DOC Acquisition Agile Program and Project Management Guidebook

June 2024

Version 1.1

CHANGE LOG

The following table lists the changes to the Guidebook following its initial posting.

Revision Number	Date	Log of Changes Made and Description of Reason Changes	Approved By
1.0	14 Dec 2023	Finalized and published initial framework, Guidebook, and artifacts	D. Bare, OAM
1.1	14 June 2024	Incorporated feedback from NOAA and Census. Adapted work hierarchy (to Program> Epics> Features> Stories). Incorporated GAO Agile guidance, including approach to EVM. Updated guidance based on bureau feedback.	D. Bare, OAM

DOC Acquisition Program and Project Management Guidebook Contents

1. OVERVIEW

1.1. BACKGROUND

The Department of Commerce (DOC) makes acquisitions of all sizes for a variety of programs, from routine to complex, mission critical programs and projects (within this document we will use the term "program" for ease of use to apply to both programs and projects of all sizes and scope). Programs may follow either a predictive/waterfall methodology or an Agile methodology. Either way, programs have similar considerations that drive successful acquisitions and outcomes (e.g., understanding mission needs and gaps, evaluating alternatives). However, programs following an Agile methodology require a distinct approach to value delivery that impacts initiation, planning, and execution. The policies, processes, tools, and artifacts for Agile programs will be distinct from those of traditional/predictive/waterfall programs. Programs following the latter methodology should understand and leverage the Predictive Framework and Guidebook.

In recent years an increasing number of programs with complex and evolving/emerging needs have adopted more adaptable methodologies to deliver value near-term, incrementally, and iteratively (see Figure 1).

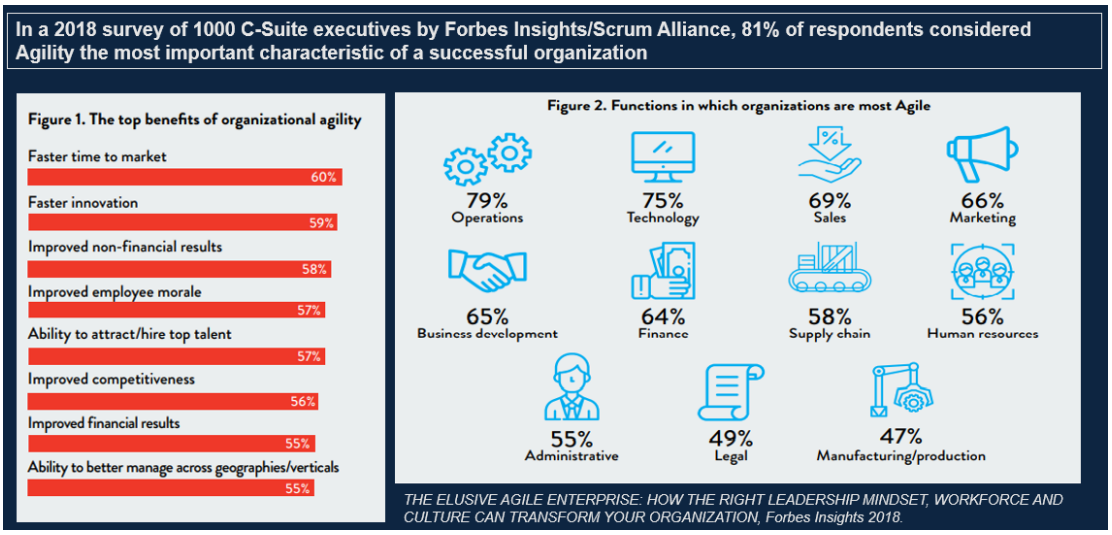

Figure 1: Agile Benefits and Usage

The growth in Agility resulted in the need for program management and acquisition guidance aligned both to industry and to Agile product and service delivery.

1.1.1. WHAT IS AGILE?

Agile is a mindset for a customer-centric approach to managing organizations, projects/programs, and products/services. Agile focuses on early, iterative, incremental, and continuous delivery of value. Agile centers on adaptability and responding to changing priorities to maximize value to customers/end-users (see Figure 2).

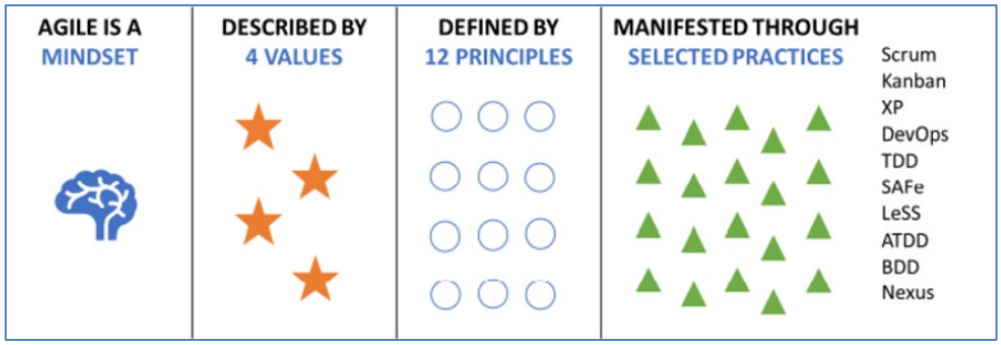

Figure 2: Agile Mindset, Values, Principles, and Practices

The Agile Mindset is comprised of four Agile Values (see Figure 3).

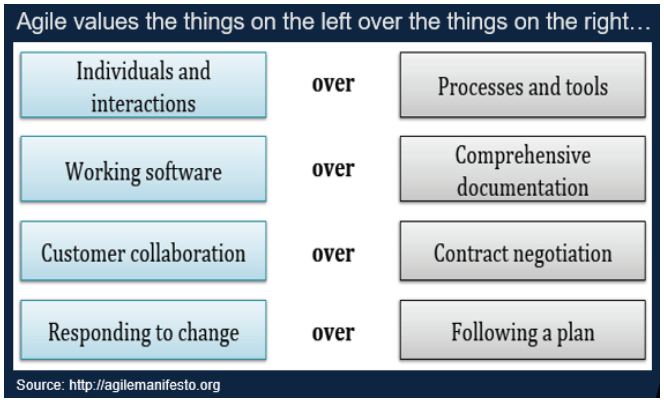

Figure 3: Agile Values

Agile Values are supported by the 12 Agile Principles (see Figure 4).

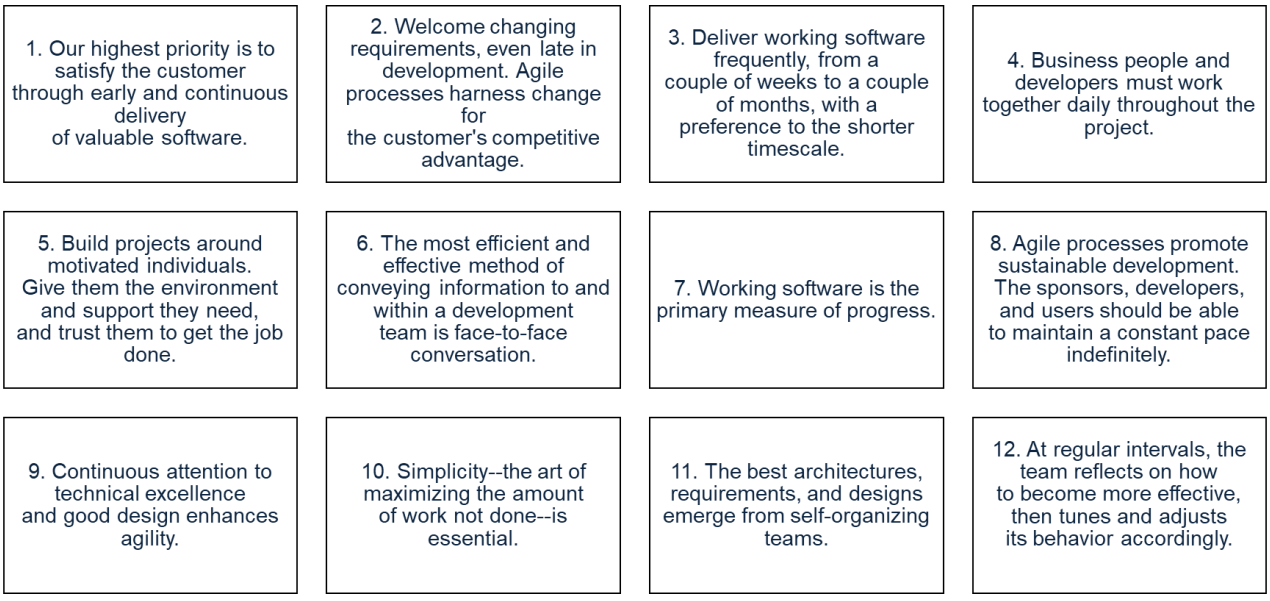

Figure 4: Agile Principles

Agile values and principles are reinforced through Agile practice. The most common and widely used Agile practice is Scrum, especially for Teams new to Agile. Scrum is widely adopted, used as a basis for many other Agile practices, and is foundational for most approaches to scaling Agile (e.g., SAFe, LeSS, Scrum of Scrums). In recognition of this, the Office of Acquisition Management (OAM) highly recommends that Agile programs follow a practice with foundations in Scrum, especially for programs relatively new to Agile. Scrum requires distinct roles, ceremonies, and tools (see Figure 5) that supplant those commonly used for predictive/waterfall program management.

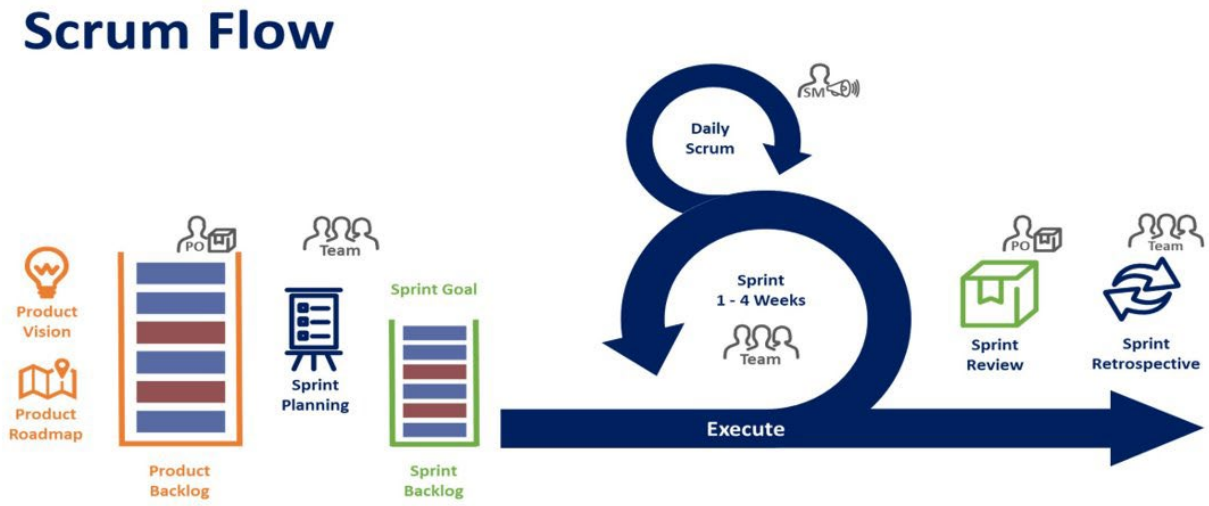

Figure 5: Overview of Scrum Practice

The OAM developed the Agile Framework to provide a clear path, process, and set of artifacts to meet the needs of Agile programs. OAM advisors will also collaborate with programs to improve Agile program management processes, best practices, and delivery of desired outcomes. Further, the OAM highly recommends that mission critical programs leverage an Agile Coach to ensure successful adoptions and continuous improvement to mature Agile practice.

Agile work is typically structured around products and services that generate value to customers and end-users. The emphasis is on allowing requirements to adapt based on new learning and evolving customer/end-user needs. Agile follows similar approaches to design, build, test, and release but moves at a faster pace with smaller batches of work. This allows Agile programs to release value in short, timeboxed increments (e.g., 3- to 6-month releases) and iterations (e.g., 2-week Sprints). Agile lets programs get value in the hands of customers/end-users, capture feedback from them, and adapt using that feedback to maximize future value (see Figure 6).

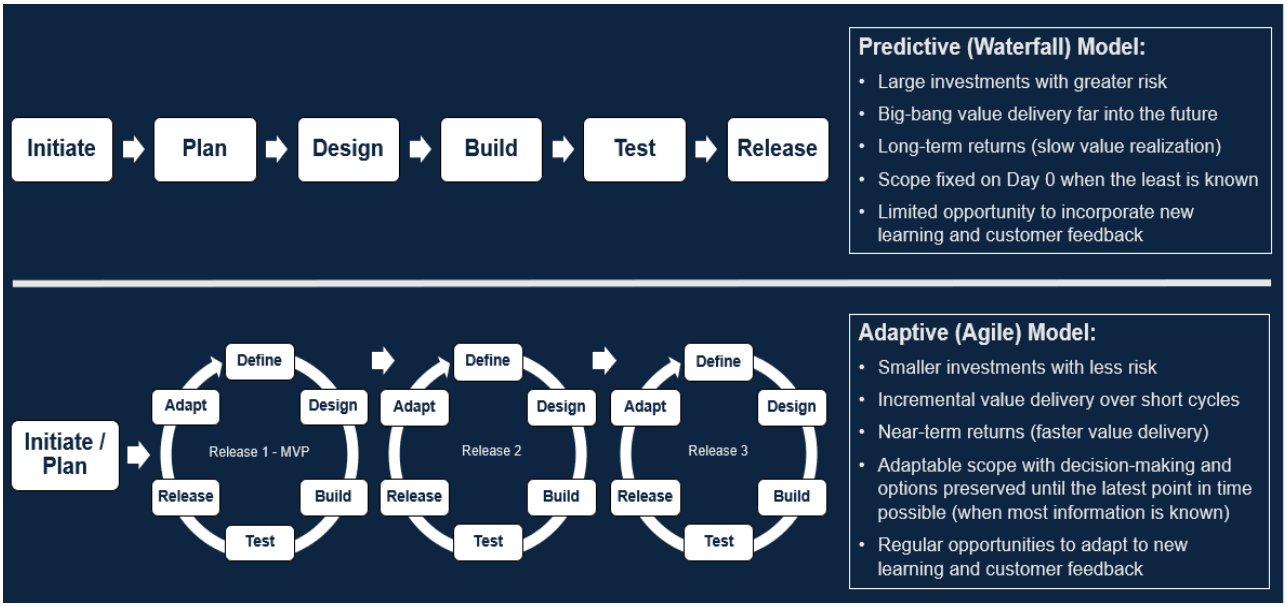

Figure 6: Agile Versus Predictive

This requires Agile programs to structure work items to be independent, to deliver value when completed, and to be deliverable within distinct timeboxes. At minimum, three labels of work items (i.e., those that populate Roadmaps and Backlogs) must be established for Agile programs to operate and deliver value effectively: a work item that spans multiple releases, a work item that can be delivered within a single increment/release, and a work item that can be completed within an iteration/Sprint. The labels for these work items may vary from program to program based on Agile methodology and tools utilized. What is important is that the program has consistent labeling for each work item that aligns to each of the timeboxes for value delivery, labels align to Agile practice/tools, and labels are well understood across the program. Work should be structured to be independent (i.e., to deliver stand-alone value with minimal dependencies) and to deliver value when completed. The OAM recommends leveraging the commonly used work hierarchy provided in Table 1. Programs may adapt based on the Agile practice and/or tool leveraged, but need to provide the OAM with the work item labeling approach they intend to use for their program.

Timebox	Hierarchy Example	Notes
Ongoing, Continuous	Epic	Continuously evolves and exists until no longer valued/invested in/disposed of.
Released in <=1 Increment (e.g., 3–6 months)	Feature	Completion of underlying Stories for this work item should result in releasable value. Each of these work items may be swarmed by a Team until completion.
Releasable in <=1 Iteration (e.g., 2 weeks)	Story	Stories when completed (“Done”) may be released to generate value for customer/end-users.

Table 1: Structuring Work for Agility

Agile programs should focus on routinely releasing smaller batches of value to customers and end-users over short-term timeboxes. This approach to value delivery allows the value delivered into a production environment and the progress against commitments made by the Team to guide regular assessment of program performance.

Agile focuses on continuous evolution and maintenance of products and services in a manner that is very distinct from predictive/waterfall approaches to project management. In predictive/waterfall project management, the scope is fixed and then broken down into tasks/activities necessary to deliver that fixed set of requirements. This leads to estimates for cost and schedule centered on the delivery of those fixed requirements. The measure of success becomes delivering those fixed requirements on time and on budget.

Agile flips the iron triangle of scope, cost, and schedule (Figure 7). Agile attempts to fix schedule by establishing short, fixed increments or release cycles. Value is continuously delivered along these increments, utilizing resources dedicated to the delivery and maintenance of a specific product, service, or Epic. Eliminating resources that are regularly matrixed in and out not only helps fix the cost structure but allows Agile Teams to continuously improve value delivery. Fixing schedule and cost makes it easy for requirements to adapt as needed to maximize value for stakeholders. It also shifts estimating efforts to focus on the amount of value that can be delivered within each fixed increment utilizing a fixed set of resources. Agile programs can learn from value assessment and Team performance data to periodically reconsider investment needs.

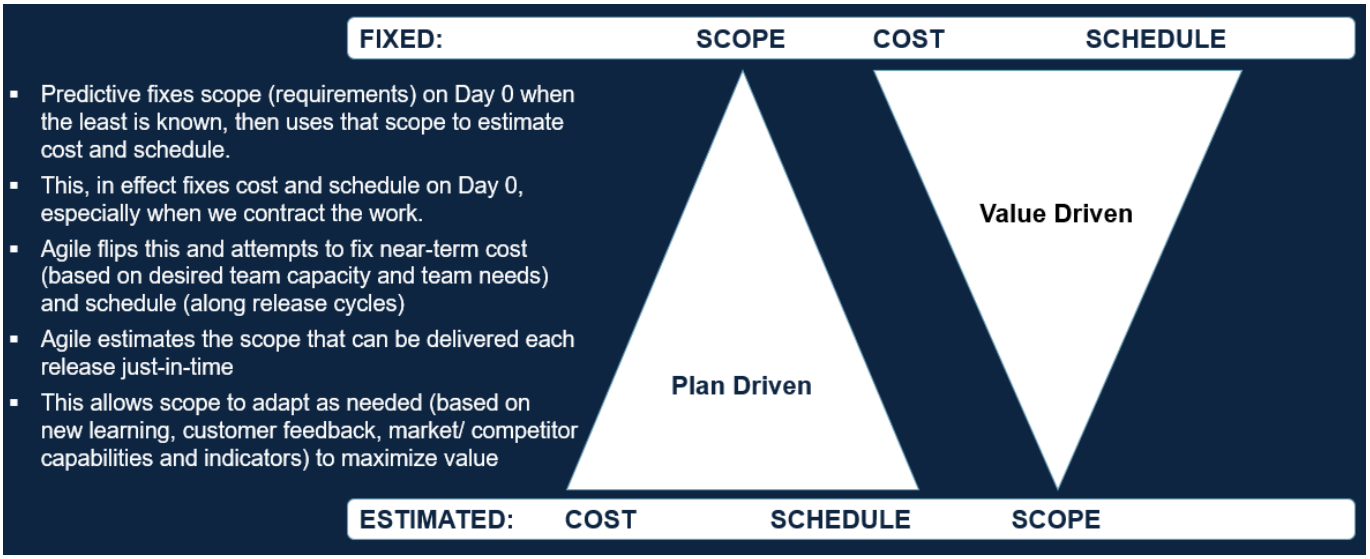

Figure 7: Agile Flips the Iron Triangle

1.1.2. WHY AGILE?

Agile helps deliver the benefits above by:

- Leveraging engineering best practices applied incrementally to a smaller set of work.
- Delivering value incrementally, which lets programs adapt future requirements to maximize future value based on new learning and customer feedback.
- Allowing each release to operate as a reflection point to make data-driven micro-investment decisions. This results in multiple near-term reflection points over time.
- Taking cues from lean manufacturing to ruthlessly eliminate waste.
- Reducing uncertainty and risk through near-term and continuous value delivery.
- Pushing authority and decision making down to the Team level (where the information is).

Some additional benefits that help overcome common predictive/waterfall challenges include those listed in Table 2.

Element	Predictive (Waterfall) Norm	Resulting Challenge	Agile Solution and Benefits
Mindset	**Success = Adherence to the plan.** Emphasizes delivering all Day 0 requirements on time and at budget.	*The product/technology lifecycle continues to shrink and Teams need to regularly adapt to new learning, customer needs, and competitor capabilities.*	**Success = Maximizing value delivered and improving Team performance.** Feedback is routinely captured to adapt scope to maximize value.
Scope/ requirements	**Scope/requirements defined for multiple years on Day 0, when very little is known.** They are then used to estimate cost and schedule and contract vendors (which locks in requirements).	*Fixing scope early when the least knowledge is available about the product reduces opportunities to maximize value and increases the threat of building obsolete/low-value requirements.*	**Scope and requirements constantly evolve to maximize value.** The Product Owner (PO) routinely prioritizes, adds, and deletes requirements based on emerging customer/end-user needs, new learning, advances in technology, and evolving competitor capabilities.
Cost	**Exhaustive upfront analysis for initial investment because it is risky and spans multiple years.** Future investment decisions hinge on delivering at or under baselined budget.	*Attempting this on Day 0 (when the least information is known) greatly increases risk, reduces incorporation of new learning, and shifts focus to complicated cost estimation/management over maximizing value.*	**Smaller, incremental investments are less risky and value delivery data guides future investments.** Future investment is driven by assessment of product value and Team performance.
Schedule	**Exhaustive upfront long-term planning detailing sequenced tasks/activities required to deliver each and every requirement.** Durations for tasks/activities are estimated in multi-year integrated master schedule (IMS).	*Attempting this on Day 0 (when the least information is known) greatly increases risk, reduces incorporation of new learning, and shifts focus to micro-managing due dates over maximizing value.*	**Long-term Roadmaps set value-based targets, allowing the Team to focus on detailed near-term increment planning.** Value is delivered along fixed increments, POs determine "what" will be delivered, and Teams are trusted to determine "how" and efficiently deliver.
Defining and delivering value	**Value is assessed once at project initiation and rarely reassessed.** Initial assessment of value determines the scope that is delivered big-bang multiple years into the future.	*Business value changes over time but Teams build based on fixed Day 0 requirements. This generates significant risk that customers will not value what is built.*	**PO routinely assesses value and prioritizes work accordingly.** Routine user engagement, feedback, and value assessments guide future effort.
Leadership focus	**Top-down management**: **Managing Teams** to deliver defined scope at a set schedule and budget developed with the highly detailed tasks provided by the Team explaining each step to be performed.	*Does not empower and trust the Team. Ignores emerging customer needs, new learning by the Team, and evolving competitor capabilities.*	**Servant leadership**: **Empowering Teams** to figure out what is valuable and how to best deliver it.
Team focus	**Adhere to the long-term plan and satisfy phase-gate approvals.** Effort is invested in product documentation to satisfy phase-gates and	*Plan adherence may not equate to delivering value. Phase-gate approvals require significant LOE that distracts the Team from delivering a valuable product.*	**Adapt requirements to maximize value delivered and improve value delivery.** Effort focuses on delivering a valuable product and minimizing

Element	Predictive (Waterfall) Norm	Resulting Challenge	Agile Solution and Benefits
	progress to long-term, big-bang delivery.		administrative work that distracts.
Release (value delivery)	**Big-bang, multi-year delivery after a black box build.**	*Sponsors make big upfront investments and wait a long time for value delivery.*	**Value demonstrated and delivered incrementally in the shortest time possible**, which generates feedback to guide future effort.
Customer feedback/ collaboration	**Heavy focus at the beginning (requirements capture) and at the end (user acceptance testing)** generates risk of significant rework and/or unsatisfied customers.	*Long delivery times and minimal customer engagement throughout result in a disconnect between what the customer initially requested and what they need now.*	**Regular customer/user engagement and collaboration to maximize value.** Demonstration of a working product at the end of each increment generates fast feedback to guide future direction.
Risk/ uncertainty	**Locking in requirements over the long term on Day 0 increases uncertainty, complexity, and risk.** Teams may fail to meet customer needs but won't be aware of it until the end of the project.	*Delivery over the long term generates significant uncertainty, risk, and complexity, resulting in the need for large contingency/management reserves and a greater risk of failure.*	**Incremental delivery in smaller batches reduces uncertainty, complexity, and risk.** A shorter timeframe results in less risk, more information about each risk, and less required contingency funding.
Team structure	**Subject matter experts (SMEs) with specific knowledge/skills that are matrixed and not highly interchangeable.** Team members typically borrowed from functional areas and matrixed in when necessary.	*Single points of failure and capacity challenges for specific resources can severely impact progress.*	**Dedicated and enduring Team members with complementary but also similar skill sets so any Team member can tackle most Stories within the backlog for a particular Epics.** This helps Teams avoid single point of failure, continuously improve, and maintain high performance.
Testing and evaluation	**Extensive effort put into developing test planning documents, manually performing multiple rounds of end-to-end testing.** Test and evaluation (T&E) are engaged once all development/build activities are completed.	*Multi-year build effort and manual testing increases LOE/time required, complexity, and risk. Multiple testing cycles increase LOE substantially because each requires a full manual testing effort.*	**Incremental releases and automated testing reduce testing LOE, complexity, and risk.** Developers build automated tests as part of the normal build cycle and definition of done.
Quality	**Quality assessed when big-bang delivery occurs.** There is a disconnect between build activities and when quality is assured. Multi-tasking, deadline-driven development, and manual testing are norms.	*The sequential nature of software development lifecycle and necessity that all requirements are completed before T&E may result in substantial rework. Multi-tasking, pressure to meet deadlines, and manual testing further erode quality.*	**Quality assessed routinely as smaller increments are delivered.** Incorporating fast feedback, automated testing, continuous improvement, and work in progress limits results in higher-quality work.

Table 2: Agile Solutions to Inherent Waterfall Challenges

However, it is important to note common Agile challenges, which include those listed in Figure 8.

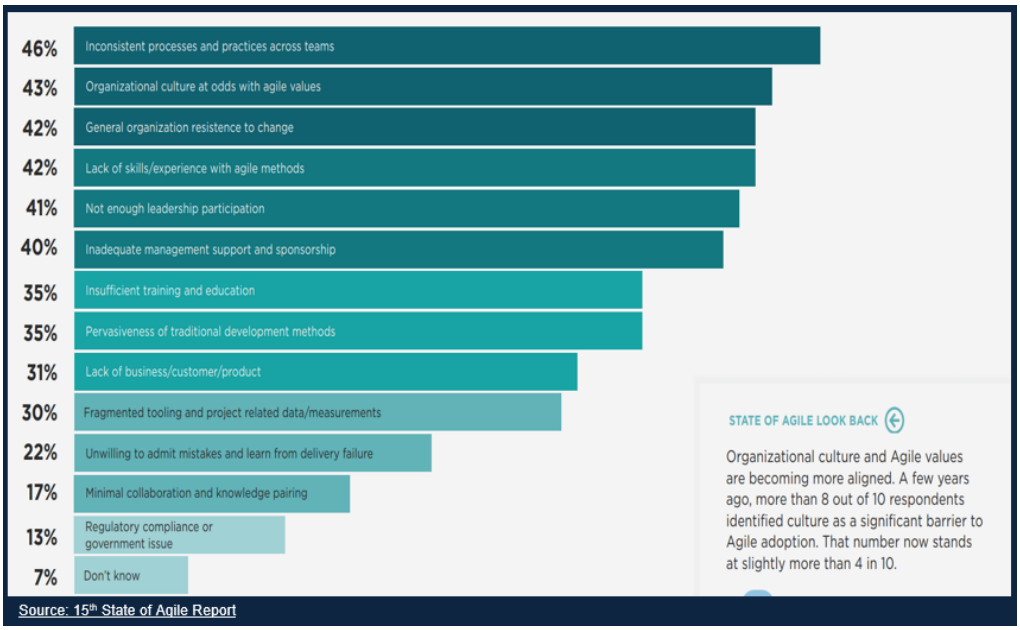

Figure 8: Challenges from the State of Agile Report

Many of the Agile adoption challenges are most effectively addressed by:

- Defining the rationale/burning platform for Agility.
- Identifying champions to help ensure leadership buy-in.
- Aligning to common practices/tools/metrics.
- Ensuring everyone is trained and maintaining ongoing Agile coaching.
- Letting action drive cultural change.

Agile acquisition and contracting typically requires a distinct approach from predictive waterfall practices primarily due to the need to adapt requirements and the incremental nature of Agile value delivery. Agile acquisition and contracting may result in:

- Smaller, more modular contracts.
- Shorter-term contracts with options to renew.
- Competition instead of single-award or prime with subs.
- Acquiring delivery capacity (to allow requirements to adapt) instead of acquiring for a fixed set of requirements or a completed product.
- Government ownership of the means of production instead of contractor owned/provided.
- Leveraging customer/end-user value assessment and Team performance data to assess renewal.

The distinction between contracting approaches is provided below:

Predictive Waterfall Contracting	Agile Contracting
Solicitation/Contract Award	
• Detailed technical and system requirements included in solicitation • Contractors propose a technical solution to meet required capability, as well as estimated cost and schedule • Contract is awarded based on strength of proposed technical solution to deliver all requirements, as well as cost and schedule estimates	• Product Vision and Roadmap included in solicitation that provide only a high-level view of desired capabilities/ functionality to be delivered over time • Contractors propose development approach, development team structure, and number of teams to achieve the desired capability evolution per the roadmap • Contract awarded based on strength of proposed software development approach (e.g., adaptable, incremental value delivery), ability of proposed team structure to deliver desired capabilities effectively and efficiently
Contract Execution	
• Contractor delivers fixed requirements provided in solicitation and included in awarded contract • New / modified requirements may require contract renegotiation • Work product is tested and delivered at completion of long and linear development phases (years into the future) • Contractor performance is measured by adherence to plan (delivering fixed requirement per the estimated schedule and budget)	• Contractor delivers whatever requirements are specified by government Product Owner • Requirements are routinely modified, added, reprioritized without the need for contract renegotiation • Work product (value) is tested and delivered incrementally and routinely via pre-established release cycles • Software is tested and demoed to users during sprints and incrementally delivered as releases • Contractor performance is measured primarily by value, as well as ability to adhere to fixed schedule and budget

Over the past decade, the DOC has invested considerable time and effort to gain a deep understanding of a variety of industry and government standards and best practices in program initiation, planning, and acquisitions. The DOC has leveraged this knowledge to assess and enhance its ability to successfully evaluate and support program initiation, planning, and acquisitions for Agile programs. The result is a distinct Agile Framework, Guidebook, and artifacts to support programs leveraging the Agile methodology. Because many Department programs may have more experience with predictive/waterfall methodologies and Agile may be a relatively new methodology for them, the following section of this Guidebook acts as a primer to discuss the Agile methodology and distinctions between Agile and predictive methodologies.

1.2. AGILE FRAMEWORK APPROACH AND OUTCOMES

The Agile Acquisition Program Management Framework (the Agile Framework) provides guidance and information needed by Department and Bureau program managers (PMs) to conduct effective and efficient acquisitions for Agile programs. The Agile Framework, as elaborated in this Guidebook, prescribes a disciplined, repeatable, and comprehensive acquisition management process by which the Department manages programs, particularly those that are mission critical. The Agile Framework has similar objectives and artifacts to the predictive pathway but places a greater emphasis on the aspects noted below, which results in a distinct approach to artifact production and content:

- Structuring work to release value incrementally along prescribed release cycles/product increments.
- Near-term planning over long-term planning.
- Adaptable requirements.
- Iterative (changing and evolving) value delivery.
- Utilization of dedicated resources to support the product or service.

This Guidebook supports Departmental policy and guidance to address what is described as “Big A” acquisition (see Figure 9), which focuses on the entire set of decisions and processes that must occur to properly synchronize

requirements, resources, and procurements to deliver required products or services. It is meant to supplement existing federal and Department regulations and guidance in support of procurement and contract-related activities ("Little A"), prescribed by the Federal Acquisition Regulation and executed by the Senior Procurement Executive, which focuses on pre-solicitation planning, contract development, source selection, and contract administration activities.

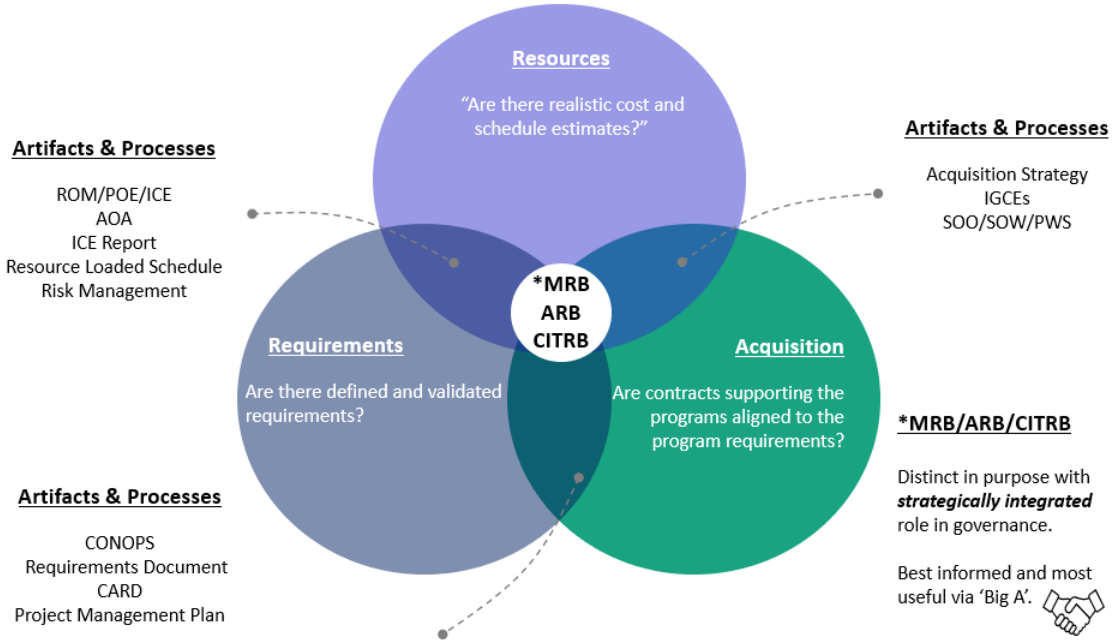

Figure 9: "Big A" Acquisition Model

The Agile Framework defines the acquisition program management phases and major decision milestones required to manage the progression of those phases (see Figure 10) from initiation through disposal. The Agile Framework's integrated, structured approach is the required process developed specifically for the Department's mission critical programs, but its principles may be scaled appropriately and applied to any other DOC program.

The lifecycle begins with the identification of mission requirements/needs/threads to support strategic goals and objectives, proceeds with the determination of the best solution for meeting those requirements, and then directs the acquisition of that solution in the most efficient and effective way. In essence, this first ensures the program is "doing the right things," and then validates programs are "doing things the right way." The Agile Framework is specific about what activities need to be accomplished during each acquisition management phase and what information and artifacts are required at decision milestones. Additionally, there may be specific requirements based on program type applicable to meet the unique requirements of those disciplines.

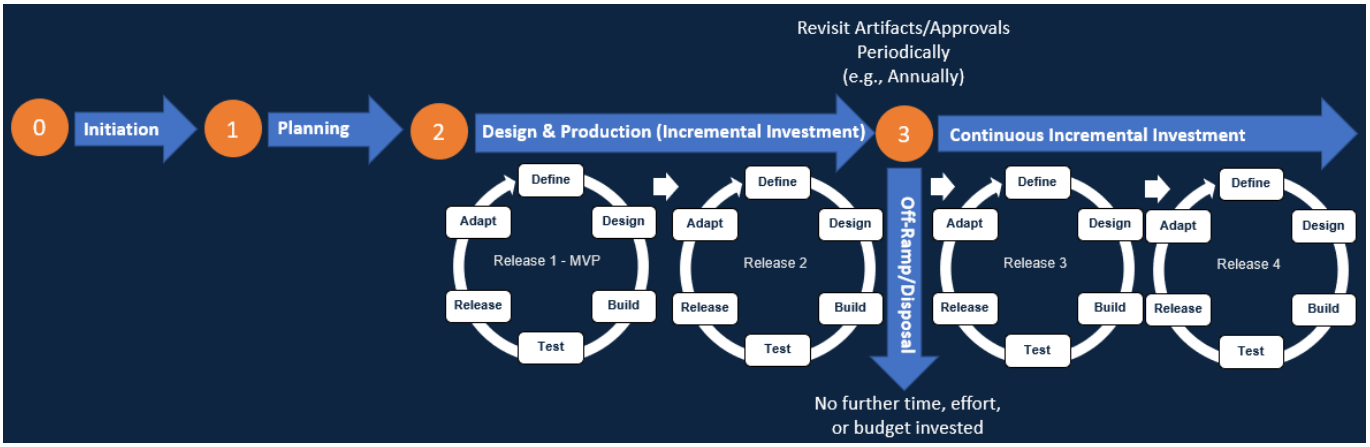

Figure 10: DOC Agile Acquisition Program and Project Management Framework

The Agile Framework:

- Describes the minimum standard of processes, artifacts, and reviews at program milestones to which all mission critical programs must adhere.
- Describes the minimum standard of processes, artifacts, and reviews at program milestones that all non-mission critical programs should consider adhering to.
- Defines the program milestones when formal reviews will be performed.
- Provides for a Milestone Review Board (MRB) to approve those programs for Milestones 1 to 3 and ongoing reviews annually thereafter.
- Is tailorable and scalable based on the program's objective, size, complexity, and risk.
- Describes the principles of a lifecycle approach to managing acquisition programs.
- Highlights incremental acquisition and annual reviews and check-ins with the program.

Note that the focus of the Agile Framework and its implementing policy is on the early phases of the process (Initiation and Planning). In the past, many of the early steps were ignored or minimized, leading to problems (e.g., major scope changes, need for significant additional time/budget, performing acquisitions without the consideration of a variety of alternatives, lack of acquisition strategy) found later in the Design and Production phases. Focusing on the early phases prevents a multitude of problems when in operations and considering disposal. When the processes included in the current Agile Framework become part of the Department's normal practices and culture, the Agile Framework will be expanded to include more detail on operations and disposal.

1.3. APPLICABILITY AND TAILORING

The principles outlined in the Agile Framework apply to all DOC programs and projects that choose to operate in an Agile fashion, but strict adherence to the Framework is required for mission critical programs. The definitions for program, project, and level of effort activity are provided below. As mentioned previously, we will leverage the term "program" to apply to both programs and projects throughout this document. Also note that the Agile Framework does not specifically apply to level of effort activities (although many of the program management principles expressed here could apply to them).

- ***Program**:* A consolidated effort to achieve a defined goal that includes a collection of ongoing activities, as well as finite projects, with objectives that achieve a specific purpose or outcome of a Departmental

strategic goal or as required by statute or regulation; a collection of projects that have objectives that achieve a specific purpose or outcome of a DOC Strategic Plan goal or as required by statute or regulation.

- ***Project**:* As noted in the DAO-208-16 Policy, "a collection of discrete activities, acting as a system, with specific output that achieve a clearly defined objective and support an overall program goal." Projects have a finite duration with a clearly defined start and end.
- ***Level of Effort Activity:*** As defined in the DAO-208-16 Policy, a funded activity that does not meet the definition of a program or project. It may have some of the characteristics of a project or program, but not all. These activities are usually the ongoing efforts of an organization. An example would be routine, recurring headquarters management activities.

Programs and activities that are "high risk", "high dollar," or that received a "special designation" are considered "mission critical" and subject to Department-level MRB oversight (including milestone reviews). Programs fall into these categories if they meet one or more of the criteria listed in Figure 11. The MRB reviews each program by milestone and provides a collective vehicle for members to review a mission critical program and execute their individual approval authorities. The MRB is the authorizing body that conducts reviews to:

- Provide approval to proceed to the next phase/milestone or feedback on remediation steps required before the program is approved to proceed to the next phase/milestone.
- Approve procurements planned for the next acquisition phase (both information technology (IT) and non-IT).
- Increase the likelihood of program success (i.e., timely completion within budget, identify and mitigate program risks).

The OAM, as the Acquisition Framework Executive Secretariat, publishes a list of mission critical programs annually to track programs, projects, and activities that may be subject to MRB review. This list is published in the Program Management Community of Practice. Note that the criteria in Figure 11 are consistent with the Mission Critical Criteria developed in the DOC Enterprise Risk Management methodology.

PROGRAMS ARE MISSION CRITICAL IF DEEMED HIGH RISK, HIGH DOLLAR, OR BY SPECIAL DESIGNATION	
"High Risk" programs warrant special attention due to meeting one or more of the following factors, regardless of dollar thresholds	
Criticality	Key to mission goals/objectives and/or to achieving the objectives in the DOC Balanced Scorecard and/or Strategic Plan
	Will the organization be able to perform its mission without this program?
	-Does the program address the core mission or strategic goal of the organization?
	Do program outcomes have broad implications for the success of the organization and/or are multiple mission goals dependent on the program?
	What capability gap would the organization face without this program?
	-The capability gap will prevent the organization from performing on its mission.
	-The capability cannot be obtained from a third party or the program will cost less than the price to obtain the capability from a third party.
	Is the program addressing a mission critical need or is the mission need well publicized?
	-The program or mission goals are considered mission critical by Congress, OMB, or The White House.
	-The program is addressing a highly publicized public concern.
	Are other Bureau's dependent on the successful completion of this program?
Complexity	Multiple organizations' involvement and interfaces; complex and/or rare skills requirements; analogous characteristics to other challenged programs
	Are key program interfaces outside the DOC?
	-Are other Federal Agencies involved in this program?
	Does the program involve organizations from multiple DOC Bureaus?
	Is the implementation of the program so complex that there is a high risk of failure?
	-Does the implementation of the program require coordination across multiple organizations?
	-Is the program dependent on outside factors that increase the risk of failure?
	-Does the organization have the necessary staff (e.g. enough personnel, subject matter experts) to implement the program?
	Are required skills available within the Bureau?
	-Does the organization have a contractor with the required skills?
	-Has the organization determined that the necessary skills will be available when they are needed on the program?
	Have similar programs in the past either failed or faced serious challenges?
	Does the organization have adequate experience in this area in order to implement the program?
Technology	Challenges identified requiring probable research, development, and/or demonstration
	Is the technology needed for this program proven?
	Will the technology require extensive demonstration and testing?
	-Does the program schedule have adequate time for demonstration and testing?
	Is there a lot of development work needed before the technology can be used in this program?
Visibility	Subject to external review and extraordinary media or political attention and/or have the potential to damage the reputation of DOC if unsuccessful
	Are there political sensitivities that senior leadership needs to be aware of?
	Would a failure in this program result in scrutiny by the media or political leaders?
	Has the program attracted the interest of political leaders?
	Would the media be interested in the program or the subject area?
"High Dollar" programs exceed the following thresholds	
All Programs	Development costs, valued in current year dollars, > $75 million or lifecycle costs, valued in current year dollars, > $250M
"Special Designation" programs are nominated by an MRB member and approved by the Deputy Secretary	

Figure 11: Mission Critical Criteria

The Bureau initiating a program is responsible for:

1. Evaluating all program concepts against the criteria identified in Figure 11 when initiated (prior to Milestone 1).
2. Continuously evaluating all programs against these criteria to determine whether changes to program characteristics result in the need for a mission critical designation at any time in the program's life. Note that changes resulting in a loss of this designation require Milestone Decision Authority (MDA) approval.
3. Notifying the MRB Executive Secretariat of all programs in their purview that meet or have the potential to meet one or more of the threshold criteria.

A program may tailor its documentation within the bounds of the Agile Framework. Tailoring refers to the flexibility of the Agile Framework processes and artifacts to be modified to suit the needs of non-mission-critical programs. Non-mission-critical programs, while not subject to Departmental review, should adhere to the

concepts established in the Agile Framework but tailored at a level appropriate to their size, complexity, risk, and importance. Therefore, heads of Operating Units shall adopt and/or tailor written procedures that align with the Agile Framework and meet the needs of non-mission-critical programs in their purview. This includes developing, tailoring, and instituting analogous acquisition review boards and processes to implement the Agile Framework for such programs. Note that if mission critical programs are sponsored directly at the Department level, the DOC sponsoring organization will take on the roles and responsibilities assigned to the Bureaus for the purpose of this Guidebook.

1.4. INTEGRATING MISSION CRITICAL PROGRAMS

Once a program is identified as mission critical, OAM staff will engage and begin active collaboration with the program. The initial engagement will focus on providing introductions of OAM staff and program Team staff and an overview of the Agile Framework, including process timing and a walkthrough of required artifacts. Subsequently, the OAM will collaborate with the program to help align it to Agile Framework. The OAM understands that each program is somewhat unique and this active collaboration between the OAM and the program allows both parties to determine how the program can best apply the Agile Framework to best achieve its intended outcomes. In the case of complex programs, this mapping process may take more than one meeting.

The purpose of each meeting is as listed in Table 3.

Engagement	Topics
Introduction	• Goals: OAM and program staff introductions, program overview, Agile Framework overview. • Provide OAM staff a brief overview of the program. • Discuss Agile Framework familiarization and project suitability. • Determine the appropriate milestone for the program. • Program Team provides the OAM with a general background on the program. • The OAM explains the basics of the Agile Framework to the program Team, including process, timelines, and high-level overview of required artifacts. • Familiarize members with secure Team website and milestone document repository.
Collaboration and Alignment	• Goals: Deeper dive on program specifics, alignment on upcoming milestone artifact requirements, and collaboration to jumpstart production of required artifacts. • Discuss program goals, outcomes, objectives. • Discuss upcoming milestone timeline and process. • Dive deeper into required Agile Framework artifacts for the upcoming milestone. • Align program information/data to jumpstart production of artifacts.

Table 3: Organizing and Planning Meetings

Occasionally a program will be large enough that several of its projects could be mission critical themselves, or the Epics it intends to deliver have enough differences that they could also be considered for mission critical status separately. In these instances, the series of meetings described above take on an even greater role in determining if the whole program or specific components will require MRB decisions, when they will occur, what defines the start and end of a phase, and how decisions made on components will affect the whole.

1.5. ROLES AND RESPONSIBILITIES

This section provides an overview of the roles and responsibilities required throughout the acquisition process for Agile programs. Roles and responsibilities may vary depending on the program's type, designation, size, or complexity. There are two primary categories of roles: those that apply to all programs and those that apply to

mission critical programs. Staff from both categories may act as principals or participants in MRBs for mission critical programs.

The roles and responsibilities listed in Table 4 apply generally to all programs.

Role	Responsibilities
OAM Staff	• Provide an Agile Framework all programs can leverage to drive better program outcomes and value delivery. • Provide artifacts that generate data and information used to initiate a program concept and to plan/define the program for successful execution. • Provide distinct guidance for predictive (e.g., waterfall) and Agile programs. • May provide programs with actionable feedback to improve success. • May provide insight and training in areas such as cost and risk.
Bureau Chief Operating Officers	• Consistently evaluate all programs, from initiation throughout the program's lifecycle, against the Mission Critical Criteria and notify the MRB Executive Secretariat of all programs that meet those criteria. • Develop, tailor, and institute analogous acquisition review boards and processes to implement the Agile Acquisition Framework for non-high-profile Agile programs. Information on Bureau-level Frameworks should be shared with the OAM. • Support MRB processes as defined in this Guidebook.
Bureau Chief Financial Officer/ Budget Officer	• Ensures activities conducted are consistent with the requirements of the Chief Financial Officer Act, related strategy, and Office of Management and Budget (OMB) requirements. • Ensures alignment of the activities of the Agile Framework and the Department's ongoing budget planning activities, as discussed in Section 4 of this document.
Program Sponsor	• Ensures programs align with organizational goals and objectives, are affordable, comply with Agile Framework processes, and produce the artifacts and information required by the Agile Framework. • Responsible for securing funding for the project.
Program/Project Managers (PMs)	• Understand the concepts of the Agile Framework and Guidebook. • Understand Agile acquisition and contracting best practices, which are distinct from predictive/waterfall best practices. • Ensure the program adheres to Agile methodology and best practices (e.g., iterative and adaptable requirements, incremental/routine/near-term value delivery, dedicated resources, fixed release/iteration cycles, fixed costs). • Produce data, information, and artifacts to support effective initiation, planning, design, production, operations, maintenance, and disposal. • Ensure alignment of mission needs, Epics, and Features. • Manage costs, schedule, performance, quality, risk, and acquisition planning to established program baselines. • Notify Bureau leadership, the OAM, and the MRB (at minimum) if there is any negative variation in program costs or release timeboxes. • For mission critical programs, must submit the Program Value and Performance Assessment to OAM and Bureau leadership shortly after each program increment/release cycle. For non-mission-critical programs, it is highly recommended that programs provide this information to Sponsors and/or Bureau leadership. • Prepare required artifacts while following the guidance and directions provided in the Agile Framework. • Adapt and refine program artifacts based on regular feedback loops and changing requirements from customers/end-users. • Support and help facilitate preparation and completion of an Independent Cost Estimate (as required).

Role	Responsibilities
	• Adapt artifacts and approaches based on feedback from the OAM and MRB. • Mission critical PMs must have experience equivalent to that defined for OMB A-11 major acquisitions. • Program offices assigned actions in a Milestone Decision Memorandum (MDM) will forward responses to the Secretariat and will be responsible for incorporating MRB decisions into appropriate DOC or Bureau policy documents. • May assume the role of or select the PO(s). • NOTE: Program/Project Manager roles are not commonly utilized in Agile. Program/Project Manager roles should be evaluated for duplication of responsibilities between core Agile roles (e.g., Product Manager, Product Owner, Scrum Master). A Program Manager may be more suited to take on a Product Manager role, while a Project Manager may be more aligned to a Product Owner or Scrum Master. However, this will require distinct knowledge, skills, and abilities (KSAs) that existing program/project managers may not have.
Product Owner (PO)	• Is the "voice of the customer", empowered to define what the Teams work on. • Owns the Vision, Roadmap, and Product Backlog. • Owns day-to-day requirements management and prioritization. • Defines Definition of Done and Acceptance Criteria. • Must have detailed understanding of customer/end-user segments, as well as the Epic being developed. • Must establish customer/end-user representatives and feedback loops/mechanisms (e.g., demos, surveys, value assessments) with those representatives to better understand their needs. • Responsible for using customer feedback, value delivery, and assessment data to guide future product direction. • Works with customers/end-users to define the Minimum Viable Product (MVP). • Removes obstacles and helps Team(s) work most effectively. • Ensures resources are dedicated to support Epics. • Ensures product increments/release cycles and related value deliveries are fixed and routine. • Is empowered to add, modify, and reprioritize items within the Roadmap and Product Backlog (both large and small) to maximize value to customers/end-users. • Accepts and rejects value delivered by the Teams.
Product Manager	• Assigns Epics to Product Owners. • Provides overall alignment across multiple products, services, and solutions (captured as Epics) that comprise the program. • Reviews program performance and value assessment data to assess government and contractor performance and levels of investment across Epics.
Agile Coach	• Facilitates Agile transformation, including coaching and training. • Provides insight on Agile best practices. • Helps identify continuous improvement opportunities. • Provides initial coaching/training and ongoing targeted coaching/training. • Provides solutions to challenges that arise to help programs and Teams continue their Agile evolution. • NOTE: This role is highly recommended role for mission critical programs. Smaller, non-mission critical programs may leverage this role or have aspects of this role performed by the Scrum Master.
Scrum Master	• Provides coaching on best practices to POs, customers, and Teams. • Responsible for establishing the Team environment. • Responsible for determining Team ways of working.

Role	Responsibilities
	• Responsible for establishing Team ceremonies, events, and meeting cadence. • Responsible for day-to-day Team execution. • Helps remove and/or estimate blockers.
Teams	• Empowered to leverage their subject matter expertise to determine "how" (i.e., steps, tasks, and activities) to deliver value (the "what" defined by the PO). • Meet Definition of Done and Acceptance Criteria defined by the PO. • Decompose the work in Product Increment/Release planning sessions. • Determine how to build each Story to satisfy acceptance criteria. • Build at quality in the most efficient manner possible. • Relentlessly and continuously improve quality, efficiency, and customer satisfaction. • Are open and honest about successes, challenges, and blockers. • Develop continuous improvement experiments for upcoming Sprints/iterations.
Customer Representatives	• Actively and routinely engage with the PO and Team to provide valuable insight on desired functionality, value delivered, and future direction. • Provide input on items in the Roadmap and in the Product Backlog. • Provide input on Definition of Done and Acceptance Criteria. • Provide input on prioritization. • Provide feedback on value delivered. • Participate in recurring reviews and demos to provide input on acceptance, rejection, and future priorities. • Deliver feedback in a respectful, graceful, and collaborative manner to enhance Team dynamics.
Bureau Procurement Official	• Provides oversight and support for the contracting officer in areas including contract/procurement planning and how to initiate, administer, and close out contracts. NOTE: This requires significant training/experience in Agile acquisition and contracting best practices, which are distinct from predictive/waterfall best practices.
Contracting Officer (CO), Contracting Office Representative (COR)	• Provides input and concurrences on acquisitions and contract/procurement planning (e.g., determining contract type, advising on source selection criteria, conducting pre-proposal conferences). NOTE: This requires significant training/experience in Agile acquisition and contracting best practices, which are distinct from predictive/waterfall best practices. • Per the Office of Federal Procurement policy and the Commerce Acquisition Manual, a CO for an Agile acquisition is required to hold the Digital IT Acquisition Professional credential. • Prepares solicitations, CD-570, Small Business Programs Review forms, determination and findings, and other contract artifacts. • Reviews, concurs, and as appropriate supplements justifications for other than full and open competition. • Initiates, administers, closes out, or terminates contracts.
*NOTE: If programs move beyond a Team-based Agile practice, to a Scaled-Agile practice, additional roles may be required. The specific roles and responsibilities for these programs will depend on the scaled-Agile practice selected.	

Table 4: Universal Roles and Responsibilities

In addition, the roles and responsibilities in Table 5 **apply to mission critical programs and activities**.

Role	Responsibilities
MRB	• All MRB members must have knowledge, experience, and/or training in Agile. • Authorizing body that reviews mission critical programs and provides approval to proceed to the next phase/milestone or feedback on remediation steps required before the program is approved to proceed to the next phase/milestone. • Provides a collective vehicle for members to review a program and execute their individual approval authorities.

Role	Responsibilities
	• Approves procurements planned for the next acquisition phase (both IT (IT Investment Authority) and non-IT). • Ensures major acquisitions/mission critical investments: Contributes to the Secretary's strategic vision and mission requirements. Employs sound, validated investment methodologies. Generates the highest return on the investment possible at acceptable risk levels. • Identifies staff to work with the MRB Executive Secretariat and the OAM to ensure artifacts are submitted in support of each milestone review. • Participates in program presentations and ask questions of the presenter(s). • Recommends that the Chair 1) approve the program to move to the next phase/milestone, 2) reject and terminate the program, 3) reject and provide remediation steps to help gain approval, or 4) request further information and/or clarification before making a decision.
DOC Deputy Secretary/ Milestone Decision Authority (MDA)	• Is the Department MDA for all mission critical programs. • Is the MRB Chair that leads MRB discussions. • Issues an MDM at the conclusion of each milestone review (typically within 15 calendar days). • Approves recommended program remediation activities and paths forward. • Designates other participants in the MRB based on the program up for review. • Tasks specific reviews and studies necessary for upcoming milestone reviews. • Approves the policies reflected in this guidance. • May delegate (in writing and with a rationale) MDA and management of any mission critical program to the Head of an Operating Unit (which does not exempt that program from adherence to the Agile Framework unless explicitly indicated in the delegation instrument).
MRB Executive Secretariat	• Schedules milestone reviews and distributes schedule information and artifacts. • Establishes meeting agendas, procedures, and attendance. • Provides artifact and presentation guidance to program sponsors and managers. • Schedules and tests all equipment needed for the MRB. • Assists in preparing MRB members for milestone reviews. • Prepares, distributes, and maintains a record of MRB IPT and MRB proceedings. • Maintains a list of MRB IPT/MRB action items and tracks to ensure completion. • Prepares the MDM for MRB Chair's issuance. • Notifies the Department Chief of Staff and Bureau under review of a pending MRB. • Performs all functions in accordance with the MRB timeline and deadlines. • Serves as the IPT Chair who organizes, kicks off, and convenes the IPT.
MRB Principals	• MRB members bring the authorities inherent in their positions to the MRB. • Apply approved evaluation criteria to inform recommendations to the Chair. • Identify their staff to work with the MRB Executive Secretariat.
MRB Integrated Product Team (IPT)	• All IPT members must have knowledge, experience, and/or training in Agile. • Coordinates a kickoff to socialize membership, duties, and timelines of reporting to MRB. • MRB IPT principals include representatives from the functional offices pertinent to the program under review, contracts, requirements development, budget, costing, project management, risk management, etc. • Forms prior to a milestone review (at request of the MRB Executive Secretary). • Reviews artifacts to identify gaps, issues, and areas of uncertainty. • Submits issues to MRB Executive Secretariat to address with PMs and Sponsors. • Assesses progress against mission needs/goals, program baselines, and dependencies on other programs and recommends if milestone review should occur. • Reviews the MDM from the previous milestone review and provides feedback on any outstanding issues to the PM.

Role	Responsibilities
	• Reviews draft MDM for the current milestone and provides feedback/concurrence.
Office of the General Counsel	• Ensures acquisition planning and execution adhere to federal law and regulation. • Involved early to help shape the acquisition process for mission critical programs.
DOC Chief Financial Officer/Assistant Secretary for Administration (CFO / ASA)	• Provides recommendations, guidance, and feedback in areas including, but not limited to, cost estimation, budgeting, and affordability. • Performs business and administrative functions in the Department in support of programs. • Develops policies reflected in the Agile Framework and Guidebook.
DOC Chief Information Officer (CIO)	• Provides recommendations and guidance in areas including, but not limited to, software development, hardware, licensing, operations and maintenance, data, intellectual property rights, and architecture/integration with existing architecture. • Performs Department business/administrative functions in support of MRB and mission critical programs. • Develops policies that support those in the Agile Framework and Guidebook.
Director, Office of Facilities and Environmental Quality	• Provides recommendations and guidance in areas including, but not limited to, facilities, real property, and construction activities. • Performs Department business/administrative functions in support of MRB and mission critical programs. • Develops policies that support those in the Agile Framework and Guidebook.
Director, Office of Budget	• Provides recommendations and guidance in areas including, but not limited to, cost estimation, budgeting, and affordability. • Performs Department business/administrative functions in support of MRB and mission critical programs. • Develops policies that support those in the Agile Framework and Guidebook.
Director, Office of Financial Operations	• Provides recommendations and guidance in areas including, but not limited to, program alignment to financial systems and finance execution. • Performs Department business/administrative functions in support of MRB and mission critical programs. • Develops policies that support those in the Agile Framework and Guidebook.
Director of the OAM and Senior Procurement Executive	• Provides guidance and oversees the management and quality of all acquisition activity in the Department, including Agile program acquisitions, and implementation of the Agile Acquisition Framework Policy and Guidebook. • Ensures the processes outlined in the Agile Framework and Guidebook are consistent with the other components of a single, Department-wide integrated system that manages risk, budget, mission execution, and stewardship of dollars. • Provides coordination among senior management functions within the DOC, including communication of review process outcomes and resulting acquisition activity. • Serves as the MRB Executive Secretariat (or delegates that authority as needed) and determines appropriate membership of the Milestone Review Board. • Ensures Bureau-level processes are in keeping with the practices and protocols outlined in the Policy and Guidebook. • Serves as the DOC official responsible for Independent Cost Estimate (ICE) oversight, policy, training, and guidance.
Heads of DOC Operating Units	• Keep the MRB Secretariat informed of program/project review schedules and decisions from their internal milestone reviews. • If delegated as the MDA for a mission critical program by the Deputy Secretary, manage that program or project in accordance with the Agile Framework and delivery artifacts defined in the Guidebook. This MDA authority cannot be re-delegated.

Table 5: Mission Critical Roles and Responsibilities

The MRB is chaired by the DOC Deputy Secretary and is composed of principals, participants that attend all MRBs, program-specific participants, and designees. Attendance will vary based on the program presenting to the MRB. The overall structure of the MRB is illustrated in Figure 20.

2. DOC ACQUISITION AGILE PROGRAM AND PROJECT MANAGEMENT FRAMEWORK

2.1. OVERVIEW AND POLICY

As shown in Figure 11, the overall program acquisition lifecycle is composed of several phases. The lifecycle begins when a need is identified, usually at the Bureau level, targeting a perceived gap in mission and exploring possible solutions. This kicks off the Initiation Phase. Bureaus may require formal documentation of a decision to begin the Initiation Phase, but there is typically no Departmental involvement at this time. At this time, Bureaus may consider if the program is mission critical and if MRB review should be required. If so, they should notify the OAM.

The Agile Framework and its Policy focus on the Initiation, Planning, and Design and Production Phases that lead to Milestones 1, 2, and 3, respectively. Each milestone is a critical decision point that requires assessment of program readiness and risk before formal authorization to proceed to the next phase. Transitions from one phase to the next occur with a milestone approval by the MDA or as designated. Due to the incremental nature of value delivery inherent to Agile programs, Milestones 2 and 3 reviews may be combined. Further, the OAM will require incremental reviews that will occur at least annually to evaluate value delivered, future needs, and disposal.

The Deputy Secretary may delegate in writing, with rationale, MDA and management of any mission critical program to the Head of an Operating Unit. This does not exempt that program from adherence to the Agile Framework (and its minimum artifacts) unless explicitly indicated in the delegation instrument.

The Initiation Phase focuses on ensuring programs are “doing the right thing” and are affordable, considering:

- Is there a real mission need (tied to strategic goals and objectives)?
- Who is the anticipated customer/end-user segments? What do they want/need?
- What are the targeted Epics and Features?
- Have all stakeholders been identified and provided input on Epics and Features?
- What would it take to deliver the proposed solution?

The Planning Phase focuses on further elaborating “the right thing” and developing the plan to “doing the thing right.” During this phase, planning is generated in preparation for acquisition and a baseline is established to help drive program success, considering:

- Are the right value delivery targets defined?
- Is the optimal solution selected?
- Is the best acquisition strategy utilized?

This Agile Framework intentionally focuses on those parts of a program leading up to a procurement, which historically has been where the OAM has found the most serious problems, then targets an annual review to evaluate incremental needs (new acquisitions that may drive ongoing Epic delivery, operations and maintenance (O&M), and/or disposal). This is distinct from predictive program management, where later phases and milestones (e.g., O&M, disposal) are primarily managed at the Bureau level. However, Bureaus will still be responsible for performing the work associated with executing contracts, implementing the solution, performing

management/oversight, and operations/disposal. Balancing new Epic development with O&M and decisions to dispose are not covered in depth in this Agile Framework document, although subsequent versions of the Agile Framework may expand on these phases. When the processes included in the Agile Framework become part of the Department's normal practices and culture, the Agile Framework will be expanded to include more detail.

Table 6 provides a description, objectives, and milestone approval requirements for each phase.

Phase	Phase Description and Objectives	Milestone Approval
Initiation	• Driven by the identification of a gap or need, often found as a result of strategic planning, changes to mission, reviews of needs, or external input. • Epics should be decomposed and delivery visualized using a high-level Roadmap that includes (at minimum) a targeted MVP. • Resource emphasis is on dedicated Teams and desired delivery capacity (both structure of Teams and number of Teams), as well as known materials and equipment to drive the rough order of magnitude (ROM) cost estimate for affordability. • Emphasis is on determining what Epics are needed and an initial range of possible solutions/alternatives. This facilitates an initial determination of high-level risks and drives a rough estimate of required resources and costs (affordability). • The Sponsor should provide their commitment to initiate planning.	• The MRB ensures the program validated that a mission need and/or gap exists, stakeholders were considered and engaged, initial alternatives were identified, risks were identified and reviewed, the concept was affordable, and a Sponsor has been identified that supports the program. • The program met additional requirements highlighted within the Agile Framework (e.g., required artifacts) and provided by the OAM. • The MDM provides approval for Milestone 1 (MS1) so the program can move to the Planning Phase.
Planning	• Approval in Initiation results in planning how to deliver mission outcomes leveraging defined Epics. • A PM is identified. • Epics are broken down into Features with input from stakeholders. • All material (e.g., equipment, facilities, platforms, software) and non-material (e.g., change in policy, operational procedures, department guidance, personnel movements, training) options are evaluated to assist with development of a preferred solution. The PM conducts an Analysis of Alternatives (AoA) based on a set of valued and weighted criteria, degree of risk, feasibility, lifecycle cost, supportability, and cost-benefit to determine the best solution. • Artifacts and plans are produced and refined to help the program define and control scope, estimate schedule and cost, determine the best approaches to value delivery and risk, manage to/report on the program baseline, and define the best approach for acquisitions.	• The MRB ensures appropriate program planning occurred that: further refined the information above; analyzed cost, schedule, and quality implications for a variety of alternatives; proposed a recommended alternative; and defined an acquisition strategy and that meets Agile Framework standards. • The program met additional requirements highlighted within the Agile Framework (e.g., required artifacts) and provided by the OAM. • The sponsor reaffirmed commitment to the program based on updated Initiation artifacts and new planning artifacts. • All issues/recommendations from the previously issued MDM are resolved. • The MDM provides approval for Milestone 2 (MS2) so the program can move to the Design Phase. • NOTE: For some programs, this step may be to receive approval to acquire

Phase	Phase Description and Objectives	Milestone Approval
	• Planning and acquisitions/procurements horizons should be tailored by the program with an eye toward shorter durations (e.g., 2 years instead of 5-10). • The Roadmap artifact replaced the project schedule/IMS. A project schedule/IMS is not required for Agile programs. ○ Additional emphasis on the production of a program backlog focuses on the near-term delivery of work that progresses toward completion of Roadmap items.	design services that may inform future build acquisitions and activities. When this is the case, the Planning approval may occur in two parts: 1) the design and 2) the subsequent build based on the design.
Design and Production	• Approval in planning may result in the need for an acquisition targeting delivery of a prototype/MVP (e.g., challenge-based acquisition). • The outcome of this phase is to begin capturing stakeholder feedback on a working product, which may inform the usage/need, future direction, additional investment and/or acquisitions required, and how program artifacts and planning should be updated to incorporate new learning from this phase.	• The MRB ensures appropriate design work has occurred that meets Agile Framework standards and that artifacts are updated to incorporate how the result of the Execution Phase informs the Production Phase. • The program met additional requirements highlighted within the Agile Framework (e.g., required artifacts) and provided by the OAM. • The sponsor reaffirmed commitment to the program based on updated work performed during design. • All issues/recommendations from previous the MDM are resolved. • The MDM provides approval for Milestone 3 (MS3) so the program can move to the Production Phase, where resourcing and procurements occur to field the solution.
Continuous Incremental Investment Review	• Due to the ongoing and continuous nature of Agile programs, programs will be required to meet with the OAM at least annually. • Programs will share insights on future acquisition and investment needs for both existing and future Epics (including operations and maintenance needs). • Disposal of existing Epics will be evaluated and considered. • Programs will be required to share value delivery and assessment information, including costs per Epic, Agile metrics, and value assessment data. • This will inform future investment requirements, reductions/trade-offs, and/or disposal.	• Review of program artifact updates. • Review of planned to actual value delivery. • Review of key Agile metrics and Value Assessment data.

Table 6: Phase Descriptions and Objectives

Some key consideration of the program phases, milestone reviews, and artifact production include:

1. The milestone phases above reflect a direct path from one milestone to the next. However, some programs may experience multiple iterations of a phase and repeat milestone reviews due to program revisions, changes to the nature of the program, a baseline(s) breach, incremental funding approaches, or failure to initially satisfy the phase.
2. The processes and artifacts described reflect streamlined and minimum requirements to prepare for a milestone review.
3. Each program should be individually mapped to the Agile Framework to determine and meet unique characteristics of the program. The processes followed and artifacts required may be tailored collaboratively with the OAM based on program type, program need, Department/Bureau guidance, and specific lifecycles of certain programs (e.g., satellites, facilities, IT, and programs requiring early design reviews, interim approvals).
4. Agile programs deliver value incrementally and will therefore release work into production that requires ongoing O&M while simultaneously producing new functionality. Agile Teams are structured to accommodate this and leverage tools (e.g., the Product Backlog) to capture and prioritize new work along with bugs/fixes and O&M.

Each phase of the Agile Framework should produce specific data and information (captured in artifacts, surveys, and interviews) required to perform milestone reviews. Figure 12 provides the list of minimum artifacts to satisfy each of the phases/milestones for mission critical programs and recommended for all other programs.

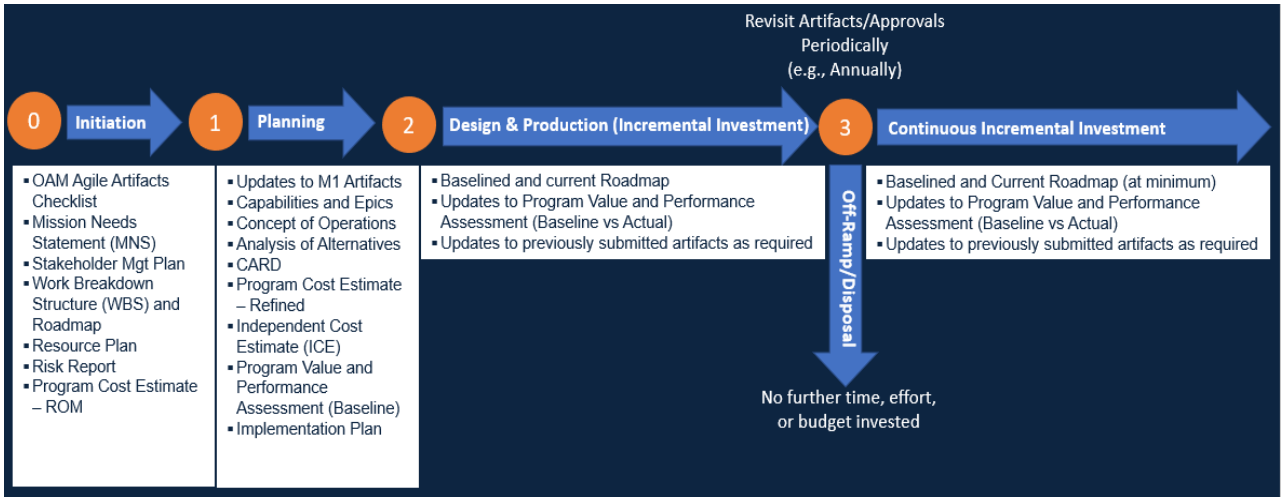

Figure 12: DOC Acquisition Agile Program and Project Management Framework Artifacts

The data and information necessary to generate these artifacts are discussed in greater detail in Sections 2.2 through 2.4. All data, information, and artifacts are required to guide milestone reviews. The templates for the required artifacts were developed to assist PMs by providing the information necessary to perform milestone review in a streamlined and efficient manner that minimizes program level of effort. If a Bureau has pre-existing artifacts with similar information, it may provide those artifacts for review. However, if the artifacts lack clarity, are missing key information, or do not provide information in a manner that will result in efficient review, programs may be asked to leverage the Agile Framework artifacts. If a Bureau uses its own templates, it must correlate and annotate sections of the Bureau template to the information requirements within the Agile Framework templates.

The Department, through the MRB, shall provide coordinated oversight, review, and approval of planning, acquisition, and management of mission critical acquisition programs and the professional services contracts that support them. Heads of Operating Units shall provide analogous oversight, review, and approval of non-high-

profile and delegated mission critical acquisition programs through application of the Agile Framework process (see Figure 1). Oversight entities, whether the MRB or Head of an Operating Unit, shall place particular emphasis on initial activities of the Agile Framework acquisition process. These review and approval activities will be required for critical management decisions affecting any acquisition program (mission critical or not), including any management action that will move the program to a new phase of development as defined in the Agile Framework. Critical management decisions include, but are not limited to:

- Do proposed program Epics address mission needs/gaps?
- Were a variety of alternatives identified and analyzed?
- Is the acquisition strategy sound and well developed? How are programs approaching procurements and the award of contracts?
- Are program Roadmaps, increments/release cycles, and cost baselines effectively estimated and clear/understandable?
- Are programs evaluating deviations in anticipated value delivery and Team performance to understand underlying root causes?

Mission critical programs, including their component or subordinate projects, that have been designated for MRB oversight and decision making shall not be subject to review by the Commerce IT Review Board (CITRB) and the Acquisition Review Board (ARB) for purposes of approving a program milestone, approving procurements that are planned for the next Big A acquisition phase, or approving progression to the next Big A acquisition phase. Although mission critical programs will not be subject to CITRB or other review boards for the purposes indicated above, the CITRB and other review boards may, at the discretion of their Chairs, be convened to support other needs for oversight, review of specific procurements (Little A), and risk management of their cognizant programs.

All DOC-designated mission critical programs must fix increments/release cycles, dedicate resources, and fix costs per Epic. This allows Agile programs to shift focus away from estimating cost/schedule and toward estimating value delivery. It also facilitates production of value delivery and Team performance data that can be used to forecast future value delivery and continuously improve Team performance. Additionally, Agile programs will capture value assessment data from customers/end-users. This allows organizational and program leadership to routinely (as often as each increment/release cycle) compare cost to value to guide future investment decisions, prioritize Epics, and dispose of Epics. Information on value, cost, and schedule should be tracked and reported by the PM and/or PO.

In Agile, operations and maintenance are performed routinely by the same Teams that are dedicated to support specific Epics. Operations and maintenance work is included in the Product Backlog and prioritized by the PO. Further, in Agile the disposal of all or portions of Epics are routine investment decisions driven by customer/user feedback.

2.2. INITIATION PHASE

2.2.1. INITIATION PROCESS

The Initiation Phase and the approval of Milestone 1 results in shared understanding, alignment, and agreement on **mission needs**, that analysis has been performed to identify gaps between existing and required Epics to meet those mission needs, and that the proposed Epics will close that gap. This will require **analyzing alternatives** to deliver those Epics to best achieve those mission needs. A **stakeholder analysis** - identification and analysis of stakeholder, customer, and end-user needs - will inform the above. Program Teams will then consider and **break**

down the work that is required to deliver Epics that drive the mission. Once the work is understood, **resource planning** will help determine the dedicated internal and external resources required to incrementally deliver the necessary Epics. Understanding the mission needs/gaps, Epics, stakeholders, required work, and internal/external resources will allow the Team to fully **identify, analyze, and respond to risk.** A **ROM cost estimate** will inform and provide insight into **affordability** and **benefits**. Milestone 1 approval moves the program into the Planning Phase, where more resources are made available to formally plan the program and necessary procurements. Programs will typically move through these processes sequentially (see Figure 13).

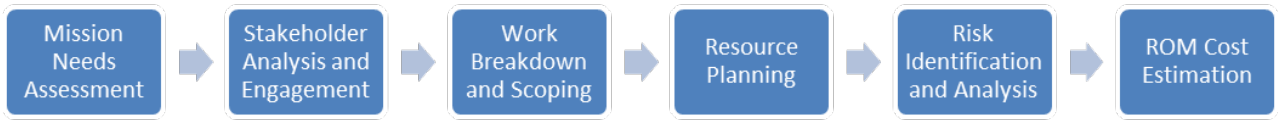

Figure 13: Initiation Phase Process Flow

Over the course of the Initiation Phase, programs generate data, information, and insights that will be used to drive action and decision making. This information is valuable to shape the program and ensure success. The OAM requires programs to capture this data/information in a set of concise and streamlined set of artifacts. The artifacts were developed to take advantage of data/information that should be well known by the programs and to capture this information in a streamlined manner to minimize the level of effort required to produce each artifact. While Agile artifacts in some cases cover topics similar to those in predictive artifacts, it is important to understand that the approach and content are distinctive, and certain predictive elements (e.g., a project schedule/IMS) are not required because they will hinder Agility.

The **required artifacts and their intended usage/value are listed in Section 2.2.2**. Artifacts should be produced in a sequential order (unless otherwise noted) to allow information available from previously produced artifacts to inform the production of subsequent artifacts. Therefore, do not attempt to produce all artifacts concurrently or farm out artifacts to distinct program staff to build in a vacuum. Prior to submission to the Sponsor, artifacts should be reviewed for alignment, flow, and consistency. Once all artifacts are produced, the Sponsor should review them and provide the MRB with **Sponsor Commitment** and assurance the Sponsor understands what is being proposed, believes the program aligns to DOC and Bureau mission needs, and is prepared to commit the resources (e.g., staff, finances, time) necessary for the program to successfully achieve its outcomes.

Once Sponsor Commitment is provided, the OAM will perform a program review for Milestone 1 that includes artifact reviews and collaboration between the program and the OAM (e.g., discussions, surveys, interviews, feedback sessions). The outcome of this program review will be **OAM feedback** on program direction, including feedback on individual artifacts and insights gained through surveys/interviews in preparation for **MRB review**, which may culminate in **MDM Approval**. This approval moves the program into Planning. The submission and approval process is illustrated in Figure 14.

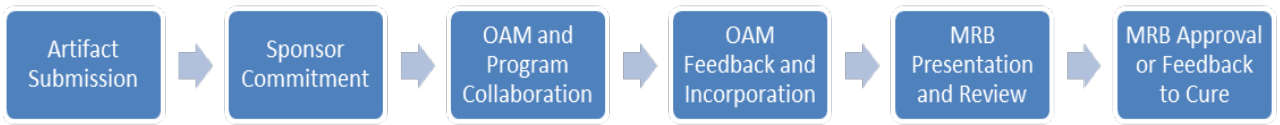

Figure 14: Initiation Phase Approval Process

2.2.2. INITIATION ARTIFACTS

Artifact ID	Artifact Name	Artifact Usage/Value
1.1	Mission Needs Statement (MNS)	The MNS artifact defines the specific mission needs and Epics required by the program and explains how it aligns to the DOC's and Bureau's mission. The MNS conveys the benefits/value of the program and alignment to mission for acquisition planning and value delivery.
1.2	OAM Agile Artifacts Checklist	The OAM Agile Artifacts Checklist helps plan and communicate the delivery of required program management artifacts. In this phase, provide target delivery dates for all artifacts.
1.3	Stakeholder Management Plan	The Stakeholder Management Plan artifact provides a thorough understanding and full picture of stakeholders, including those that will be impacted by the program, provide support to the program, or generate requirements for the program. This view should include a heavy emphasis on defining and understanding distinct customer/end-user segments. The information contained in this artifact provides an understanding of program stakeholders, their populations and characteristics, and methods to engage stakeholders. In this phase, approaches to stakeholder engagement do not need to be defined.
1.4	Work Breakdown Structure (WBS) and Roadmap	The WBS artifact provides a visual depiction of all the work required to deliver mission needs. This work is decomposed from the program level into larger work packages (e.g., Epics) and smaller work packages (e.g. Features) that define what the program will deliver. Decomposition should emphasize tangible deliverables (nouns, not verbs) instead of the actions (steps/tasks/activities) required to complete the work. The information from the WBS is then used to populate the Roadmap. The Roadmap should be structured to visualize anticipated value delivery over the desired delivery cadence/release cycle (e.g., 3 or 6 months). The Roadmap should include the MVP and value targeted for subsequent releases.
1.5	Resource Plan	The Resource Plan artifact provides insight on what is needed to deliver mission needs (and Epics further decomposed in the WBS and Roadmap). In this phase, the Resource Plan provides a high-level/ROM breakdown of the dedicated resources (e.g., people, materials, equipment) required to complete the work in the WBS and Roadmap. This should include the structure and number of Teams targeted to deliver the value depicted in the WBS and Roadmap. The Resource Plan also highlights which resources are available internally versus those that are external (e.g., contracted/procured).
1.6	Risk Report	The Risk Report artifact provides insight on the unknown elements that could impact the program. It provides a summary of identified program risks, risk characteristics, an analysis of probability and impact of each risk, and potential risk response strategies. The initial Risk Report will help the Sponsor and Milestone Review Board determine if the program is within established risk tolerances.
1.7	Program Cost Estimate – ROM	The Program Cost Estimate artifact provides insight on the costs the program requires to deliver its mission, including the decomposed work found in the WBS and Epics and Features artifacts. In this phase, a ROM of costs will be provided for at least one potential option that demonstrates affordability. This ROM may be generated by evaluation of market analysis, the Roadmap, WBS elements, stakeholder engagement needs, and resources necessary to both deliver and perform O&M.
1.8	Sponsor Commitment	This provides the Sponsor's commitment to the program based on the information provided in all artifacts required for the Concept Initiation Phase. The Sponsor Commitment provides the MRB with assurance the Sponsor believes the program aligns to DOC and Bureau mission needs, understands what is being proposed, and is prepared to commit the resources necessary (e.g., staff, finances, time) for the program to achieve its outcomes successfully.

Artifact ID	Artifact Name	Artifact Usage/Value
1.9	OAM Feedback Report (OAM Document)	This OAM Feedback Report provides the program with insights and feedback on artifacts developed during this phase to ensure the program is fully elaborated, clearly defined, and prepared for review with the MRB.
1.10	MDM Approval (OAM Document)	This artifact provides approval to move into Program Planning and Definition, rejection with feedback on areas to improve to gain approval, or complete rejection of the concept.

Table 7: Initiation Artifacts

2.3. PLANNING PHASE

2.3.1. PLANNING PROCESS

The Planning Phase and the approval of Milestone 2 results in shared understanding, alignment, and agreement on the approach to executing the program, including acquisitions that will drive the program. As programs move from Initiation and through Planning, it is expected that significant learning will occur that may result in changes to underlying data and information about the program. Programs should anticipate that new learning will drive updates to artifacts previously produced during Initiation. Programs should share updated versions of the artifacts provided during Initiation and also communicate a summary of updates via the **OAM Agile Artifacts Checklist**. The OAM Agile Artifact Checklist also provides anticipated delivery dates for newly created artifacts required to demonstrate thoughtful and comprehensive Planning.

As programs begin planning, it is critical to explore and elaborate necessary Epics and underlying requirements, consider their impact to operations, and evaluate alternatives for delivery. The **Epics and Features** artifact leverages insight from the MNS, WBS, and Roadmap and further decomposes necessary Epics to lower-level work items/functionality (e.g., Features) deliverables within the anticipated program increment/release cycles. Lean Business Case (LBC) information is captured to help define high-level parameters of the these work items. In this phase, provide all information (with the exception of the procurement information) prior to producing the AoA. After the AoA and Acquisition Strategy are complete, the Epics and Features artifact will be revisited to ensure all items listed within are highlighted for delivery by the government or associated with a specific procurement. The **Concept of Operations (CONOPS)** artifact provides insight on the as-is state of each Epic, the future state of each Epic within the Bureau's operating environment, how it will be supported, and how it will impact current-state operations. The artifact should capture insights on all alternatives anticipated to be considered in the **AoA**. The AoA provides insights on alternatives that the program considered, what evaluation criteria and weighting was used to evaluate those alternatives, what alternative the program recommends, and a rationale for the recommendation.

Agile programs will use Earned Value Management (EVM) only when required by regulation (e.g., FAR Part 34, OMB A-11). When required, programs will utilize an EVM approach modified specifically for Agile (not a traditional EVM approach or one requiring a project schedule/IMS), as noted in the Program Value and Performance Assessment artifact. Agile programs will not produce a project schedule and/or IMS, which are predictive/waterfall tools that hinder Agile value delivery.

The program will use the recommended alternative above to estimate cost and budget. Programs will produce a **Cost Analysis Requirements Description (CARD)** to explain how costs were estimated and a **detailed Program Cost Estimate** to share built-up costs. The CARD artifact provides insight on the approach(es) used to estimate cost for the recommended option in the AoA. The CARD is structured to provide cost detail that traces back to Epics (initially taken from the WBS), including a summary of the work, the anticipated cost estimation approach,

the basis of estimate, and the ultimate cost required to deliver that work. Information in the CARD will be leveraged to develop the Program Cost Estimate.

The Program Cost Estimate provides a refined, structured accounting of all known lifecycle resources and associated cost elements required to develop, produce, deploy, and sustain the recommended option from the AoA. As programs are initiated, it is expected that a rough order of magnitude cost for the entire lifecycle of the program is considered to drive affordability. As programs enter Planning, cost estimation may take a more incremental view and focus on the costs associated with delivering the Epics targeted in the Roadmap (the duration of which will be determined and agreed to between the program and the OAM). As the program executes, value delivery information is generated and cost information may be further refined to guide future incremental planning efforts.

In Agile, Epics are supported by dedicated resources (e.g., Teams, tools, materials, equipment) to provide a nearly fixed cost structure. Further, the schedule is also fixed along routine increments/release cycles that do not change. This allows value (scope) to adapt as needed and shifts the focus of estimates to center on value delivery and Team performance. This approach provides the Department, Bureaus, and underlying programs the ability to routinely and easily weigh the value of distinct Epics against the cost to provide them. Ultimately, this information can be used to guide incremental investment decisions. Agile programs may look to analogous programs as an opportunity to inform initial resource needs, costs, and delivery estimates.

The Program Cost Estimate should include a view of budget aligned to the proposed timeline/delivery Roadmap that will serve as the Program Baseline the Team and the Sponsor will use to monitor and control program execution and delivery by comparing actual results against baselined values. Once the CARD and the detailed Program Cost Estimate are produced, an **Independent Cost Estimate (ICE)** is performed by a third party for mission critical programs. Non-mission-critical programs may consider if an ICE is valuable compared with the level of effort (and cost) required to produce the ICE. The ICE is performed to confirm program costs estimation and resulting budgets for the recommended option from the AoA. It provides a thorough review, analysis, and feedback of the CARD and the Program Cost Estimate artifacts provided by the program Team.

The **Acquisition Strategy** artifact details specific procurements that are required for the recommended option in the AoA, provides the acquisition Roadmap, and includes specific assumptions and constraints used to guide acquisition decisions. Completion of the Acquisition Strategy Report triggers an update of the Capabilities and Requirements artifact (procurement details information). The Acquisition Strategy Report is then used to update the procurement information fields in the **Epics and Features** artifact. In this artifact, the program will identify each Epic and Feature and highlight the associated contract/procurement or if the government intends to deliver without contractor support. Epics are decomposed into Features that may be further decomposed into Stories. This decomposition is designed to express “what” value is desired without defining “how” exactly it will be delivered (without highly detailed product specifications that may not be known upfront). The goal is to build in flexibility for future solutioning by the SMEs who comprise the delivery Team(s). Finally, programs should provide a **Program Value and Performance Assessment** that demonstrates overall program health and progress toward Epic delivery, compares planned results with actual results, and highlights successes/challenges impacting delivery. For example, this could tie together Epic delivery over time with anticipated program budget/cost information for the Epic. Programs should share the process for capturing program data/metrics/reporting necessary to monitor program health, demonstrate progress against the baseline, and inform Epic delivery. This artifact should describe how the information will be used to monitor, control, notify, and take corrective action (if necessary) to enhance overall program success. Baseline metrics for Agile programs will be different from those typically utilized in predictive programs. Agile programs should select baseline metrics that provide the best insight to support and enhance value delivery. Some examples of metrics that may be utilized are depicted in Figure 15.

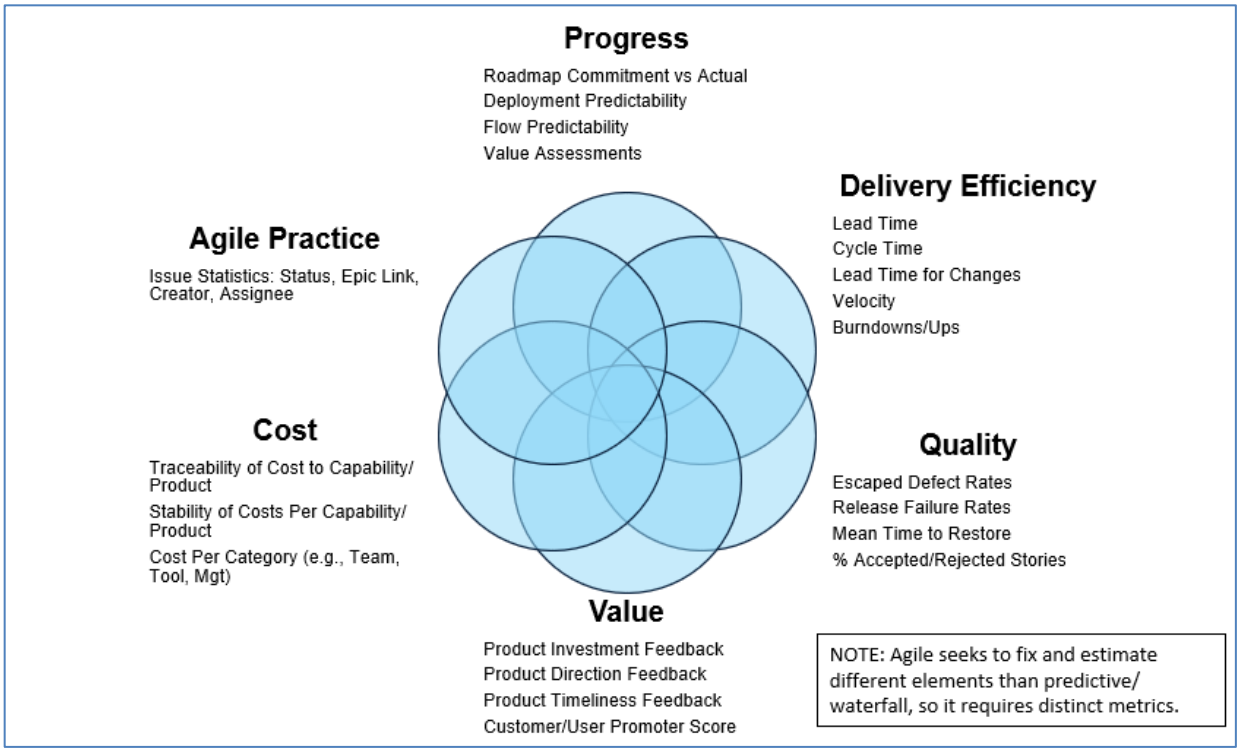

Figure 15: Agile Metrics Examples

Agile programs should leverage Agile metrics and value assessment data at program, product, and Team levels. At the Team level, this information is used as a guide during ceremonies targeting continuous improvement (e.g., Sprint and Release Retrospectives). At a program/product level, this data can be used to incrementally inform decisions related to the level of investment in each product/Epic, contractor performance, and Team performance.

Decision Type	Example
Product/Epic Investment Level	A program assesses value across Epics and learns that Epic A is no longer used/deemed valuable by customers/end-users. However, Epic B is more heavily used and is deemed the most valuable. This information could be used by the program to recommend discontinued investment in Epic A and a shift of that funding to Epic B.
Contractor Performance	A program contracts Teams A, B, C, and D from distinct contractors. The program reviews performance metrics and determines that Teams A, B, and C all are meeting their commitments and through value assessments learns that customers/end-users are happy with both the amount of value delivered and the quality of work delivered. However, Team D has been unable to meet their commitments and their customers/end-users are unhappy with both the amount of value delivered and the quality of work delivered. The program could use this information to recommend non-renewal of the contract associated with Team D and shifting their work to the higher-performing contractors (Teams A, B, and C).
Team Performance	A program reviews Agile metrics for government Teams E, F, and G. The program determines Teams E and F consistently meet their velocity targets and velocity is improving gradually. Team G has a highly volatile velocity that seems to be declining. The program may recommend Agile Coaching to help better understand and help improve the situation with Team G.

The Planning Phase typically follows the process depicted in Figure 16.

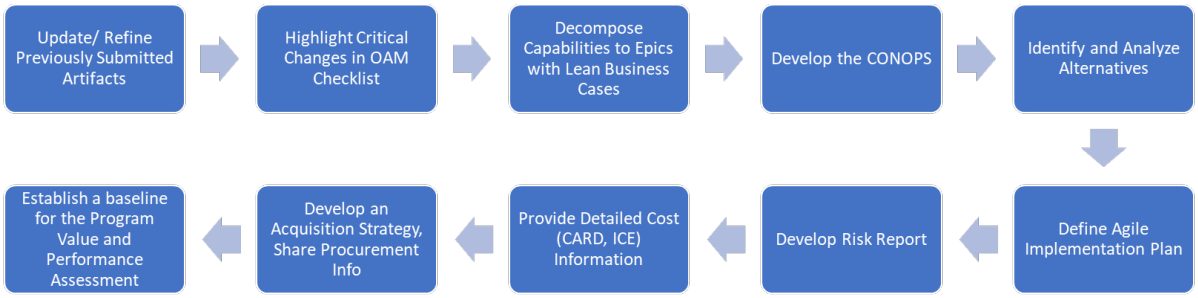

Figure 16: Planning Phase Process Flow

Over the course of the Planning Phase, programs will generate data, information, and insights that will be used to drive action and decision making. This information is valuable to shape the program and ensure program success. The OAM requires programs to capture this data/information in a concise and streamlined set of artifacts. The artifacts were developed to take advantage of data/information that should be well known by the programs and to capture it in a streamlined manner to minimize the level of effort required to produce each artifact.

The **required artifacts and their intended usage/value are listed in Section 2.3.2**. Artifacts should be updated/produced in a sequential order (unless otherwise noted), as information available from previously produced artifacts informs subsequent artifacts. Therefore, do not attempt to farm out artifacts to distinct program personnel to produce in a vacuum at the same time. Prior to submission to the Sponsor, artifacts should be reviewed for alignment, flow, and consistency. Once all artifacts are produced, the Sponsor should review the artifacts and provide the MRB with **Sponsor Commitment** and assurance the Sponsor understands what is being proposed, believes the program aligns to DOC and Bureau mission needs, and is prepared to commit the resources (e.g., staff, finances, time) necessary for the program to successfully achieve its outcomes.

Once Sponsor Commitment is provided, the OAM will perform a program review for Milestone 2 that includes artifact reviews and collaboration between the program and the OAM (e.g., discussions, surveys, interviews, feedback sessions). The outcome of this program review will be **OAM Feedback** on program direction, including feedback on individual artifacts and insights gained through surveys/interviews in preparation for **MRB Review**, which may culminate in **MDM Approval**. This approval moves the program into the next phase, which gives the program authority to acquire a move toward a solution. The approval will typically be for entry into the Design and Production Phase, which focuses on beginning the Agile development and execution process. This includes a review for the delivery of a prototype-like MVP that meets some portion of mission need and can be used for new learning. Future releases will occur incrementally along routine timeboxes.

A summarized view of the submission and approval process is illustrated in Figure 17.

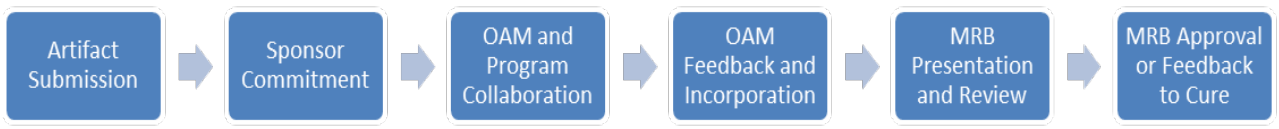

Figure 17: Planning Phase Approval Process

2.3.2. PLANNING ARTIFACTS

Artifact ID	Artifact Name	Artifact Usage/Value
2.1	OAM Agile Artifacts Checklist Update	The OAM Artifacts Checklist helps plan and communicate the delivery of required program management artifacts. In this phase, update target delivery dates (if necessary) and highlight changes to information within each artifact. Highlighted changes should be provided for information used to gain approval in the Concept Initiation Phase. Changes that simply add new information requested in the Planning Phase do not need to be highlighted.
2.2	Stakeholder Management Plan Update	During this phase, update and refine information in the initial submission as needed. In addition, capture engagement strategies, communication events, and change management activities.
2.3	Work Breakdown Structure and Roadmap Updates	During this phase, update and refine information in the initial submission as needed.
2.4	Epics and Features	The Epics and Features artifact leverages the insight from the MNS, WBS, and Roadmap to ensure all lower-level work packages identified (e.g., Features) are traceable up to the Epic level and structured to deliver value at the end of each program increment/release cycle. Definition of specific targeted Epics and Features, along a timeframe negotiated with Bureau Leadership, the OAM, and the MRB, will be provided via the Lean Business Case. At this point in the process, provide all information, except procurement information, prior to producing the AoA. After the AoA and Acquisition Strategy are complete, revisit this artifact to relate each Epic and underlying targeted Feature to a specific procurement or highlight the government's intent to deliver it.
2.5	Concept of Operations	The CONOPS artifact provides insight on the shift from the current to the future state. It describes how the new asset, system, or solution will function; how it will be supported; and how it will impact current-state operations. It should capture insights on all alternatives anticipated to be considered in the AoA.
2.6	Resource Plan Update	During this phase, update and refine information in the initial submission as needed.
2.7	Analysis of Alternatives	The AoA provides insights on alternatives that the program considered, what evaluation criteria and weighting was used to evaluate those alternatives, technology readiness, what alternative the program recommends, and a rationale for the recommendation.
2.8	Value Delivery Strategy	This artifact describes the approach to value delivery (e.g., Agile, DevSecOps), as well as the approach to ensure alignment with organizational requirements and norms (e.g., architecture, cybersecurity, test, and evaluation).
2.9	Risk Report Update	This artifact is an update to the initial Risk Report artifact with risk identification, analysis, and response based on the recommended option in the AoA. This includes newly identified risks, highlighting expired risk events that did not occur, fresh analysis of probability and impact for all risks, and updated risk response strategies (as necessary). This should inform a contingency budget to address risk.
2.10	CARD	The CARD artifact provides insight on the approach(es) used to estimate cost for the recommended option in the AoA. The CARD is structured to provide work package-level cost detail (taken from the WBS), including a summary of the work, anticipated cost estimation approach, basis of estimate, and the ultimate cost required to deliver that work. Information in the CARD will be leveraged to develop the Program Cost Estimate.
2.11	Program Office Cost Estimate - Refined	This artifact provides a refined, structured accounting of all known lifecycle resources and associated cost elements required to support ongoing

Artifact ID	Artifact Name	Artifact Usage/Value
		development and release of targeted Epics based on the recommended option from the AoA. Estimates for Agile programs typically focus on the fixed set of resources defined to support both new value and the ongoing support of value previously delivered. It is expected that programs leverage value delivery and assessment data to incrementally assess costs and iteratively refine estimates.
2.12	Independent Cost Estimate	The ICE is performed to confirm program costs estimation and resulting budgets for the recommended option from the AoA. It provides a thorough review, analysis, and feedback of the CARD and the Program Cost Estimate artifacts provided by the program Team.
2.13	Acquisition Strategy	The Acquisition Strategy artifact details specific procurements that are required for the recommended option in the AoA, provides the acquisition Roadmap, and includes specific assumptions and constraints used to guide acquisition decisions. Completion of the Acquisition Strategy Report triggers an update of the Capabilities and Requirements artifact (procurement details information).
2.14	Epics and Feature (Procurement Information Update)	Leverage the Acquisition Strategy for the recommended alternative from the AoA to update this artifact. Identify each item the government intends to deliver without contractor support or a specific procurement the item is a part of.
2.15	Program Value and Performance Assessment	Establish a baseline for value delivery with the initial Roadmap and compare it against the value delivered. Where variations exist, provide an explanation of the root cause(s) and explain why. Provide a baseline for the anticipated budget/spend to produce each Epic and share how cost will be monitored and controlled. Provide information on how value will be assessed and monitored over time (e.g., Agile program data, metrics, reporting) to demonstrate program health, progress against the baseline, and Epic (value) delivery. This should include how the program will use this information to continuously improve, monitor, control, notify, and take corrective action (if necessary) to enhance overall program success. *NOTE: Available data and metrics for Agile programs will be different from those for predictive programs.*
2.16	Sponsor Commitment	This artifact provides the Sponsor's commitment to the program based on the information provided in all artifacts required for this phase. The Sponsor Commitment provides the MRB with assurance the Sponsor believes the program aligns to DOC and Bureau mission needs, understands what is being proposed, and is prepared to commit the resources necessary (e.g., staff, finances, time) for the program to achieve its outcomes successfully.
2.17	OAM Feedback Report	This artifact provides the program with insights and feedback on artifacts developed during this phase to ensure the program is fully elaborated, clearly defined, and prepared for review with the MRB.
2.18	MDM Approval	This artifact provides approval to move into Program Execution, rejection with feedback on where to improve to gain approval, or complete rejection of the program.

Table 8: Planning Artifacts

2.4. DESIGN AND PRODUCTION PHASE

2.4.1. DESIGN AND PRODUCTION PROCESS

The Design and Production Phase is incremental and ongoing for Agile programs. It initially focuses on acquiring the Agile development capability, tools, and Team(s) required to deliver the work items (e.g., Epics and Features) within the initial Roadmap, including delivery of the MVP. Epics will continue to evolve, iterate, and require

maintenance until they are no longer valuable and are disposed of. Once initial delivery occurs, programs will produce value delivery and Team performance data that can be reviewed incrementally to determine if more, less, or the same level of continued investment is warranted, as well as if disposal should be considered. During this phase, programs may contract vendors to help develop designs and prototypes to inform what Epics the program needs to produce and what it will take to produce them.

Once the Agile development contracts have been awarded and executed, and objectives achieved, the program should assess those results for incorporation into future iterations of the Roadmap. The program should update all relevant artifacts from the previous phase, with specific focus on the Roadmap, Epics and Features, Acquisition Strategy, and Program Cost Estimates. As the program is executing, value assessments, incremental value delivery, and annual check-ins with the OAM will be conducted. The process followed for the Design and Production phase is in Figure 18.

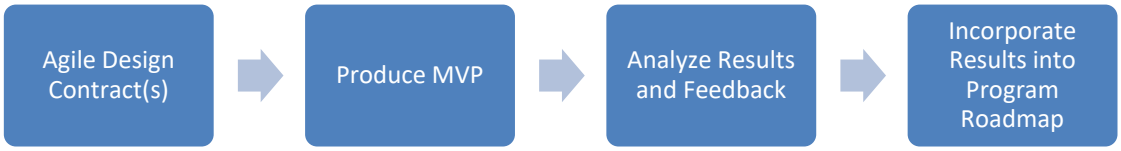

Figure 18: Design and Production Phase Process Flow

The **required artifacts and their intended usage/value are listed in Section 2.3.2**. Artifacts should be updated/produced in a sequential order (unless otherwise noted), as information available from previously produced artifacts informs subsequent artifacts. Therefore, attempting to farm out artifacts to distinct program personnel to produce in a vacuum at the same time introduces management risk. Prior to submission to the Sponsor, artifacts should be reviewed for alignment, flow, and consistency. The program should provide insights on new acquisitions required and anticipated variations in scheduled release cycles, resourcing/cost structure, and value delivery. Once all artifacts are updated/produced, the Sponsor should review the artifacts and provide the MRB with **Sponsor Commitment** and assurance the Sponsor understands what is being proposed, believes the program aligns to DOC and Bureau mission needs, and is prepared to commit the resources (e.g., staff, finances, time) necessary for the program to successfully achieve its outcomes.

Once Sponsor Commitment is provided, the OAM will perform a program review for Milestone 3 that includes artifact reviews and collaboration between the program and the OAM. The program review will focus on target noted variation (e.g., in scheduled release cycles, utilization of resources, cost, and value delivery), additional incremental acquisitions, and possible disposal of all or part of the program's capabilities. The outcome of this program review will be **OAM Feedback** on program direction, including continued incremental investment or increases/decreases in investment based on analysis of the preceding items. Additional feedback may be specific to individual artifacts and insights gained through surveys/interviews. This will help the program prepare for **MRB review**, which may culminate in **MDM Approval**. This approval gives the program authority to continue development of Epics, to make approved incremental acquisitions to further development of existing or new Epics, and/or dispose of Epics.

A summarized view of the submission and approval process is illustrated in Figure 19.

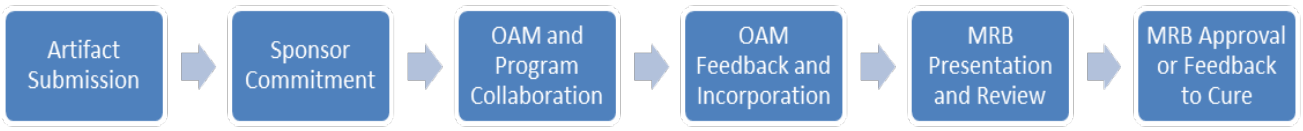

Figure 19: Design and Production Phase Approval Process

2.4.2. DESIGN AND PRODUCTION ARTIFACTS

Update all artifacts listed in Section 2.3.2 to reflect what is needed by the program to deliver all approved Epics. Note: Program Value and Performance Assessment data should be provided for all releases. Submit these artifacts to the OAM and MRB for milestone review.

3. MILESTONE REVIEW BOARD

3.1. MRB ORGANIZATION AND STRUCTURE

As described in this Guidebook, the MRB will conduct DOC review of mission critical programs, supported directly by an MRB IPT and the MRB Executive Secretariat (the Secretariat). The Secretariat will serve as Executive Secretary to both the MRB and the MRB IPT. The OAM will perform the duties of the Secretariat, chair the MRB IPT, and provide support to programs between milestones. For membership, roles, and responsibilities, see the MRB roles and responsibilities listed in Section 1.5.

Figure 20: Milestone Review Board Membership

3.2. OAM SUPPORT

The OAM supports programs throughout the entire MRB process by providing:

- Advice on program initiating and planning activities.
- Guidance to navigate the MRB process.
- Assistance in acquiring independent reviews (e.g., ICE).
- Support across a variety of program management knowledge areas (e.g., risk, cost).
- Support in preparing program artifacts.
- Feedback to ensure successful reviews at future MRBs.
- Annual program engagements to review value delivery, Team performance, and emerging needs.

- Additional engagements as requested by the program to evaluate emerging needs.

3.3. MRB PRESENTATION REQUIREMENTS AND GUIDING QUESTIONS

Wherever possible, PMs should leverage required MRB artifacts as presentation materials. Where summarized views of the artifacts are desirable (e.g., cost artifacts), PMs will produce these summarized views based on data and information contained within the artifacts. PMs will combine information from these artifacts and summarized views to electronically share both the artifacts and additional presentation materials to the Secretariat in accordance with the MRB Proposed Timeline found in Section 3.4. Read-ahead materials will be provided to both the MRB IPT and the MRB members in advance of the MRB meeting to give ample opportunity to review and prepare, as well as solicit any input from SMEs prior to the meeting. Briefings should use a reasonable number of slides to succinctly convey the message. The program's scope, status, and history of reviews will dictate the time allotment for the agenda item. Changes to presentation materials after submission are not permitted without notifying the MRB IPT Chair. Presenters must stay within their allotted briefing time according to the agenda and presentations, and all required MRB documents should be paginated. Programs leveraging the recommended artifacts can simply leverage those as the presentation for the MRB.

The MRB IPT will be the final forum for ensuring issues, programs, and briefings are condensed into understandable terms and recommendations for decisions before presentation to the MRB. MRB IPT principals are required to review and comment on all MRB artifacts proposed for MRB presentation by the end of the established comment period. A non-response is considered concurrence.

At each MRB, both the board members and the program Team need to understand the criteria for a successful MRB. Table 9 provides a standard set of questions for each milestone that the program Team should be able answer satisfactorily and that the review board members should consider. Additional questions will be generated for each mission critical program, specific to that program. The IPT will lead the effort to identify program-specific issues and generate MRB questions.

Milestone	Guiding Questions
1	• Is the MNS clear on what gaps exists and what requirement(s) is to be satisfied with this proposed program? • What strategic goals for the Department are linked to this program? If applicable, what supporting Bureau strategic goals are linked to this program? • Have all pertinent stakeholders been involved in developing the requirement? • Do the rough cost estimates seem reasonable and is the solution affordable? • Have the risks of the proposed program been identified? • Have the risks of not pursuing the program been identified? • Is the sponsor identified and supportive of the program?
2	• Has the scope from MS1 changed? If so, is the program still valid and reasonable? • Were all reasonable alternatives considered by the AoA? • Does the AoA support the selected alternative? • Does the CONOPS clearly define how the new Epics will operate, integrate with existing Epics, and impact stakeholders? • Have all risks, including technical risks, been identified, and treated properly? • Does the evolving solution meet the stated mission need? • Have any of the following changed since MS1: cost, schedule, performance, strategy, risk, or requirements? If so, explain. Have the program baselines changed? If so, how and why? • What are the key performance parameters and what is the status for achieving them? • Do planned program management and acquisition activities appear adequate?

Milestone	Guiding Questions
	• Do external reviews support the technology considerations and cost projections? • Is the sponsor fully supporting the program (with resources, staffing, and organizational support)? • Does the program have an approach for routine, incremental value delivery? • Has the program established baselines with the OAM? • Is an annual review process established with the OAM?
3	• Does the evolving solution meet the stated mission need? • What value was promised versus delivered? • What do Agile metrics communicate about value delivery efficiency, Team performance, and quality? Are Teams improving? • Are resources mapped to Epics? Are their associated costs relatively fixed? • Is the Team(s) delivering value in routinely timeboxed increments? • Are customer/end-user feedback loops established to inform product evolution? • Are value assessments routinely performed? What do they say about the value delivered and future product direction? • What is the status of program management and acquisition activities? • Do go-forward plans seem adequate for successful acquisition and delivery of necessary Epics? • Are plans sufficient to ensure necessary support for the effective and efficient operation of the fielded Epic? • Have any of the following changed since MS2: cost, schedule, performance, strategy, risk, or requirements? If so, explain. Have the program baselines established at MS2 changed? If so, how/why? • Do external reviews support the technology considerations and cost projections? • Is the sponsor fully supporting the program (with resources, staffing, and organizational support)? • Is an annual review process established with the OAM? • Is there a need for enhanced or reduced investment for each Epic? Will this result in trade-offs across Epics?

Table 9: Guiding Questions

3.4. MRB PROPOSED TIMELINE

PMs will follow the MRB Proposed Timeline in Figure 21 and Table 10 unless otherwise agreed to with the Secretariat. All days expressed are calendar days.

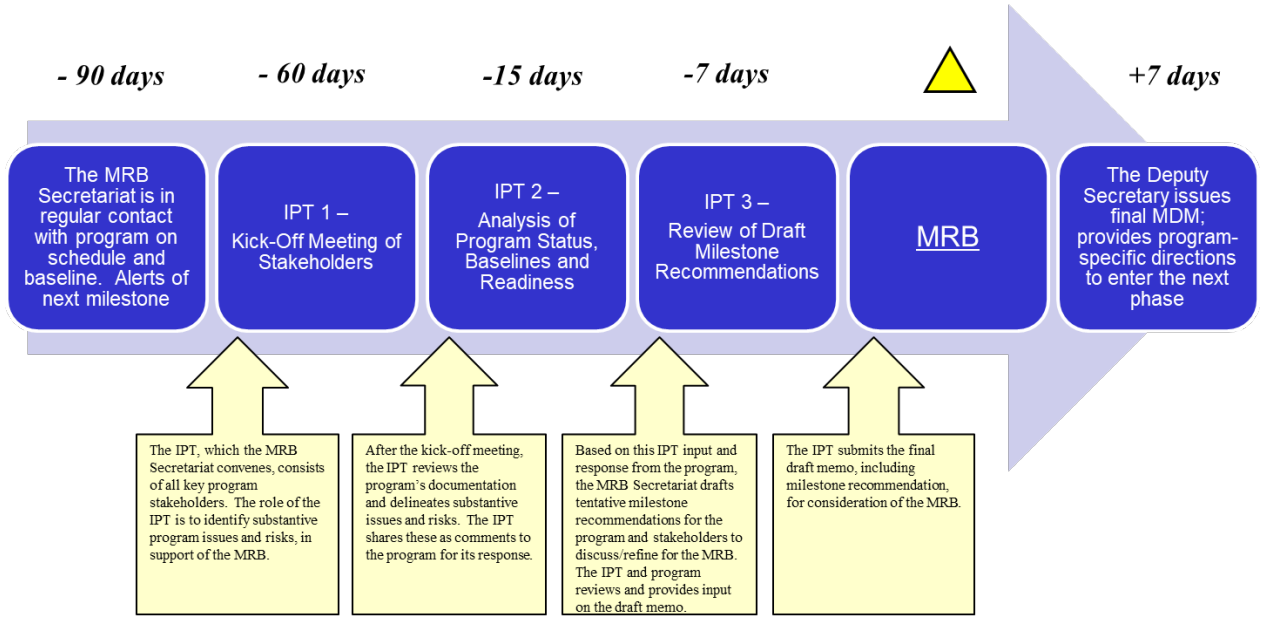

Figure 21: MRB Timeline

90 Days Prior	• Secretariat contacts PM and notifies of required artifacts and schedule. • Secretariat/PM jointly agree to proceed with MRB schedule.
70 Days Prior	• Secretariat receives artifacts and supporting materials from PM.
60 Days Prior	• Secretariat convenes MRB IPT kick-off meeting (IPT1).
30 Days Prior	• IPT members provide feedback to the Secretariat.
20 Days Prior	• Secretariat provides program with feedback on artifacts (prior to IPT2).
15 Days Prior	• Secretariat convenes IPT2 to provide feedback on artifacts to PM.
7 Days Prior	• Secretariat provides PM with IPT feedback on MRB briefing and draft decision memorandum with known issues and required corrective actions (IPT3). • PM provides final MRB artifacts and briefing to the Secretariat. • Secretariat provides MRB final artifacts and briefing to MRB principals and responds to any questions from MRB members. • IPT representatives pre-brief their respective MRB members and undertake other required activities to prepare them for the upcoming MRB.
3 Days Prior	• Secretariat staff distributes final agenda, all artifacts, briefing, and draft MDM to MRB principals and PM. • Secretariat staff uploads all materials to shared drive.
MRB Meeting	• Secretariat staff prepares for and facilitates the meeting. • Secretariat staff takes meeting minutes, documents decisions, and captures action items.
1 Day After	• Secretariat staff sends revised draft MDM to MRB principals, MRB IPT, and PM.
3 Days After	• MRB Executive Secretariat forwards the coordinated, revised MDM to MRB Chair for signature.
7 Days After	• Deputy Secretary signs MDM. • MRB Executive Secretariat distributes the signed MDM to MRB members and enters actions into tracking system. • The OAM completes an ICE report that documents the ICE results used to establish the Department's baseline.

Table 10: IPT and MRB Actions and Timing

3.5. OTHER MRB PROCEDURES

3.5.1. MILESTONE DECISION MEMORANDUM

The MDA shall issue a MDM after each milestone review, directing the program's way ahead in the next phase. The memo will include approval for the program to transition to the next phase and direct the program's way ahead, including necessary procurement authorities, specific phase exit criteria, and other directed actions.

When a program is not approved to go to the next milestone, the MDM will contain information on how to proceed. This will include specific instructions on required activities and timelines for milestone reconsideration.

3.5.2. APPEALS PROCESS

There is not an appeal process when approval to move to the next phase is denied. However, in most situations, if a program is not ready to progress, the MDM will outline the steps needed to remedy or cure any deficits, and the program can approach the MDA again once those steps are completed.

3.5.3. ESTABLISHING AN INCREMENTAL APPROACH TO ASSESS PROGRAM VALUE AND PERFORMANCE

Every mission critical program following an Agile approach shall be defined by at minimum three baselines starting in Milestone 2. These will be defined in the Program Value and Performance Assessment artifact and refined, as necessary with justification, at subsequent milestones.

1. **Cost**: Traditional/predictive costing is highly detailed over the long term and considers lifecycle costs (the total of the direct, indirect, recurring, and nonrecurring costs, including the construction of facilities and civil servant costs and other related expenses incurred or estimated to be incurred in the design, development, verification, production, operation, maintenance, support, and retirement of the entire program over its planned lifespan, without regard to funding source or management control). This approach is necessitated because of the significant risk of a large upfront investment with value delivery anticipated multiple years into the future with value confirmation only after most funding is expended. Further, plug-and-play resources add cost estimation complexity and necessitate a greater need for elaboration of which resources will be required when, as well as what work they will focus on. Agile's distinct emphasis on near-term/routine value delivery and simplified costing of dedicated resources/Teams to support delivery of a distinct Epic reduces this risk and shifts the rationale for the initial estimate to long-term affordability instead of near-exact precision. Agile programs can also start small, succeed or fail fast, and incrementally grow/evolve as they need to. Routine value delivery provides regular opportunities to capture customer/end-user feedback that adapts scope to maximize value, as well as incrementally and iteratively refine costs using actual value delivery data. This allows the PO and leadership to regularly evaluate value delivered versus cost to deliver, augment or off-ramp Epics/resources, and make trade-offs across Epics that comprise a program.

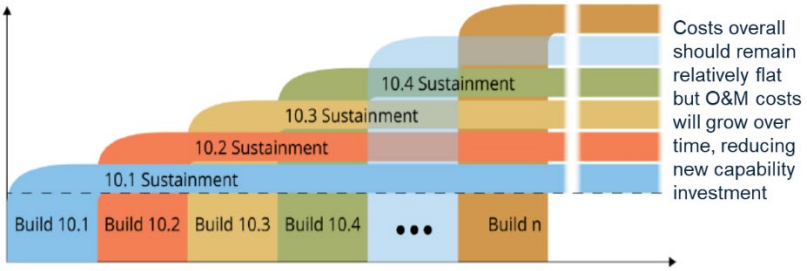

Figure 22: Agile Teams Develop New Epics and Address O&M

2. **Roadmap:** The Roadmap demonstrates value delivery and cadence for program releases of value to customers/end-users. This should include the activities from Milestone 2 to the release of MVP (targeted 3-6 months post-acquisition) and routinely thereafter (targeted <= 6 months). Typically, more information is known about near-term releases and less fidelity is available for future releases. An example of an Agile Roadmap is provided in Figure 23. Programs compare original and updated Roadmaps to understand what was committed to versus what was delivered. This informs whether additional time and/or budget is required.

	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sep	Oct	Nov	Dec
	Increment/Release 1			Increment/Release 2			Increment/Release 3			Increment/Release 4		
Mission Need 1	Epic A											
	Feature A.1			Feature A.3			Feature A.5			Feature A.7		
	Feature A.2			Feature A.4			Feature A.6					
Mission Need 2	Epic B											
	Feature B.1			Feature B.2			Feature B.4			Feature B.5		
				Feature B.3								
				Epic C								
				Feature C.1			Feature C.3			Feature C.6		
				Feature C.2			Feature C.4					
Mission Need 3							Epic D					
							Feature D.1			Feature D.3		
							Feature D.2					
Mission Need 4										Epic E		
										Feature E.1		
										Feature E.2		
										Feature E.3		

Figure 23: Agile Roadmap Example

3. **Performance:** Performance metrics should align to those relevant for continuous improvement of value delivery, delivery efficiency (Team performance), quality, security, and Agile adoption (see Figure 15 for examples). Further, reporting should include the key performance parameters or metrics established at Milestone 2 that define program operational Epics and readiness.

All Department-designated mission critical programs, regardless of size or MDA shall:

- At Milestone 1:
  - Prepare the range of costs at ROM that corresponds to the alternatives proposed.
- At Milestone 2:
  - Have cost (lifecycle and development), schedule (using a Roadmap), and performance baselines established.

- Provide the rough order of magnitude range of costs for all alternatives considered in the Analysis of Alternatives and a detailed cost estimate for the recommended option.
- Be responsible for preparation of an ICE.
- Submit a revised ICE as directed by the OAM. The PM shall track all baselines.

- At Milestone 3:

  - Have cost (lifecycle and development), schedule, and performance baselines established.
  - Be responsible for preparation of an ICE.
  - Submit a revised ICE as directed by the OAM. The PM shall track all baselines.

For mission critical programs subject to MRB oversight or as delegated, the Operating Unit shall report any deviation in cost, schedule, or value delivery (when compared to the previously established baseline) to the MRB Secretariat within 30 calendar days of the date the deviation is identified. Deviations in targeted value delivery (scope) must include impacts to customers/end-users and the overall Roadmap. The OAM will analyze the deviation report and recommend corrective actions to the appropriate official(s). For programs not subject to MRB oversight, PMs shall report any deviation in cost, schedule, or value (when compared to the previously established baseline) to the authorities designated in the procedures established to implement the Agile Framework within the Operating Unit within 30 calendar days of the date the deviation is identified. Deviations in targeted value delivery (scope) must be accompanied by impacts to customers/end-users, as well as the overall Roadmap.

4. AGILE FRAMEWORK INTEGRATION WITH BUDGETING PROCESS

The Acquisition Agile Framework must interface with the Department's budget process to ensure efficient and effective project management, resource allocation, and ability to fulfill its mission. This requires consistent and complete information exchanges between the Agile Framework and the budget processes.

To fully leverage the benefits of the Acquisition Agile Framework and the milestone review process, the lifecycle cost estimate must:

- Tie directly to the Bureau budget submissions and appropriations.
- Avoid erroneous mapping schemas.
- Identify who can charge against program appropriations.
- Identify who has charged against program funds.

Program traceability from budget formulation and cost estimation through budget execution provides numerous benefits, including:

- Allowing the PM to measure program performance against a funding baseline.
- Management of carryover funds.
- Comparison of actual costs versus estimated costs by year or release.
- The ability to assess the degree of accuracy of the Team's cost estimate.
- The ability to continuously improve cost estimation capabilities and methodologies.
- Allowing for better decision support to program and DOC leadership.

Aligning the cost estimate to budget formulation and execution requires program cost reporting is structured so each Epic is identifiable for budgeting and execution purposes. For example, one cost element might be a single contract, a single Contract Line-Item Number (CLIN), or a single federal branch that can be identified and tied directly back to Epic delivery in a system of record such as the DOC financial system of record.

In some cases, programs utilize umbrella contracts that provide support and staff to multiple other programs. In these cases, the program must utilize a mechanism (e.g., cost reporting, unique lines of accounting) to identify program-specific costs and tie them back to Epic delivery. Programs that lack this mechanism will not have proper cost traceability, which will inhibit the ability to make necessary investment and trade-off decisions.

The process of thoroughly defining the program cost, schedule, and performance metrics provides a strong basis for program funding stability. OAM analysis has shown that, historically, programs that have been baselined through the MRB process receive at least 95% of their requested funds and many baselined programs are fully funded. Without complete cost estimates, it is possible that the full scope of the work will not be funded. Budgets formed without proper cost estimates may struggle to assess affordability, the impact of changes, and maintain an appropriate level of PM control.

The interactions between the budget process and the Agile Framework involve linking a calendar-driven process (i.e., budget development) with an event-driven process (i.e., a program's progression along the Agile Framework and through increments/release cycles). The budget development process follows a predictable schedule throughout the year that may or may not fully align with a program's routine increments/releases. Therefore, participants in both processes must be aware of the timing of both sets of activities. Further, the program office must provide current estimates of schedule, budget, and resources to support the budget process both when necessary and as requested.

APPENDIX A – ARTIFACT PRODUCTION, USAGE, AND OUTCOMES

Introduction

This appendix includes descriptions of the processes required by the Agile Framework, as well as suggested templates to be used to efficiently capture, submit, and review the required information. The templates describe the minimum information required for an MRB, but programs may find additional artifacts, information, and data useful to produce based on their specific needs. Organizations may use their own artifact formats instead of the templates provided for the first six months after the Agile Pathway is published but must ensure that all requested information is provided by the program and a correlation of the information is appropriately noted. Programs participating in a milestone review six months after the publication of the Agile Guidebook will be required to submit information in the artifact formats provided. All Agile artifacts can be found here.

MISSION NEEDS STATEMENT

Usage and Value

All program investments and effort should start with mission need and a clear understanding of Department and Bureau strategy. Programs are typically initiated to ensure the fulfillment of mission needs and that gaps to fulfillment are identified and addressed via the development of new Epics. The MNS artifact captures information on required mission needs, identified gaps in Epics that may lead to an inability to deliver the mission, and an overview of the Epics required to deliver on mission and fill identified gaps. Note that the MNS provides a high-level overview of required Epics but does not provide a highly detailed solution or set of requirements.

Recommended Resources

- Program sponsor, PM, SMEs, customers and end-users, internal and external stakeholders.

Process Description

- Establish an analysis Team.
- Explore the scope of any gaps.
- Identify potential hazards and their safety, security, and risk implications.
- Determine the potential strategies to meet the mission need.
- Document findings of the analysis in an MNS.
- Define material or non-material solutions that have been or will be considered to meet mission needs, target opportunities, and close gaps.
- Align Epics to mission needs.
- Provide a high-level view of alternatives that will be analyzed in more detail in the AoA.

The sponsor typically leads a Team in conducting the needs analysis and preparing the resulting MNS. This requires the sponsor to consider mission needs and gaps as an honest broker, from the perspective of the user or customer. Accordingly, the Team should consult freely with end-users and other stakeholders when preparing the MNS to ensure that it reflects mission needs or deficiencies as viewed by the end-user.

The MNS must align to the Department's strategic direction and priorities and address several key elements, including:

- Required mission in functional terms.
- Description of Epics required for the mission and gaps in Epics that drive the need for a solution.
- Consideration of existing or planned systems (internal or external to the Department) that have been considered for use to fill the gap.
- A compelling value proposition for filling the gap, including the impacts of not filling the gap.

The MNS must be sufficiently detailed to justify an acquisition start. Approval of an MNS provides formal agency executive-level acknowledgment of a justified and supported requirement to a user or stakeholder need with a material or non-material solution.

Anticipated Outcomes

1. Document a high-level synopsis of specific functional Epics needed to accomplish agency mission and objectives.
2. Provide a strategic Agile Framework for acquisition planning and value delivery. This serves to formalize the acquisition and link the gap to the procurement of a material solution that will fill the need.
3. Identify alternatives to fill the gap that will be further evaluated and explored in the next phase.

Example

An example of the type of information and data captured in this artifact is depicted in Figure 24. Directions for developing the artifact are found within the artifact itself.

Figure 24: MNS Information and Data

OAM ARTIFACT CHECKLIST

Usage and Value

The OAM Artifact Checklist provides an overview of the processes and documents required within each phase of the acquisition lifecycle. This list of artifacts (unless otherwise noted) should be created sequentially. The checklist helps programs ensure they understand the requirements for phases and milestone reviews. The purpose of the OAM Artifact Checklist is to facilitate early planning within the program, provide targeted availability of artifacts to establish a review and feedback schedule with the OAM, and communicate major changes/updates to the artifacts.

Recommended Resources

- Agile Coach, PM, PO, Scrum Master, Teams, SMEs.

Process Description

- Complete documentation of mission need.
- Develop an initial plan to complete program initiation activities.
- Complete the OAM Artifact Checklist.
- Provide a checklist to the OAM for coordination.

After a program has identified mission needs, it should complete the OAM Artifact Checklist to denote which artifacts it will provide and the timeframe in which those artifacts will be ready for OAM review. The overall schedule, resources, and scope of the acquisition should be considered when establishing the anticipated need dates for milestones and artifacts. The PM should provide the completed checklist to the OAM for planning purposes and to facilitate any support that may be required.

Anticipated Outcomes

1. The OAM Artifact Checklist is updated with anticipated completion dates for each of the required artifacts to support each milestone. As programs enter new phases, significant updates or changes to any artifacts should be communicated using the OAM Artifact Checklist. The OAM Artifact Checklist should be provided to the OAM for communication and collaboration purposes.

Example

An example of the type of information and data captured in this artifact is depicted in Figure 25. Directions for developing the artifact are found within the artifact itself.

Milestone ID	Milestone Name	Artifact ID	Artifact Name	Artifact Usage/Value	Link to Artifact Template	Target Delivery Date	Changes Since Last Update
1	Concept Initiation	1.1	Mission Needs Statement	The Mission Needs Statement artifact defines the specific mission need and functional capabilities required by the program and explains how it aligns to the DOC and Bureau's mission. The MNS conveys the benefits and value of the project/program, alignment to mission, and the strategic framework for acquisition planning and capability delivery.			

Figure 25: OAM Artifact Checklist Information and Data

STAKEHOLDER MANAGEMENT PLAN

Usage and Value

By completing the Stakeholder Management Plan, the program will identify key stakeholders, with a heavy emphasis on customer and end-user segments. The goal is to understand the key characteristics, understand stakeholder populations and usage, identify segment representatives, and provide an approach to engaging stakeholders and establishing feedback loops that will inform future program priorities. The Stakeholder Management Plan will ensure that the program is engaging stakeholders to understand their evolving needs/usage, understand their perceptions on value delivered, and provide stakeholders a voice in future Epic direction.

Predictive approaches typically engage stakeholders upfront to provide requirements and then at the end of development to test and validate the delivery of those requirements. However, Agile's incremental approach to value delivery requires continuous, routine, and active engagement with stakeholders to improve the speed of value delivery and to maximize the value of what is delivered. This will require that stakeholder representatives understand how they will participate (e.g., value assessments, feedback loops, proportional user representation, upvoting functionality, net promoter scores) so they can plan and budget accordingly. Enhanced approaches to engaging and delivering incrementally/iteratively improve product delivery economics and value to customers.

Recommended Resources

- Agile Coach, PM, PO, Scrum Master, Teams, SMEs.

Process Description

- Identify stakeholders and understand their characteristics, population sizes, needs, and usage.
- Identify stakeholder representatives with whom the program will engage.
- Determine approaches to enhance engagement, feedback, and customer satisfaction to maximize value.

The Stakeholder Management Plan artifact is created during the Initiation Phase. During this phase, the program will begin identifying and understanding stakeholders via the Stakeholder Register. During the Planning Phase, the PM should continue identifying stakeholders and refining the Stakeholder Register, determine representatives, and leverage representatives' understanding of stakeholders to inform engagement events and activities.

Anticipated Outcomes

- Frequent, consistent, and active user engagement maximizes the value delivery by Agile programs.
- Gain commitment that identified user representatives will engage routinely, actively, and continuously to guide Epic evolution and address emerging priority needs.
- Capture feedback to drive Epic direction and acceptance criteria (e.g., needs, priorities, trade-offs).
- Engagements prepare for user acceptance and help ensure readiness for operational deployment.
- Stakeholders may use this artifact to ensure adequate time and budget are available to support the program.

Example

An example of the type of information and data captured in this artifact is depicted in Figure 26. Directions for developing the artifact are found within the artifact itself.

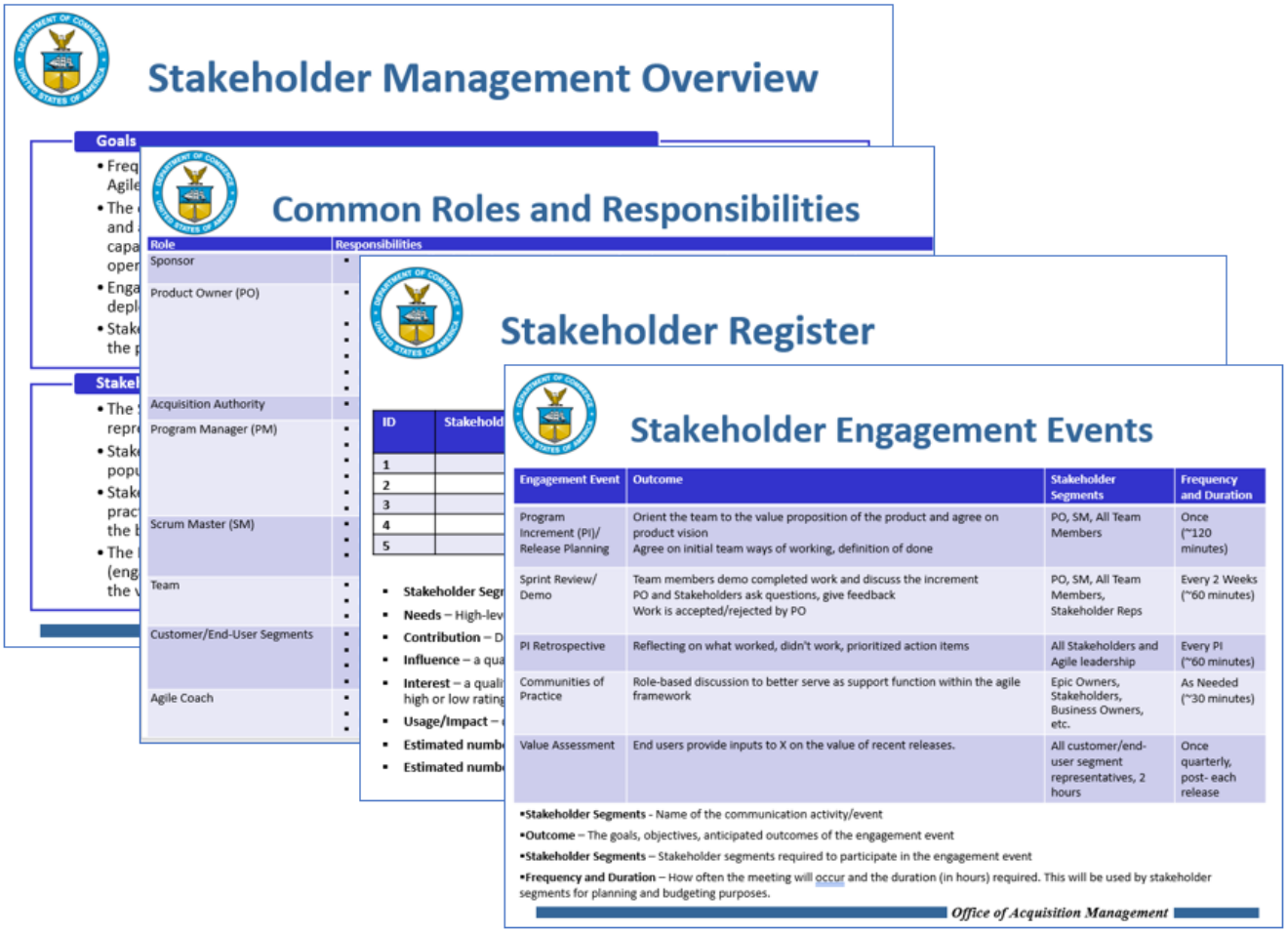

Figure 26: Stakeholder Management Plan Information and Data

WORK BREAKDOWN STRUCTURE (WBS) AND ROADMAP

Usage and Value

The purpose of the WBS is to provide a product-oriented visualization of components of the program that need to be delivered (e.g., Epics and Features) for the program to be successful. The WBS helps guide the program value delivery and inform future acquisition activities (e.g., resourcing, cost estimating, acquisition strategy). It is a tree structure, which shows the subdivision of efforts required to complete a program. The initial WBS may be high-level but will be refined as the program is further defined. Developing the WBS can help inform Epics and Features that can be scheduled for delivery across fixed release cycles in the Roadmap. The Roadmap portion of this artifact is used to illustrate and communicate long-term planning (Epic delivery) and near-term planning (work items targeted for MVP and other near-term release(s) and additional decomposition by Teams in Program and Product Backlogs).

Recommended Resources

- Agile Coach, PM, PO, Scrum Master, Teams, SMEs, customer and end-user representatives, cost estimators.

Process Description

- Review provided WBS examples for alignment to program.
- Tailor examples to the program or define the product(s) to be developed and/or produced, followed by elements of work to be accomplished in support of acquiring or developing the product(s).
- Emphasize work products (nouns) over phases/tasks/activities (verbs) to explain “what we need” and “why” without explaining “how.”
- Define elements that may be related to the future operating posture or model.
- Solicit feedback from program personnel, customers, end-users, and other stakeholders.
- Build with SMEs using a combination of silent writing/brainstorming/storm draining.
- Leverage the WBS from similar programs (historical knowledge).
- If subject matter expertise is limited and there are no similar programs to draw from, ask industry (e.g., request for information, request for proposal).

The initial WBS is informed by stakeholder and SME expert inputs, as well as the gaps identified in the MNS. In addition, the WBS is informed by resources common in all programs. It provides a visual depiction of all work packages (deliverables) for programs (a product-oriented family tree composed of hardware, software, services, data, and facilities). It informs resourcing (both internal needs and acquisition/contracting needs). Finally, it generates clarity on scope (what will be delivered and what will not be delivered) for communication with stakeholders and in the acquisition process.

Anticipated Outcomes

- A completed WBS outline provides a structured hierarchy for future program definition.

Example

An example of the type of information and data captured in this artifact is depicted in Figure 27. Directions for developing the artifact are found within the artifact itself.

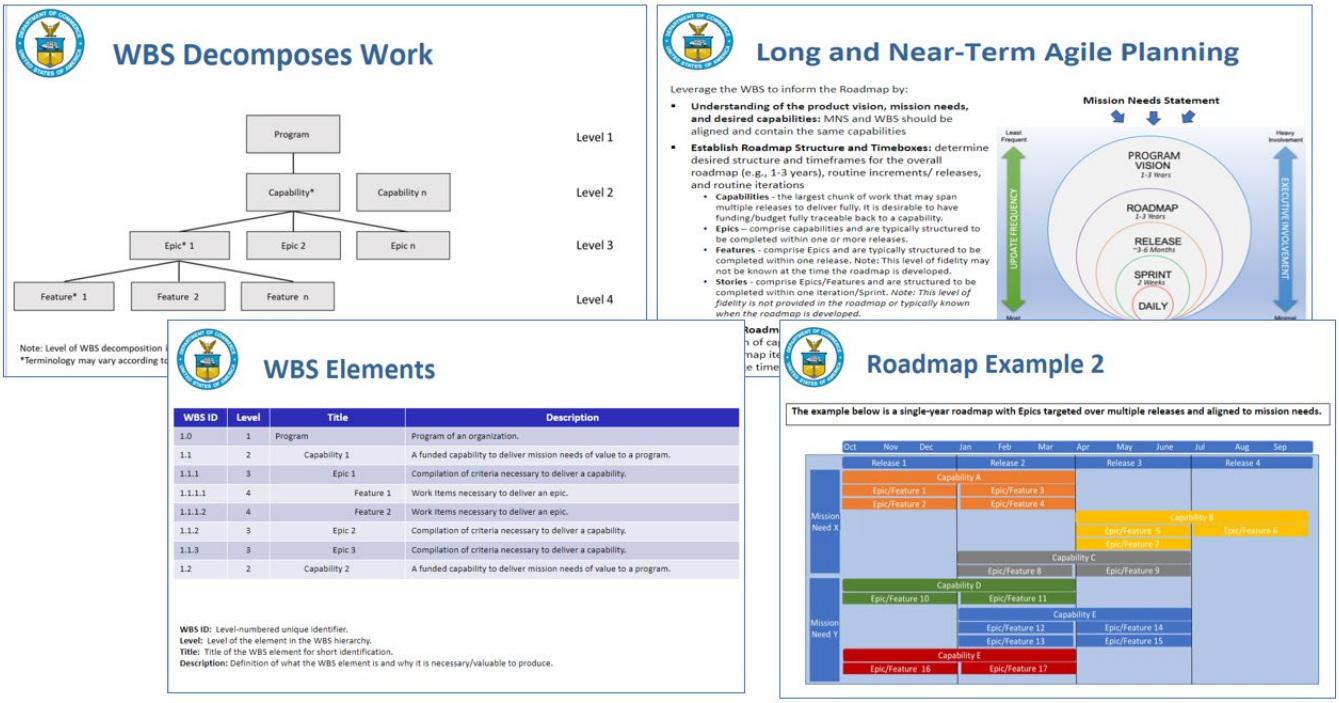

Figure 27: Work Breakdown Structure Information and Data

RESOURCE PLAN

Usage and Value

The purpose of the Resource Plan is to provide the program Sponsor needed, if limited, information about the program's potential costs and resource requirements and the organization's likely ability to afford those costs and resource needs. During the Initiation Phase, little information will be available about the program. Therefore, this analysis will be very broad and will probably produce a range of estimates. The program Sponsor will use this analysis to inform their decision to commit to the program. In Agile programs, resources are typically dedicated to the delivery of a product or service (e.g., an Epic). This helps fix costs and provides traceability that can be used to guide investment decisions.

Recommended Resources

- Agile Coach, PM, PO, Scrum Master, Teams, SMEs, cost estimators.

Process Description

This process is performed by the organization that will undertake the program, which will usually be the organization that has identified the need. Expertise from outside the organization may be required to complete the analysis.

All information about the program needs to be assembled and analyzed:

- What work needs to be performed to deliver MVP and Roadmap items?
- What is the timeframe for routine program releases?
- Who are the major stakeholders that will be engaged?

Information about the current and projected resources available during the lifecycle of the program must be assembled, such as:

- Budget authority currently and potentially available.
- Technical expertise within and available to the organization.
- Experience in program management.
- Available real property/facilities and other material support.
- Adequacy of staffing.
- Contracting capability.

The analysis must consider all the above information and provide to the program sponsor:

- An understanding of the resources required to deliver per the Roadmap.
- An understanding of the costs associated with each resource.
- A judgment about the ability of the organization to undertake such a program and what additional capability would be needed to succeed.
- An opinion about the likelihood of securing the needed resources.

Anticipated Outcomes

In Initiation, the analysis should provide the first rough order of magnitude estimate of resources required to deliver Epics necessary to meet mission needs. In Planning, this artifact provides resources necessary for **each of**

the alternatives depicted in the AoA. The resource estimates should be aligned to the MNS, WBS, and Roadmap to cover materials, equipment, and labor.

Example

An example of the type of information and data captured in this artifact is depicted in Figure 28. Directions for developing the artifact are found within the artifact itself.

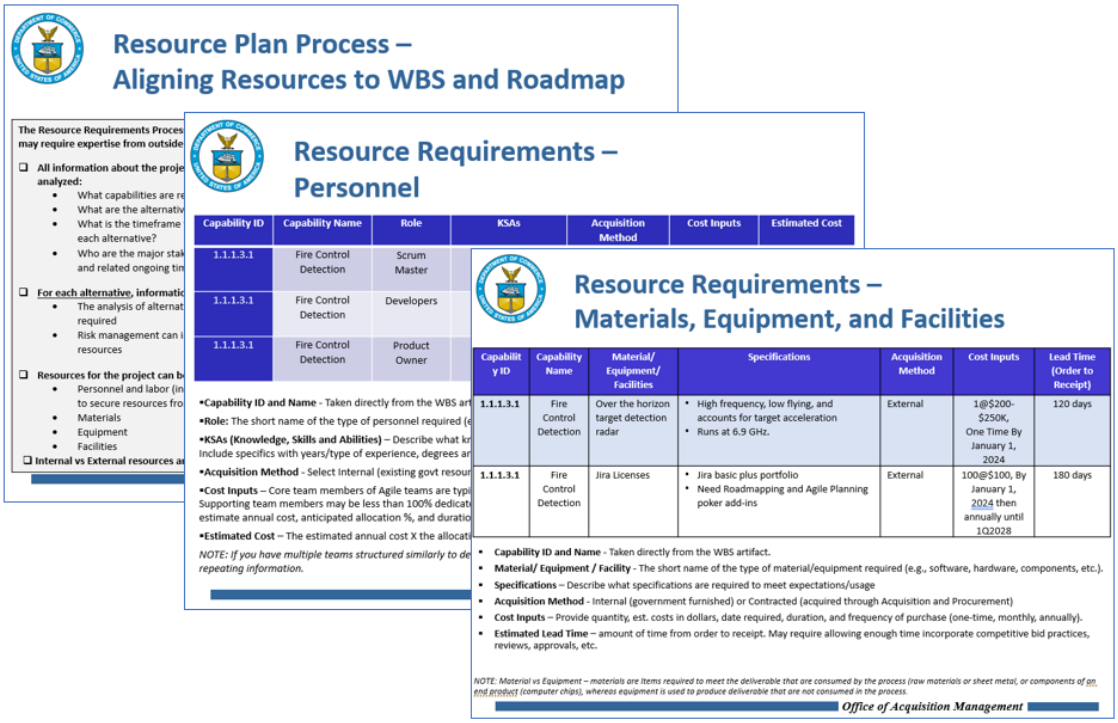

Figure 28: Resource Plan Information and Data

RISK REPORT

Usage and Value

In the Initiation Phase, an organization is still early in the discovery process of determining whether it should invest in the program. The purpose of the initial Risk Report is to identify potential risks, providing the program sponsor and the MRB members with a more complete understanding of the program.

In subsequent phases, the purpose of the Risk Report is to document potential risks, providing the program sponsor and the MRB members with a more complete understanding of the program at the time of the milestone. Typically, in Agile practice, identification, analysis, and resolution of risks will be assessed at the beginning of each release in program increment/release cycle planning sessions. Risks are identified and actively addressed by ROAMing risk (i.e., risks are noted as Resolved, Owned for monitoring/further analysis, Accepted, or Mitigated).

Risk management is an ongoing, iterative process, and the program's risk register should routinely be updated based on new risk events or updates to strategic risk responses for current risks. Positive or negative risk events can be associated with any aspect of a program (e.g., technology maturity, supplier capability, design maturation, performance against plan) and may affect any element of the acquisition process from program initiation through execution to disposal. Risk management is an ongoing process (not a static event) designed to ensure predictable delivery, enhanced value delivery, and realistic outcomes.

Recommended Resources

- Agile Coach, PM, PO, Scrum Master, SMEs, customer and end-user representatives, cost estimators.

Process Description

Risk management begins during the Initiation Phase of a program, when little information is available, and continues throughout the program as increasing amounts of information are available. During subsequent phases, the program should have a formalized risk management process from which the updated Risk Reports will be provided during milestone reviews.

Several factors are essential for the success of risk management:

- The support and involvement of senior management in the risk management process.
- The designation of functional representatives with subject matter expertise in various risk areas.
- A predetermined set of procedures to guide the management process.
- Ongoing documentation of risk information.

The process includes:

- Identify existing risks/adverse events and populate the Risk Register.
- Determine underlying root causes/trigger events that may lead to the risk event occurring.
- Evaluate probabilities and consequences if the risk event occurs.
- Consider related program consequences (i.e., on scope, schedule, budget, quality, value/benefits).
- Determine risk response strategies, owners, and actions ahead of time to modify their probability and/or consequence (as necessary).
- Provide a regular cadence to review and update risks, response strategies, and status.

Anticipated Outcomes

1. Identify a comprehensive list of program risks, developed by SMEs from a variety of disciplines and incorporating unique perspectives.
2. Qualitative and quantitative analysis and grouping of risks inform suitable risk response strategies.
3. Clearly define risk response strategies to minimize risk exposure.

Example

An example of the type of information and data captured in this artifact is depicted in Figure 29. Directions for developing the artifact are found within the artifact itself.

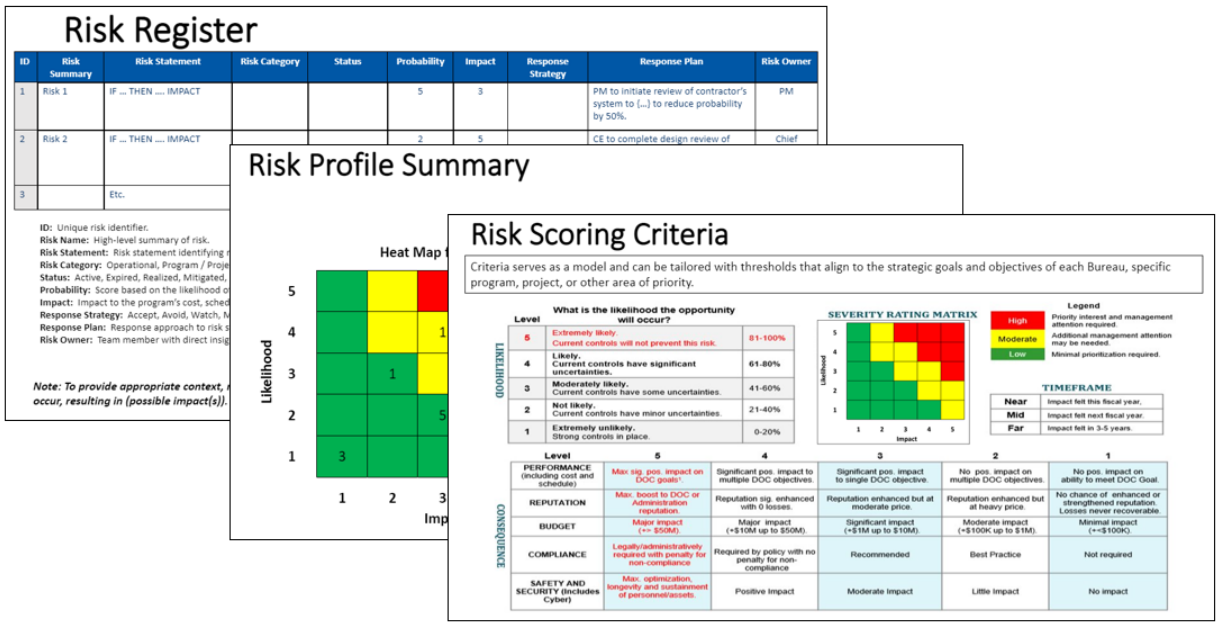

Figure 29: Risk Report Information and Data

PROGRAM COST ESTIMATE

Usage and Value

The Program Cost Estimate provides the foundation for the Department's business decisions concerning program affordability and investment levels at each milestone. It provides a complete accounting of all resources and associated cost elements required to develop, produce, deploy, and sustain a particular program or Epic. The Program Cost Estimate heavily relies on the MNS, Roadmap, WBS, and Resource Plan and costs should only be considered once those artifacts are produced and clearly aligned. Agile programs tend to have dedicated resources and a fixed cost structure that typically changes only if a decision is made to increase or reduce investment, or due to routine cost increases (e.g., salary, license increases). Investment decisions should be made leveraging targeted value delivery on the Roadmap, value delivery data produced post-release, and value assessment data captured from customers/end-users.

Recommended Resources

- Agile Coach, PM, PO, Scrum Master, Teams, SMEs, cost estimators.

Process Description

The Program Cost Estimate is the responsibility of the PM. It is essential to successfully manage a program within cost and affordability guidelines. All known costs should be included in the Program Cost Estimate, which will be ROM during Initiation and refined for greater accuracy during Planning.

The inputs for this process during Initiation include the MNS, Roadmap, WBS, and Resource Plan. During Planning and beyond, the AoA, CONOPS, and other artifacts may be available to refine the Program Cost Estimate.

The process of developing a Program Cost Estimate should involve the following:

- Understand the work targeted for delivery using the MNS, Roadmap, and WBS.
- Understand the resources required to support delivery of targeted Epics to meet mission need.
- Determine the estimate's purpose.
- Develop the estimating plan and required resources.
- Determine what is known about the technical baseline (i.e., functional and performance characteristics).
- Use the program Roadmap to link scheduled releases, targeted value delivery/requirements, resources, costs, and risks.
- Document ground rules, assumptions, data, and methodologies underlying the cost estimate.
- Structure the cost estimates per Epic along the increments/releases in the Roadmap.
- Collect the data for the estimate.
- Develop the initial draft.
- Conduct sensitivity, risk, and uncertainty analysis.
- Document the steps used to develop the estimate to demonstrate it was done correctly and can be replicated with similar results.
- Update and document the estimate to reflect any changes and/or at subsequent decision points as a best practice.

Anticipated Outcomes

The Program Cost Estimate should assume Epics will exist and be supported until they are no longer valuable. Therefore, programs should consider the entire life of the program (from initiation through sustainment and disposal). This information should inform affordability, ROM, and a refined cost estimate for (at minimum) the portion of the program targeted for delivery within the Roadmap. The Program Cost Estimate will be used to inform milestone reviews, ongoing program performance, and value assessment.

Example

An example of the type of information and data captured in this artifact is depicted in Figure 30. Directions for developing the artifact are found within the artifact itself.

WBS #	Level	Cost Element	Approp.	FY23	FY24	FY25	FY26	FY27	Total ($M)
		Program XYZ		**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**
1.0	**1**	**Development, Modernization, & Enhancement (DME)**	**DME**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
1.1	2	Program Management	DME	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
1.1.1	3	Program Management Labor							$0.00
1.1.2	3	Other Direct Costs (ODC)							$0.00
1.2	2	System Engineering	DME	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
1.2.1	3	System Engineering Labor							$0.00
1.2.2	3	Other Direct Costs (ODC)							$0.00
1.2.3	3	Infrastructure							$0.00
1.3	2	Capability	DME	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
1.3.1	3	Epic 1		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
1.3.1.1	4	Application Development							$0.00
1.3.1.2	4	Cybersecurity							$0.00
1.3.1.3	4	Integration, Test & Evaluation							$0.00
1.3.1.4	4	Implementation/Deployment							$0.00
1.3.1.5	4	Other (specify)							$0.00
1.3.2	3	Epic 2		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
1.3.2.1	4	Application Development							$0.00
1.3.2.2	4	Cybersecurity							$0.00
1.3.2.3	4	Integration, Test & Evaluation							$0.00
1.3.2.4	4	Implementation/Deployment							$0.00
1.3.1.5	4	Other (specify)							$0.00

Figure 30: Program Cost Estimate Information and Data

EPICS AND FEATURES

Usage and Value

The Epics and Features artifact initially serves as a repository for tracking the necessary Epics and showing the mapping of Epics to decomposed Features. This allows the program to ensure that all work items (e.g., requirements, value) are traceable back to a particular Epic. Additionally, once the acquisition strategy is developed and procurements are identified, value delivery (e.g., Epics and Features) can be mapped to specific procurements or flagged for production by government staff. This will ensure that there is a planned approach for delivering the value required to satisfy mission needs. The OAM will use this document to ensure that the existing gaps and deficiencies are being addressed and that the program is properly planning for future procurements.

This artifact leverages the insight from the MNS and WBS to relate work packages (e.g., Epics, Features) to specific requirements necessary to deliver them and to further relate them to the specific stakeholders that requested them. In this phase, provide all information (except for the procurement information) prior to producing the AoA. After the AoA and acquisition strategy are complete, revisit this artifact to relate each requirement to a specific procurement or highlight that the government intends to deliver that requirement. For Agile programs, the artifact has been modified to focus on the hierarchical decomposition of work items and includes the production of a Lean Business Case for major work items (e.g., Epics, Features).

Recommended Resources

- Agile Coach, PM, PO, Scrum Master, Teams, SMEs, customer and end-user representatives.

Process Description

- Identify Epics and underlying Features.
- Determine constraints that influence or mandate specific requirements.
- Provide Lean Business Case information that shapes Epics and/or Features.

Epics, Features, and Stories will evolve and be captured throughout the life of the Agile program, but a view of the current state is required during the Planning Phase (prior to Milestone 2). Capture of Epics and Features typically occurs early in the Planning Phase but will be revisited toward the end of the phase after the Acquisition Strategy is completed and specific procurements are known so they can be tied back to specific requirements.

To develop the Epics, the program should begin by referring to the MNS and AoA to gain a thorough understanding of the program needs. The program will also use the Stakeholder Management Plan to determine stakeholders' participation and needs when determining the Epics. Each Epic and Feature will need to be vetted with the stakeholders to ensure that they are appropriate and accurate. The program should plan to revisit and revise the Epics and Features as needed.

The Epics and Features artifact shows how the program should start by listing and describing all Epics (taken from the MNS), then decomposing those Epics into Features that can be delivered within the release cycle provided in the Roadmap. The program will provide additional information and parameters of each Epic and Feature in the Lean Business Case portion of the artifact, which includes the Name, Owner, Requested by, Value Statement, Anticipated Benefits/Value, Leading Indicators, In Scope, Out of Scope, Nonfunctional Requirements, Minimum Viable Product Features, and Additional Potential Features. The Lean Business Case may also include constraints that influence or mandate specific requirements for the program described in the Epics and Features artifact, including explanations for each constraint. After determining the Acquisition Strategy and specific procurements

that will be made, the program should align all known Epics and Features to specific, identified procurements or highlight the government intent to deliver the Epic or Feature.

Anticipated Outcomes

The Epics and Features artifact leverages the insight from the MNS, WBS, and Roadmap to ensure all lower-level work packages identified (e.g., Features, Stories) are traceable up to the Epic level and structured to deliver value at the end of each program increment/release cycles. Additional information is captured about decomposed Epics targeted for the upcoming release(s) to help Team(s) decompose work down to the Story level in increment/release planning.

Example

An example of the type of information and data captured in this artifact is depicted in Figure 31. Directions for developing the artifact are found within the artifact itself.

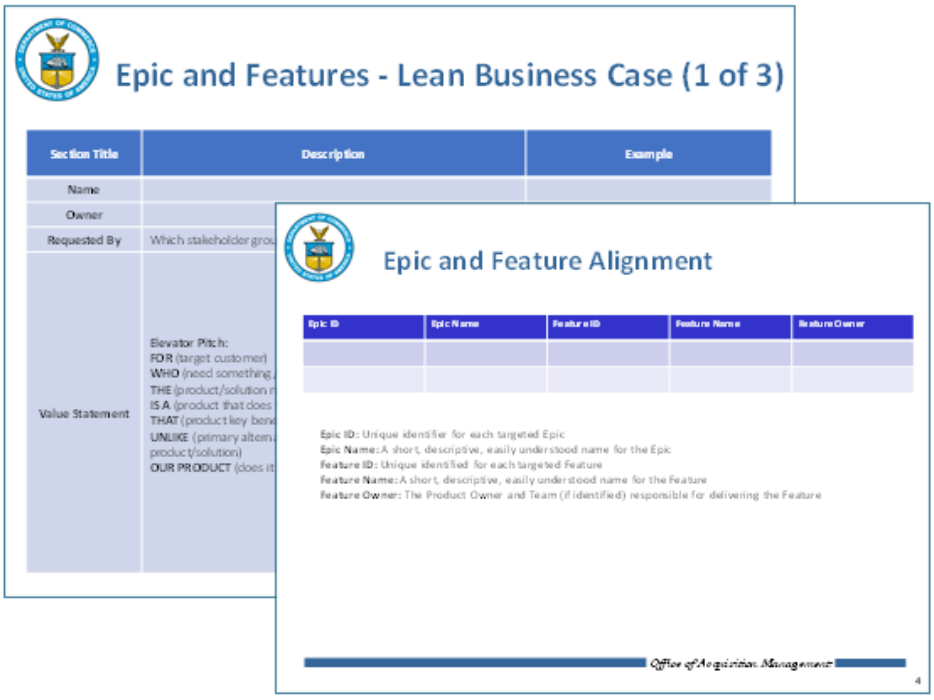

Figure 31: Epics and Features Information and Data

CONCEPT OF OPERATIONS (CONOPS)

Usage and Value

The CONOPS is developed during the Planning Phase and describes the operational view of a required Epic from the user's perspective. It communicates high-level, conceptual future business and mission operations to program sponsors, end-users, planning and design Teams, and other stakeholders. Specifically, it provides an understanding of usage to drive the development of an operational Epic. It permits stakeholders to assess solution alternatives in the context of "real-world" (scenario-based) operational environments. The CONOPS describes how an asset, system, product, or service will be used and supported.

Recommended Resources

- Agile Coach, PM, PO, Scrum Master, Teams, SMEs, customer and end-user representatives.

Process Description

The CONOPS process includes:

- Define and describe each of the missions that the solution will contribute to or perform and how they align to the MNS.
- List and briefly describe the various groups of people/user classes who will interact with the system.
- Describe the type of interaction each user group (e.g., operational users, data entry personnel, trainers) will have with the mission.
- Develop a user-focused description and/or illustration to provide insight into how an Epic will perform and fit into the processes, activities, and organizations involved in fulfilling the mission(s).
- Provide multiple scenarios and operational descriptions for how the asset or system will operate if there are differing workflows, interfaces, and inputs.

Stakeholder and end-user inputs define the operational scenarios in which the new system or asset will be utilized. The operational environment(s), factors, and constraints further define how the system will be used.

Anticipated Outcomes

A CONOPS that communicates the high-level conceptual function of each Epic, including:

- Describes the operational view of a required Epic from the user's perspective.
- Communicates high-level, conceptual future business and mission operations to program sponsors, end-users, planning and design Teams, and other stakeholders.
- Permits stakeholders to assess solution alternatives in the context of "real-world" (scenario-based) operational environments.
- Describes how an asset, system, product, or service will be used and supported.

Example

An example of the type of information and data captured in this artifact is depicted in Figure 32. Directions for developing the artifact are found within the artifact itself.

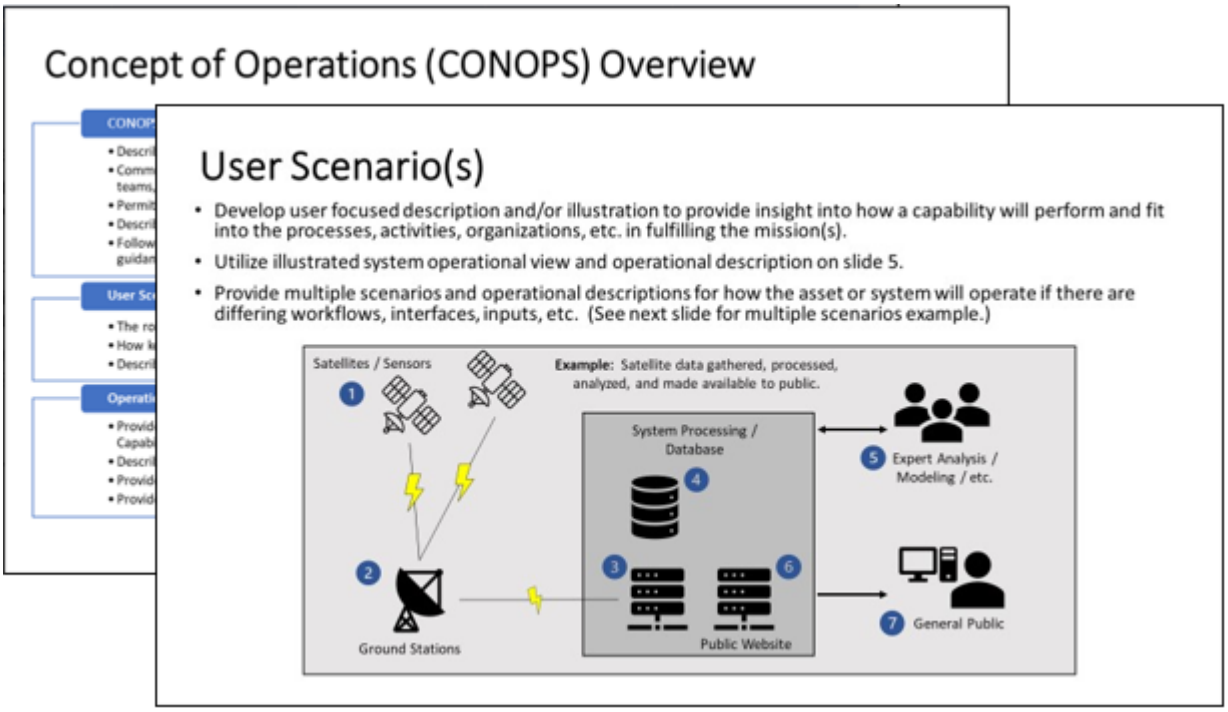

Figure 32: Concept of Operations Information and Data

ANALYSIS OF ALTERNATIVES (AOA)

Usage and Value

The AoA is an analysis method used to provide a systematic decision-making process to identify and document the most resource efficient method of satisfying an identified need. It includes evaluation of the effectiveness of the alternative solutions as well as estimates of their lifecycle costs. The AoA assesses the advantages and disadvantages of alternatives being considered, including the sensitivity of each alternative to possible changes in key assumptions or variables. The results of the analyses are used to give decision makers a basis for choosing the best solution to meet their mission need. Technology Readiness is a requirement in the AoA for Agile programs.

Recommended Resources

- Agile Coach, PM, PO, Scrum Master, Teams, SMEs, customer and end-user representatives, cost analysts.

Process Description

- Establish the study team.
- Determine the scope of the alternatives and the assumptions/ground rules.
- Identify effectiveness and performance measures.
- Assess Technology Readiness for each alternative.
- Analyze the alternatives based on identified measures and estimated costs.
- Write the AoA report.

An AoA consists of analyses of alternative solutions to an identified mission gap. It involves the use of trade studies, identification of rough order of magnitude lifecycle cost for each viable alternative, and a Cost-Benefit Analysis for each viable alternative to establish the return-on-investment measure. To be considered viable, an alternative must satisfy the MNS and align with (or have) a viable CONOPS.

A minimum of three viable alternatives should be identified, including the existing asset or system solution (status quo). When an alternative is an existing asset, capability, or technology demonstrator, an evaluation of relevant safety and performance records and costs should be included.

While more than three alternatives may be identified, only the top three most effective, viable, and affordable alternatives (including status quo) should be fully examined in the AoA. The alternatives are usually conceptual solutions that satisfy the identified gap. To properly conduct the AoA, there needs to be a tight coupling between the MNS, CONOPS, and the analyses performed to evaluate the various alternatives.

The analyses conducted during the AoA (e.g., trade studies, modeling, simulation, experimentation) must be completed at a level of resolution sufficient to clearly show the effectiveness, suitability, and rough order of magnitude lifecycle costs of each of the alternatives considered. At a minimum, the AoA shall include an assessment of the technical maturity of the Epic and technical and other risks, as well as an examination of the Epic, interoperability, and other advantages or disadvantages. It is important to identify costs that will allow discrimination among alternatives. The achievable level of analysis must be balanced against the fact that program-level information on alternative costs may not be readily available at this point.

Anticipated Outcomes

The AoA process and results are documented in a formal, written AoA Report provided to decision makers and the Milestone 2 Review Board. Programs should submit the AoA for feedback once completed to ensure the selected alternative is aligned with leadership objectives. The AoA report should:

- Clearly define and analyze alternate solutions, courses of action, and allocation of resources to best deliver Epics and solve problems.
- Define and weigh evaluation criteria (e.g., operational effectiveness, cost, schedule, risk) to analyze alternatives.
- Document the rationale for the recommended solution(s).
- Optimize through trade-off analysis of actions to improve performance.
- Exercise “what-if” scenarios to better understand decision space.
- Evaluate the technology readiness level.
- Forecast anticipated value, cost, and schedule across alternatives (at ROM).

Example

An example of the type of information and data captured in this artifact is depicted in Figure 33. Directions for developing the artifact are found within the artifact itself.

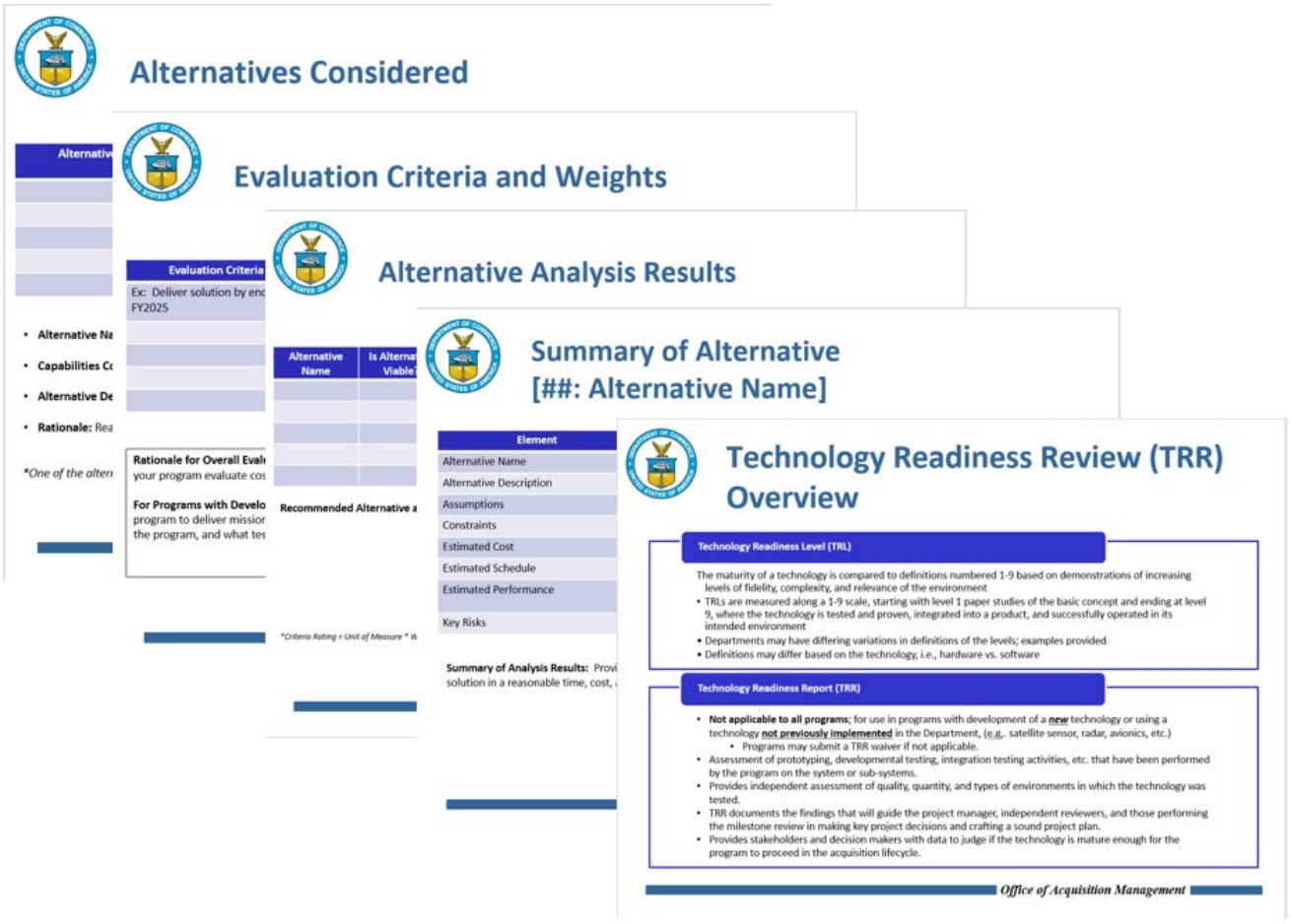

Figure 33: Analysis of Alternatives Information and Data

COST ANALYSIS REQUIREMENTS DESCRIPTION (CARD)

Usage and Value

The CARD is a comprehensive, detailed description of the program and the basis used to drive preparation of the cost estimate. The primary purpose of the CARD is to explicitly describe the key technical, programmatic, operational, and sustainment characteristics of a program necessary to drive cost estimation. The foundation of a credible cost estimate is a well-defined program, as noted in the MNS, Roadmap, WBS, Resource Plan, CONOPS, and AoA. With Agile programs, resources and costs should be aligned to specific Epics. Estimating costs in an Agile environment requires a more iterative, integrated, and collaborative approach than in traditional acquisition programs. Contrary to the myth that Agile is an undisciplined approach that downplays cost aspects, cost estimation is a critical activity in programs that use Agile practices. However, the approach shifts to a nearer-term view aligned to anticipated value delivery, which is supported by dedicated resources.

An Agile development program intentionally relies on just-in-time planning with less fidelity than traditional predictive/waterfall programs. This is because the goal of Agile is to deliver value incrementally and continuously with adaptation of requirements throughout. Detailed information on targeted value delivery down to the Story level is typically only available for the upcoming increment/release. Releases occurring farther into the future are defined by higher-level value delivery targets (e.g., Epics and Features on a Roadmap). Cost estimators must rely on certain artifact information (e.g., MNS, Roadmap, WBS, Resource Plan, CONOPS, and AoA), as well as estimation approaches more aligned to Agile practice (e.g., analogy, simplified function point analysis).

Recommended Resources

- Agile Coach, PM, PO, Scrum Master, Teams, SMEs, cost estimators

Process Description

The CARD should document and define the program baseline to include:

- Program scope and content
- Major schedule milestones for the life of the program
- System overview, description, and characteristics
- Technical definition and quantitative parameters

The program CARD should be developed prior to the drafting of the Program Cost Estimate. Once both are completed, they should be kept current, updated, and shared with program stakeholders as the program evolves through the acquisition lifecycle and/or its requirements change.

Anticipated Outcomes

A completed, formal CARD for major programs or an abbreviated CARD-like document for smaller programs will result in a written program description suitable to support a credible Program Cost Estimate.

Example

An example of the type of information and data captured in this artifact is depicted in Figure 34. Directions for developing the artifact are found within the artifact itself.

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Figure 34: CARD Information and Data

INDEPENDENT COST ESTIMATE (ICE)

Usage and Value

An ICE is an estimate of a program's lifecycle costs undertaken by an entity outside of the program's chain of command. The ICE is developed to support new program starts or to support milestone decisions for a program's stakeholders. It is relied on to validate the reasonableness of the Program Cost Estimate and to identify any gaps or risks related to the program's cost or funding baseline. To successfully perform an ICE for Agile programs, cost estimators must be familiar with emerging cost estimation practices for Agile programs.

Recommended Resources

- Agile Coach, PM, PO, Scrum Master, Teams, SMEs, customer and end-user representatives, cost analysts. The PM is responsible for ensuring that the ICE is developed and for working with the entity responsible for compiling the ICE to resolve any outstanding items or issues in achieving consensus.

Process Description

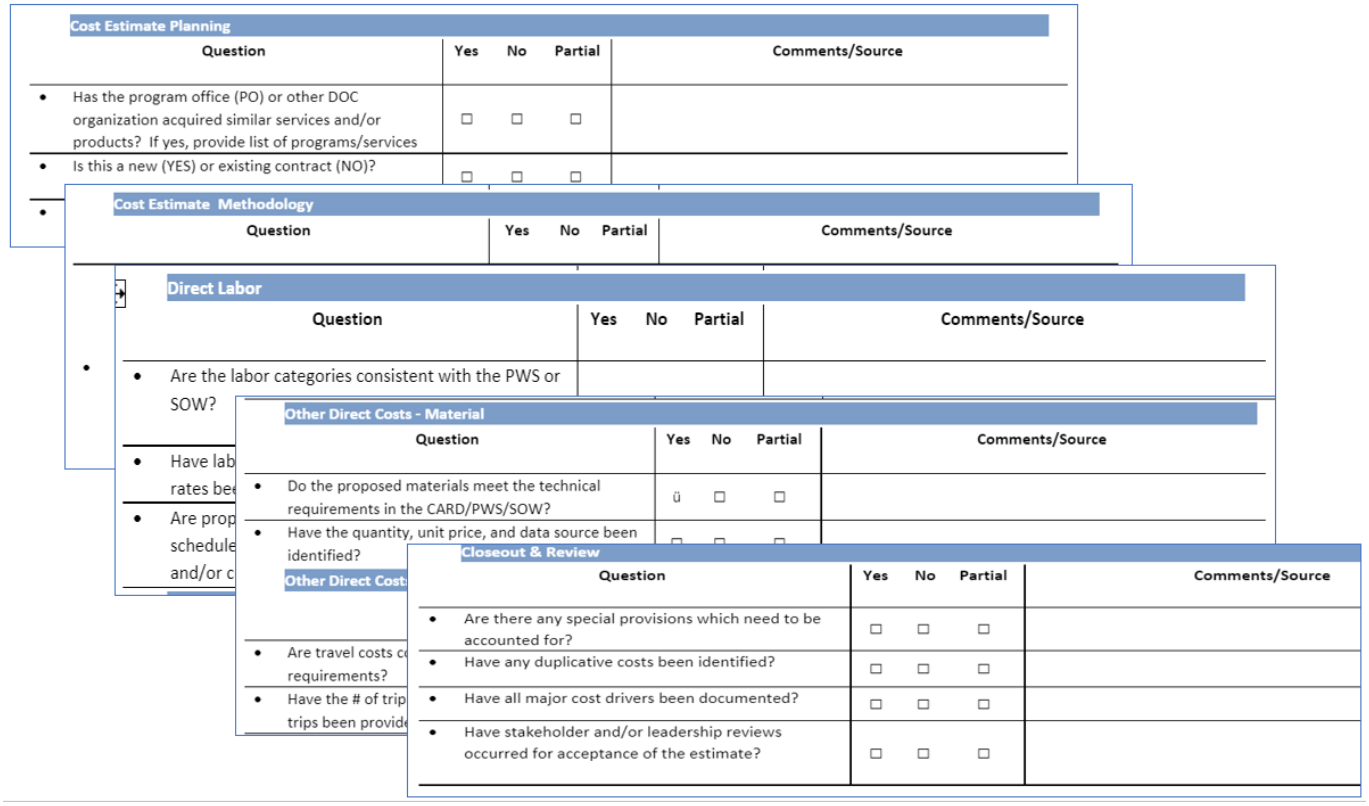
Programs may have an ICE or review performed on them at certain pre-determined points in time by those with the required cost estimating expertise but who are not involved with the program. The processes involved in developing the ICE are largely the same as the Program Cost Estimate, and the ICE is usually based on the same technical and program information used to derive the program estimate. The independent estimator uses the available programmatic documents (e.g., AoA, WBS, CARD, MNS, IMS) or other description of the solution or Epic to develop the ICE by estimating each WBS element using the best methodology from the available data. The individual WBS elements are then summed to arrive at the point estimate. The *GAO Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Program Costs*, GAO-20-195g, has detailed information on developing a cost estimate.

Anticipated Outcomes

- An Independent Cost Estimate that includes all estimated costs for developing, acquiring, and supporting the Epic being pursued. An analysis of cost variations between the Program Cost Estimate and the Independent Cost Estimate provided.

Example

An example of the type of information and data captured in this artifact is depicted in Figure 35. Directions for developing the artifact are found within the artifact itself.



Cost Estimate Planning

Question	Yes	No	Partial	Comments/Source
• Has the program office (PO) or other DOC organization acquired similar services and/or products? If yes, provide list of programs/services	☐	☐	☐	
• Is this a new (YES) or existing contract (NO)?	☐	☐	☐	

Cost Estimate Methodology

Question	Yes	No	Partial	Comments/Source

Direct Labor

Question	Yes	No	Partial	Comments/Source
• Are the labor categories consistent with the PWS or SOW?				

Other Direct Costs - Material

Question	Yes	No	Partial	Comments/Source
• Do the proposed materials meet the technical requirements in the CARD/PWS/SOW?	ü	☐	☐	
• Have the quantity, unit price, and data source been identified?				

Closeout & Review

Question	Yes	No	Partial	Comments/Source
• Are there any special provisions which need to be accounted for?	☐	☐	☐	
• Have any duplicative costs been identified?	☐	☐	☐	
• Have all major cost drivers been documented?	☐	☐	☐	
• Have stakeholder and/or leadership reviews occurred for acceptance of the estimate?	☐	☐	☐	

Figure 35: Independent Cost Estimate Information and Data

ACQUISITION STRATEGY

Usage and Value

The goal of developing an Acquisition Strategy is to minimize the time and cost of satisfying an identified, validated need, consistent with common sense, sound business practices, federal regulations, and statute. The acquisition strategy evolves through an iterative process, supporting Milestones 2 and 3, and becomes increasingly more definitive in describing relationships of the essential elements of the program acquisition. The acquisition strategy should be tailored to the specific program and provide a plan for satisfying the mission need in the most effective, economical, and timely manner.

The acquisition strategy includes the critical events that govern the management of the program. The event-driven acquisition strategy explicitly links program decisions to demonstrated accomplishments in development, testing, and initial production. The acquisition strategy process is performed throughout the program's lifecycle.

Recommended Resources

- Agile Coach, PM, PO, Scrum Master, Teams, SMEs, customer and end-user representatives, cost analysts, contracting officer(s).

Process Description

The acquisition strategy process is a comprehensive, integrated method of identifying the acquisition approach and describing the business, technical, and support strategies that an organization will follow to manage program risks and meet program objectives. The acquisition strategy should define the relationship between the acquisition phases and work efforts, and key program events such as decision points, reviews, contract awards, test activities, production lot/delivery quantities, and operational deployment objectives.

The acquisition strategy process ensures that all stakeholders, drivers, risks, and alternatives for a successful acquisition are considered to inform a sound acquisition strategy. The process brings together the efforts of all personnel responsible for an acquisition, so their work is coordinated and integrated through a comprehensive plan for fulfilling the agency's need in a timely and cost-efficient manner.

Acquisition planning must acknowledge a variety of risks and their impact on acquisition strategy elements. The Federal Acquisition Regulation (FAR) requires acquisition planning for all federal procurements. Acquisition plans are execution oriented and tend to contain more contracting-related detail than an acquisition strategy. Acquisition plans flow from the acquisition strategy and normally relate to a singular contractual action, whereas an acquisition strategy covers the entire program and may reflect the efforts of multiple contractual actions.

The process begins by consolidating information gathered from other artifacts associated with the program, such as the MNS, Roadmap, WBS, Resource Plan, Program Cost Estimate, AoA, and Risk Report. That consolidation forms the background and objectives section and the strategic factor section of the acquisition strategy. In those first two sections of the strategy, a picture of the acquisition and the environment in which it is to be accomplished is described. Considerations include:

- Type of requirement.
- Market research (including small business considerations).
- Adequate resource availability.
- Cost, schedule, and performance risk management.
- Contract type approach.

- Management approach
- Funding types
- Program requirements

The acquisition strategy concludes by detailing the strategy for implementing the acquisition:

- What contractual vehicles are considered and selected as being most appropriate and effective?
- What potential sources are available for this procurement?
- What contracting approach will be used for this procurement?
- How will the contract be administered?

Anticipated Outcomes

The process produces an Acquisition Strategy that will be updated for each future milestone review. With each milestone, there will be an increasing level of specificity as more data becomes available and more decisions are made.

Example

An example of the type of information and data captured in this artifact is depicted in Figure 36. Directions for developing the artifact are found within the artifact itself.

Figure 36: Acquisition Strategy Information and Data

PROGRAM VALUE AND PERFORMANCE ASSESSMENT

Usage and Value

The Program Value and Performance Assessment provides insight on overall program health and reflects the level of program monitoring, insight, and control. It represents a snapshot of the program at certain points in time (e.g., milestone approvals) that can be measured against program progress as it executes. The overall program health and level of monitoring/control are typically captured in dashboards, metrics, and data visualizations supported by language that provides context and thoughtful analysis. The metrics and data presented should be actionable (near real time), low cost to produce (automated wherever possible), and accurate/reliable.

Program metrics and data should be captured at program/product increments or releases. Planned or targeted values can be compared against actual values to reflect trends and continuous improvement areas. The data captured in the program baseline should contain at minimum schedule, cost, value, and performance information but should also relay changes and issues related to scope, resources, quality, risks, benefits, and procurements.

Many programs may leverage Bureau- and program-specific tools, metrics, and reporting that may have been built to support predictive/waterfall programs and not Agility. Where Bureau tools, metrics, and reporting are not aligned to Agility, Bureau leadership should work with program leadership to determine appropriate Agile tools, metrics, and reporting to meet Bureau needs while reducing unnecessary overhead on the Agile Team(s). This will allow Agile Team(s) to focus on delivering value. The Agile Framework provides guidance on areas of programmatic control and highlights meaningful Agile metrics but does not pre-define tools, metrics, and reporting for Agile programs. The OAM and MRB may, however, provide recommendations and direction on the suitability and completeness of proposed program baselines. Mission critical programs may be required to provide this information on a regular cadence to the OAM.

Predictive programs attempt to fix scope and use that scope to estimate costs and schedule. Performance metrics look to ensure that scope does not change drastically and then focus on cost and schedule (what was estimated) to make sure program performance is aligned to estimates. This is typically done using a project schedule/IMS, EVM, etc. The relationship among scope, cost, and schedule is known as the triple constraints, or “iron triangle.”

Agile flips the iron triangle by fixing schedule using routine/fixed release cycles and fixing costs via resources fully dedicated to delivery of a specific Epic that supports the program. The program then estimates what value (scope) can be delivered in the upcoming release and over the Roadmap time period. As such, programs monitor cost just enough to ensure it stays flat unless a conscious investment decision is made or annual adjustments (e.g., salary, license costs) occur. The program also monitors release cycles (the fixed schedule) to ensure they remain fixed/routine and do not extend for any reason. Fixing time and cost in this manner allows Agile programs to estimate and focus metrics/reporting on value delivery, Team performance (value delivery efficiency), and quality. Because value is released routinely and incrementally, release data and value to customers/end-users can be assessed post-release to guide decision making (including investment levels and trade-offs across Epics).

Recommended Resources

- Agile Coach, PM, PO, Scrum Master, Teams, SMEs, customer and end-user representatives, cost analysts.

Process Description

In the Planning Phase, program planning considers all program activities. The assessment includes expected value delivery, release timing, program costs, Agile metrics, and assessment of value delivered. As the program

matures, many events will continuously shape it, including new learning, availability of additional information, emerging risks, external influences, and evolving customer needs.

Considerations may include:

- Have baseline costs or scheduled release cycles been consistent and routine?
- Is scope adapting to maximize value?
- Are customers happy with recent product demos/releases?
- How is the program leveraging Agile metrics to continuously improve?
- What are the latest results of risk management? Have new risks been identified? Have previously identified risks been treated? How have they impacted the program?
- Are there any human resources issues to consider?
- What are the latest results of quality assurance practices? Have any issues been identified? If so, will they cause changes to the baseline?
- What are the latest impacts of any internal or external program dependencies?
- Are there any communications issues to consider?
- Are there any adjustments that need to be considered before procurement actions?

As the program baseline is established, OAM will work with programs to:

- Determine whether the proposed program baseline provides a complete set of metrics and data to inform on overall program health.
- Provide feedback on which baselines will be measured and tracked for deviations.
- Establish the process and audiences required for notification and action deviation thresholds.

Anticipated Outcomes

The process produces a Program Value and Performance Assessment that is essential for communicating program/product health that may include:

- Comparison of Planned Value Delivery to Actual Value Delivered.
- Summary of Costs Per Epic.
- Program Metrics and Usage.

Example

An example of the type of information and data captured in this artifact is depicted in Figure 37. Directions for developing the artifact are found within the artifact itself.

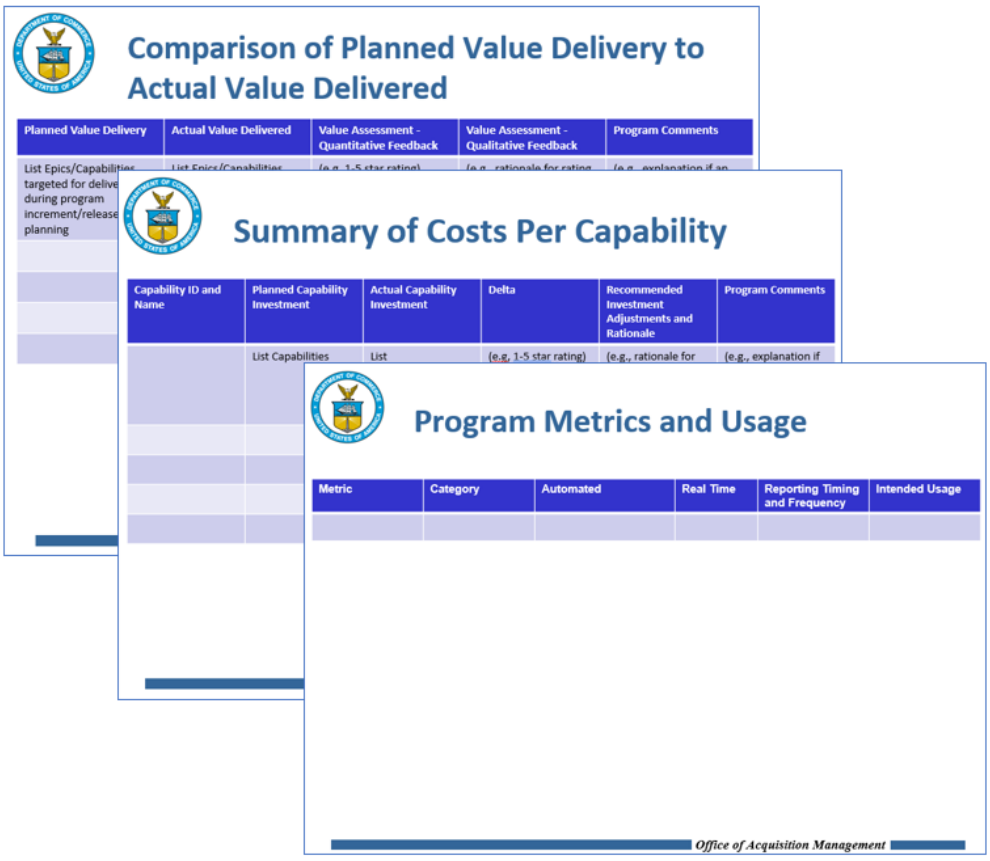


Figure 37: Program Value and Performance Assessment Information and Data

VALUE DELIVERY STRATEGY

Usage and Value

The Value Delivery Strategy artifact defines the approach to Agile practice (e.g., cadence of release cycles, defined Agile practice and tools), as well as DevSecOps. It will help ensure that the program has considered how it will shift left many organizational requirements and supporting functions to move at the speed of the Agile Product Team(s) (e.g., architecture, cybersecurity, test, and evaluation). At minimum, it will identify possible areas of challenges that may require organizational intervention or program-level solutioning.

Recommended Resources

- Agile Coach, PM, PO, Scrum Master, Teams, SMEs, customer and end-user representatives.

Process Description

In the Planning Phase, the program must consider how it will operate in an Agile fashion and integrate organizational requirements and supporting functions into that Agile approach to ensure smooth and efficient value delivery without bottlenecks, blockers, and disruption. Key considerations include:

- What is the Agile practice the program intends to utilize?
- What is the increment/release cycle the program will routinely follow?
- What is the increment/Sprint cadence the program will leverage?
- How will the program leverage DevSecOps and automation to drive efficient, repeatable, and high-quality processes for value delivery?
- What approach will the program take to ensure just-in-time and emerging architecture meets organizational needs?
- What requirements should be built into the definition of done and/or acceptance criteria, or built as Stories to meet known architecture, cybersecurity, and test/evaluation needs?
- How does the program receive continuous authority to operate and release value (CATO)?

Anticipated Outcomes

The program will provide a clear understanding of Agile and DevSecOps practices, approaches, and tools. The program will highlight anticipated touchpoints with organizational policies, processes, and functions and make efforts to shift these left to move at the speed of the Agile Product Team(s), so value delivery is not inhibited or disrupted.

Example

An example of the type of information and data captured in this artifact is depicted in Figure 38. Directions for developing the artifact are found within the artifact itself.

Figure 38: Value Delivery Strategy Information and Data

APPENDIX B – DEFINITIONS

***Acquisition Management**:* Management of a project over its entire lifecycle, including initial concept identification, needs analysis, requirements development, design and development, fielding and operations, and disposal.

***Acquisition Agile Framework**:* A framework that describes acquisition project management phases and the major decision milestones required to manage the progression of those phases (see Figure 1). The Agile Framework:

- Describes the minimum standard processes, documents, and reviews to which all mission critical acquisition programs and projects must adhere.
- Places emphasis on early program and project planning, requirements development and traceability, risk identification, and resource and cost expectations.
- Is scalable depending on the program's or project's size, complexity, and risk.
- Describes the principles of a lifecycle approach to managing acquisition programs/projects.

***Activity**:* An action that supports a project and objective.

Agile: A mindset for a customer-centric approach to managing organizations, projects/programs, and products/services. Agile focuses on early, iterative, incremental, and continuous delivery of value. Agile centers on adaptability and responding to changing priorities to maximize value to customers/end-users.

Agile Coach: Facilitates Agile transformation and provides insight on Agile best practices for leadership, Scrum Master, and Teams.

Baseline: A snapshot of key program metrics and data taken by Milestone 2 that will include at minimum schedule, cost, and performance data. The program baseline compares the snapshot of data at critical points throughout the project (e.g., milestones) to actual program results.

***Baseline Deviation**:* Any variation in cost, schedule, and/or anticipated value delivered when compared to the agreed-on baseline values.

***Cost Analysis Requirements Description (CARD)**:* A description of scope of the program and basis of estimate utilized to develop the Program Cost Estimate.

***Enterprise**:* An entire business organization. For example, when discussing DOC Enterprise Risk Management, "Enterprise" means the entire DOC.

***Level of Effort Activity**:* A funded activity that does not meet the definition of a program or project. It may have some of their characteristics, but not all. These activities are usually the ongoing efforts of an organization.

***Milestone Decision Authority**:* The Deputy Secretary, who has statutory authority, or an individual who has been formally delegated authority to make acquisition investment decisions at program/project milestones in the DOC. This authority may be delegated in writing with rationale.

Milestone Review Board (MRB): The authorizing body for approval of an identified DOC mission critical acquisition program or project to proceed from one phase of the Agile Framework to the next (see Figure 2). The authorities vested in the MRB include approval of procurements planned for the next acquisition phase (both information technology (IT) (IT Investment Authority) and non-IT).

Minimum Viable Product or Prototype: A real, working product, system, service, or asset that is used to evaluate design, usability, and fitness for use. Typically, prototypes generate a real, working product that can be assessed by end-users at a lesser level of investment and effort than the full and final product.

Mission Critical: The classification for programs and activities that are subject to Department-level milestone review board oversight due to being "high risk", "high dollar", or receiving a "special designation".

Mission Need*:* A high-level statement of the Epic required to perform an organizational function or close a gap or recognized need.

MRB Chair: The DOC Deputy Secretary is the MRB Chair. The Deputy Secretary may designate an individual to chair an MRB, but the MDA shall remain with the Deputy Secretary unless formally delegated in writing with rationale.

Procurement Requirement*:* The articulation of what the government is purchasing as its selected solution in a form that industry can successfully implement.

Product Owner: Provides the "voice of the customer" who is empowered to define what the Team works on and owns the Vision, Roadmap, and Product Backlog (including prioritization of adaptable requirements).

Program*:* A consolidated effort to achieve a defined goal that includes a collection of ongoing activities and projects that have objectives that achieve a specific purpose or outcome of a DOC Strategic Plan goal or as required by statute or regulation. The Agile Framework will apply to all Department and Bureau programs.

Program/Product Backlog: The catalog of all work that could be delivered by the program/product Team. The backlog typically contains work items structured to deliver value within increments/releases (e.g., Epics, Features) and also within iterations/Sprints (e.g., Stories). This tool is used in conjunction with the Roadmap to replace the project schedule.

Program/Product Increment: Agile Teams deliver value in fixed, routine time periods known as increments or release cycles.

Project*:* A collection of discrete activities, acting as a system, with specific outputs that achieve a clearly defined objective and support an overall program goal. Projects have a finite duration with a clearly defined start and end.

Release Cycle: See definition of Program/Product Increment.

Requirement*:* A desired Epic (e.g., service or product) necessary for accomplishing the organization's mission, goals, or objectives. Agile Framework requirements may need to be adjusted to fit the specific lifecycle of certain programs.

Research and Development*:* Activities that comprise creative work undertaken on a systematic basis to increase the stock of knowledge, including knowledge of humankind, culture, and society, and the use of this stock of knowledge to devise new applications.

Roadmap: The tool used to visualize value delivery over time (typically <= 2 years). It contains higher-level work items (e.g., Epics) that will be delivered over multiple increments/releases and also work items structured to deliver value within increments/releases (e.g., Features). This is used in conjunction with the Program/Product Backlog to replace the project schedule.

Scrum: The most commonly leveraged Agile practice. It is the basis for many other Agile practices and is foundational for most approaches for scaling Agile.

Scrum Master: The individual who facilitates Agile best practices, establishes the Team working environment, and coaches the Team to deliver value.

Sponsor*:* The identified individual (or organizational element) who develops and documents a need or gap, commits to providing specific resources, defines and validates functional requirements, and accepts value produced by the project.

System: A collection of components and/or activities organized to accomplish a specific function or set of functions.

Value: Predictive programs typically focus on the delivery of a set of known requirements, whereas Agile anticipates that requirements will adapt and change continuously based on new learning. This adaptation helps programs maximize benefits for stakeholders. In Agile, value to stakeholders is released routinely in short cycles and is a primary measure of success. Therefore, work is structured around value instead of tasks/activities/steps toward value.

Value Delivery: Release of working product in a production environment to customers and end-users so they can realize benefits and provide feedback for future evolution.

Value Assessment: With each increment/release, value to stakeholders (particularly customers/end-users) should be assessed. This information should be used in conjunction with Team performance data to inform future investment in the product, service, and/or Epic. It should also inform future direction for the product, service, and/or Epic.

Vision: This is a clear statement of the long-term goals for a particular product, service, and/or Epic. It provides insight on future direction and differentiates from other comparable products or services.

APPENDIX C – ACRONYMS

AoA	Analysis of Alternatives
ARB	Acquisition Review Board
BPO	Bureau Procurement Official
CARD	Cost Analysis Requirements Description
CFO/ASA	Chief Financial Officer/Assistant Secretary for Administration
CIO	Chief Information Officer
CITRB	Commerce Information Technology Review Board
CLIN	Contract Line-Item Number
CO	Contracting Officer
CONOPS	Concept of Operations
COR	Contracting Officer Representative
DOC	Department of Commerce
ERM	Enterprise Risk Management
EVM	Earned Value Management
FAR	Federal Acquisition Regulation
FF&E	Furniture, Fixtures, and Equipment
GSA	General Services Administration
ICE	Independent Cost Estimate
IMS	Integrated Master Schedule
IPT	Integrated Product Team
IT	Information Technology
KPP	Key Performance Parameter
LBC	Lean Business Case
LEED	Leadership in Energy and Environmental Design
MDA	Milestone Decision Authority
MDM	Milestone Decision Memorandum

MNS	Mission Needs Statement
MRB	Milestone Review Board
MS0	Milestone 0
MS1	Milestone 1
MS2	Milestone 2
MS3	Milestone 3
MVP	Minimum Viable Product
NOAA	National Oceanic and Atmospheric Administration
NIST	National Institute of Standards and Technology
O&M	Operations and Maintenance
O&S	Operations and Sustainment
OAM	Office of Acquisition Management
OCIO	Office of the Chief Information Officer
OFEQ	Office of Facilities and Environmental Quality
OGC	Office of General Counsel
OMB	Office of Management and Budget
PM	Program/Project Manager
PMO	Project Management Office
PMP	Project Management Plan
PO	Product Owner
PWS	Performance Work Statement
ROM	Rough Order of Magnitude
SME	Subject Matter Expert
SOO	Statement of Objectives
SOW	Statement of Work
WBS	Work Breakdown Structure