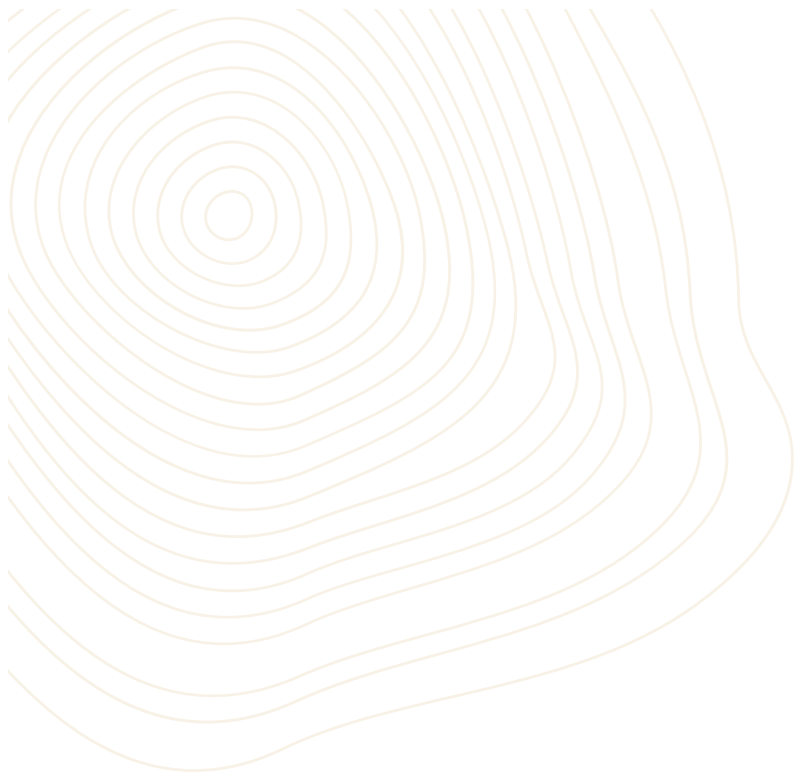




Advancing Government Procurement: Agile Contracting with SAFe

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Executive Summary

Government agencies are under increasing pressure to deliver high-quality, responsive solutions quickly and efficiently in today's rapidly evolving technological landscape. Traditional procurement methods often fall short in meeting the dynamic needs of modern projects, requiring a shift towards Agile methodologies. This white paper aims to clarify how to write Agile contracts that effectively incorporate Scaled Agile principles to enhance government acquisition processes.

The terms "Agile acquisition" and "Agile contract" are often used casually to describe part of or the entire lifecycle of how the government procures a contractor to perform work in an Agile way. While traditional project management methodologies have long been established in government settings, it's important to recognize that Lean-Agile approaches, including SAFe, operate under fundamentally different principles. These newer methodologies emphasize iterative development, empirical processes, and adaptive planning, which may not align seamlessly with conventional project-based frameworks. To fully realize the benefits of Lean-Agile practices, it's crucial for acquisition officials and program managers to understand that these approaches require a distinct mindset and set of practices separate from traditional project management. Acknowledging this difference can help prevent potential challenges and ensure more successful implementations of Lean-Agile methodologies in government contexts.

Understanding the difference between an Agile acquisition process and an Agile contract is also important. Agile acquisition is about breaking processes down, removing slack, and focusing on end users, security, legal, and other integral parties while increasing flexibility in the process. This methodology ensures that procurement processes remain flexible and responsive to changing requirements and technologies. The success of Agile acquisition heavily depends on the underlying contractual mechanisms, which is where Agile Contracting comes into play.

Agile contracting is about the structure of the contract itself, the key is focusing on objectives, outcomes over outputs, and separating contractual and technical requirements to empower the product owners to deliver the most important functionality to end users first. The contract should describe the process for delivering outputs and differentiate between milestone delivery of specific technical requirements and contract requirements. An Agile contract that does not reflect Agile principles and industry best practices can lead to several adverse outcomes, including a lack of flexibility to accommodate changes, misalignment with Agile processes, increased risk of project failure, and poor collaboration between the government and contractors. This rigidity can result in scope creep, missed deadlines, budget overruns, and delayed value delivery to end-users.

By breaking projects into manageable pieces and emphasizing continuous communication, Agile contracts ensure that both parties are aligned and can adapt to evolving requirements, enhancing the likelihood of delivering a product that meets user needs and expectations. Agile contracts promote a win-win scenario by aligning incentives with value delivery, rather than effort. They encourage vendors to prioritize high-value features and enable early project completion if crucial objectives are met. Agile

contracts allow for experimentation and discovery because they focus on high-value delivery instead of outputs. Solutions are driven by findings from research and spikes (either technical or market and user findings), making them easier for users to adopt because they meet user needs and solve problems, rather than just “checking the functionality box.” Agile contracts create a more dynamic and responsive project environment, leading to higher success rates and better stakeholder outcomes.

This paper focuses on recommended strategies for success when implementing a contracting vehicle that incorporates the Scaled Agile Framework (SAFe) and associated agile principles and commercial best practices. Contracting in this way promotes innovation and continuous improvement. When vendors focus on delivering valuable solutions to real challenges rather than meeting rigid output requirements, it creates space for exploration. This exploratory approach is essential for fostering research and development around emerging technologies and innovative solutions. These principles provide a framework for scaling Agile practices across large, complex projects, ensuring that all increments are aligned with the overall project goals and deliver value consistently. This white paper will delve into the specifics of writing Agile contracts and integrating Scaled Agile principles, offering practical guidance and best practices to help government agencies navigate the complexities of modern procurement.

TARGET AUDIENCE:

The development, execution, and management of an Agile contract include various stakeholders involved in procurement, project management, and systems development within government and private sectors. The audience may consist of:

- Procurement Officers and Contract Managers: Individuals responsible for drafting, negotiating, and managing contracts who must understand how to structure agreements supporting Agile methodologies.
- Government Project Managers and Program Managers: Professionals overseeing project execution who require insights into how Agile contracts can enhance project flexibility, risk management, and value delivery.
- Government Officials and Policy Makers: Decision-makers in public sector organizations looking to modernize procurement processes and improve project outcomes through Agile practices.
- IT and Systems/Software Development Teams: Developers, engineers, and IT managers working within Agile frameworks must understand how contractual agreements can support their workflows and project goals.
- Vendors and Contractors: COTS products and service providers must align their delivery models with Agile contracts to meet client expectations and foster collaborative relationships.
- Legal Advisors and Compliance Officers: Legal professionals who ensure contracts comply with statutory and regulatory requirements while supporting Agile principles.
- Product Owners: Government stakeholders responsible for defining project requirements and ensuring that delivered solutions meet mission needs.

This paper provides comprehensive guidance on implementing Agile contracts to improve project success rates and deliver high-quality outcomes.

Revolutionizing Acquisitions: From Traditional to Agile

Transitioning from traditional to Agile methods in government acquisitions presents several challenges, the most significant being the necessary cultural transformation. This shift involves moving from a plan-driven approach to embracing a flexible, iterative mindset. However, this change is often hindered by a widespread lack of understanding and familiarity with Agile methodologies among government professionals. Despite progress in government adoption of Agile practices, challenges persist if the contract or the Contracting Officer (CO) restricts the necessary changes or limits the program's ability to deliver continuously. This paper aims to address these obstacles, providing insights and strategies to illuminate a path forward and encouraging the reader to envision themselves as integral parts of this successful transition.

Benefits of Agile in Government

Agile IT acquisition has brought notable improvements to government agencies, including quicker feature delivery, greater adaptability, and improved alignment with user needs. Government agencies at both federal and state levels have implemented innovative strategies to streamline procurement processes for Agile services. The Department of Homeland Security (DHS) led the way by designating Agile software development as the preferred approach for all IT programs in 2016, revising its Acquisition Lifecycle Framework to align with agile methodologies, and incorporating cybersecurity considerations earlier in the process. Similarly, the U.S. Digital Service and 18F have embraced transparency by using GitHub to publish draft RFP documents for public comment and employing Google Forms to gather vendor feedback post-contract award. These federal initiatives have set a precedent for more efficient and collaborative procurement practices.

The Department of Homeland Security (DHS) implemented significant changes to streamline its procurement process for Agile acquisitions, addressing challenges with traditional IT development approaches. Key initiatives included adopting Agile software development as the preferred method for all IT programs, updating acquisition policies, revising the Acquisition Lifecycle Framework (ALF) to align with Agile methodologies, and introducing tools like the Digital Review & Adjudication Workflow (DRAW) to increase accountability and transparency. DHS also developed lean Analysis of Alternatives (AoA) templates, reduced duplicate information requests, and created 24 action plans to address various aspects of [agile adoption](#).

These changes yielded positive outcomes, including faster Acquisition Decision Events (ADE) achievement for several programs, improved collaboration, increased transparency, and enhanced flexibility in development processes. The streamlined approach allowed DHS to deliver working, tested IT solutions incrementally, increasing value, visibility, and adaptability while reducing program risk. While there are still areas for improvement, such as ensuring comprehensive staff training in Agile methods, the revised procurement process has positioned DHS to better address its IT development challenges and deliver value more efficiently, aligning with federal goals for IT management reform.

At the state and local levels, several governments have followed suit with their own innovative approaches. The State of Alaska collaborated with 18F to increase transparency in RFP development, while Connecticut established a dedicated Digital Services team to focus on Agile procurement. California created a Project Management Office to standardize frameworks and provide training, developing Agile playbooks for departments. New York City set up a Service Design Studio to advance evidence-based programs and apply Agile principles to public service projects. These examples demonstrate a growing trend across different levels of government to adapt procurement processes to better incorporate Agile methodologies, emphasizing transparency, vendor engagement, and iterative development approaches.

Differences Between Traditional Waterfall and Agile Approaches

The traditional waterfall methods have long been recognized for their structured approach, clear milestones, and delivery dates. However, they often encounter challenges such as delayed feedback and integration issues. Despite their predictability and the ease of progress tracking through methods like Earned Value Management (EVM), this model can result in compliance problems, increased costs, and lower-quality outcomes due to delayed feedback. Reports from the Government Accountability Office (GAO) emphasize the federal government's struggles with IT project failures, leading to financial losses and highlighting the crucial need for improved project management and cybersecurity. On the other hand, Lean-Agile practices prioritize early and incremental quality improvements, offering a more adaptable and efficient approach to achieving project success and compliance. This shift towards Lean-Agile practices inspires confidence in the potential for positive change and enhanced project outcomes. Agile allows for changing requirements and budgets as the project evolves, keeps clients involved throughout the development process, and incorporates testing at every stage. While waterfall typically requires large upfront requirements and analysis upfront, there is a high degree of uncertainty regarding the cost estimates to develop the solution. Agile allows for phased, incremental investments based on user feedback, clarity, refinement of requirements, and response to change. Agile enables early risk identification and mitigation due to iterative work. Instead of contracting around delivery milestones for specific functionality, you contract the delivery approaches, processes, and practices that enable the delivery of said functionality based on a prioritized Product Roadmap and backlog where functionality (value) is incrementally delivered based on a cadence-based schedule. In the case of requesting SAFe as the Agile Framework to execute the work, the process should include information on Agile planning increments (PIs) to be conducted every 8-12 weeks and that teams-of-teams are organized into Agile Release Trains (ARTs). These ARTs consist of 50-125 people who are responsible for planning and executing the work and are the people provided by the contractor to develop the solution on the contract.

Changing from Conventional Contracting to Agile Contracting

The rest of this paper is organized around a model process for developing and awarding an Agile contract using a generic government acquisition process, as illustrated in Figure 1. While an agency's acquisition process may differ, it should encompass most of these steps. It is more important to consider the principles in the model process and incorporate them into your process, keeping in mind that the ultimate objective is to establish an Agile contract that swiftly delivers value to the end user while fostering a collaborative environment that is beneficial for both the government and the contractor. Please note that this paper focuses specifically on Agile Contracting and does not address all aspects of the model process. References to several books on Government procurement procedures can be found in the appendix.



"Agile Acquisition" was first introduced in section 875 of the 2018 National Defense Act. It defined "Agile Acquisition" as using Agile or iterative development in acquisitions. It further described "Agile" or "iterative development," especially concerning software, as delivering multiple, rapid, incremental capabilities to the user for operational use, evaluation, and feedback. This is not limited to any single proprietary method or process and involves the incremental development and fielding of capabilities, commonly referred to as "spirals,"

"spins," or "sprints," which can be measured in a few weeks or months. It also includes continuous participation and collaboration by users, testers, and requirements authorities. In simpler terms, incremental development of fielding capabilities means delivering value in smaller increments, and continuous participation by various stakeholders means ongoing feedback. The National Defense Act asks agencies to deliver value through continuous delivery and feedback.

Government Resources

The Defense Acquisition University (DAU) and the Federal Acquisition Institute (FAI) are critical organizations dedicated to improving the federal acquisition workforce. DAU, established in 1991, focuses on providing training and career development for Department of Defense acquisition professionals. FAI, founded in 1976, serves a similar role for civilian agencies across the federal government. Their goal is to modernize federal contracting practices and improve software acquisition processes.

DAU has developed an Agile Software Acquisition Guidebook, which offers valuable insights from Agile pilot programs and guidance on transitioning from waterfall to the Agile method. DAU has also created a Contracting Considerations Guide, providing strategies and sample language for Agile contracting.

The Procurement Innovation Lab (PIL) is a framework developed by the U.S. Department of Homeland Security (DHS) to experiment with innovative acquisition techniques across the DHS enterprise. Launched in March 2015, the PIL provides a safe space for procurement teams to test new ideas, share lessons learned, and promote best practices in government acquisitions. The PIL aims to foster cultural changes that encourage innovation and managed risk-taking through a continuous feedback cycle of testing and sharing. Key objectives include lowering entry barriers for non-traditional contractors, shortening time-to-award, encouraging competition, and increasing the likelihood of successful outcomes. The PIL team acts as consultants to acquisition teams, emphasizing the use of sound business judgment in providing the best value to meet customer needs while maintaining integrity, fairness, and openness in the procurement process.

FAI contributes to this effort with its Agile Practice Guide, a practical resource for project leaders and team members adapting to Agile approaches. They also offer an Agile Acquisitions 101 Seminar, which showcases successful Agile implementations in the federal government and discusses strategies for making acquisition processes more Agile while maintaining compliance with regulations. DITAP (Digital IT Acquisition Professional) offers a 6-month training and development program that teaches federal government acquisition professionals how to design innovative and flexible procurements for IT and digital services. The program aims to equip participants with the skills to execute digital service procurements, act as qualified business advisors, and lead agency training workshops to expand digital service procurement expertise throughout the federal government. Upon completion, learners earn 60 to 80 Continuous Learning Points (CLPs) and a DITAP Training Certificate, which can be used to apply for the Digital Services Credential through the Federal Acquisition Institute (FAI) Credential Program.

The Government Accountability Office (GAO) Agile Assessment Guide was developed to provide best practices for the adoption, execution, and control of Agile methodologies within federal agencies. Recognizing the significant challenges and inefficiencies in traditional IT project management, the GAO created this guide to help federal auditors and agencies better manage their IT investments, which exceed \$100 billion annually. The guide aims to improve the success rates of IT projects by promoting Agile practices, which emphasize iterative development, continuous feedback, and incremental delivery. This approach can mitigate risks such as cost overruns and schedule delays, which are common in government IT projects. These resources aim to educate and support the federal acquisition workforce in understanding and implementing Agile principles. Government agencies can potentially improve their software development processes by adopting these tools and methodologies, leading to more efficient and effective acquisitions.

The collaborative efforts of DAU, FAI, and GAO represent a significant step towards modernizing government software acquisition practices, balancing the need for innovation with regulatory compliance. However, most of the examples provided in the guides are based on software systems and offer little guidance on how these principles can be applied to large programs, where hundreds of technical staff may be employed for several years, and multiple contractors might be needed to support the effort.

Model Agile Contracting Process



The process for a large government Agile acquisition typically involves several key steps. Once a need is identified, the agency develops its strategy for how to procure Agile services to execute the work. This might be done through market research and considering whether to designate the work to go to small business or full and open bids from multiple vendors. The agency develops a high-level vision and objectives for the project. They may conduct market research to understand available solutions and vendors. Based on this, they create a solicitation document, such as a Request for Proposal (RFP), that outlines the key objectives and evaluation criteria while allowing flexibility for an Agile approach. One of the best practices to include in an Agile contract is to put contractual requirements in the contract and NOT system requirements.

There is a growing trend in government procurement towards incorporating oral presentations and technical demonstrations as part of the Request for Proposal (RFP) evaluation process. This shift recognizes that written proposals alone may not fully capture a vendor's capabilities or understanding of the requirements. Oral presentations allow vendors to directly communicate their approach, clarify aspects of their proposal, and demonstrate their expertise in real-time. They provide evaluators with a more comprehensive view of the vendor's qualifications and proposed solutions.

The process for evaluating and selecting the best vendor (s) often involves multiple steps known as the down-select process. Typically, this is done in multiple phases, with different criteria evaluated at each phase. The early phases focus on basic qualifications, past performance, and rough estimates. The later phases may include technical approaches, prototypes, or oral presentations. The number of vendors is reduced at each phase. For more information on oral evaluations, see 5 Evaluating the Proposal of this document.

SAI recommends doing oral presentations or technical demonstration/challenges. The objective of procurement should be to hire the best development teams (in the case of software delivery) and not the best proposal writers. Generally, a succinct proposal is submitted (ideally 10 pages or less) with emphasis placed on the orals or technical challenge. The evaluation should focus on how effective the team is in working together, problem-solving, and developing a minimum viable product (MVP) rather than on writing.

Alternative ways procurement specialists might evaluate technical proposals include:

- Reviewing written technical submissions
- Conducting technical demonstrations or proof of concept exercises
- Requesting sample deliverables or work products
- Evaluating past performance on similar projects
- Assessing responses to technical scenarios or challenge questions
- Conducting site visits to evaluate capabilities firsthand

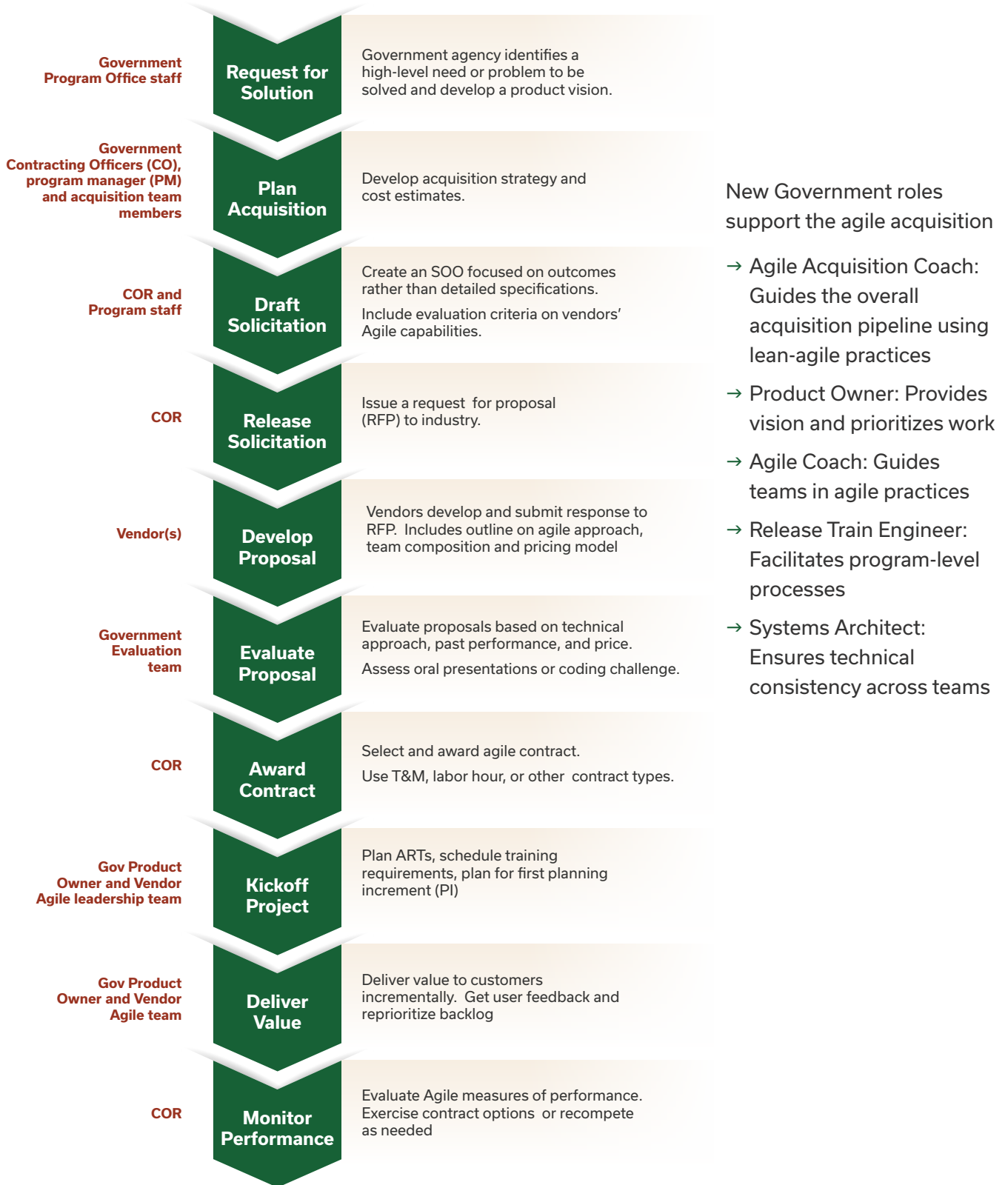
The Federal Acquisition Regulation (FAR) 15.305(a)(3) states: "The evaluation should take into account past performance information regarding predecessor companies, key personnel who have relevant experience, or subcontractors that will perform major or critical aspects of the requirement when such information is relevant to the instant acquisition."

The Government Accountability Office's (GAO) Agile Assessment Guide recommends: "Agencies should evaluate technical proposals based on the offeror's proposed approach to meeting the government's requirements, rather than solely on compliance with predetermined specifications."

The Defense Acquisition University (DAU) advises: "Technical evaluations should focus on the offeror's understanding of requirements, feasibility of approach, and risk associated with the proposed technical solution."

This process allows government agencies to make more informed decisions about vendor selection, especially for complex or innovative projects where written proposals alone may not fully convey a vendor's capabilities or approach. By implementing this process, both the government and vendors save valuable time and resources. Furthermore, it allows for a more comprehensive assessment of top candidates, minimizing the risk of protests. Additionally, it opens up the opportunity to utilize advanced evaluation methods, such as prototypes, exclusively for the top vendors. The focus remains on delivering working solutions into production quickly and making adaptations based on evolving user needs and feedback.

Figure 1- Model Process for Agile Acquisition Approach





Identify High-Level Needs or Problem

How any particular government agency identifies the need for a new item or system to be built is highly dependent on the specific agency's mission. To identify the agency's high-level need or problem, start by addressing these two questions:

- What is the problem that we need to solve or what is the opportunity we need to exploit?
- What is the process by which we build it?

SAFe calls the collection of knowledge needed to answer these questions as the **Solution Intent**. Solution Intent provides a basic definition of the solution's current and evolving requirements, design, and purpose.

Some elements of solution intent are fixed and non-negotiable. Other components are variable and open to further exploration as facts surface, keeping with SAFe Principle #3 – Assume variability; preserve options. Solution intent is dynamic and will evolve over the life of the contract. Early in the pre-contract award phase, it is only necessary to document enough of the solution intent to communicate to the prospective contractors the vision for the solution and whatever fixed, non-negotiable elements may exist. This will provide the agency and the future selected vendor the maximum flexibility to make decisions as knowledge is gained through the development process. This will result in a high-quality solution delivered quickly without excess cost.



Read [this framework article](#) for more detailed information on how to develop and evolve solution intent.

Read [this framework article](#) to better understand Principle #3 – Assume variability; preserve options, and to understand why it is critical to success with agile.



Plan the Acquisition

After identifying the need or problem, the agency can begin planning an acquisition approach. There are two key factors to consider during this phase:

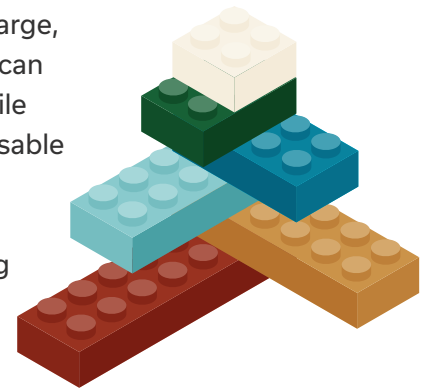
- Modular contracting
- Contracting practices

Both factors affect an agency's ability to maximize Agile benefits.

Modular Contracting

At the federal level, agencies are encouraged to use modular contracting to the maximum extent practicable. Government agencies can use modular contracting at any level to acquire significant and non-major systems.

Modular contracting is an acquisition strategy that involves breaking down large, complex projects into smaller, more manageable increments, each of which can be delivered independently. This approach is well-suited for government Agile acquisitions as it aligns with iterative development and frequently delivers usable software or systems. By breaking down a larger project into smaller parts, modular contracting allows for greater flexibility and adaptability to evolving technology and requirements. It also enhances risk management by isolating risks within smaller increments and promotes vendor competition and innovation by involving multiple vendors. See [Modular Contracting Examples](#) of this document for more information.



However, when not structured as an iterative and not just an incremental approach, it can introduce unintended consequences. Be careful not to over-specify the modules so that each one is simply putting together a predefined waterfall incremental delivery.

Modular contracting offers these additional benefits:

- Enhances efficiency and flexibility
- Improves the management of complex IT objectives and contractor performance
- Opens more opportunities for small businesses
- Aligns well with Agile practices
- Helps control costs
- Ensures technological relevance

This leads to more efficient, effective, and responsive government IT and system acquisitions, ultimately better serving the agency's ability to fulfill its missions and serve the public. Using the solution intent as a guide, divide the acquisition into smaller, interoperable increments, ensuring each part can function independently while contributing to the overall system. Mandating system interoperability and consistent coding practices across contractors is critical. Using open-source or government-owned code facilitates knowledge transfer between vendors, and implementing automated testing and quality checks maintains consistency.



Read [SAFe Principle #4](#) — Build incrementally with fast integrated learning cycles to learn how to use integration points.

Contracting Practices

Contracts should be structured to allow for adjustments and reprioritization throughout the project lifecycle, focusing on the contractor's proven ability to develop and deliver working software rather than detailed technical solutions.

Things to promote:

- Focus on desired outcomes rather than detailed specifications
- Use flexible contract types that support short development and delivery cycles
- Implement short performance periods appropriate for the scope of work
- Establish clear acceptance criteria for each increment
- Break large projects into smaller, manageable modules or phases. This allows for incremental delivery, easier management, and the ability to quickly adapt to changes.
- Implement regular reviews and feedback loops to ensure continuous alignment with project goals.
- Ensure that all stakeholders understand and are committed to the Agile approach.

A Quality Assurance Surveillance Plan (QASP) in government agile acquisitions serves as a flexible, outcome-focused tool for monitoring and evaluating contractor performance throughout the development process. It emphasizes the assessment of working software at the end of each sprint, incorporates agile-specific metrics, and encourages collaboration between government and contractor teams. The QASP focuses on desired outcomes rather than prescriptive requirements, allowing

for adaptability as project needs evolve. It includes user feedback and satisfaction as key quality measures and evaluates the use of agile technical practices. Regular reviews during sprint retrospectives ensure the QASP remains relevant and effective. By tailoring the QASP to an agile approach, government agencies can maintain quality standards while preserving the flexibility and iterative nature of agile development. 18F has [guidance on QASPs](#) for agile programs.

Things to avoid:

- Locking in detailed requirements and schedules upfront. This is a characteristic of waterfall contracting and contradicts Agile principles.
- Protracted timelines that hinder frequent releases and demonstration of working systems.
- Costly change request processes that impede agility by preventing learning and new technology from rapidly being introduced.
- Complicated contract incentive structures (for example, incentive fees and award fees) that are time-consuming to administer or easily gamed to the benefit of one party over the other.
- Locking feature or functionality delivery to a specific contract milestone or milestone delivery date.

- Avoid specifying how the work should be done and the required hours. Instead, focus on the desired outcomes and results.
- Avoid lengthy and detailed requirements documents that limit innovation. Use a Statement of Objectives (SOO) or Solution Intent to allow contractors to propose creative solutions.
- Avoid single large contracts that cover extensive scopes of work. Use modular contracting to break down projects into smaller, manageable segments.
- Avoid inflexible quality assurance plans. Develop adaptable quality assurance surveillance plans that can evolve with the project.



Read [this framework article](#) for more information on an alternative contracting approach better suited to Agile.

You can also learn more about how these recommendations are supported by the FAR's Performance-Based Acquisition process in the Outcome-Based Contracts section of this paper.



COR and
Program staff

Draft Solicitation

When it comes time to write the actual solicitation, several points will result in vendors being able to respond in an Agile way and enable the achievement of the agency's Agile objectives:

- Create a Statement of Objectives vs. overly prescriptive requirements (Statements of Work)
- Create flexibility for unknown changing needs
- Performance measures (Consider a QASP)
- Include provisions for Agile training for government personnel
- Separate contract and technical requirements

SAFe and Change Control Process (CCP)

In government Agile delivery projects, it's important to balance flexibility with proper governance. While Agile methodologies allow for adaptability, it's crucial to maintain a structured approach to change management. A well-defined Change Control Process (CCP) can coexist with Agile principles, ensuring that changes are evaluated, prioritized, and incorporated in a controlled manner. To enhance project flexibility while maintaining oversight, consider emphasizing the importance of robust Product Management processes in contracts. This approach should include:

1. Clear definition of roles and responsibilities for product ownership and backlog management
2. Established procedures for regular backlog refinement and prioritization
3. Mechanisms for stakeholder engagement and feedback incorporation
4. Guidelines for balancing new requirements with existing commitments
5. Metrics for measuring and reporting on value delivery

The following provides guidance on how an agile CCP process would work considering agile requirements and flow management:

INITIATIVE AND PRODUCT BACKLOG MANAGEMENT

- Initiatives represent the highest-level items in the Product Backlog.
- Through collaborative backlog refinement, initiatives are decomposed into smaller, manageable items.
- The Product Roadmap outlines each initiative's priority and projected delivery timeline, aligning with agency goals and objectives.

PLANNING INCREMENT (PI) PREPARATION

- Prior to each PI event, Product Management collaboratively breaks down initiatives into epics.
- Epics are assigned to specific PIs based on priority and agency needs.
- Coordination with the Government Business Owner (aka Mission Owners) ensures epics are properly refined, prioritized, and documented in accordance with agency requirements.

PRIORITIZATION CRITERIA

- Prioritization is based on multiple factors including business value, dependencies, architectural considerations, and other relevant agency-specific criteria.
- This process ensures alignment with agency mission and strategic objectives.

PI PLANNING AND EXECUTION

- During PI Planning, Agile Teams decompose epics into user stories and non-functional requirements (NFRs).
- Teams estimate their capacity for each sprint and draft delivery plans in accordance with agency timelines and resources.
- Stories and NFRs are developed incrementally, sprint by sprint, by the Agile Release Train (ART) or Team of Teams over the course of the PI.

MANAGING SCOPE CHANGES

When changes or new requirements are proposed within a contracted scope of work, the Release Train Engineer (RTE) and project leadership (both government and contractor) conduct a thorough impact analysis. This analysis includes identifying work of similar size that can be deferred or de-prioritized to accommodate the new or updated requirements.

This process enables:

- Rapid discovery and adaptation
- Early and frequent feedback collection
- Accommodation of evolving requirements as new information becomes available

This approach maintains the flexibility to respond to changing needs while ensuring proper governance and alignment with contractual obligations. It supports the government's need for adaptability in complex environments while maintaining accountability and transparency in the use of resources.

Create a Statement of Objectives rather than a Statement of Work

Flexibility and adaptability are hallmarks of Agile contracts. As started earlier in the process, the solution intent captures this flexibility in allowing for variability. Overly prescriptive requirements hinder innovation and the ability to adjust to new priorities, technologies or regulations that emerge over the life of the contract. This may result in solutions that use outdated technology or fail to meet end-users needs. It also does not provide opportunities for experimentation which leads to innovation. See the "Delivering Value" section of this paper for innovation measures of performance.

Statement of Objectives

A *Statement of Objectives (SOO)* is a document for government procurement that prioritizes performance-based alternatives over traditional requirement specifications. It focuses on outcomes rather than dictating how to achieve them. Key characteristics include an outcomeorientated approach to measuring results, performance-based measures, non-prescriptive solutions, collaboration, and flexibility. SOOs increase competition among potential vendors, improve contractor performance, and reduce administrative burden while allowing for innovation in meeting agency objectives. The content of an SOO varies by agency, project, and contract and typically includes a description of outcomes, performance measures, evaluation criteria, and other relevant information. See Appendix B for an example of requirements converted into a SOO.

Overly prescriptive requirements involving legacy systems or specific technology can often cause issues. There are many unknowns when developing large, sophisticated systems; experimentation is often necessary to find the right solution. In SAFe, the recommended approach is to assume variability exists in the solution intent and to preserve options. Experiments help to clarify the solution and remove designs that do not support the user as intended. This demonstrates that requirements must be flexible to make economic and design sense, and designs must support changing requirements to avoid extensive contract modifications.

Scaled Agile, Inc. (SAI) has an Agile Services Acquisition RFI/RFP exemplar that includes recommended language to be used in a request for proposal (RFP). GAO has developed an [Agile Assessment Guide](#) that discusses best practices that can be used across the federal government for Agile adoption, execution, and program monitoring

and control. The guide provides an overview of Agile software development practices and challenges federal agencies face as they acquire and manage IT systems and software. Additionally, the GAO has identified 32 practices and approaches as effective for applying Agile software development methods to IT projects.

Preserving options and experimenting with fast feedback cycles through an iterative development process may seem expensive. However, it is a prudent economic choice that is better than locking into specific solutions, or platforms that require extensive modifications, resulting in high maintenance costs. Overall, it is considerably less expensive to preserve experimentation than it is to offset EVM, which is incredibly expensive.



Re-read [this framework article](#) to become more familiar with variability and preserving options.

Read [this DAU article](#) for information on SOO, SOW, and PWS.

Create Flexibility for Unknown Changing Needs

Due to their linear, phase-gated approach, waterfall contracts struggle with adaptability. Changing requirements or new technologies can significantly impact them, leading to delays, scope creep, and contractual disputes. In contrast, Agile allows for ongoing changes and adaptation throughout the development process, focusing on user-centric design, iterative development, and setting high-level goals instead of fixed requirements.

Common Agile Frameworks in Government

Agile acquisition in government involves breaking large, complex projects into smaller pieces, collaborating with customers throughout the development process, and iteratively building and demonstrating working solutions. This approach aims to deliver value faster and more flexibly than traditional waterfall methods. The State of Agile 2024 report identified [several methodologies](#) that are being employed in Government, the most popular being Scrum for smaller programs and SAFe for very large complex programs.

SCRUM

- Most widely adopted agile methodology in government
- Used for software development projects and IT modernization efforts
- Suitable for projects with changing requirements and need for frequent deliverables

KANBAN

- Often used alongside Scrum in government projects
- Effective for ongoing operational work and maintenance projects
- Useful for visualizing workflow and managing work in progress

SCALED AGILE FRAMEWORK (SAFe)

- The most popular framework for larger government projects that are highly regulated. SAFe is a Framework, a flexible mechanism for managing programs, and not a monolithic implementation methodology.
- Used for complex, multi-year, multi-team programs
- Suitable for agencies undergoing large-scale digital transformations
- Effective for large cyber-physical systems development or multi-vendor programs



DEVOPS

- Increasingly adopted in government for integrating development and operations
- Used for improving software delivery pipelines and operational efficiency
- Particularly relevant for agencies focusing on continuous delivery and deployment
- Works best when coupled with an agile framework

These methodologies and frameworks are used in various government contexts, including:

- Software development for citizen-facing services
- IT modernization initiatives
- Defense and national security systems
- Health and human services programs
- Financial management systems

Government agencies often customize agile methods to meet their specific needs and regulatory requirements. The selection of an agile methodology or framework usually depends on the project's size, complexity, and the agency's particular goals and constraints. Additionally, many agencies adopt hybrid approaches, integrating components from different methodologies to best address their needs. The flexibility of the SAFe enables agencies to start with industry best practices in leadership, technical execution, and planning. As the agency matures its lead-agile practices, there are opportunities to incorporate more advanced practices easily.

Common Agile Ceremonies and Collaborative Events

The following describes some common events and ceremonies used by all Agile frameworks. Where the event is SAFe specific, it is noted.

Please note that not all Agile frameworks use the same terminology. For clarity, Scrum uses the term "Sprint," while SAFe uses the term "Iteration." Both terminologies refer to a 2-3 week period during which work is planned, tested, and deployed by the Agile team into a staging or testing environment for review. Not all frameworks have planning cycles beyond the sprint, and not all frameworks have reflection ceremonies outside of team events.

- Sprint or Iteration Planning: Team defines work for the upcoming 2-week period.
- Daily Team Stand-ups: Brief daily meetings to sync team progress and identify blockers.
- Sprint or Iteration Review: Demonstration of completed work to stakeholders at each iteration's end.
- Retrospective: The team reflects on the process and identifies improvements. Retrospectives are held at the end of each iteration, after an 8-12 week period of performance, or after any major event, such as a milestone.
- Backlog Refinement: Ongoing process of clarifying and prioritizing work items in the queue.

Demonstration of Working Solutions:

- Sprint Reviews: Regular demonstrations (often every 2-4 weeks) of working software or hardware to stakeholders.

- Incremental Deliveries: Government agencies aim to deliver enhanced or new functionality to users at least every 6 months.
- Minimum Viable Product (MVP): Focus on quickly delivering a basic working version, then iterating based on user feedback.
- User Acceptance Testing: Involving end-users in testing and providing feedback throughout the development process.

Key Considerations for Government Agile Acquisitions

The following strategies can be used to align contracts with Agile principles, enabling better adaptation to evolving requirements while maintaining project progress and value delivery:

- Use pricing models such as time and materials (T&M) or capacity-based approaches such as fixed price (FP) per iteration or PI
- Incorporate provisions for regular reassessment and collaborative change management
- Define a process for roadblock resolution and reprioritization
- Allow for incremental delivery and acceptance
- Use broad-scope objectives and encourage innovation and experimentation in order to find best-fit solutions

Prioritize collaboration, flexibility, and incremental approaches. These methods create an environment that can effectively accommodate scope changes throughout the project lifecycle, ensuring that the contract remains responsive to emerging needs and changing conditions.

Roles and Responsibilities

CONTRACTING OFFICER (CO)

The Contracting Officer (CO) or Contracting Specialist plays a key role in government contracting by facilitating the release of a Request for Proposal (RFP). While the CO is primarily responsible for issuing the RFP, the Contracting Officer's Representative (COR) provides essential technical input and support. The COR collaborates closely with the CO, Project Manager (PM), and technical subject matter expert (SME) to develop precise technical requirements, evaluation criteria, and performance work statements that accurately represent the government's needs. Additionally, the CO or COR may assist in drafting sections of the RFP pertaining to the technical aspects of the work. The COR is also involved in reviewing the final RFP package to ensure technical accuracy and completeness before it is released. It's important to note that in many cases, the COR is not assigned until after the contract has been awarded.



Additionally, the COR may participate in pre-solicitation conferences or industry days to help explain technical requirements to potential contractors. Throughout the process, the COR serves as a technical advisor to the CO, providing subject matter expertise to support the development of a high-quality solicitation that will result in proposals that meet the government's requirements.

PRODUCT MANAGER

In an agile acquisition, Product Management is responsible for defining and delivering valuable, feasible, and sustainable solutions that meet customer needs while aligning with agency goals. In government agile acquisitions, Product Managers lead cross-functional teams, develop product vision and strategy, manage the product backlog, and ensure user-centered design. They collaborate with stakeholders, balance user needs with technical constraints and policy requirements, and drive iterative development. Product Managers also play a crucial role in bridging the gap between traditional government procurement processes and agile development methodologies, often serving as the Product Owner or working closely with one. Their responsibilities include steering the Agile Release Train (ART), evolving the solution, and ensuring product completeness while meeting business goals.

The traditional Program Manager role in government is pivotal in overseeing and implementing programs designed by administrators, elected officials, or stakeholders. Their responsibilities include working collaboratively with Contracting Officers, handling market research, managing budgets. CO's and CORs ensuring compliance with government requirements, policies, and procedures. They lead teams to achieve program objectives, maintain schedules, evaluate risks, and ensure that projects are completed efficiently and on time. Program managers also develop strategic plans, and facilitate communication across various teams to ensure alignment with agency priorities.

In the Agile community, the Project or Program Manager role does not exist in all agile frameworks, yet the role remains important in government work. Instead, the agile community places emphasis on Product Management. This role focuses on the user's needs and adopts best practices in the Agile community to plan the vision, roadmap, and releases to customers. This paper use the roles of Product Owner and Product Management to describe the collaborative nature necessary to build an Agile solicitation.

Figure 2 compares different Agile methodologies and frameworks used in government, including their approach to project and program management roles:

Framework /Methodology	Project Manager Role	Program Manager Role	Equivalent Agile Roles
SAFe (Scaled Agile Framework)	No formal Project Manager role	No formal Program Manager role	Release Train Engineer (RTE), Product Manager, Solution Train Engineer
Scrum	No formal Project Manager role	No formal Program Manager role	Scrum Master, Product Owner
LeSS (Large-Scale Scrum)	No formal Project Manager role	No formal Program Manager role	Area Product Owner, Overall Product Owner
Kanban	Optional	Optional	Service Delivery Manager, Service Request Manager
XP (eXtreme Programming)	No formal Project Manager role	No formal Program Manager role	Coach, Customer
DSDM (Dynamic Systems Development Method)	Project Manager	Program Manager	Team Leader, Business Ambassador
FDD (Feature-Driven Development)	Project Manager	No formal Project Manager role	Chief Architect, Development Manager
Scrum@Scale	No formal Project Manager role	No formal Project Manager role	Scrum of Scrums Master (SoSM)
Disciplined Agile Delivery (DAD)	No formal Project Manager role	No formal Project Manager role	Team Lead

Figure 2: Project Management roles in various agile frameworks and methodologies

- SAFe is gaining momentum among government agencies for large, complex systems. While there are no formal project or program manager roles, the Release Train Engineer (RTE) takes on many traditional program management responsibilities, ensuring smooth operation of the Agile Release Train and facilitating program execution.
- Scrum is widely used in government projects. It deliberately does not include a project manager role. Instead, the Scrum Master facilitates the Scrum process and helps remove impediments, while the Product Owner manages the product backlog and prioritizes work.
- LeSS, being a scaled version of Scrum, also doesn't have formal project or program manager roles. It introduces roles such as Area Product Owner for larger-scale product management.
- Kanban is more flexible and can accommodate traditional management roles if needed. It often uses roles like Service Delivery Manager and Service Request Manager to handle workflow optimization and customer needs respectively.
- XP focuses on engineering practices and doesn't have formal project or program manager roles. The Coach helps the team implement XP practices, while the Customer represents the business interests.
- DSDM is sometimes used in government projects and retains more traditional project and program manager roles, alongside Agile-specific roles like Team Leader and Business Ambassador.
- FDD includes a Project Manager role but distributes program management responsibilities among other roles like Chief Architect and Development Manager.
- Scrum@Scale is a framework that extends Scrum principles to coordinate multiple teams across an organization, enabling them to work together efficiently on complex projects. The framework does not include a project manager role.
- Disciplined Agile Delivery (DAD) is a people-first, learning-oriented hybrid agile approach to IT solution delivery that provides a comprehensive, flexible, and context-sensitive framework compared to traditional agile methodologies. The Team Lead in DAD ensures the team is focused on solution delivery, achieves iteration goals, and is responsible for overall delivery (scope, time, budget) and quality standards. This role facilitates communication, removes obstacles, manages resources, and oversees project progress, which are traditionally associated with project management responsibilities.



It is important to note that while Agile methodologies often do not include formal project or program manager roles, the responsibilities associated with these roles are still addressed. These responsibilities are distributed differently among team members or assigned to new Agile-specific roles. The goal is to promote self-organization, flexibility and shared responsibility within the team while retaining consistent communication and reporting mechanisms internally and externally.

Transferring governance controls to SAFe® to retire legacy project roles

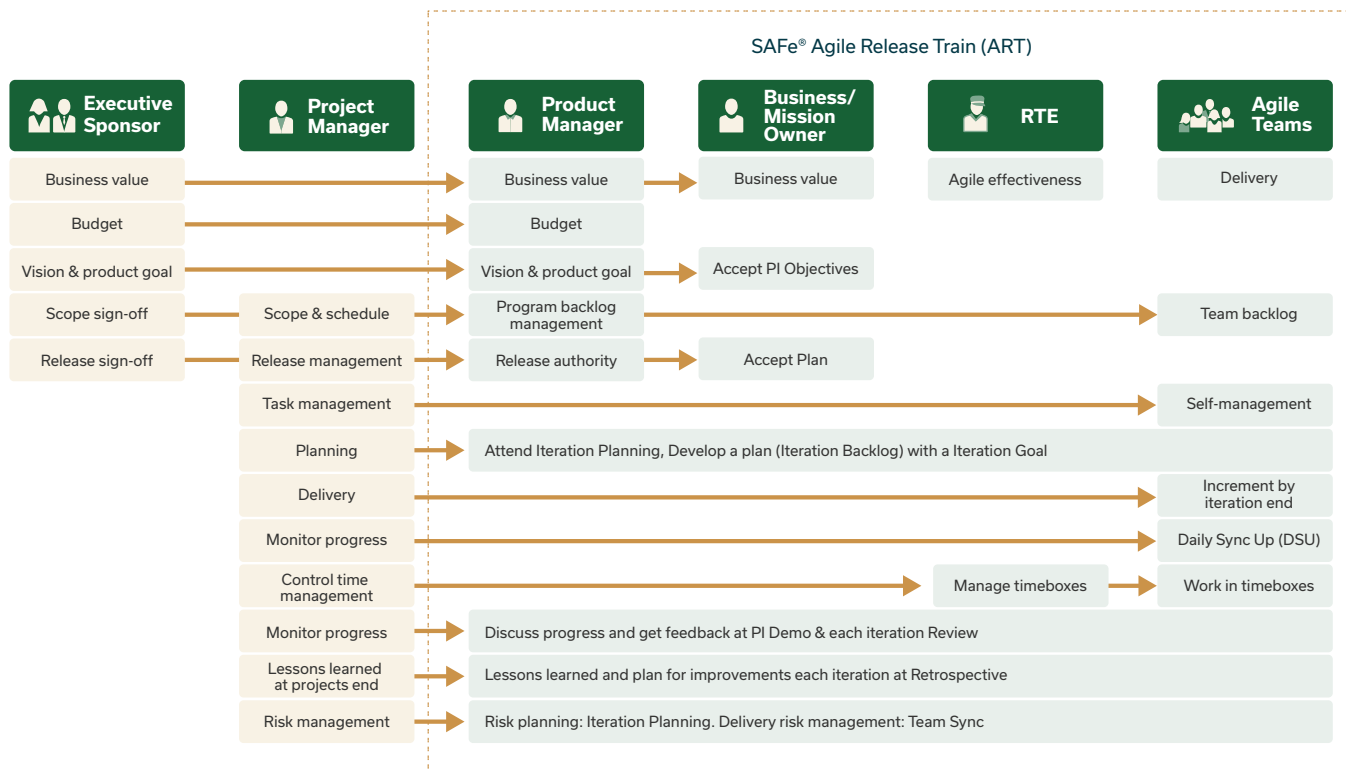


Figure 3: Transferring Government Roles to SAFe Agile roles

The Product Manager and the procurement specialist are vital in developing government Agile contracts. The Product Manager transitions from a traditional directive approach to focusing on resource, risk, and dependency management. Their goal is to ensure the delivery of valuable outcomes at every iteration, emphasizing broad objectives and fostering developer-stakeholder collaboration. They adapt the solution based on user feedback and continuously adjust priorities. The procurement specialist redefines contracting to favor Agile methods, shifting from a detailed Statement of Work (SOW) to outcome-oriented SOOs, allowing project flexibility in scope and adaptation. This approach incorporates iterative development and frequent reassessment, using mechanisms such as time and materials or capacity-based pricing models. Procurement specialists also facilitate the proposal evaluation process, ensuring vendors are assessed based on their ability to deliver Agile processes and outcomes rather than low-cost solutions.

These two roles foster an agile-friendly contracting environment, emphasizing regular reassessment, collaborative change management, and adaptable short-term commitments. Their collective focus on value and flexibility reduces risks from scope changes, ensuring the project remains responsive to new requirements and technological shifts.



Read [this framework article](#) to become more familiar with the Product Manager role in SAFe.

Include Provisions for Agile Training

Including a training component in government solicitations for Agile software development is essential to ensure all government staff involved with the acquisition have a common language and understanding of Agile concepts and culture. Training should encompass Agile principles, practices, roles and responsibilities provided by SAFe. This will equip government personnel and contractors with the necessary skills and knowledge to effectively implement Agile processes. Often the government expects contractors to possess lean and agile expertise and apply these practices effectively. However, it is highly advisable for both government staff and the contractor's delivery team to undergo joint training sessions. As described in this paper, there are many variations of agile methods, and a newly assembled team of teams can avoid unnecessary communication issues by having a collaborative training plan. This collaborative approach offers several benefits:



1. **Common Understanding:** Joint training ensures that both parties develop a shared understanding of agile principles, methodologies, and practices specific to the project context.
2. **Unified Lexicon:** It helps establish a common language and terminology, reducing miscommunication and enhancing collaboration.
3. **Role Clarity:** Training together allows for a clear delineation and understanding of roles and responsibilities between government staff and contractors.
4. **Process Alignment:** It enables the development of common processes and workflows that integrate seamlessly with government requirements and contractor capabilities.
5. **Team Cohesion:** Joint training fosters team building and creates a sense of shared purpose between government and contractor personnel.
6. **Customization:** It allows for tailoring agile practices to the specific needs and constraints of the government project.
7. **Cultural Alignment:** This approach helps bridge potential cultural gaps between government and contractor organizations, promoting a unified agile mindset.

By investing in joint training, government agencies can ensure a more cohesive, efficient, and effective agile implementation, maximizing the benefits of the agile approach in the unique context of government acquisitions as well being able to startup and deliver initial outcomes faster.

The solicitation should cover the costs of licenses and tools required for executing a SAFe transformation, such as application lifecycle management (ALM tools, PI Planning (PIPlanning.io) and backlog management (JIRA, ServiceNow) and continuous deployment (CI/CD) pipelines. These investments will help foster a culture of Agile practices, enabling teams to work more efficiently and readily adapt to changes. The combined approach to providing training on processes, tools, and culture improves project success rates and fosters a more collaborative and responsive work environment.

Measures of Performance

It is important to incorporate Agile metrics in the solicitation to clearly define what will be measured and how vendor performance will be assessed.

Metrics such as ART Predictability Measure, Business Value Assessment, Customer Feedback, SAFe assessments, DORA Metrics, Agile Financial Metrics and EVM offer a comprehensive framework for assessing project progress, cost, value delivery, and user satisfaction. Regarding EVM on an agile contract, this approach should be a last resort due to the high overhead involved in management, and there are better performance measures that meet regulatory requirements.

Additionally, detailing how and when these metrics will be collected will help contractors and CORs understand the timeline and processes for reporting and evaluation, promoting transparency and accountability. Details on Agile metrics are provided in the Delivering Value section of this paper. Also, see the appendix for further examples. Each measure explains why and how the measurement should be used, followed by practical tips on capturing and analyzing the data.

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The NDIA's Industry Practice Guide for Agile on EVM Programs

This comprehensive [guide](#) offers practical insights on integrating Agile and EVM in government contracts, covering planning, budgeting, analysis, and control of Product Backlog and Baseline changes. It also addresses contracting considerations and Agile Integrated Baseline Review (IBR) practices.



Read [this framework article](#) on Measure and Grow in SAFe.

The U.S. Army PEO EIS's successful implementation of SAFe serves as a compelling case study. The Army was able to streamline its software development processes, reduce project timelines, and enhance overall efficiency by adopting SAFe. The contractor provided the necessary

training and support, helping the Army fully embrace Agile practices. This [success story](#) underscores the importance of including comprehensive training and tool costs in government solicitations to ensure a successful transition to Agile methodologies.



Release Solicitation

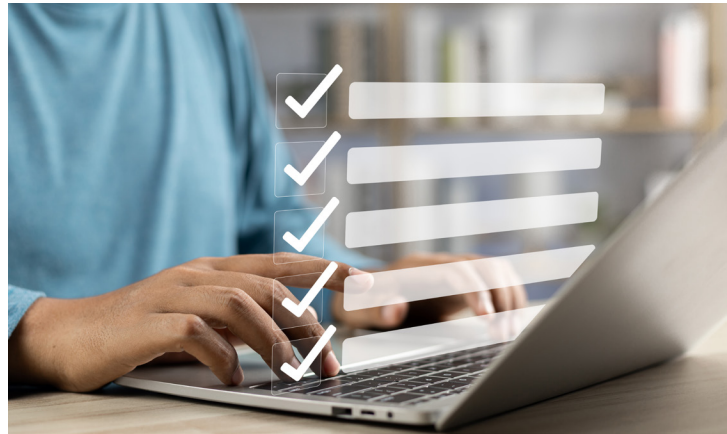
Summarizing the information that has been discussed earlier in this paper, we can now describe an ideal release for a solicitation:

- 1) Clearly identifying the agency's needs and developing a comprehensive Statement of Objectives rather than overly prescriptive requirements.
- 2) Drafting a well-structured Request for Proposals (RFP) that outlines evaluation criteria, measures of performance, timeline, and other key details.
- 3) Conducting market research and engaging with industry through methods such as draft RFPs or industry days to refine requirements.
- 4) Publicizing the final solicitation through appropriate channels like SAM.gov with adequate vendor response time.
- 5) Designating a single point of contact to manage communications and questions from vendors.
- 6) Using technology platforms to streamline the solicitation and proposal submission process.

Best practices to shorten the time from release to award include:

- 1) Using modular contracting to break large projects into smaller, more manageable pieces.
- 2) Leveraging existing contract vehicles when possible.
- 3) Employing oral presentations or technical demonstrations rather than lengthy written proposals.
- 4) Utilizing a phased or down-select approach to progressively reduce the vendor pool.
- 5) Streamlining internal review and approval processes.
- 6) Setting up evaluation teams and criteria in advance.
- 7) Using automation and procurement software to manage the process more efficiently.

These best practices have been successfully implemented by agencies such as the Department of Homeland Security's Procurement Innovation Lab, which has dramatically reduced procurement timelines. The General Services Administration and U.S. Citizenship and Immigration Services have also used modular contracting and agile development approaches to speed up complex IT procurements. Additionally, the Department of Defense has employed oral presentations and other streamlined techniques to accelerate acquisitions for software and emerging technologies.



Develop Proposal

While this section of the paper only provides a high-level overview of the contractor's response process, the details and best practices for crafting a winning proposal using SAFe are covered in a separate white paper specifically for vendors.

Responding to a Request for Proposal (RFP), a contractor typically undertakes a detailed analysis to understand the project's scope, requirements, and objectives. The contractor then prepares a comprehensive proposal outlining its approach, methodology, and intent to meet the contract specifications. This includes past performance, project timelines, cost estimates, and any innovative solutions they can offer. The proposal also addresses contractual terms and conditions compliance, ensuring alignment with the client's expectations and regulatory requirements.

Evaluating the Proposal

Once proposals are received, the government assesses vendors' Agile capabilities against the solicitation requirements. This includes the vendors' ability to collaborate closely with government stakeholders, adapt to changing priorities, and deliver value incrementally. Using tech demos for example, it may not be proposals received and instead just the intent to demo. It might also be access to source code if evaluating a coding challenge.

A good response to an RFP should highlight the following and show evidence of how these approaches generated better outcomes or resulted in experiments that advanced the solution intent.

- Agile Expertise: The contractor should highlight experience and success in delivering Agile projects, particularly within government settings and include how problems were solved or solutions.
- Focus on Outcomes: The contractor must demonstrate their ability to quickly deliver effective solutions, experiment with and release minimal viable products (MVPs) or services, and adapt to changing needs. It's important to note that not all government work is product-focused; a significant portion involves service-based activities, such as running a Security Operations Center (SOC) or providing managed infrastructure services. Focusing solely on a Minimum Viable Product (MVP) does not fully encompass the range of responsibilities. The priority should be to achieve mission objectives rather than simply producing outputs and to aim for comprehensive solutions that truly fulfill the mission's goals.
- Iterative Evaluation: The contractor should demonstrate the use of iterative assessments, such as technical demonstrations and iteration reviews, to continuously evaluate solution intent and feedback from government stakeholders. Look for stories that demonstrate the ability to pivot based on feedback from demonstrations or evaluations.
- Collaboration and Communication: The contractor should demonstrate strong capabilities in stakeholder engagement and transparent communication throughout the project. Look for specific examples of how resolution was quickly reached or how risk was mitigated using collaborative communications and transparency.

- Risk Management: Evaluate the contractors approach to identifying and mitigating risks early in development. Look for how the vendor utilized agile practice to capture and manage risk, without a separate risk management practice.
- Flexibility in Requirements: Assess the contractor’s ability to handle changing requirements and adjust their approach.

By incorporating these best practices, government agencies can more effectively evaluate Agile RFPs and select well-suited contractors to deliver high-quality, adaptive solutions.

Focus on Best Value vs Low Cost

The U.S. government has shifted its procurement strategy from a lowest-price focus to a “best value” approach, considering both price and non-price factors to determine the most advantageous offer. This method allows agencies to evaluate proposals based on various criteria such as technical merit, past performance, quality, additional capabilities, and cost. The best value approach permits tradeoffs between price and non-price factors, allowing agencies to select higher-priced offers if the added value justifies the cost. While maintaining competitive procedures and transparency, this strategy requires thorough documentation of decision-making rationales. The government also emphasizes considering life-cycle costs in best value determinations. This approach provides a flexible framework for procurement decisions, allowing agencies to tailor their evaluations to specific needs while considering the lowest overall cost alternative in certain contexts. By focusing on best value, the contract supports resilient and adaptable teams to future changes and technologies, ensuring long-term project success and stakeholder satisfaction.

Best Value

In a government contract, “best value” refers to the expected outcome of an acquisition that provides the best price, and technically acceptable in response to the requirements, as determined by the government. For example, when the [Department of Veterans Affairs \(VA\)](#) evaluates proposals, it considers various factors beyond price. These factors might include the quality of the proposed solution, the expertise and past performance of the offeror, unique features of the

product or service, warranty considerations, environmental and energy efficiency, and delivery terms. By weighing these factors, the government aims to select a contractor that offers the optimal combination of cost, quality, and performance, thereby achieving the best value for the taxpayers’ money. This approach ensures that the selected vendor meets the technical and functional requirements and delivers the highest overall benefit to the government and its stakeholders.



Award Contract

Focusing on contract structure, performance metrics, and team readiness is crucial when awarding an Agile acquisition contract. The contract should adopt Agile principles through an Agile Contract Format (ACF), emphasizing a product vision or minimum viable product (MVP) and a high-level product backlog, fostering iterative development with frequent reviews. Performance metrics aligned with Agile methodologies, such as sprint success rates, defect resolution times, and end-user satisfaction, should be used as data that can be used to evaluate the vendors performance.

Ask Scaled Agile, Inc. for their tailored SAFe for Government micro-cert workshops, which include hands-on training on Roles and Responsibilities, Agile Contracting, Measures of Performance, and Leadership.

Team readiness is essential, requiring government personnel, including Product Managers and Contracting Officers to be Agile savvy and potentially co-locate with contractors for better collaboration. The contract must outline Agile-based roles with Agile.

The essence of an Agile contract is a partnership rather than an explicit product scope. Building upon the concept of government-contractor collaboration, the integration of cooperative work methods into contract language represents a significant shift in procurement practices. By explicitly detailing how the government and contractor will work together within the contract itself, both parties establish a clear framework for communication, problem-solving, and shared responsibility from the outset. This approach goes beyond traditional contractual obligations, fostering a partnership mentality that can lead to more efficient project execution, improved outcomes, and a more positive working relationship overall. Such provisions might include regular joint strategy sessions, collaborative risk management processes, or integrated project teams that blend government and contractor personnel.

The incorporation of shared pain and gain mechanisms, as highlighted in the [Managed Investment Contract model](#), further reinforces this collaborative approach. By structuring contracts to include incentives that benefit both parties when project goals are met or exceeded and penalties that affect both sides when targets are missed, the traditional adversarial dynamic is transformed into a more symbiotic relationship. This alignment of interests encourages innovation, efficiency, and a focus on long-term value rather than short-term gains. For instance, a contract might include performance-based bonuses that reward the contractor for early completion or cost savings while also providing the government with a share of these benefits. Conversely, cost overruns or delays could result in shared financial responsibilities, motivating both parties to work diligently to avoid such outcomes. This win-win mindset improves project performance and fosters a more sustainable and productive government-contractor ecosystem.

Many government procurements are for services, such as a SOC, systems integration and configuration, managed services, SAAS, PAAS, etc. While the scope needs should be defined, the way it is defined is different. It is about setting expectations for a collaborative relationship to evolve the project based on iterative feedback and adjustments. Unlike traditional projects where the contractor works independently based on fixed requirements, Agile projects demand active leadership and vision from government agencies throughout the project's lifecycle. See Appendix E for contract examples.



Project Kickoff

Several critical activities should occur to ensure a strong foundation when kicking off an Agile project using the Scaled Agile Framework (SAFe). The process begins with a project kickoff meeting, aligning the development, delivery and management teams and stakeholders on the project overview, roles, and responsibilities. An iteration zero session follows this to establish team norms and organize the working board. It is crucial to articulate the “why” behind the solution intent and validate assumptions through due diligence. Defining and prioritizing building blocks for the transformation, including organizational readiness and content preparation, sets the stage for success. Training for government personnel, such as SAFe for Teams or specific workshops, should be conducted before the PI.

The kickoff process continues with establishing team topology at the Agile Release Train (ART) and team levels and implementing standardized tooling for visibility across all work types. Creating a comprehensive implementation plan and applying knowledge from training and Lean-Agile principles to move from the current state to the desired future state is essential. Setting up regular iteration reviews keeps stakeholders informed of project progress. The team should also discuss and agree on process-specific issues like iteration length and definition of done. Finally, lightweight risk management should be considered by identifying top risks and planning mitigation activities to help prepare for potential challenges. Risks can be stored as artifacts in the backlog (aka a risk-adjusted backlog) that align looming risks with the iteration in which they are likely to occur, making risks very transparent and easy to discuss in one of the Product Owner or sync meetings. These activities collectively set the stage for a successful SAFe implementation and Agile transformation.

Consider Tooling

The kickoff of a new contract award helps to establish the way the vendor and government will work together and the use of application lifecycle management tools (ALM) for the program. It is an opportunity to rethink how information is relayed to the project management team and the COR. This includes using dashboards to demonstrate any of the measures of performance agreed upon in the contract and having that data available on-demand using the ALM tools to help capture that data.

The use of shared repositories and Git is becoming increasingly common in government,

promoting transparency, collaboration, and efficiency in software development. Many U.S. federal agencies, including GSA, DOD, and NASA, maintain public code repositories. The UK's Government Digital Service (GDS) uses Git extensively for version control and publishes most of its code openly on GitHub. The U.S. government's Code.gov initiative promotes code sharing and reuse across federal agencies. Using tools such as Jira combined with PPI Planning.io maximizes how remote teams plan as well as increase transparency and alignment for all parties involved. Contact Government@scaledagile.com for more information on integrated agile tools used with SAFe.



Delivering Value

In the context of a Scaled Agile Framework (SAFe) implementation for a large government Agile contract, “deliver value” means providing mission-related services or capabilities to users. These users might be internal government personnel, or external citizens or warfighters. The following provide methods to evaluate value to users, that can be used as measures of performance for the contract. See Appendix C of measures that should be avoided that have been found in several government agile RFPs. Countermeasures are suggested that embrace SAFe principles while fulfilling required performance measures.

Here are several methods to collect data and measure the effectiveness of work being performed using Agile best practices in a government scenario. The first 4 metrics are SAFe’s flow metrics which can be applied easily in a government setting. The remainder of the metrics have been applied to SAFe implementations and measure either the effectiveness of the SAFe transformation or the delivery of value to the user as measures of performance.

1. **Flow Efficiency** is a metric that measures how much of the total time spent on work items is actively adding value versus waiting or being idle. A higher flow efficiency percentage indicates that more of the total time is spent actively working on and adding value to items, rather than having them sit idle. Low flow efficiency often indicates bottlenecks, delays, or inefficiencies in the process where work items are waiting rather than being actively worked on. Typical flow efficiency in many organizations starts around 15-30%. Highly optimized value streams may achieve 40-50% flow efficiency. The goal is to increase flow efficiency by reducing wait times and bottlenecks in the process.

How to collect flow efficiency data:

- Track the active time vs. wait time for work items moving through the value stream
- Collect data on start/stop times at each stage using project management tools
- Calculate flow efficiency = active time / total time
- Target improving flow efficiency over time to reduce waste

2. **Cycle Time** is a key metric used to measure the efficiency of the development process. It is measured from the start of work on an item to its completion, including all stages of development, testing, and deployment. Typically calculated as the average time taken for work items to move from “in progress” to “done” status. Often used in conjunction with other SAFe metrics like lead time and throughput to provide a comprehensive view of process efficiency. The aim is generally to reduce cycle time, which indicates increased efficiency and faster value delivery. In government projects, cycle time may vary depending on the complexity of work items, security requirements, and approval processes. Reducing cycle time can lead to faster delivery of critical services or systems, improved responsiveness to policy changes, and better use of taxpayer funds.

How to collect and evaluate cycle time data:

- Use automated tools to timestamp when items enter/exit each stage
- Calculate average cycle time and look for trends
- Visualize this data using tools like cumulative flow diagrams or cycle time scatterplots to track trends over time. Aim to reduce cycle time to deliver value faster.

3. **Throughput** is the rate at which work items are completed and delivered by an Agile team or Agile Release Train (ART) over a specific time period. It's a key metric used to measure productivity and value delivery in Agile projects. Throughput is typically measured by counting the number of work items (such as user stories, features, or capabilities) completed per iteration or PI. Unlike traditional metrics that might focus on effort or time spent, throughput emphasizes the actual delivery of valuable outcomes to stakeholders. Throughput can be measured at various levels - team, program, or portfolio - allowing for scalable performance tracking in large government projects. Throughput should be tied to missioncritical objectives, ensuring completed work items contribute directly to agency goals.

How to collect and evaluate throughput data:

- Define work items to be tracked (e.g., user stories, features, or capabilities).
- Establish the time period for measuring throughput, typically per iteration (for user stories) or PI (for features) or semi-annually (for capabilities).
- Implement tracking tools (e.g., Jira, Azure DevOps) to track work items through their lifecycle.
- Record completed items at the end of each defined period that meet the team's Definition of Done.
- Analyze and evaluate by using visuals (e.g., bar charts) to display throughput over time. Look for trends such as increases, decreases, or stability in throughput. Compare throughput with other metrics like cycle time and flow efficiency

4. **Work in Progress (WIP)** measures the number of work items actively being worked on. The goal is to have the correct balance of work in progress without overloading the teams and to limit context switching due to working on too many items simultaneously. By limiting WIP, teams can focus on completing tasks rather than starting new ones, which increases the overall flow of work through the system, resulting in more complete work that has high quality. With fewer items in progress, it's easier to identify and mitigate risks early in the development process.



How to collect and evaluate WIP data:

- Define WIP limits at each workflow stage to maintain focus and efficiency.
- Use visual management tools, such as Kanban boards or project management software to visually track work items and their status throughout the lifecycle.
- Consistently record the number of work items in progress at defined intervals (e.g., daily or weekly) to ensure accurate tracking.
- Visualize WIP trends by creating visual representations of WIP data, such as cumulative flow diagrams, to identify patterns and bottlenecks in the workflow.
- Analyze and Compare Metrics by evaluating WIP data alongside other Agile metrics like cycle time and throughput to gain insights into overall process efficiency.
- Discuss in retrospective WIP data to identify areas for improvement and adjust processes accordingly.

5. **Customer Satisfaction Surveys** are important for assessing whether the product or service meets the needs and expectations of internal users in Agile methodologies. By measuring internal user satisfaction, agencies can ensure that the developed solutions effectively contribute to the organization’s mission and strategic goals. Surveys also help in evaluating how well the contractor is meeting the needs of the government agency and its internal stakeholders. In Agile government contracts, customer satisfaction surveys are crucial for ensuring that the iterative development process focuses on delivering real value to end-users and aligning with the agency’s mission objectives.

How to collect and evaluate customer satisfaction surveys:

These surveys should be brief, taking only a few minutes to respond to, typically tied to a release or a short performance period (quarterly). The data collected should be reviewed as part of the Inspect and Adapt session held before an upcoming PI event, providing an opportunity to address any performance issues identified in the survey results.

SAMPLE SURVEY

Please rate the contractor’s performance on a scale of 1 to 5, where:
1 = Poor, 2 = Fair, 3 = Satisfactory, 4 = Good, 5 = Excellent

Timeliness	How well did the contractor meet the expected delivery
Quality	How would you rate the overall quality of the delivered MVP?
Security	How well did the contractor address security requirements and concerns?
Goodness of Fit	How well does the MVP align with the stated requirements and objectives, date/milestone?
Business Acumen	How would you rate the contractor’s understanding of your agency’s business needs?
Communication	How effective was the contractor’s communication throughout the project?
Collaboration	How well did the contractor collaborate with other parties in the projects?
Transparency	How transparent was the contractor regarding upcoming issues or challenges?
Problem-Solving	How effective was the contractor in finding workarounds for issues that arose?

Figure 4: Sample customer satisfaction survey

6. **Business (or Mission) Value (BV) Delivered** is a critical metric used in SAFe to prioritize and align work with an organization’s strategic goals. BV is assigned to Planning Increment (PI) objectives during PI planning, where Business Owners (BOs) rate each objective on a scale from 1 (lowest) to 10 (highest) based on its importance and expected impact on the agency’s mission. This process fosters essential face-to-face dialogue between teams and their key stakeholders, ensuring everyone understands the business priorities and the rationale behind them. By assigning BV, BOs help teams make informed decisions and tradeoffs during PI execution, which enhances predictability, alignment, and trust. This practice clarifies the agency’s mission needs and empowers teams to focus on delivering the most valuable outcomes, ultimately leading to improved performance and faster time-to-field capabilities.

How to collect and evaluate BV

- BV is assigned to Planning Increment (PI) objectives during PI planning
- Business (or Mission) Owners rate objectives on a scale from 1 (lowest) to 10 (highest). Ratings are based on importance and expected impact on the agency’s mission. See examples below in figure 5 below.

→ BV assignment helps teams make informed decisions and trade-offs during PI execution. It enhances predictability, alignment, and trust. The practice clarifies agency mission needs and focuses teams on delivering valuable outcomes

Value	Points	Description
Low Business Value	1	Minimal impact. Addresses a low-priority issue or minor compliance requirement that affects a small number of stakeholders or has limited visibility.
	2	Slightly more significant than a 1-point item but still low impact. Might include minor improvements or small-scale operational efficiencies
	3	Low impact but with some noticeable benefit. Could be a minor policy change or small enhancement that improves service delivery slightly but does not significantly affect overall government objectives.
Moderate Business Value	4	Moderate impact. Addresses a known issue that affects a moderate number of stakeholders or introduces a feature that moderately improves public service or operational efficiency.
	5	Balanced impact. Enhances public service or operational efficiency by a noticeable margin (e.g., improving processing times by 20%).
	6	Slightly higher than average impact. Could include initiatives that improve public satisfaction or compliance rates from moderate to high levels.
High Business Value	7	High impact. Introduces features or policies that significantly improve public service delivery or operational efficiency. Might include major performance improvements or critical compliance requirements.
	8	Very high impact. Features or improvements that substantially enhance public trust, satisfaction, or operational efficiency. Could include major system overhauls or significant new capabilities.
	9	Near the highest impact. Addresses critical public needs or opportunities, leading to substantial benefits. Examples might include major new public services that drive significant improvements in public welfare or efficiency.
Highest Business Value	10	Maximum impact. Represents the highest possible business value. These are game-changing policies or improvements that can drastically improve public service delivery, operational efficiency, or public trust. Examples include groundbreaking innovations or critical strategic initiatives that align closely with the government's long-term goals.

Figure 5: Business Value Exemplar

Here are some practical examples

- 3 Points: Implementing a minor policy change that slightly enhances service delivery but does not drive significant new benefits or stakeholder engagement.
- 5 Points: Introducing a feature that improves processing times by 20%, resulting in noticeable but not game-changing improvements in public service delivery and operational efficiency.
- 7 Points: Launching a new initiative that significantly improves public satisfaction, substantially increasing stakeholder engagement and trust.
- 10 Points: Implementing a major new public service that opens up new opportunities for public welfare, potentially doubling the government's impact and significantly enhancing its reputation.

7. **Feature Usage** measures how frequently and effectively users engage with specific features or functionalities of a system or application developed under the Agile contract. It provides insights into which features are most valuable to end-users and helps prioritize future development efforts. Data collected will often identify underutilized features that may need improvement or removal. This metric can be used to assess the adoption rates of new digital services or tools or evaluate the impact of IT modernization efforts on user productivity. Use this information to make decisions about resource allocation for future iteration or release.

Include feature usage targets in contract performance metrics. Use data to justify continued investment or pivot to more valuable features. Incorporate usage data into sprint reviews and backlog prioritization

How to collect and analyze Feature Usage:

- Implement analytics tools to track user interactions with different features
- Collect data on frequency of use, time spent on features, and user paths through the system

8. **Tracking Defects** in a government environment can be beneficial, but it needs to be done carefully to align with Agile principles. Rather than tracking individual defects, consider tracking defect density instead of a defect count. This will provide you with a better quality indicator, as defect density is directly proportional to the amount of work done (story points) in Agile. For instance, it's preferable to have 50 defects when delivering 85 story points of value in an iteration, as opposed to 50 defects when delivering 21 story points. Sometimes, the functionality is so complex that many defects can occur. Start by establishing a baseline for the defect count based on the amount of work completed. Defect Density accomplishes just that.



How to collect and analyze Tracking Defects:

- Track the number and severity of defects found at the end of each iteration and at the end of the PI
- Monitor defect resolution time
- Look for patterns in types of defects occurring
- Look for strategies that reduce the number of defects by type over time
- Use data to improve quality practices

Be sure to review Appendix C, which identifies several issues that might arise from tracking number of defects.

9. **Measuring PI Objectives** can effectively assess performance on agile contracts in government settings. PI Objectives provide a clear, outcome-focused summary of what teams intend to achieve in a PI, typically spanning 8-12 weeks. By using these objectives as performance metrics, government agencies can shift from traditional contract management focused on compliance to a more agile approach centered on delivering value. It's important to distinguish between completed features and achieved objectives. While a feature may be completed, it doesn't necessarily mean that the objective has been fully met. Sometimes, multiple features are needed to support a single objective, and sometimes, the hypothesis on the impact of the feature on an objective is incorrect.

For example, if the objective was to reduce the number of errors in submitted data to only 20% of submissions, and at the end of the process, the actual data showed that errors were fewer but still over 40%, the objective wasn't fully met. Although the results are moving in the right direction, they fall short of the initial goal. This prompts a discussion on whether to develop an additional feature to further reduce error rates or to focus on other higher-priority objectives. Ultimately, the goal is to achieve better outcomes over time, and have the flexibility to respond to the data with additional actions.

How to collect and evaluate PI Objectives

- Define PI Objectives during PI Planning, ensuring they are specific, measurable, and valuable to stakeholders.
- Progress is tracked against these objectives, with regular reviews and demonstrations of working solutions. The percentage of objectives achieved should be captured. An ideal percentage rate is between 80% and 100%.
- Business owners assess the actual value delivered against the planned objectives, providing a quantifiable performance measure.

10. **A Quality Assurance Surveillance Plan (QASP)** is a tool that can be used to measure the contractor's performance. It is developed by the government and included in the solicitation, focusing on delivering value to users through working solutions. The QASP typically includes metrics such as iteration goals or objectives, code quality, accessibility compliance, and user feedback. The QASP should be treated as a living document, allowing for adjustments as the project progresses. QASP is discussed earlier in this document.

How to implement and analyze QASP data:

- Establish clear metrics (as described in this section) that specify key measurable performance indicators that align with the program's mission. While QASPs have tended to focus on iteration burn-down and story points completed, these metrics are not customer focuses and only measure a single team's ability to plan and execute to that plan over a very small window of time. Rather, the QASP can be updated to include any of the measures described in this paper, focusing on throughput, flow efficiency, and mission value delivered.
- Collect data consistently and at key intervals, typically at the end of each iteration and PI.
- Use automated tools to perform code quality checks, and test coverage
- Look for patterns in the data to identify opportunities for improvement
- Capture insights to inform future projects in QASP development.



11. **Measuring the Innovation Rate** can be an effective way to assess performance on an Agile contract in government. This metric focuses on the ability of the development team to generate and implement new ideas, features, or improvements that add value to the project. By tracking the innovation rate, government agencies can gauge how well the Agile approach fosters creativity and continuous improvement, which are key principles of SAFe. The benefits of measuring the innovation rate include encouraging experimentation, promoting a culture of continuous improvement, and ensuring the project remains responsive to changing user needs and technological advancements.

How to collect and analyze the Innovation Rate

- Track the number of new features or improvements introduced in each sprint or release cycle, weighted by their impact on user satisfaction or mission effectiveness.
- Use a combination of quantitative measures (e.g., number of new features implemented) and qualitative assessments (e.g., user feedback on innovative solutions).
- Incorporate innovation-related criteria into contractor performance evaluation, incentivizing teams to prioritize creative problem-solving and forward-thinking approaches throughout the project lifecycle.

This section has provided numerous metrics to measure alignment with the mission, benefit to end users, and improvement in delivery speed. Start by tracking just a few of these measures in the first year and gradually add more to get a complete picture of the contractor's performance. Write the contract so the performance measures are reviewed and evolve on a cadence. State specific time intervals when this review will be conducted. It should be consistent and, on a cadence, so contractors know what to expect and be prepared to adapt. This can be done at each PI, or bi-annually, but needs to be in the contract.

Many of these measurements can be automated using tools. When deciding which ones to implement, consider the available tools for collecting data and the visualization needed to create an easily accessible transparent dashboard. Displaying key metrics on dashboards increases transparency, giving the entire team a clear view of progress and areas needing attention. The contract should reference this dashboard as a core means of transparency and project-level or contract-level governance and reporting. These dashboards should be used for governance. Performance measures should be outcome-driven and not just specific to outputs.

It is important to regularly review these metrics during team retrospectives and PI (PI) planning sessions to ensure that the insights gained can effectively inform strategies and actions. Focus on trends rather than fixating on specific numbers to promote a more comprehensive performance analysis over time. Using data as a tool for continuous improvement, rather than for punitive purposes, encourages a culture of learning and growth. Finally, aligning metrics with the overall program goals and mission objectives ensures that all efforts are directed toward achieving the broader vision, thereby maximizing the impact of these strategies.

Appendices

Appendix A: Government Agile Guides

GAO Agile Assessment Guide

The GAO Agile Assessment Guide discusses these challenges when managing an Agile program under a waterfall contract.

- Misalignment of expectations: Waterfall contracts typically require detailed specifications upfront, which conflicts with Agile's iterative approach. This can lead to misunderstandings between the contractor and the government agency.
- Inflexibility: Waterfall contracts often have fixed requirements, timelines, and deliverables, hindering the Agile team's ability to respond to changing priorities or new information.
- Reporting challenges: Traditional waterfall contracts may require progress reports and metrics that don't align well with Agile methodologies, making it difficult to communicate project status accurately.
- Risk of non-compliance: Agile teams may struggle to meet contractual obligations designed for waterfall projects, potentially putting them at risk of noncompliance.
- Reduced benefits: The full benefits of Agile, such as early and continuous delivery of working software, may not be realized due to contractual constraints.
- Difficulty adapting: Waterfall contracts may not allow for the frequent reprioritization and backlog refinement essential to Agile processes.

The GAO guide suggests that to implement Agile under a waterfall contract successfully, the government and contractors must be flexible and willing to adapt their processes. This may include modifying reporting requirements, allowing for more frequent deliveries, and being open to project scope and priorities changes.

The guide also recommends that agencies consider using more flexible contracting vehicles better suited to Agile development, such as time-and-materials contracts or indefinitedelivery/indefinite-quantity (IDIQ) contracts with Agile-friendly terms.

Department of Homeland Security Guidance

The Department of Homeland Security (DHS) developed the Lean Analysis of Alternatives (AoA) templates and guidance to improve its acquisition processes. The main components of DHS's Lean AoA templates include:

- Incorporation of 22 GAO best practices from report #17-799, ensuring a comprehensive and reliable approach.
- Alignment with the Acquisition Lifecycle Framework (ALF) and Systems Engineering Life Cycle (SELC) processes.

- Focus on reducing redundancies and streamlining the process, as evidenced by the identification of 66 repetitive information requests across various templates.
- Integration of cybersecurity and privacy considerations, as mentioned in the revised JRIMS MD-107-01 Instruction.
- Emphasis on incremental testing rather than testing after development completion, as per the revised TEMP Guidance.
- Incorporation of Enterprise Architecture touchpoints in MD-102-01-001.
- Utilization of the Digital Review & Adjudication Workflow (DRAW) tool for increased accountability and transparency in the review process.

These Lean AoA templates are part of DHS's broader effort to [modernize and streamline](#) its acquisition processes. This includes developing action plans for various aspects of acquisition management and implementing agile methodologies.

Appendix B: Statement of Objective (SOO) Example

Waterfall Requirements:

- The system shall calculate gross pay based on employee hourly rates and hours worked.
- The system shall deduct federal and state taxes from gross pay.
- The system shall calculate and deduct Social Security and Medicare contributions.
- The system shall process and track employee benefits deductions.
- The system shall generate pay stubs for each pay period.
- The system shall maintain historical payroll records for at least 7 years.
- The system shall integrate with the existing time-tracking system.
- The system shall generate year-end tax forms (W-2, 1099) for all employees.
- The system shall allow for manual adjustments to payroll calculations.
- The system shall provide role-based access control

Statement of Objectives (SOO):

Please remember the following objectives for our payroll system:

1. Accurate and Compliant Payroll Processing

- Ensure precise calculation of employee compensation, maintain compliance with regulations, and generate required tax forms and reports.

2. Efficient Payroll Administration

- Streamline processes, provide intuitive interfaces, and integrate seamlessly with existing systems.

3. Comprehensive Payroll Record Management

- Maintain secure, easily accessible records, ensure data retention meets legal requirements, and provide robust reporting capabilities.

4. User-Friendly Employee Experience

- Deliver clear, accurate pay stubs and offer secure, role-based access to payroll information.

5. Scalability and Adaptability

- Design the system to accommodate future growth and changes in payroll regulations, and allow for easy configuration of new pay types, deductions, and benefits.

By converting the waterfall requirements into a Statement of Objectives, the focus shifts from specific system features to desired outcomes and goals. This approach allows for more flexibility in implementation and encourages innovative solutions from potential vendors or development teams.

Appendix C: Measures of Performance

Establishing the correct Agile performance measures is vital for government projects transitioning from waterfall methodologies because it ensures that the metrics used accurately reflect Agile practices' iterative and flexible nature. Unlike waterfall, which relies on linear and sequential progress measures, Agile metrics provide real-time insights into team productivity, project health, and customer value delivery. These metrics help teams to continuously improve and adapt to changes, fostering a more responsive and efficient project management environment. Relying on outdated waterfall standards can lead to misaligned goals, inefficiencies, and a failure to fully realize the benefits of SAFe, ultimately hindering project success and stakeholder satisfaction.

Here are three common **anti-patterns** often observed in government that result in misalignment, bottlenecks, and mistrust.

Using Agile Velocity as a Performance Metric

Agile velocity, which measures the work a team completes during a sprint, is often misused beyond its intended purpose of capacity planning. When velocity is used to measure team performance or to compare different teams, it can lead to several detrimental outcomes:

- Comparison Between Teams: Velocity is a relative measure unique to each team. Comparing velocities across different teams can lead to unfair assessments and demotivation, as no two teams are identical in skills, experience, or dynamics.
- Pressure to Inflate Estimates: Using velocity to predict long-term project delivery dates or set performance targets can pressure teams to inflate their story points, leading to meaningless metrics and undermining trust.
- Focus on Quantity Over Quality: Emphasizing velocity can shift the focus from delivering high-quality, valuable features to merely increasing the number of story points completed, which can degrade overall product quality and team morale.

Relying on Earned Value Management (EVM)

Earned Value Management (EVM) is a project management tool that tracks costs, schedules, and scope against an initial plan. However, it is not well-suited for Agile environments for several reasons:

- Inflexibility: EVM is based on a fixed plan and does not accommodate the iterative and flexible nature of Agile methodologies. Agile projects often require adjustments based on feedback and evolving requirements, which EVM does not easily support.
- Misalignment with Agile: EVM focuses on tracking progress against a predefined plan rather than the continuous delivery of value, a core principle of Agile.
- Complexity and Overhead: Implementing EVM in an Agile context can add unnecessary complexity and administrative overhead, detracting from the Agile goal of simplicity and efficiency.

Tracking Number of Defects

While measuring performance by tracking the number of bugs fixed, this metric can lead to several issues:

- Encourages Short-Term Fixes: Focusing on the number of bugs fixed can incentivize teams to prioritize quick fixes over addressing underlying issues, leading to recurring problems and technical debt.
- Gaming the System: Teams might report more easily fixable bugs to boost their numbers, which does not reflect progress or quality improvements.
- Neglects Preventive Measures: This metric does not encourage practices that prevent bugs from occurring, such as thorough testing and code reviews, which are essential for maintaining high-quality software.

Focusing instead on metrics that emphasize value delivery, team collaboration, and continuous improvement can lead to more meaningful insights and successful Agile acquisitions. The following table provides suggested countermeasures that embrace SAFe principles while fulfilling required performance requirements. These countermeasures lead to less overhead to manage and offer better predictability on how well the contract is performing.

Stop	Which can:	Instead	Which:
Misusing Agile Velocity	Leads to inflated estimates, unhealthy competition, and a focus on quantity over quality	Use Outcome-Based Metrics	Emphasizes the value delivered to customers and the quality of the product
		Satisfy the Customer	Gauges how well the product meets user needs by using metrics such as Net Promoter Score (NPS) or Customer Satisfaction (CSAT) surveys
		Deliver Value	Increases usage, user engagement, or reduces costs, by tracking the actual business value delivered through features
Earned Value Management (EVM)	Be rigid and does not align with the iterative and flexible nature of agile	Measure Quality	Ensures that the product maintains high standards by measuring defect rates, code quality, and technical debt
		Implement a Balanced Set of KPIs	Reflects Agile values and principles by using a balanced set of Key Performance Indicators (KPIs)
		Measure Cycle Time and Lead Time	To understand and improve the flow of work by measuring the time taken at the start of work to its completion
		Measure Planned-to-Done Ratio	Assesses predictability and planning accuracy by tracking how much planned work is completed within an iteration or a PI
		Track Escaped	Defects Improve the development and testing processes by monitoring defects found after a release

Stop	Which can:	Instead	Which:
Tracking the Number of Bugs Fixed	Leads to short-term fixes and neglect of preventive measures	Use Qualitative Feedback and Continuous Improvement	Foster a culture of continuous improvement by incorporating qualitative feedback
		Do Retrospectives	Gather qualitative feedback from the team on what went well and what needs improvement
		Do Root Cause Analysis	To prevent recurrence and address underlying issues.
		Use Continuous Improvement Metrics	Monitors improvement actions from retrospectives and tracks metric such as team satisfaction, technical competency and operating procedures

Appendix D: Buy the Partner, not the Point

These pricing patterns that have been working well within government followed by patterns that should be avoided.

Buy the Agile Teams

ITERATION-BASED PRICING (BEST FOR A SMALL NUMBER OF AGILE TEAMS)

Sprint or iteration-based pricing is one effective method for Agile teams in government acquisitions. This approach involves defining the cost per iteration based on the team size, skill set, and labor rates. The government can request vendors to provide pricing for each sprint cycle, ensuring a clear correlation between the proposed technical solution and the pricing. The government issues a solicitation that specifies the desired number of sprints and the timeframe for each sprint. Vendors then submit their proposed pricing for each sprint, including detailed backup documentation to support their pricing. This method ensures transparency and aligns costs with the work performed during each sprint. It also allows for adjustments based on the evolving project requirements, maintaining flexibility while controlling costs.

ART Based Pricing

When it comes to pricing, contractors should base their quotes on the cost of a standard Agile team per week and the number of weeks in the contract to perform the work. Agencies should refrain from specifying the "standard" team composition, as vendors may offer different team sizes and compositions. As long as the vendor defines the team they will provide and quotes the duration of effort needed, the agency can calculate the total estimated price by multiplying the team's weekly price by the proposed number of weeks. The Government should expect a 10-20% variance in the estimated number of weeks.

There are numerous studies that look at the average cost of an agile team, however much depends on context, classification level and technology utilized. However, the [average cost](#) of a 7-9 person agile team for one year can be between \$700,000-\$900,000 and for more complex environments between \$1,300,000 and \$1,700,000 per year.

The variability is to a variety of things:

- Team Size: Agile teams usually consist of 4-9 members, with 7 being standard.
- Labor Rates: The government often uses a blended hourly rate for team members and arriving at an average rate of \$125 per hour.
- Annual Work Hours: Assuming 1,880 billable hours per year (accounting for holidays and leave).
- Team Composition: A typical team might include roles such as software developers, designers, testers, and content strategists.

Suppose the estimated the cost of a 9-person agile team for one year of performance is \$1.9 million. If the Agile Release Train (ART) consists of 6 agile teams, you can factor the \$1.9M x 6 as the cost of the ART, and include an additional 5% to 15% of this price to account for project administration. These costs can vary based on location, security clearance requirements, and specific agency needs.

While iteration-based pricing (best for a small number of agile teams) is a good approach, do not assign story points or expected capacity of delivery for each Agile team each iteration. The team will be expected to deliver within an X standard deviation of the recommended capacity for that team, based on industry standards ([industry best practice recommends between 60% and 80% of capacity](#)). Never assign the number of points per iteration ahead of planning, as this does not take into consideration time-off, and life's inevitable unknowns. We have received many RFPs requesting an agile team of 10 members to deliver 100-120 story points per iteration consistently. To achieve this, teams would be pressured to work overtime regularly, leading to a sacrifice in quality and likely manipulation of metrics. A better practice is to baseline the team's velocity after no less than 6 iterations (or any time major organizational shifts take place, such as the loss or addition of a team member), and delivery is expected based on historical velocity.

Misusing Story Points for Pricing

One of the worst approaches is using story points as a direct basis for pricing in Agile contracts. This is problematic because:

- Story points are subjective and team-specific, making them easy to manipulate.
- It incentivizes delivering more story points rather than actual value.
- More experienced teams tend to estimate fewer story points, potentially appearing less productive.

Example: A government agency issues a solicitation with a sample 1-point story and asks vendors to quote a predefined point. They then issue task orders with pre-defined story point volumes, leading to potential gaming of the system and misalignment with actual value delivered.

Instead, leave story points out of the evaluation or pricing criteria. Story points have only one value and that is for the individual teams to learn how well they are planning and completing work within an iteration.

Rigid Fixed-Price Contracts for Uncertain Requirements

Using traditional firm-fixed-price contracts with firm requirements on an Agile project that has evolving requirements can be problematic:

- It forces vendors to build in unnecessary contingencies, potentially increasing costs.
- It reduces flexibility to adapt to changing needs.
- It can lead to numerous change orders, negating the intended cost certainty.

Example: An agency issues a multi-year, fixed-price contract for a large software project with detailed upfront specifications. As requirements evolve during development, the agency faces costly change orders and receives a product that does not fully meet their needs.

Instead, use Firm Fixed Price (FFP) based on capacity (price per ART or per iteration) which allows flexibility to accommodate changing requirements.

Time and Materials Contracts Without Proper Controls

While time and materials (T&M) contracts can be suitable for agile projects, using them without proper controls is risky:

- It can lead to cost overruns if not carefully managed.
- It may have insufficient monitors of performance.
- It can result in paying for effort rather than outcomes.

Example: An agency uses a T&M contract for an agile development project without setting clear performance metrics or delivery milestones. The project extends beyond the planned timeframe and budget, with little recourse for the agency to ensure value for money. Using any of the performance measures identified in this paper, would place proper controls on a T&M Agile contracting.

These examples highlight the importance of aligning the contract type and pricing model with the agile methodology, focusing on outcomes and value rather than rigid specifications or easily manipulated metrics. Agencies should consider more flexible approaches, such as fixed-price per sprint or capacity-based pricing, with appropriate performance incentives and regular evaluation periods.

Modular Contracting Examples

Modular contracting involves breaking down large projects into smaller, manageable modules that can be developed, tested, and delivered incrementally. This approach allows for more accurate cost estimation and reduces the risk of large-scale project failures.

General Services Administration (GSA) and U.S. Citizenship and Immigration Services (USCIS):

GSA used modular contracting to procure Agile services by inviting vendors to deliver a real Agile product as part of their proposal. This method allowed GSA to evaluate vendors based on their ability to deliver working software incrementally and adapt to changing requirements. USCIS's Flexible Agile Delivery Services II (FADS II) adopted a similar approach, requiring vendors to demonstrate their Agile capabilities through a sample project. This helped USCIS assess vendors' ability to deliver value incrementally and manage costs more effectively. The bigger acquisition win was the speed with which the RFP went out and was evaluated, resulting in significantly reduced time to start the contract and better management when it was executed. The teams did a value stream analysis, and it was discovered that the largest time factor in delivering new capability was not doing development but the procurement cycle itself. The team focused on reducing the procurement lifecycle first.

Time and Materials (T&M) Contracts with Agile Metrics

DEPARTMENT OF DEFENSE (DOD)

The Department of Defense used Agile processes to enhance the Defense Medical Human Resources System-internet (DMHRSi). By adopting T&M contracts combined with Agile metrics such as cycle time, lead time, and customer satisfaction, the DoD significantly reduced the time required for software releases and improved overall project outcomes.

Outcome-Based Contracts

VARIOUS FEDERAL AGENCIES

Outcome-based contracts focus on the results and value delivered rather than the specific tasks. This approach aligns well with Agile principles, emphasizing delivering working software and customer satisfaction.

Agile Assessment Guide by GAO:

The Government Accountability Office (GAO) recommends using outcome-based metrics to evaluate the success of Agile projects. This includes tracking customer satisfaction, the value delivered, and the quality of the software. By focusing on outcomes, agencies can ensure that contracts are aligned with the goals of Agile development and provide flexibility to adapt to changing requirements.

Government agencies typically look at factors such as the price per iteration, team size, and labor category rates to ensure fair and reasonable pricing when evaluating agile contracts. This approach allows for more flexible and iterative development while maintaining fiscal responsibility.

FAR'S PERFORMANCE-BASED ACQUISITION

The [Federal Acquisition Regulation \(FAR\) Subpart 37.6](#) provides guidance on Performance-Based Acquisition (PBA) for acquiring services. PBA focuses on describing work in terms of required results rather than how the work should be performed, using measurable performance standards and financial incentives to encourage innovative and cost-effective methods. The FAR mandates that performance-based contracts include a Performance Work Statement (PWS), measurable performance standards, and performance incentives where appropriate.

Appendix E: Government Contract Examples

Pay.gov Agile Implementation. The U.S. Treasury and Federal Reserve Bank of Cleveland successfully implemented agile practices for the Pay.gov system, allowing customers to pay the government electronically. This resulted in improved software quality, faster time-to-market, and increased efficiency. DeVillier, J., Leitner, S., & McFadden, T. (n.d.). How the Pay.gov Team Went Agile. TechFAR Hub. <https://techfarhub.usds.gov/resources/case-studies/how-pay-govteam-went-agile/>

Patriot Excalibur (PEX). The PEX program has been using agile methods for software development for over a decade, successfully delivering and evolving a squadron support system adopted by more than 600 organizations. Obama White House Archives. (2014). Innovative Contracting Case Studies. https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/innovative_contracting_case_studies_2014_-_august.pdf

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GSA's 18F - Agile Delivery Services Blanket Purchase Agreement. GSA used an innovative approach to evaluate vendors' agile capabilities by requesting working software artifacts as part of their procurement process. 18F. (2015, August 28). Announcing the Agile BPA awards: A conversation about the process. <https://18f.gsa.gov/2015/08/28/announcing-the-agile-BPAawards/>

The NASA Consolidated Applications and Platform Services (NCAPS) contract is a major IT services consolidation effort aimed at standardizing and centralizing NASA's IT services across all its centers and facilities. The contract structure suggests an agile-inspired approach, incorporating elements such as iterative delivery, flexibility, continuous improvement, crossfunctional teams, and customer focus. The contract is designed to transform service delivery while maintaining mission focus and improving efficiency across NASA's IT operations. (2023, September). NASA Awards Contract for IT Support, Platform Services.

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The FBI's Flexible Agile Scalable Teams (FAST) contract is a multiple-award blanket purchase agreement to acquire agile development expertise. The contract utilizes Scaled Agile Framework (SAFe) methodologies to support the FBI's Criminal Justice Information Services division. FAST emphasizes agile practices by allowing for flexible team compositions, iterative development, and continuous delivery of value. The contract structure enables the FBI to access talent across multiple occupational categories through competitive task orders issued to preselected vendors. By implementing agile principles, the FBI aims to improve alignment between development efforts and business goals, enhance transparency, and focus on delivering outcomes rather than outputs. This approach allows for more frequent feedback and adjustments, supporting the agile principle of responding to change while maintaining accountability in government contracting. (Government Accountability Office, 2023)

The [How to Use SPARC](#) section on the CMS website provides high-level instructions for using the SPARC (Strategic Partners Acquisition Readiness Contract) IDIQ (Indefinite Delivery Indefinite Quantity) contract. It guides users through the process of issuing a Task Order (TO), emphasizing the importance of lean methodologies and Agile contracting best practices as outlined in the United States Digital Services (USDS) playbook. The guide details various pricing arrangements and competition types, including set-asides for small businesses and solesource contracts. It also highlights the need for market research to inform procurement strategies and includes resources such as the SPARC Task Order Guide and IT Contracting Best Practices. For more detailed information, users are encouraged to consult their Contracting Officer (CO) and Contract Specialist (CS).

The [DoD Enterprise DevSecOps Strategy Guide](#) outlines the Department of Defense's approach to integrating DevSecOps practices across its software development and IT operations. The guide aims to establish a unified DevSecOps framework to enhance software delivery speed, security, and quality within the DoD. It envisions a culture where development, security, and operations are seamlessly integrated, fostering collaboration and continuous improvement.

Appendix F: Contracting for AI

The Office of Management and Budget (OMB) has released a memorandum titled [“Advancing the Responsible Acquisition of Artificial Intelligence in Government”](#) to guide federal agencies in the responsible procurement of AI. This guidance, part of President Biden’s Executive Order on AI, aims to manage risks, promote innovation and competition, and implement governance structures for AI acquisition. The memorandum addresses the unique challenges of AI procurement, building upon previous guidance for AI use in government. It emphasizes the significant impact of federal purchasing power, with over \$750 billion in annual spending, on technological advancements, including AI.

The guidance focuses on three strategic goals: managing AI risks and performance, promoting a competitive AI market, and ensuring collaboration across the federal government. Key requirements include involving privacy officials in AI acquisition processes, using outcomesbased acquisition techniques, protecting government data and intellectual property, and minimizing vendor lock-in. The memorandum also calls for agencies to leverage innovative acquisition practices, consider interoperability and transparency in vendor evaluation, and establish cross-functional teams for AI procurement.

Based on the White House fact sheet and the guidance provided in this paper, the following are recommendations for developing an agile contract procuring AI and using SAFe:

1. Emphasize Outcomes and Value Delivery:
 - Focus on delivering small, frequent, incremental AI capabilities to users.
 - Structure the program to deliver capabilities that address threats and mission goals iteratively.
 - Use planning events (PI) instead of traditional milestone reviews.
2. Incorporate Risk Management and Performance Metrics:
 - Include requirements for ongoing risk assessment and mitigation strategies specific to AI.
 - Define Lean-Agile metrics for performance measurement, focusing on value delivery and risk reduction.
 - Require vendors to provide sufficient information for agencies to evaluate claims and conduct impact assessments.
3. Promote Collaboration and Transparency:
 - Establish contractual terms that foster a collaborative partnership between government and contractors.
 - Require engagement of key customer personnel and decision-makers throughout the development process.
 - Ensure transparency in AI development, including data usage, model training, and decision-making processes.
4. Flexibility and Adaptability:
 - Allow for changes in operations, technology, regulations, and budgets.

- Use a Statement of Objectives rather than a detailed Statement of Work to allow for flexibility in implementation.
 - Include provisions for continuous learning and adaptation of AI systems.
5. Cross-Functional Teams and Expertise:
- Require the formation of cross-functional teams that include AI experts, acquisition specialists, cybersecurity professionals, privacy officers, and civil liberties experts.
 - Ensure ongoing involvement of agency privacy officials throughout the AI acquisition process.
6. Interoperability and Vendor Lock-In Prevention:
- Include requirements for interoperability and transparency in market research and vendor evaluation processes.
 - Incorporate acquisition principles designed to minimize vendor lock-in.
7. Innovative Acquisition Practices:
- Use outcomes-based acquisition techniques to strengthen risk management and drive performance.
 - Leverage innovative practices like challenge-based acquisition or other Agile-friendly contract vehicles.
8. Data and Intellectual Property Protection:
- Include terms that protect government data and intellectual property while ensuring safe use of AI in decision-making processes.
9. Continuous Evaluation and Feedback:
- Require regular demonstrations of progress and value delivery.
 - Include provisions for collecting and incorporating user feedback into the development process.
10. Ethical AI and Bias Mitigation:
- Include requirements for assessing and mitigating bias in AI systems.
 - Ensure compliance with ethical AI principles and relevant regulations.
11. Scalability and Enterprise Integration:
- Consider how the AI solution will integrate with existing systems and scale across the organization.
 - Use SAFe principles to ensure alignment with broader organizational goals and strategies.

By incorporating these elements into Agile contracts for AI procurement, government agencies can better manage risks, promote innovation, and ensure responsible development and deployment of AI systems.

Appendix G: EVM and SAFe

Earned Value Management (EVM) in government is a project management technique used to measure project performance and progress in an objective manner. It integrates project scope, schedule, and cost measures to help managers predict project performance problems and make informed decisions.

Projects Subject to EVM:

In the U.S. federal government, EVM is typically required for major acquisition programs and projects that meet certain thresholds. According to the Office of Management and Budget (OMB) Circular A-11, EVM is generally required for:

1. Major IT investments (as defined in OMB Circular A-11)
2. Acquisitions with development, modernization, or enhancement (DME) activities exceeding \$20 million
3. Other projects deemed high-risk or high-priority by the agency

As EVM is a project management approach, the iterative nature of planning and executing work using SAFe can create challenges, such as:

- Flexibility vs. Baseline: SAFe emphasizes adaptability, while EVM relies on a fixed performance measurement baseline.
- Granularity: EVM often requires detailed work breakdown structures (WBS), which can conflict with SAFe's iterative approach.
- Value Measurement: EVM focuses on planned vs. actual costs, while SAFe prioritizes delivered business value.
- Reporting Cycles: EVM typically uses monthly reporting, which may not align with SAFe's iterations and Program Increments (PIs).
- Misalignment of timeframes: EVM typically uses monthly reporting cycles, while SAFe operates on shorter iterations (usually 2 weeks). This creates a few days at the beginning of the month and at the end of the month, where data will require manipulation in order "to fit" within the EVM monthly reporting schedule.

Best practices to overcome these challenges:

- Use higher-level WBS: Refrain from creating overly detailed WBS structures. Instead, align WBS elements with epics or features rather than individual user stories. If there are numerous smaller features being delivered each month, consider creating a master feature to which the child features roll up, all sharing the same WBS.
- Adjust EVM schedule: Align EVM reporting cycles with SAFe's PIs boundaries (4x a year) rather than calendar months.
- Redefine progress measurement: Use a percentage of feature complete as a proxy for the percent complete of project work.
- Implement rolling wave planning: Only detail near-term work in the EVM baseline, leaving future work at a higher level.

- Automate data collection: Utilize agile management tools to generate EVM data, reducing manual effort automatically.
- Focus on outcomes: Emphasize the delivery of business value rather than strict adherence to the original plan.
- Regular baseline updates: Perform more frequent baseline updates to reflect the evolving nature of agile projects.

Examples of successful EVM and SAFe implementation:

1. U.S. Department of Veterans Affairs (VA) - Financial Services Center:

The VA implemented SAFe with EVM for their Financial Services Center modernization project. They adapted their EVM approach to align with SAFe's PI structure and used feature completion as a key progress indicator (U.S. Department of Veterans Affairs, 2019).

Lesson Learned: Aligning EVM reporting with PI boundaries improved visibility and reduced reporting overhead.

2. U.S. Air Force - Kessel Run:

The Kessel Run program successfully integrated EVM principles with their SAFe implementation for software development. They used a higher-level WBS aligned with epics and features, and adjusted their EVM metrics to focus on value delivery (Broadus, 2020).

Lesson Learned: Focusing on value-based metrics rather than traditional task-based EVM improved stakeholder communication and project steering.

3. NASA - Jet Propulsion Laboratory (JPL):

JPL adapted their EVM processes to work with their agile development approach for spacecraft software. They used a rolling wave planning approach and aligned their EVM reporting with sprint and release cycles (Reifer et al., 2017).

Lesson Learned: Regular baseline updates and using agile artifacts for EVM reporting improved the accuracy and relevance of EVM data in an agile context.

By adopting these best practices and learning from successful implementations, government agencies can better integrate EVM requirements with SAFe methodologies, allowing for more effective project management and reporting while maintaining agile principles.

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Glossary

Acquisition: The process of obtaining goods, services, or solutions to meet government needs.

Acquisition Lifecycle Framework (ALF): A structured approach to managing acquisitions, emphasizing agility and flexibility.

Agile: An iterative and adaptive approach to project management, focusing on delivering value in small increments.

Agile Acquisition: The application of Agile principles to the acquisition process, emphasizing collaboration and flexibility.

Agile Contract: A contract that incorporates Agile principles, focusing on outcomes and value delivery rather than fixed requirements.

Agile Framework: A structured approach to implementing Agile methodologies, such as Scrum or SAFe.

Agile Metrics: Measures used to evaluate the success of Agile projects, such as cycle time, throughput, and customer satisfaction.

Agile Release Train (ART): A team of teams that work together to deliver a program increment, using SAFe principles.

Agile Services Acquisition: The process of acquiring Agile services, such as software development or IT consulting.

Backlog: A prioritized list of work items, such as user stories or features, to be developed by an Agile team.

Best Value: A procurement approach that considers both price and non-price factors to determine the most advantageous offer.

Change Control Process (CCP): A structured approach to managing changes to a contract or project scope.

Contracting Officer (CO): A government official responsible for managing contracts and ensuring compliance with regulations.

Contracting Officer's Representative (COR): A government official who assists the CO in managing contracts and ensuring technical accuracy.

Cross-Functional Team: A team that includes members from different functional areas, such as development, testing, and operations.

Cycle Time: The time it takes for a work item to move from start to completion, including all stages of development, testing, and deployment.

Defense Acquisition University (DAU): A government organization that provides training and guidance on acquisition processes.

Earned Value Management (EVM): A project management tool that tracks costs, schedules, and scope against an initial plan.

Federal Acquisition Institute (FAI): A government organization that provides training and guidance on acquisition processes.

Federal Acquisition Regulation (FAR): A set of regulations that govern federal procurement processes.

Flow Efficiency: A metric that measures the percentage of time spent on value-added activities versus wait time or idle time.

Government Accountability Office (GAO): A government organization that provides guidance and oversight on federal procurement processes.

Incremental Delivery: The practice of delivering working software or solutions in small increments, rather than all at once.

Iteration: A short period of time, typically 2-4 weeks, during which an Agile team works on a specific set of tasks.

Kanban: A visual system for managing work, emphasizing continuous flow and limiting work in progress.

Lean-Agile: An approach that combines Lean principles with Agile methodologies, focusing on eliminating waste and delivering value.

Minimum Viable Product (MVP): A product or solution that meets the minimum requirements for delivery, with the goal of iterating and improving over time.

Modular Contracting: An approach to contracting that breaks down large projects into smaller, more manageable modules.

Outcome-Based Contract: A contract that focuses on delivering specific outcomes or results, rather than fixed requirements.

Performance-Based Acquisition: An approach to contracting that focuses on delivering specific performance metrics, rather than fixed requirements.

Product Backlog: A prioritized list of work items, such as user stories or features, to be developed by an Agile team.

Product Manager: A role that is responsible for defining and delivering valuable, feasible, and sustainable solutions that meet customer needs.

Product Owner: A role that is responsible for managing the product backlog and prioritizing work items.

Program Increment (PI): A period of time, typically 8-12 weeks, during which an Agile Release Train delivers a specific set of features or capabilities.

Quality Assurance Surveillance Plan (QASP): A plan that outlines the approach to monitoring and evaluating contractor performance.

Release Train Engineer (RTE): A role that is responsible for facilitating the Agile Release Train and ensuring smooth operation.

Scaled Agile Framework (SAFe): A framework that provides a structured approach to implementing Agile principles at scale.

Scrum: A framework that provides a structured approach to implementing Agile principles, emphasizing teamwork and iterative development.

Solicitation: A formal request for proposals or bids from contractors.

Solution Intent: A document that outlines the high-level vision and objectives for a project or program.

Statement of Objectives (SOO): A document that outlines the desired outcomes and objectives for a project or program.

Statement of Work (SOW): A document that outlines the specific tasks and requirements for a project or program.

Throughput: A metric that measures the rate at which work items are completed and delivered by an Agile team.

Time and Materials (T&M) Contract: A contract that pays contractors for the time and materials used to complete a project.

User Story: A brief description of a feature or requirement, written from the user's perspective.

Value Stream: A series of processes that create value for customers, from initial request to delivery.

Work in Progress (WIP): A metric that measures the number of work items that are currently being worked on by an Agile team.