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# Whitepaper on Using FAR 39.103 Modular Contracting Principles for Agile IT Procurement By Leveraging Case Studies and Examples from US Federal Agencies

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## Modular Contracting Principles to Support IT Agile Procurement

Many federal agencies are moving towards implementing Information Technology (IT) using Agile Principles “*from Action 15: Issue Contracting Guidance and Templates to Support Modular Development, 25 Point Implementation Plan to Reform Federal Information Technology Management*”<sup>1</sup>. There are several important aspects that the Government Procurement and IT Leadership teams need to consider as they plan for modular development efforts, such as whether to award to a single vendor or multiple vendors; how to ensure that there is appropriate competition at various stages in the process; how broad or specific the statements of work should be; when to use fixed-price contracts or rely on other pricing arrangements; and how to promote opportunities for small business.

Modular approaches involve dividing investments into smaller parts in order to reduce investment risk, deliver capabilities more rapidly, and permit easier adoption of newer and emerging technologies. Section 5202 of the Clinger-Cohen Act of 1996 and section 39.103 of the Federal Acquisition Regulations (FAR) each recognize these potential benefits of modular contracting and state that agencies “*should, to the maximum extent practicable, use modular contracting for an acquisition of a major system of information technology*”<sup>2</sup> Furthermore, OMB Circulars A-130 and A-11, as well as the Capital Programming Guide, include modular development and contracting approaches for capital asset acquisitions in general, which also readily apply to acquiring and developing investments in IT.

There are key fundamental differences in Traditional Vs Modular Contracting approaches for Large IT Procurements as shown in the following Exhibit 1.

Contracting Area	Traditional Contracting Challenges	Modular Contracting Needs
Timelines	Long Timelines	Flexibility to support short development and delivery timelines
Scope	The requirements are locked-in at contract award; changes often require lengthy, resource-consuming and costly contract modifications	Allow the program to refine Agile requirements throughout the development process

<sup>1</sup> 25 Point Implementation Plan to Reform Federal IT Management: <http://www.cio.gov/documents/25-Point-Implementation-Plan-to-ReformFederal%20IT.pdf>

<sup>2</sup> Federal Acquisition Regulation (FAR), Section 39.103 Modular Contracting, (a): [https://www.acquisition.gov/far/current/html/Subpart%2039\\_1.html#wp1096819](https://www.acquisition.gov/far/current/html/Subpart%2039_1.html#wp1096819)

<b>Government- Contractor Relationship</b>	The contractor executes the technical solution and reports progress to the government	Collaborative approach. The government and contractor are working together on the development with daily interaction and collaboration
<b>Contracting Support</b>	Often centralized and unable to provide rapid turnaround on contract actions	Embedded contracting support that can quickly and efficiently execute contract actions
<b>Technical Evaluation</b>	Offeror proposes the development methodology and the contract is awarded based on the strength of the technical solution	The government identifies the development process and the contract is awarded based on strength of development team and experience with Agile

Exhibit 1: Traditional Vs Modular Contracting

Many agencies are operating with squeezed budgets are expected to “Do more with less” or “Innovate with less”. Modular approaches to acquisitions are particularly helpful in these scenarios the achieve the following key benefits.

- **IT Benefits** – a modular development helps test the potential of the successful implementation of solutions in shorter time periods, which better positions agencies to adopt new innovative technologies. Successful organizations use modular approaches to define high-level requirements, and then continue to refine their needs through an iterative process that includes continual engagement and collection of feedback from stakeholders, particularly from customers, until work is completed. To minimize risk and maximize the success of the deployment, major investment enhancements or capabilities are completed incrementally. This includes a prioritization of critical requirements and functionality that will deliver features for customers.
- **Acquisition Benefits** - a modular approach to contracting balances the Government’s need for fast access to rapidly changing technology and risk management. This approach provides for the incremental delivery, implementation, and testing of an investment. A modular approach is one of many methods that may be used by Federal Agencies to acquire major IT investments. The acquisition may be achieved through a single procurement, or multiple procurements, but should balance the Government's need for fast access to rapidly changing technology and incentivized contractor performance with stability in program management, contract performance and risk management. In addition, it opens new opportunities for small businesses to compete for just a part of the work in the overall investment.

While there are many benefits to modular approach, there are also risks in terms of a) roles and responsibilities when integrating / collaborating with multiple systems managed by different organizations and contractors, b) communication of rapid and incremental implementations by nuclear teams to various stakeholders within and outside the organization on a regular basis c) additional workload on acquisition personnel to support awards of incremental work or iterations at a fast turnaround time.

There are case studies of Federal Agencies using several vehicles to support their needs. *“The following Exhibit shows a few examples from different agencies”<sup>3</sup>.*

Modular Contract Type	Description	Agency Example
<b>Indefinite-delivery indefinite-quantity (IDIQ) task and delivery order contracts</b>	IDIQ contracts are likely to be the most popular contracting form as agencies migrate to modular development approaches. Under an IDIQ contract, the agency awards an “umbrella” contract to one or more contractors with a statement of work that describes the general scope, nature, complexity and purposes of the goods or services to be procured. The agency then places orders for specific goods or services within this general scope of work as needs arise. IDIQ contracts may be particularly advantageous when the scope of all subsequent projects cannot be clearly defined when the contract is first awarded.	The Department of Homeland Security’s (DHS) Immigration and Customs Enforcement (ICE) Office of the Chief Information Office is leading an effort to transition from methods seeking enterprise solutions through large scale, long-term contracts, to “bite-size” awards supporting agile-based development and a significantly shortened time to value. As an example of this transition, ICE’s strategy includes IDIQ contracts for requirements, architectural design and software development and a blanket purchase agreement (BPA) under the GSA Schedule for software operations and maintenance. The IDIQ contracts and blanket purchase agreements will save time by simplifying acquisition planning and technical evaluation for these services while providing the agency with ready access to a range of sources that can be quickly considered to perform these tasks to support a range of IT projects being undertaken within the agency.
<b>Single contract with options</b>	Award of a single contract with options may be beneficial when the integration effort will involve unique skills obtainable only through the success of previous projects. Agencies must take care to ensure that competition among all	Defense Information Systems Agency (DISA) issued a single contract with for four years with a base amount of \$100 thousand, and two one-year extension options with a total ceiling amount of \$427 million. The goal is to provide a dynamically scalable, on-demand

<sup>3</sup> White House Contracting Guidance to Support Modular Development

	<p>potential bidders is fair and that all options are priced with the proposal. If the industry can identify prices and the Government is able to effectively evaluate them, a single contract can be a good tool to support modular acquisition.</p>	<p>storage infrastructure, which can adjust to new and unpredictable demands. This storage environment will enable flexible worker access and be capable of handling classified and unclassified data.</p>
<p><b>Successive Contracts</b></p>	<p>Successive contracts may be appropriate when there is sufficient time to award successful individual contracts, the administrative cost is outweighed by the potential cost/technical benefits derived from the competitive marketplace, and where contractor continuity is not a predominant concern. This approach allows the agency to distribute risk among multiple contracts.</p>	<p>The Veterans Benefits Management System (VBMS) is improving service to Veterans by migrating from a paper-intensive process to an entirely electronic system for processing disability claims from submission to payment. VBMS was designed to provide a stable, scalable technology infrastructure and a business process that empowers Regional Offices to process even the most complex claims more efficiently. In developing VBMS, a large and complex system, VA decided to break the scope into pieces that were more easily managed individually allowing the agency to focus its attention on the specific outcome assigned to each of the contracted project. This allowed industry partners to bid on work with specialization and core competencies. Once the system projects were defined, the VA competitively awarded individual stand-alone contracts to eight different vendors to provide the various functionalities required for the system. The chart below shows the various projects and the functionality provided by each project. Other contracts were included for services and projects that did not provide direct user functionality, such as for architectural, security, documentation, program management, and deployment support services applicable to all projects.</p>
<p><b>Performance-based Work Statements</b></p>	<p>An agency can improve its ability to acquire the best support and smartest solutions by using a performance-based statement of work, also known as a performance work statement (PWS), that</p>	<p>The Department of Agriculture (USDA) created a tool to assist the agency with monitoring grantee performance in the Women, Infants and Children (WIC) program. USDA took advantage of agile development techniques and modular</p>

describes desired mission-related outcomes, rather than how the work is to be performed. Further, by tying payment to the contractor's successful achievement of measurable performance standards, it incentivizes the contractor to be efficient and effective.

The PWS used to support award of the underlying contract and initial project can be refined to reflect advances in thinking by program and IT personnel that is gained from customer feedback on early development work and analyses from the contractor. If an IDIQ contract or BPA is used, the PWS for the individual order would be finalized just before the requirement was issued to the vendor community, allowing maximum refinement. This approach allows the Government customer to identify course corrections in a more timely manner and obtain software that meets the customer's requirements in a shorter timeframe.

If modular development is being used to replace a legacy system, a PWS may be especially helpful to support a project under the investment for acquiring services associated with development of the base system, or initial capability. However, a PWS may be less suitable for a follow-on project on the same investment if end users wish to be more prescriptive in their depiction of work. Based on experience, for example, end users may be able to describe the desired design for canned reports and ad-hoc reports, which would be activities or releases under the reporting project.

contracting to support the rapid development and delivery of this software. These techniques were facilitated through a PWS.

Instead of laying out a detailed prescription of technical requirements, the agency:

- . **Identified the goals and the desired outcomes of the development effort;**
- . **Outlined the expected performance standards;**
- . **Requested a certain number of requirements sessions and focus group sessions with the customer;**
- . **Received system documentation as deliverables for fixed price payments; and**
- . **Requested five "build iterations" of software development.**

The agency used focus group sessions to develop the broad scope of the program. Requirements gathering sessions allowed the agency to learn from end users and map out use cases. The agency used quality assurance sessions for final development based on customer feedback. Customers provided feedback through the development of software iterations, functional "builds" of the software. Based on these cycles of information gathering and feedback from end-users, the contractor developed the details that comprise the finished product and allowed the agency to avoid some of the potential shortcomings of a traditional approach, which would have involved agency experts developing detailed requirements based on their program needs, without the benefit of a contractor's technical expertise – a process that can lead to long delays and increased costs if the generated requirements are not technologically feasible. Instead, the two groups collaborated to ensure that program needs were met in the most

	<p>A number of agencies have successfully used PWS's to support agile software development. The appendix includes a sample PWS. Figure 5 illustrates how one agency successfully used a PWS to support the agile development of a tool to monitor grantee performance.</p>	<p>technologically appropriate, cost-effective manner. The agency successfully deployed a Management Evaluation Tool in the first year, which was expanded the subsequent year to meet requirements from the Summer Food Service Program and the Financial Management Review process. Each deployment was a successive project or increment to build momentum, and was deployed in 6 months or less.</p>
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Exhibit 2: Various Approaches and Examples of Modular Contracting

Given the background on various methods to Modular Contracting, SD Solutions, LLC will use the following approach to support the Acquisition Tasks in this contract.

there is no one-size-fits-all acquisition strategy for modular developments. SD Solutions, LLC will work with Procurement and IT Teams to define the business, technical and contracting requirements, conduct market analysis, review the lessons learned from other agencies with their use of Modular Contracting Approach. The following Key Considerations and Payment Strategies will be considered while developing the Acquisition Strategy and Plan.

**Key Considerations:**

Use of competition, Innovation, Small business, Clear Definition of Roles and Responsibilities of various stakeholders in Modular development teams, Organizational Conflict of Interest (OCI), Service Level Agreements (SLA), Performance Measures, Incentives/Disincentives, Lessons Learned from other agencies. The Contracting Officer will benefit by considering of the following key considerations.

1. Segregate service requirements in discrete task orders to allow agencies to engage specialists / highest performing vendors to perform change and program management, product management, product development, and product deployment duties
2. Use modular solution architecture, comprised of highly cohesive, loosely coupled, autonomous, and business domain-centric services, to bound contract task orders and the responsibilities of product development vendors
3. Incrementally fund task order development services through release plan-driven contract-line-items (CLINs) that allow agencies to establish performance measurement baselines and incrementally contract for prioritized and valued product features
4. Define deliverables as the delivery of working software features, so that agencies can measure progress in terms of delivered value and align payments with a true accounting of progress

5. Use vendor management and rigorous inspect and adapt metrics to monitor service provider performance and progress, and to drive continuous performance improvements and lower costs
6. Use multi-award Indefinite Delivery Vehicles (IDVs) to establish a pool or pre-qualified vendors and rates so agencies can quickly and conveniently engage contract holders
7. Acquire task order product development services from the IDV pool by applying streamlined vendor selection procedures that heavily favor competitive prototyping and capability demonstration

### **Payment Strategies:**

Fixed Price Contracts with task orders, Cost Reimbursement Contracts, Time and Material and Labor Hours, Incentive Contracts, and Hybrid Contracts.

### **Relevant Past Performance:**

Client: US Department of Transportation (Prime Contract; Value \$1,250,000)

- As a Prime Contractor, SD Solutions, LLC is assisting with Acquisition Support of Next Generation Agile IT Services IDIQ (value between \$100M and \$500M)
- Agile Transformation of OITS People, Processes and Technology
- Deployment of Agile Toolset

Client: US Department of Commerce (Sub-Contract; Value \$1,250,000)

- Agile (Scrum) principles to develop and deliver Executive Compensation System in our contract to Support the Office of Secretary at the Department of Commerce.
- SD Solutions, LLC's team of developers used 2-week sprint cycles to develop and deploy the features. This was of great benefit to the Director of IT and Program Management at DOC as it helped him get requirements from the Executives and Political Appointees on a regular basis and implement the changes in a rapid manner.

In addition, our Agile Coaches and Scrum Masters have experience in Agile Transformation efforts of the following Commercial and Government organizations.

- Center for Medicare and Medicaid Services (CMS, Department of Health and Human Services)
- Capital One
- Fannie Mae
- US Patent and Trademark Office (US PTO / Department of Commerce)