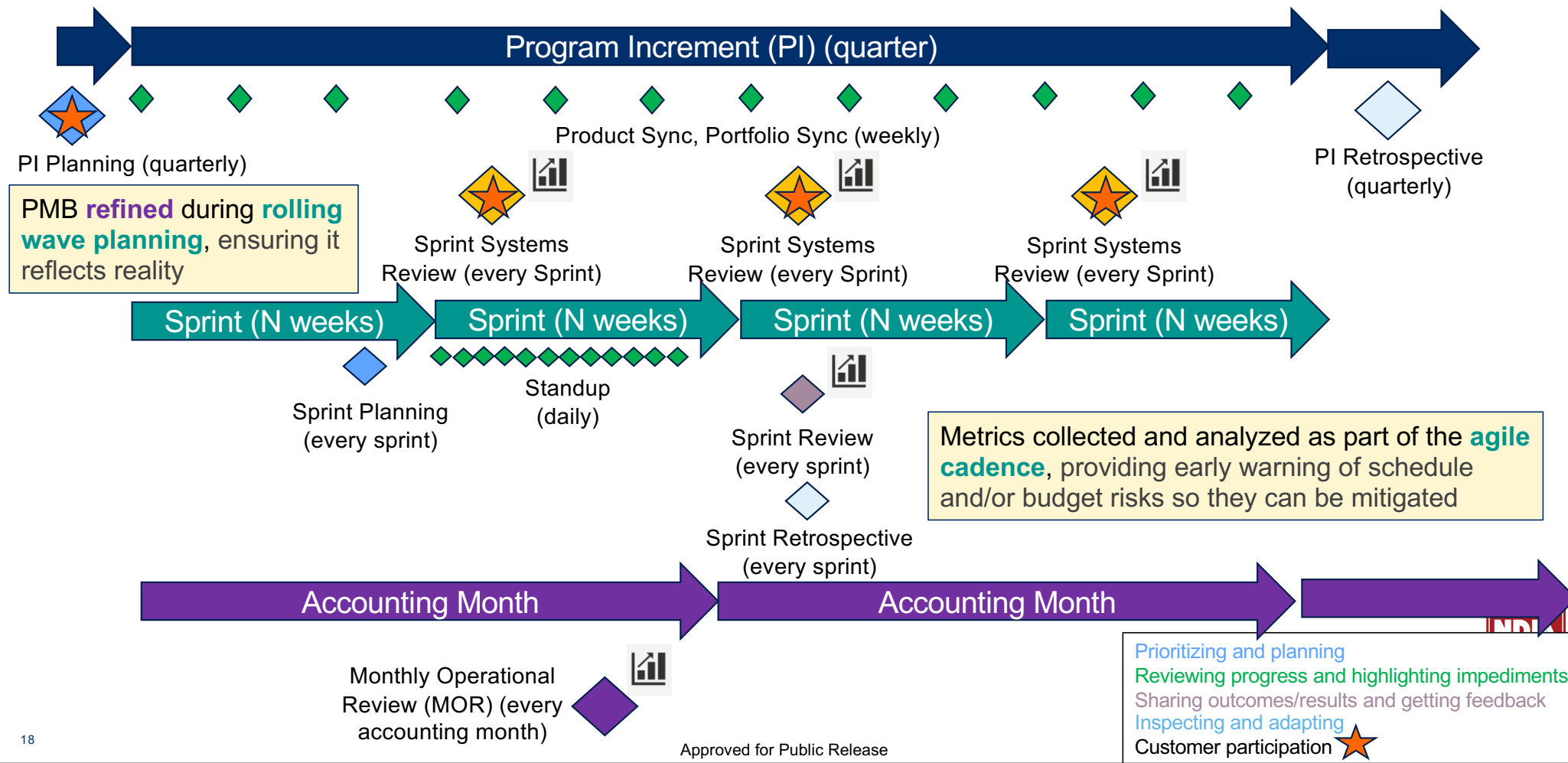
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A plan for delivering contract scope on time and within budget



Manage the PMB Using the Agile Operating Rhythm

Manage the Performance Measurement Baseline (PMB)

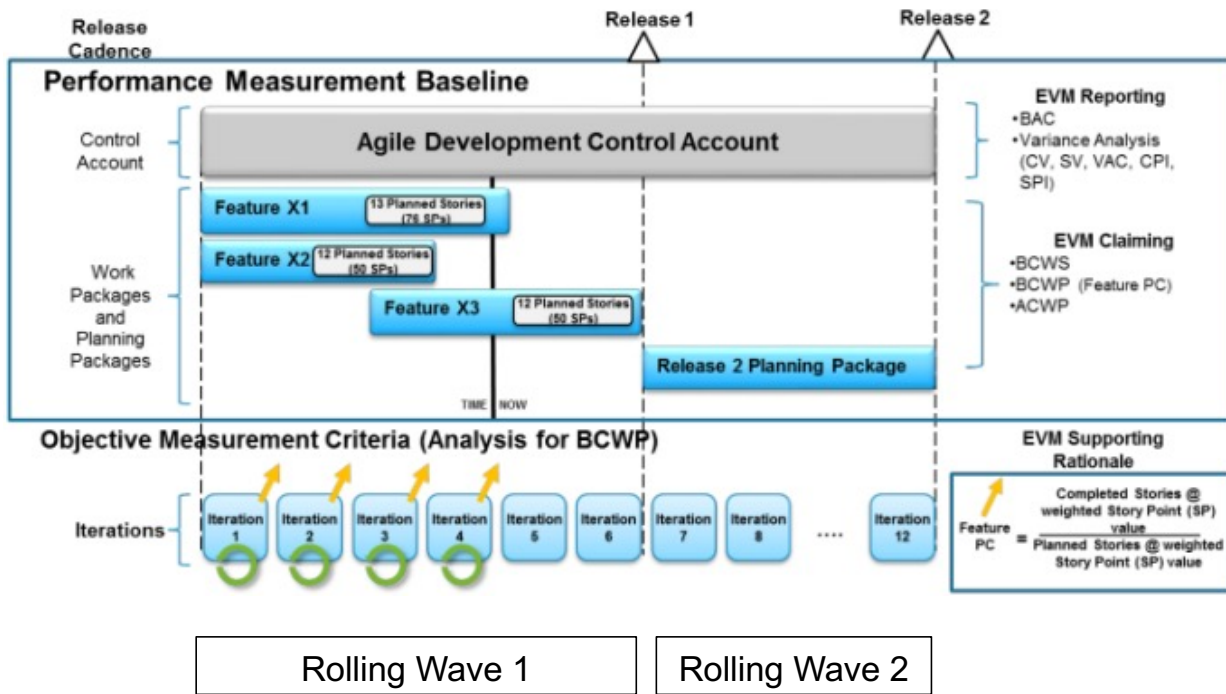




Manage the Performance Measurement Baseline (PMB)

Evolve the PMB via Rolling Wave Planning

Rolling wave planning refines the scope (**Backlog**), schedule (**IMS**) and budget (**CAP**)



EV Metrics collected and analyzed regularly to inform rolling wave planning

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Synchronize the Agile Plan with the PMB on a regular cadence to ensure alignment



Agile Metrics Feed EV metrics, improving accuracy



Manage the Performance Measurement Baseline (PMB)

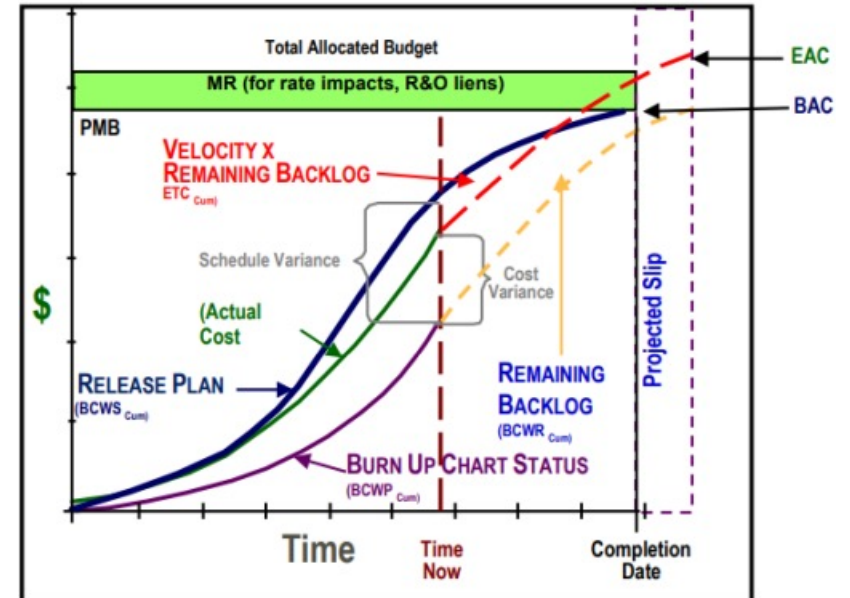
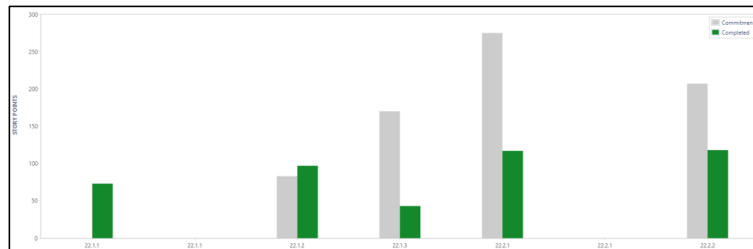
Answers the question, "will we make it?"

% complete is used for tracking scope progress
(**Percent Complete Earned Value Technique (EVT)**)

Issue	+ Create issue	Progress (story points)
AHI-5645	Harnesses	<div style="width: 80%;"></div>
AHI-5641	Electrical Architecture	<div style="width: 60%;"></div>

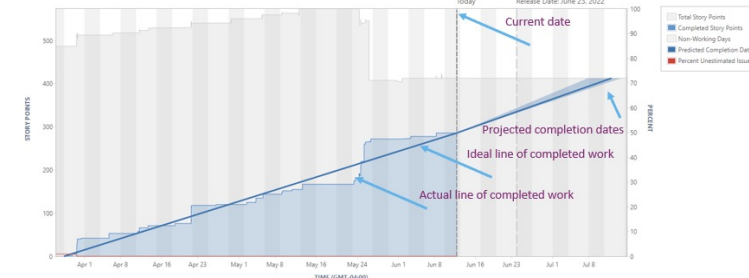
Velocity and **remaining work** metrics used to forecast future performance

Stable agile teams have predictable velocity which improves forecasting



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Burnup metrics provide a leading indicator for completing scope on time (schedule)

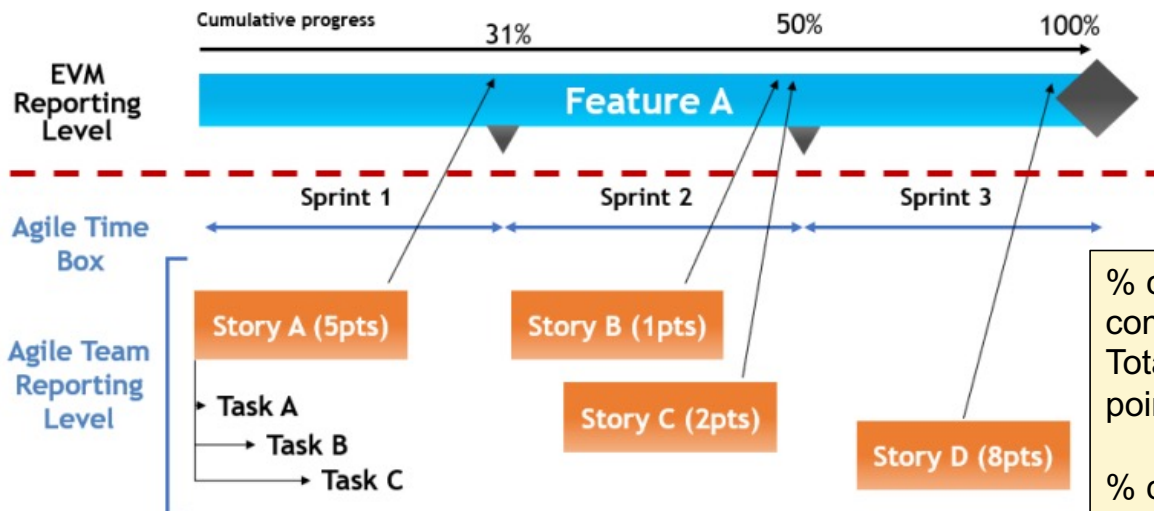


Measuring Progress Using Agile Plan (Percent %)

Earned Value Reflected at the Feature Level

Backlog item size estimates (story points) are used to calculate % complete

Backlog item acceptance criteria determines when work is done and when story points are used to calculate % complete



$\% \text{ complete} = \frac{\text{Total completed story points}}{\text{Total estimated story points}}$

% complete reflects % value delivered, not % activities completed

- Percent Complete (PC) for the feature at the end of each sprint, assuming stories are completed:
- At the end of sprint 1, feature PC = 31%
 - At the end of sprint 2, feature PC = 50%
 - At the end of sprint 3, feature PC = 100%

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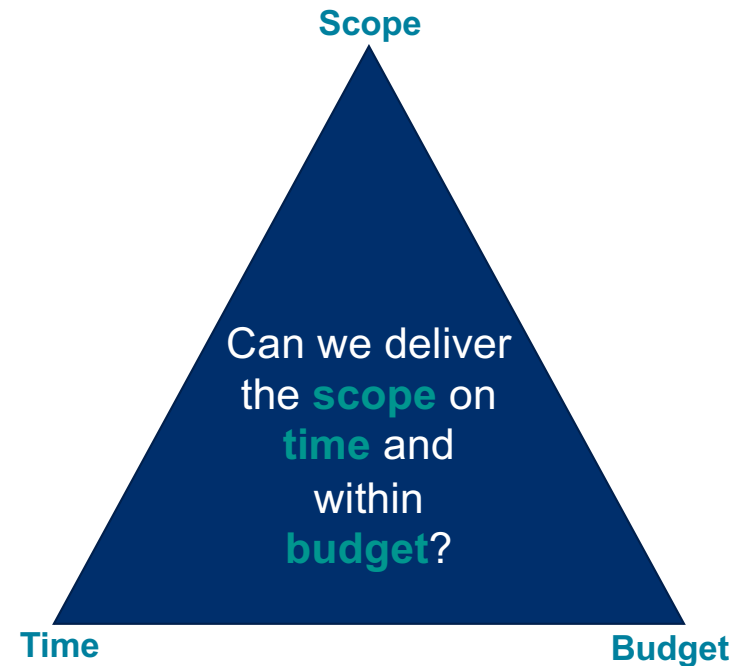
Agile backlog definition dramatically improves the accuracy of progress metrics



Refine the PMB to Meet Program Commitments

Possible adjustments:

- **Scope:** *Can the intent be met with less?*
Refine the following to reflect the understanding of work to be done
 - **Backlog item Acceptance Criteria** and/or **Definition of Done**
 - **Backlog item size** (story points)
- **Time:** *Can we get the work done earlier?*
Reduce timeline for completing work (**Backlog item planned end dates**) due to:
 - New understanding of scope (see above)
 - Refining the order of activities to drive earlier delivery of value
 - Eliminating **dependencies** to allow parallel/independent work efforts
- **Budget:** *Can we get the work done with less money?*
Reduce the budget allocated to work due to:
 - New understanding of scope (see above)
 - Ability for the work to be done by a **lower-cost resource**
 - **Automation** of certain tasks reduces the budget needed for a task



PMB change management is part of rolling wave planning, which supports **Baseline Change Request (BCR)** deadlines

Use metrics and agility practices to guide programs so they can meet their commitments



Closing



Summary: The Power of Agile Program Performance Management (PPM)

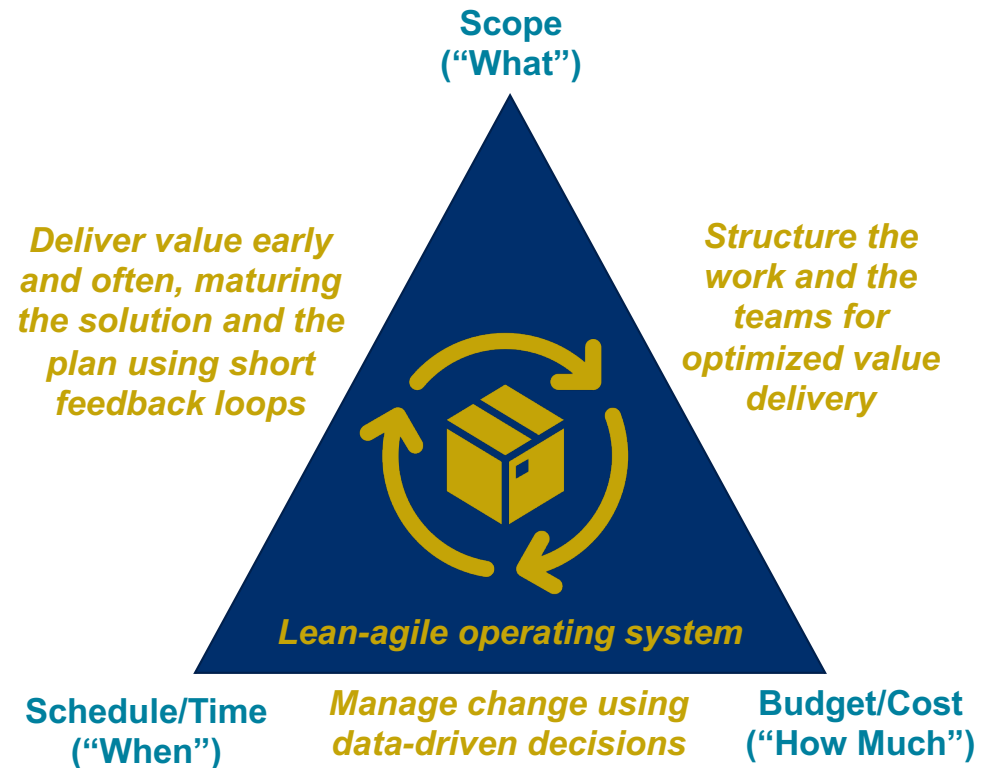
Enables programs to effectively track progress against scope, schedule and cost, as well as to pivot when needed

Supported by a lean-agile operating system

- Backlogs provide clarity of scope, priorities and effort
- Roadmaps and quarterly plans define incremental delivery plans
- Synchronized cadence and supporting meetings enable effective execution

Agile Earned Value Management (EVM) measures progress against a Performance Measurement Baseline (PMB) driven from an Agile Plan, improving accuracy.

PMB is managed as part of the agile operating rhythm, aligned with rolling wave planning



Enable programs to deliver innovative and affordable technical solutions on time and within budget



Resources

- National Defense Industrial Association (NDIA) Integrated Program Management Division (IPMD). (2022, December 9). An Industry Practice Guide for Integrating Agile and Earned Value Management on Programs: NDIA Agile EVM Guide. Version 1.4. Retrieved from https://www.ndia.org/-/media/sites/ndia/divisions/ipmd/division-guides-and-resources/2023/ndia_ipmd_agileandevmguide_version_1-4.pdf?download=1
- Lockheed Martin's Guidebook for Program Performance Management for Agility
- Lockheed Martin's Program Performance Management for Agility education

Q&A





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