Just-in-Time Mission Assurance: Leveraging Agile to Deliver MA Based on Value

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Introduction

- The Aerospace Mission Assurance Baseline

- The Agile MAB Process

- An Agile Case Study at Aerospace

- How we manage the Agile MAB process

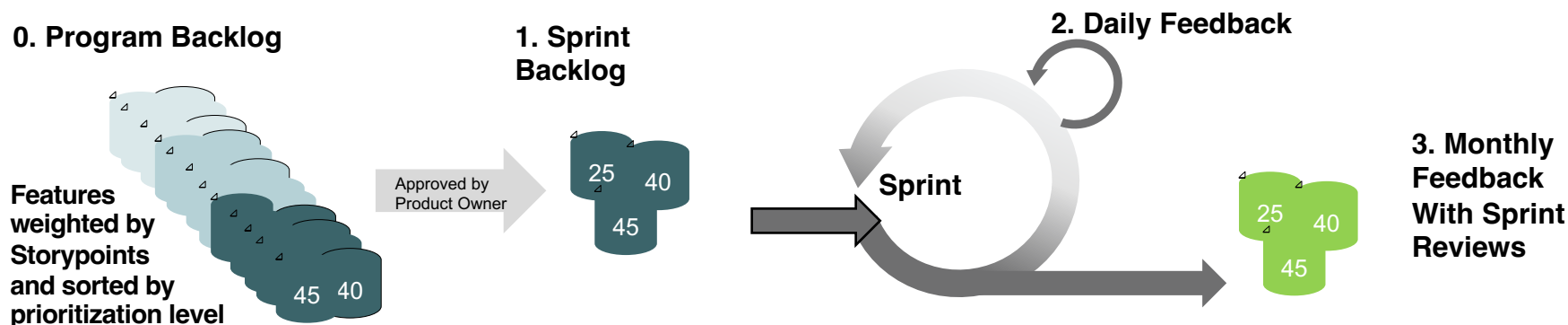- Benefits and challenges found using Agile to generate MA Tasks

Aerospace's Mission Assurance Baseline (MAB)

MAB and Agile MAB

- Mission Assurance Baseline (MAB)
  - *Configuration-controlled set of MA tasks*
  - *Cover a wide variety of categories including software development and cybersecurity*
  - *Performed to increase confidence toward achieving mission success for sat systems & associated ground systems*
  - *Includes the current Mission Assurance (MA) base approved by the Aerospace standards board.*

- The **Agile** Mission Assurance Baseline (Agile MAB)
  - *A set of MA tasks for those who use Agile Practices to develop software, hardware, or business capabilities*
  - *Who wish to use Agile to **develop** and/or execute their Mission Assurance tasks.*
  - *Output is integrated into original MAB to provide more current options for those programs who need it*

0. Program Backlog

Features weighted by Storypoints and sorted by prioritization level

Approved by Product Owner

1. Sprint Backlog

25 40
45

2. Daily Feedback

Sprint

3. Monthly Feedback With Sprint Reviews

25 40
45

The Agile MAB Process Overview

- Agile MAB process includes how one may best develop new content for the MAB
    - *Based on the Agile Manifesto and its principles.*
- New tasks and categories are developed via fixed iterations
- Supported by teams who use Scrum
- Some tailoring from Scaled Agile Frameworks Enterprise (SAFe) (the most popular large-scale framework)
- Tasks are developed in close partnership with stakeholders and/or users of the content.
- Differs in that previous contributions to the MAB were based on traditional development and planning methods.
- The current Aerospace MA Baseline is based on Waterfall development
- Has not previously been updated with more modern Agile or hybrid-developed ideas.

Collaboration with stakeholders/users ensures Agile tasks drive program success and efficiency

Case Study: OCX 3F using the Agile MAB
A gap is found

- OCX 3F is an ongoing Government program that is using Scaled Agile (SAFe) for software development.
- OCX 3F Mission Assurance Plan includes a Program Overview and lists standard Mission Assurance Activities.
- Includes:
  - *Description of the use of the corporate Mission Assurance Baseline (MAB)*
  - *All the legacy MA tasks selected by the program from the MAB expected to best support the program.*

- Initially, the available list of MA tasks in the MAB only covered software items that were being developed via traditional waterfall methods.
- There was a gap here for programs expected to use Agile.

All Phases	All Evals	
Program Office Task Name ▲	MAB Task No ⬍	Product ⬍	Planned Evals
Assess alignment with Kanban standards for backlog management (Kanban framework only)	0-1001 (2.10)	Ground	Demo ASMR
Assess alignment with SAFe standards for backlog management (SAFe framework only)	0-1001 (2.10)	Ground	Demo ASMR
Assess backlog centralization, visibility, and readiness	0-1001 (2.10)	Ground	Demo ASMR
Assess backlog close-out	0-1001 (2.10)	Ground	Demo ASMR
Assess backlog created to date and overall health	0-1001 (2.10)	Ground	Demo ASMR

Sample from Agile MAB section on Backlog Creation and Management

Origins of Agile MAB
Area of opportunity is identified

- Aerospace launched effort to create new groups of tasks for the Mission Assurance Baseline.

- This team is referred to as the **Agile MAB Team**.

- Initial topic areas identified for creating these new MA tasks were high level categories new to Aerospace and Government software development programs:
  - *DevSecOps*
  - *Cloud Instantiation*
  - *CI/CD*
  - *Scrum*

MA Ground Development-iMAT Revision and Update
Created by Allison S Gion, last modified by Laura J Remington on May 17, 2022

✅ **Welcome to the Agile MAB Confluence Space!**
The Agile Mission Assurance Baseline (Agile MAB) is a set of guidelines for those who use Agile Practices t

MA Ground Development ☆

📅 Calendars

〽 Analytics

Welcome to the Mission Assurance Confluence Site! Our mission is to ensure that the Mission Assurance Group can help you get the right tools and the right products to help you achieve Aerospace's mission of helping our customers.

PAGE TREE

› Deliverable Repository

› Work in Progress

› References

› Weekly Scrum Meetings

› Retrospectives

› Increment Planning

• File lists

The Agile MAB Confluence site.

Using Agile to Support Agile Tasks

- A Scrum process was adopted to help deliver the Agile-related content.

- A sprint team was formed. *(4-week sprints)*
  - *Team includes members of customer team*

- Jira is used for tracking tasks.

- Confluence is used for sharing the delivered content to other departments.

- Sprints are grouped into Program Increments.
  - *Four sprints per Increment*

- Program Increment Planning sessions are held prior to the start of each Program Increment
  - *Lasts roughly 3 hours – much lighter than typical PIP*
  - *Used to demo what was completed, plan for what's next*
  - *Advertise to other programs looking for help with Agile MA*
  - *Identifies what's most valuable to the customer*
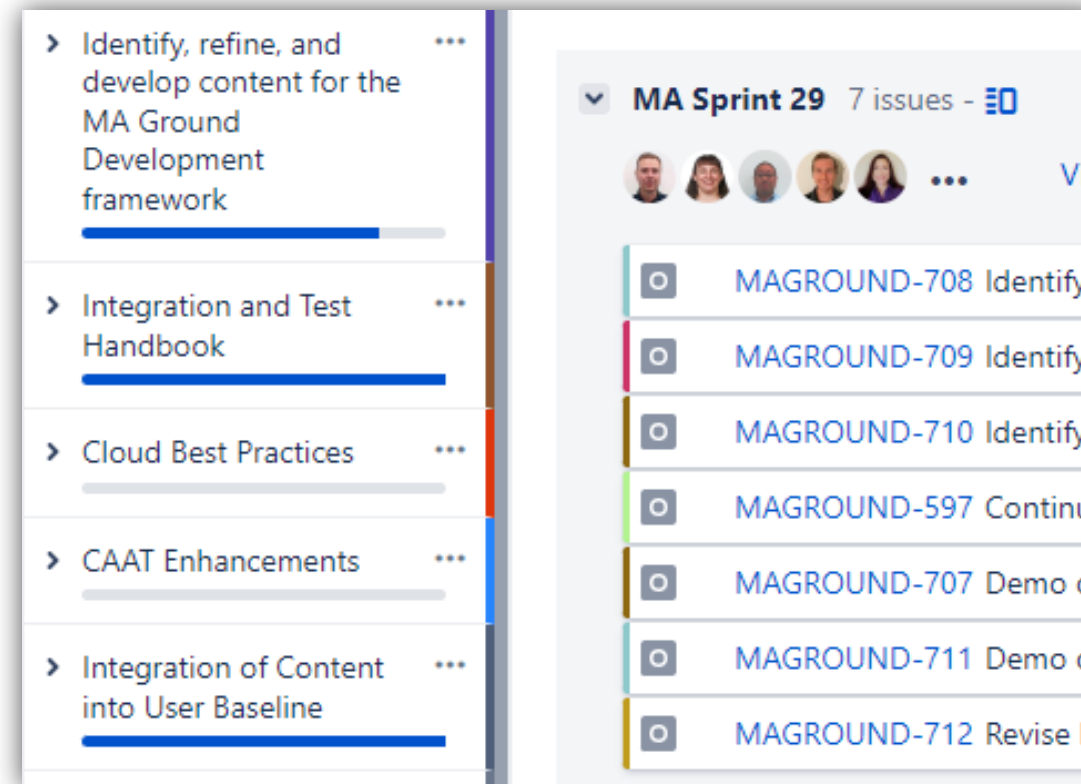
Jira is used for backlog and sprint activities.

Agile MAB / OCX Integration

- Agile MAB team looked to identify programs within Aerospace that might benefit from incorporating Agile MA Tasks.

- The OCX 3F program fell in this category since it was using SAFe (Scaled Agile Framework)

- New Scrum-related MA Task categories reviewed with OCX 3F program office
  - *Some tailored to better fit how OCX 3F was working with their development contractors*

- These categories included:
  - *DevSecOps*
  - *Cloud Instantiation*
  - *Lean-Agile Mindset (Agile Culture)*
  - *Agile Change Control*
  - *Agile Product Value Estimation*
  - *Agile Backlog Creation and Management*
  - *Agile Events (Meetings)*
  - *Agile Relative Estimation*

Agile MAB Documentation

- Individual tasks, best practices, and reference material for each category is maintained in Confluence.

- The Tasks are also integrated into the MAB where they can be accessed by other Aerospace programs.

- Individual programs can generate a tailored version of the complete MAB by going through the iMAT Tool and identifying only those MA topic areas that apply to their program.

- Other programs are beginning to see value in this and approaching Agile MAB Team for their own MA needs.

- These programs provide their own SMEs into the Scrum team as well as funding.

5.1.1.c - Lean-Agile Mindset (Agile Culture)
Created by Jason P McKenney, last modified on Aug 29, 2022

5.1.1	Agile Development Approach and Methodologies	Agile development approaches and methodologies include but are not limited to; Agile, Scrum, SAFe, and Kanban. Activities within these frameworks include corresponding lexicons, terminologies, iterations, teams, tools, pipelines, milestones and cadences. - Aerospace Webinar: Agile Planning and Program Management September 2020
5.1.1.c	Lean-Agile Mindset (Agile Culture)	The Lean-Agile Agile Mi... practitioners who embra... harnesses the best of ho...

Best practices to consider include:

- 1.1.c1 Assess **references** within this section of the Mission Assurance Baseline (MAB)
- 1.1.c2 Assess program enterprise for **Agile Readiness**
- 1.1.c3 Assess **participating vendor**s or outside personnel necessary for the completion of work

Tasks to check:

- 1.1.c1-1 Ensure **reference material is centrally published** to Program Lead(s) and other team members who influence team members on Lean-Agile Mindset and Agile Culture initiatives
- 1.1.c1-2 Ensure **Program Lead(s) review the references** within this section of the MAB related to Lean-Agile Mindset (Agile Culture) in entirety

Tasks documented in the Agile MAB Confluence site.

9

Benefits of using Agile to create MA Tasks

- Programs able to easily suggest additional MA topics/tasks needed in support of their program.

- They have the freedom to suggest categories they deem most valuable.

- For planning, the Jira Backlog view allows customers to see what's allocated to the upcoming sprints and the entire backlog.

- Documenting findings in Confluence for easy access and sharing.

- Jira allows you to see Issues linked to other Issues or grouped via Epics or Releases.
  - *If a customer doesn't remember where something is, they can always go to the Epic and trace their way down to find it.*
  - *Easy to break work into smaller pieces and maintain traceability if a task is too large for a sprint or needs to be divided among team members*

- Dashboards provide a quick overview of the work: What individual scrum team members are responsible for. It's easy to see if you have someone overloaded.

- New MA Tasks can be created and integrated into a program's MA Plan much quicker than in the past.

- The tool is intuitive and easy to use. It facilitates planning and an understanding of progress and path forward.

Challenges of the Agile Process

- Agile process is not exempt from traditional challenges on programs
  - *Bandwidth limitations due to team members commitments to other programs.*
  - *Dealing with roadblocks stemming from external sources (approvals, competing priorities)*
  - *Funding challenges due to perceived value.*
  - *Remote team members.*

- Tailoring Scrum and SAFe concepts to fit deliveries of non-software deliverables.
  - *Documentation, Spreadsheets, Content generation, etc*

- Initial orientation for new team members assigned Agile tasks is required

Q & A

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