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Examination of Government Accounting System Requirements

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Institution Name: George Mason University School of Business

Address: Buchanan Hall, 4400 University Drive, MS 6E11, Fairfax, Virginia 22030

Principal Investigator: Eric Lofgren, Senior Fellow, Center for Government Contracting

Phone Number: (703) 899-7418

Email Address: elofgren@gmu.edu

Contributing Authors: Edward Hyatt, Ph.D., Research Scientist, Center for Government Contracting

Michael McPherson, Research Scientist, Center for Government Contracting

Long Chen, Ph.D., Associate Professor of Accounting, School of Business

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Executive Summary

Accounting systems are an integral part of company operations, producing information for two primary use-cases: financial statements and managerial reporting. For publicly traded companies, the Generally Accepted Accounting Principles (GAAP) regulate the standards, terminologies, and methods used to prepare financial statements. It allows external parties to compare financial statements issued by public companies to make investment decisions. Managerial accounting (also known as cost accounting) focuses on the internal processes and helps managers make decisions within the company by illuminating activity costs, performance variances, and pricing decisions. In certain circumstance, GAAP guidance partially aligns with government requirements for managerial accounting such as for the percentage of completion method for longer-term contracts.

In support of the Office of Defense Pricing & Contracting's Contract Financing/Cost and Pricing Study, George Mason University's Center for Government Contracting examined government accounting system requirements and their impact on commercial company participation in defense contracts. The examination includes examining: (1) accounting systems and practices used in the commercial sector for large, small, private, and public companies; (2) differences between Generally Accepted Accounting Principles and government requirements; (3) the government's requirements for accounting systems under range of contracting scenarios; and (4) a survey of commercial industry compliance costs related to government requirements on accounting systems, analyses of entry or exit, and instances of adapting existing systems to meet the requirements.

Companies involved with defense contracts may face four up to major sources of accounting system requirements: (1) Standard Form 1408: Preaward Survey of Prospective Contractor; (2) DFARS 252.242-7006: Accounting System Administration; (3) FAR Part 31: Cost Principles; and (4) 48 CFR 9904 Cost Accounting Standards (CAS). In general, the requirements involve identifying direct costs with contract orders, assigning indirect costs using a consistent methodology, and segregating unallowable costs that government will not pay for.

The four sources of accounting system requirements were decomposed into 41 separate requirements and compared against each other using researcher judgment. Of the 14 items listed in the Preaward Survey and the 18 items found in the Accounting System Administration, 12 were virtually identical to each other. While these requirements are essential to compliance, only three of them directly overlapped with the 19 items in CAS. The Cost Accounting Standards are more detailed and require more maturity of the accounting system. FAR Part 31 provides instructions for the determination, negotiation, or allowance of particular elements of costs and has 15 instances of overlap with CAS. Finally, these accounting system requirements are compared with GAAP where possible. The information is summarized in Table 2.

The accounting system requirements are mapped to contract types and methods of financing in Table 3. Only firm fixed price contracts awarded under Part 12, Acquisition of Commercial Products and Commercial Services, are exempt from all accounting system requirements. All but CAS are exempt from contracts using firm-fixed price no financing, fixed price performance-based payments, and fixed price economic price adjustment based on actual labor or material cost. CAS applies unless it meets one of the exemptions found in reproduced in Table 1, such as for small businesses or fixed price contracts with adequate price competition. CAS, however, is usually required when the government negotiates a sole source effort with a large contractor.

Other government requirements with accounting system implications including the Truth in Negotiations Act, Forward Pricing Rates, Earned Value Management System, and the Cost and Software Data Reports. These requirements were generally created to mitigate problems stemming from asymmetric information and have their own thresholds for applicability. Often, the requirements drive accounting detail (such as to lower levels of a Work Breakdown Structure) and drive reporting workflow (such as submission to particular formats). Table 4 describes the additional requirements. More research is required, however, on accounting system impacts from other DFARS-required business systems including estimating systems, purchasing systems, material management systems, and property management systems.

Interviews with 10 subject matter experts in government and industry provided a mix of narratives on whether accounting system requirements represented a barrier to commercial company participation in defense contracts. Some found compliance to be a significant expense, particularly for small businesses. One estimate of the employee cost to become compliant with accounting systems requirements was $700,000. By contrast, others found accounting requirements to be indicative of good management at any commercial company. Moreover, compliance protected the government on cost reimbursable contracts and helped it obtain lower prices.

Not-for-attribution interviews with representatives from 12 companies provided perspectives on accounting system requirements and estimates of their costs. The companies, described in Table 5, ranged from small tech startups to giant professional services firms to industrial conglomerates. Nine implemented a compliant accounting system, and none performed cost-benefit analyses in advance. The decision to move towards accounting compliance largely depended on subjective factors related to the company's commitment to growth in the defense sector.

Estimates of implementation and maintenance costs were often incomplete (Table 7), ranging from little additional effort to more than a dozen dedicated employees with unique software costs. One company with revenues of about $25 million decided to create a federal subsidiary after receiving several deficiencies in an audit of a time and materials contract from the Defense Contract Audit Agency. The total cost including consultants, employee time, and software was $1 million, or 4 percent of revenue. GMU researchers also estimated the cost of maintaining on-going compliance compared to prior accounting system costs for five companies. A wide-range of estimates resulted, from a low of zero to a high of 1.5 percent of revenue (Table 8). While numerous factors affect the cost of compliance, particularly the number and type of contracts, there seemed to be a correlation between accounting compliance cost and company size. Smaller companies incurred higher relative costs. The average compliance cost as a percent of revenue for the three companies over $200 million was 0.16 percent whereas the figure for the two companies under $25 million was 1.2 percent. Some of these costs may be recouped through indirect cost allocations.

Five companies reported not pursuing defense contracts due to the accounting requirements involved. In many cases, the decision to decline a contract was tangled with other compliance factors, particularly those having to do with sole source negotiation. Two companies did not have FAR/DFARS compliant accounting systems, and so could not accept any contracts with the requirement. They did not actively pursue defense contracts, and often presented a "take it or leave it" price for government to buy on a competitive firm fixed price or commercial item basis.

1.0 Introduction: Initial Report

Doing business with the U.S. government is a critical decision point for many companies because it is one of the largest customers in the world. According to USAspending.gov, Department of Defense (DoD: composed of the Army, Navy, Air Force, and other defense departments) contract obligations for products and services were $391.5 billion in fiscal year 2019.[1] The purchasing power of the U.S. government represents a powerful incentive for a commercial company to enter the business-to-government (B2G) market.

Despite the attraction of becoming a federal contactor, many government contracts require firms to make significant transaction-specific investments in order to comply with federal regulations and oversight.[2] These investments can include, for example, the implementation of an accounting system deemed compliant with certain government requirements. Many of these requirements focus on ensuring the proper allocation of costs related to government contracts, which in many instances is a distinct goal from compliance with the Generally Accepted Accounting Principles (GAAP) that guide high-level financial performance reporting. The government requirements related to cost accounting are captured in part by cost principles found in Part 31 of the Federal Acquisition Regulation (FAR), Standard Form 1408: Preaward Survey of Prospective Contractor accounting system criteria found in Part 252.242-7006 of the defense supplement to the FAR (DFARS), and the Cost Accounting Standards (CAS).

There are potential costs for engaging with the U.S. government as a customer, especially for new entrants into the B2G marketplace due to business system and unilateral audit requirements that do not exist in the commercial space. Direct costs can include the expense of installing and maintaining, for example, a FAR/DFARS compliant accounting system. Additional costs can include hiring additional staff or devoting existing staff time to new procedures, training employees to be familiar with government contracting (especially in the first few years), dealing with management issues arising from change in culture, and balancing the opportunity cost of foregone benefits from other clients if limited company resources are shifted to government contracts. Some research has indicated that firms likely struggle to extract benefits from this customer relationship until they reach a certain point where they have become government "purists" (high government customer emphasis) instead of just "tourists" (low government customer emphasis).[3] The benefits from government contracting may be difficult to achieve given costs associated with requirements that do not exist or are not as prevalent in the commercial space.[4] The Defense Contract Audit Agency (DCAA) Information for Contractors manual advises that "prospective contractors may have no work that requires the same type of accounting system required for Government work. A prospective contractor may not want to install a new, more detailed accounting system unless awarded a contract."[5], 3.a(3), Enclosure 2]

Despite the concerns expressed by some government agencies and commercial companies, existing empirical evidence of accounting system requirements acting as a barrier for commercial companies to become federal contractors is relatively scarce. This remains an important issue because "a healthy manufacturing and defense industrial base and resilient supply chains are essential to the economic strength and national security of the United States."[6, p. 34597] This study intends to fill the void by examining how government accounting system requirements affect commercial companies' perceptions and decisions involving government contracting.[i] This is accomplished with a comprehensive review of typical commercial company cost accounting practices, a review of the accounting requirements levied on government suppliers, a series of interviews with subject matter experts, and a series of semi-structured interviews involving DoD suppliers and other commercial companies.

The following report is divided into several main sections. Section 2 provides a general background on accounting information systems and the role they play in business operations. Section 3 focuses on how companies typically track and allocate project costs in the commercial sector, and the role that GAAP play in this regard. Sections 4 and 5 shift the focus to government requirements for cost accounting systems, specifically what they are, how they relate to one another, and when they are applicable under a range of contracting scenarios. Section 6 explains how government requirements differ from GAAP in both form and purpose. It provides an example of an explicit comparison between commercial and government requirements. Section 7 concludes the background investigation by describing two narratives that exist about whether governmental cost accounting requirements represent a true barrier to commercial company entry or participation in the B2G marketplace. Sections 8 and 9 provide the results of interviews conducted with commercial company representatives who speak about their experiences as DoD suppliers, costs of implementation and maintenance of compliant accounting systems, and whether they decline to pursue certain government contracts.

[i] For the purposes of this study, commercial companies are defined as companies that generate less than 25% of 2019 revenue from the Department of Defense (including Foreign Military Sales), NASA and DHS.

2.0 Accounting Systems: Background

This section provides a brief discussion on cost accounting systems to serve as background for the ensuing sections. It identifies the general framework of accounting systems and practices that enable commercial companies to accumulate and track costs. It also discusses a common rationale for implementing an accounting system that is widely applicable to commercial companies, including large, small, private, and public companies. Cost accounting information assists with several activities that underpin company performance, including profitability analyses, budget preparation, and internal management of operations. The section also discusses the circumstances when process order or job order accounting is utilized, and how costs can be determined as recurring or nonrecurring effort. Finally, the section concludes with a discussion of commercial sector accounting requirements found in GAAP which focuses on financial reporting for publicly-traded companies.

2.1 Accounting Information Systems

The accounting information system ("AIS") has long been one of the most important information systems utilized by businesses.[7] A "complete" accounting system needs to be able to process routine business transactions such as sales, purchases, cash receipts, cash disbursements, payroll, and adjustments.[8] The AIS is an essential tool for assessing the results of operations and subsequent profit of a company; as such it should directly inform managerial decision-making. An AIS system is necessary for accurate product pricing, inventory valuation, income and profitability determination.[7] It should be able to identify and capture costs at such a level that can provide input for financial reporting, help set realistic targets and goals, and measure profitability and company success. Accounting information influences both the broad control of management and the evaluation of individual projects.[9]

An AIS includes many subsystems such as order entry and sales, billing accounts receivable and cash receipts, inventory, general ledger, and cost accounting.[10] The two major subsystems are: (1) a cost management information system, which is used to provide information about costs of services and/or products for internal managerial decision-making, planning, and control purposes, and (2) a financial accounting information system, which is used to prepare financial statements for external users (e.g., balance sheet, income statement, and statement of cash flows). The cost management information system should ideally be integrated with Enterprise Resource Planning (ERP) operational systems that can incorporate both financial and non-financial information into various management reports (e.g., sales reports). Setting up or modifying an AIS involves costs in terms of system development and employee time and effort, as well as organizational training. The decision to implement an information system is somewhat of a subjective cost/benefit exercise[7] and likely varies based on the size of the firm and whether it is privately held or publicly traded.[11] However, web-based software such as QuickBooks Online, ePeachtree, Microsoft Dynamics 365 for Finance and Operations, and Intacct enable small businesses to implement systems with operating capabilities on par with systems used by Fortune 500 companies. In addition, ICAT (Indirect Cost Allocation Tool) Systems can be used in conjunction with QuickBooks to satisfy government requirements for FAR/DFARS compliant accounting.

The cost management information system (CAIS) itself has two subsystems: (1) a CAIS, designed to assign costs to individual products and services; and (2) an operational control information system used to provide information about manager and employee performance, different product designs, customer needs, and other activities of the business.[10] The major functions of a CAIS are typically structured on either: (1) job-order costing; or (2) process-order costing. Both types of costing methods have different ways of tracking costs, and the choice of method is typically based on the types of products or services provided by a company. We will discuss both costing methods in the following section but will focus on job-cost systems since they are more relevant to the later discussion of cost-reimbursement government contracts.

2.2 Process-Cost Systems

Process costing is conducted when many identical units, assumed to cost the same, are being produced. This costing method is therefore best suited to those situations where a product is manufactured continuously, such as fastenings, paint, and sheet metal. In these instances, there is a continuous flow of raw materials through various processing departments, and the finished output is relatively homogenous. Because the final products are not typically discrete jobs or units but rather are equivalent units of production, there is no need to track information at an individual product level. Therefore, instead of capturing costs for individual jobs, costs are captured for each process or department. Process costing typically accumulates costs at an aggregate level to achieve a total cost of production and then allocates that cost proportionately to the total output at the end of an accounting period. Most accounting principles and activities involving cost transfers are the same for both process-cost systems and job-cost systems.

2.3 Job-Cost Systems

Job-cost systems, or job-order accounting systems, are more likely to be utilized in specific situations, such as when a customer has contractually agreed to reimburse a company for all costs charged to a specific job. Job-order systems are also "ideally suited to situations where goods and services are produced based on a specific order, to customer specifications, or in unique batches."[12], Chapter 19 Job costing is critical in instances where different types of production, labor, materials, and overhead are being applied to different projects. For example, businesses like landscapers, construction companies, printing companies, and automobile repair shops are more likely to use job-order costing systems.[13] The "job-shop" nature of the production process necessitates a system that will provide information on the costs of individual jobs. Although job costing is typically used in manufacturing settings where tangible products are produced, it is also relevant for service, not-for-profit, and governmental environments. "Jobs" may be more abstract, (e.g., number of fire call responses), and direct inputs may become less significant relative to overhead costs. For example, a costly hospital visit bill received by a customer reflects much more than the direct cost of items consumed (e.g., a pill) but also reflects heavy administration, documentation, and billing overhead costs.

Job costing accumulates costs for individual units or small productions batches; this is especially helpful for custom-made machines or projects involving services with specific labor. Job costing accumulates the costs of individual jobs related to three sources: direct materials, direct labor, and overhead (which includes indirect materials, indirect labor, among others). All three categories of costs represent cost drivers, which are factors that are viewed as causing costs to be incurred within an organization (e.g., labor hours, machine hours). Job-cost systems assign those costs (direct materials, direct labor, and manufacturing overhead costs) to each activity or job independently.

Overhead costs are typically assigned to different cost pools and then allocated to various open jobs at the end of the accounting period.

Job-cost systems must be designed to track a variety of costs or be integrated with other systems that can do so. Direct material costs are tracked on a materials requisition form showing what materials are put into production on various jobs. Direct labor costs are tracked on a report documenting time spent on each job and other tasks (e.g., timesheet). Manufacturing overhead costs, or indirect product manufacturing costs include items like depreciation, repairs, maintenance, heating, lighting, vehicle expenses, liability and workman's compensation insurance, continuing education, small tools and equipment expenses. It is generally difficult to track their specific usage for each job or to assign them to individual output items. Therefore, these costs are usually allocated using a predetermined application rate which is then reviewed for accuracy at the end of the accounting period. Because overhead is usually first applied to jobs based on an estimated rate, adjustments to cost-of-goods-sold account are often made at the end of each reporting period based on actual overhead costs. The purpose of job-cost systems is to ascertain the total dollar value of all jobs and amount of costs attributable to each job, if only for billing and collection.

2.4 Recurring vs. Nonrecurring Costs

In the commercial world, the recurring costs are typically defined as costs that are incurred at regular intervals by a company and are anticipated, not just once or even multiple times at irregular intervals.[14] Some examples of recurring costs for companies include rent and/or mortgage payments, utilities, communications bills, salary, and in many instances, software subscriptions. Multiple recurring costs can exist for a single asset as well. For example, in the instance of vehicles, some recurring costs likely include license and registration costs, subscription costs for on-vehicle equipment, insurance, fuel, and preventative maintenance.[15] These types of costs can be further divided into subcategories according to a company's business needs; for example, between those related to general expenses and administrative expenses. However, the distinguishing feature of most recurring expenses is that they cannot easily be attributed to a specific job or product line of the business; a new roof covers all operations within a building and cannot easily be linked to any single project being conducted in that building. Non-recurring costs are those costs that are incurred at irregular intervals and are not generally anticipated. For example, restructuring charges inclusive of severance pay and factory closings are non-recurring costs.

This commercial view of recurring costs as a function or periodicity stands in contrast to the common usage of recurring and nonrecurring costs in the context of defense contracting. FAR 17.103 defines recurring costs to be "costs that vary with the quantity being produced, such as labor and materials." The Data Item Description for the Contractor Cost Data Report provides a similar definition of recurring costs: "Repetitive elements of development, investment, and sustainment costs that may vary with the quantity being produced or maintained, irrespective of system life cycle phase and appropriation."[16, p. 12] Similarly, Defense Acquisition University's glossary of terms defines recurring costs as "Costs for items and services that reoccur, especially at regular intervals. Recurring costs are incurred each time a unit of equipment is produced, such as direct labor and direct materials."[17] This includes activities like fabrication, assembly, procurement of raw materials, and so forth. By contrast, nonrecurring costs do not vary with the quantity being produced. This includes product design activities, tooling, testing, data, and so forth.

While commercial and government usage of the term recurring and nonrecurring overlap to the extent that quantity production often implies the periodicity of costs, there are important distinctions. In defense contracting, it is often direct costs are accumulated according to recurring and nonrecurring. The concept does not often apply to indirect costs which are allocated to contracts based on direct costs. While in commercial sector, both direct costs and indirect costs could be subject to the recurring and nonrecurring costs classification. The distinction between direct costs and indirect costs is also fluid and determined by the choice of cost object. For example, salaries for product engineering may be a recurring cost from the perspective of a commercial contractor because it is anticipated and occurs every pay period. From a defense contracting standpoint, product engineering salaries are nonrecurring because once they develop the product specifications, the costs will no longer be incurred when the program enters full-rate production. Similarly, employee health insurance cost is a recurring expense for commercial companies, while these costs are neither recurring or nonrecurring in the defense context. Health insurance costs, like other fringe costs, are allocated to labor and it is the activities performed by the labor which determines whether it is recurring or nonrecurring.

The reason the Department of Defense uses its unique terminology is because it often funds Engineering and Manufacturing Development efforts. Government officials want to know how much of the costs will persist to support cost analyses of the follow-on production efforts for budgeting and contract pricing. In most commercial purchases, nonrecurring engineering is not paid for directly by the customer but rather amortized across the production run.

3.0 Commercial Accounting Systems and Practices

This section focuses on what guides accounting practices in the commercial sector and how company public/private status, size, and industry likely play a role in determining what practices and systems are utilized. First, the potential use of cost data will be reviewed as it relates to internal operations and external reporting. The impact of Generally Accepted Accounting Principles (GAAP) on company financial reporting will then be discussed. Next, an example of how companies calculate Cost of Goods Sold and report the cost of inventory will be presented. Finally, specific questions regarding when certain accounting practices are more likely to occur (e.g., when a job order accounting system is employed and at what level costs are typically tracked) will be detailed. This section provides insight into what might be considered baseline practices for commercial accounting and the use of cost data in commercial company activity.

3.1 Internal and External Use of Cost Data

Cost accounting information helps to determining total product costs, which in turn enables the preparation of financial and other reports needed to run a business. Financial statements like a balance sheet, income statement, statement of cash flows, and retained earnings statement are often required for investors and creditors to assess the financial health of a business. In addition to being relevant for external reporting, the same data that inform company-wide financial statements are also useful for internal reasons.[18]

Information gleaned from a cost accounting system helps inform managerial decision-making involving ongoing operations, planning, and control. Unit cost data provide insight into the business consequences of different pricing strategies. It can help identify performance issues requiring managerial attention. Accurate costing also helps to determine levels of competitive pricing to be included in bids and proposals for additional contracts. Historical costs often serve as the basis for future projections of firm performance and budget preparation. They are also useful for establishing production and acquisition objectives within a strategic plan.

Knowledge of the cost of production also helps assign responsibilities appropriately to each unit of activity within the business (e.g., each cost center). For example, line managers in a manufacturing context may only be accountable for the costs within their direct control, namely those involving quantity of materials used and number of labor hours worked by their immediate staff. In contrast, other business units would likely be responsible for the cost of raw materials (purchasing department), wages (human resources department), and machinery depreciation (accounting department).

3.2 Generally Accepted Accounting Principles (GAAP)

The GAAP are a commonly recognized set of principles, rules, and procedures meant to govern corporate accounting and financial reporting for U.S. publicly traded companies.[19] The principles are developed and jointly updated every year by the Financial Accounting Standards Board (FASB), responsible for standards for public and private companies and not-for-profit organizations, and the Governmental Accounting Standards Board (GASB), responsible for standards for state and local governments. The rules originated after the Great Depression and were initially promulgated by predecessors of the FASB and GASB. The Financial Accounting Foundation (FAF), established in 1972, is currently the private-sector, not-for-profit organization responsible for overseeing the operations of the FASB and the GASB. In 2009, the Accounting Standards Codification (ASC) organized thousands of previously issued GAAP rules, making it the only source of authoritative U.S. generally accepted accounting principles recognized by the FASB, with regular updates in the form of Accounting Standards Updates.[20] Recently the

Securities and Exchange Commission (SEC) reaffirmed that the FASB is the designated private-sector standard setter.[21]

The purpose of GAAP are to ensure consistent and accurate financial reporting by companies with publicly traded stocks so that investors are furnished with the information necessary to make investment decisions. GAAP include guidance on what items should be recognized in financial statements (e.g., assets, liabilities, revenues, and expenses), what amounts of those items should be included, how those items should be aggregated and presented, and what additional information should be disclosed for users of those financial statements.[22] For example, GAAP require the precise matching of expenses with revenues for the same accounting period. They also require that underapplied overhead relating to idle facilities, wasted material, the allocation of fixed production overhead, and so forth, be charged to Cost of Goods Sold (COGS) in the current period. Standards such as these ensure that accounting information is recorded and reported consistently so that investors and the public can compare the financial statements of companies and be assured of their veracity.

U.S. securities law requires publicly-traded companies to follow GAAP principles and procedures, although private companies may adhere to its precepts as well for both economic and non-economic reasons. As noted in the previous section, all commercial businesses, regardless of size or public/private designation, have similar functional needs for an accounting system and accompanying set of standard rules. A company's accounting system should support managerial decision-making, provide internal controls, and allow for adequate reporting to external authorities. It can also provide cost information that may be useful for establishing product or service pricing and for establishing appropriate levels of profit to ensure continued survival. This is the manifestation of the assumption that economic self-interest is the sole driver of accounting-related decisions, dubbed Positive Accounting Theory (PAT).[23] According to the originators of PAT, "the only accounting theory that will provide a set of predictions that are consistent with observed phenomena is one based on self-interest."[24, pp. 300–301] This view takes as granted that organizations are constrained by their external environment, especially by other entities on whom they depend for resources. Thus, companies have very real incentives to establish a working accounting system, both for internal control reasons and to meet external requirements for obtaining resources.

Non-economic factors such as organizational values, politics, and institutional norms can also play an important part in explaining a relatively high level of homogeneity in accounting systems and accounting practices throughout the commercial sector.[25] There is institutional pressure that encourages conformity when requirements or standards are promulgated by professional external organizations like the FASB. Mimetic pressure,[26] the pressure for companies to adopt prevailing best practices, is especially strong as they relate to accounting standards.[25], [27] Private companies may also accrue other non-economic benefits from complying with GAAP even though only publicly traded ones are required to do so. For instance, GAAP compliance is a signal to potential investors that the company is legitimate and has credible operational infrastructure. Several empirical studies have found support for considering institutional pressures in addition to PAT to provide a more complete explanation for observed accounting and auditing practices.[27]–[29]

When considering non-economic rationale, it is also important to note that even if GAAP are adopted for external financial reporting purposes, it is possible that GAAP information is not used in making financial management decisions (e.g., budgetary decisions).[25] It may be a bit of a myth that GAAP improve financial management practices; instead, it may be more of a symbol of legitimacy meant to *signal* sound fiscal management practices and rational decision-making even if it does not lead to greater, actual efficiency.[25] For example, GAAP adoption is often sold as a means of improving a company's credit rating,[11] and corporate executives often lobby Congress for changes to standards that will merely allow them to present a picture of more favorable revenue and earnings performance.[30] However, despite numerous sensitive and controversial pronouncements over the years, GAAP have largely embodied the desire for transparent and ethical financial reporting.

3.3 Cost of Goods Sold and Cost of Inventory

Commercial firms accumulate and track cost data in some organized way by means of an accounting system. First, firms accumulate in various categories the costs of different types of materials, different classifications of labor, the costs incurred for supervision, and so on. Next, the accumulated costs are assigned to designated cost objects, such as the different models of a product. Then, firms trace direct costs, which include direct materials and direct labor, to different cost objects, as well as allocating indirect costs to cost objects following some allocation method. For example, a simple method is to use a unit-level measure as cost-allocation base or a refined method using multi-level activities as cost-allocation bases.

Depending on their business sectors, commercial firms may have different types of inventory and thus different way of reporting the cost of inventories. Manufacturing-sector companies typically have three types of inventory: direct materials inventory, work-in-process inventory, and finished-goods inventory. Merchandise-sector companies only have merchandise inventory. Service-sector companies do not hold substantial inventories of tangible products. Depending on the process of production, inventoriable costs may include direct materials, direct labor, and manufacturing overhead costs. Inventoriable costs go through the balance sheet asset accounts of direct materials inventory, work-in-process inventory, and finished-goods inventory before entering the income statement as the expense item Cost of Goods Sold. The calculations for the total amount of COGS and inventory should be same between companies that report revenue and profits on a percentage of completion basis and those that do not, although the timing of recognition differs between percentage-of-completion basis and completed-contract basis.

3.4 Percentage of Completion Accounting Method

The Generally Accepted Accounting Principles align with government requirements for cost accounting in certain circumstances. The most relevant to this study is Percentage of Completion (PoC), an accounting method used to record revenue, expenses, and gross profit associated with long-term contracts that span for more than one accounting year. It is based on an evaluation of the percentage of work completed for a project, often on a monthly basis.[31] Revenues and costs incurred to-date can be realized based on in-work progress rather than when the payment is due from a customer, thereby representing an exception to the GAAP realization principle. Additionally, many government contracts are governed under Internal Revenue Code section 460, which requires the PoC method for contracts with long periods of performance or that require construction and manufacturing.[32]

The PoC method contrasts with the completed contract method whereby revenues and costs of a project are only recognized once the project is completed. The PoC method calculates the revenue and costs based on the portion of work completed on a project even if the final completed product has not been delivered. Large construction and engineering contracts often utilize the PoC method for revenue recognition given their tendency to span multiple tax years.[33] Small contractors with gross receipts under $25M for the previous three years who are completing small projects to be completed within two years are permitted to use the completed contract method. The PoC method helps companies to avoid incurring an outsized tax burden at the end of a major contract and allows for more steady and reasonably accurate income measurement over a contract period.[33]

Companies can use one of three methods for estimating the completion percentage of a project; two of these methods rely on input measures and one relies on output measures. The input methods are cost-to-cost method, which is based on costs incurred (expenses incurred divided by total estimated cost), and efforts-expended method, which is based on efforts expended such as labor hours or materials consumed (e.g., man hours divided by estimated total man hours). The output method is units-of-delivery method, which is based on the number of smaller batches, units, or components that have been delivered (in the case where it is possible to identify distinct deliverables in a contract).[34]

GAAP guidance prior to the reporting period beginning December 2018 relied on industry-specific guidance; for example, Topic 605-35 detailed the acceptable methods for revenue recognition on construction projects.[35] Since that time, FASB aligned its guidance across industries as well as with other rule-setting organizations (e.g., International Financial Reporting Standards Foundation) with ASC 606: Revenue from Contracts with Customers.[36] ASC 606 expanded the scope to all customer contracts except those contracts for which other more specific guidance is provided in the ASC (e.g., leases, insurance contracts).[37] ASC 606 also shifted the focus from contract value and duration to instead consider projects in light of "performance obligations" and "transfer of control." "Performance obligation" is defined in the ASC Master Glossary as:

> "A promise in a contract with a customer to transfer to the customer either: *(a)* a good or service (or a bundle of goods or services) that is distinct *(b)* a series of distinct goods or services that are substantially the same and that have the same pattern of transfer to the customer."as cited in [38]

Contracts may have multiple performance obligations, and contractors need to identify and allocate a value to distinct performance obligations within each contract. The value is determined by the transaction price the customer expects to pay for the obligation; in other words, the probable standalone price of each distinct good or service. The contractor also needs to determine when transfer of control occurs, whether at a single point in time (presumably at contract completion) or over time. Transfer of control is when the customer has obtained control of the good or services (e.g., when the legal title has transferred from the contractor to the customer), or when the customer has begun to consume benefits from the work in progress. Transfer of control can occur over time in those instances where the customer receives and consumes benefits as the contractor performs work, when an asset is newly created or an existing asset under the customer's control is enhanced by the contractor, or when the contractor cannot make alternative use of the asset beyond the scope of the contract.[39], [40] If control is transferred over time, then PoC accounting remains the most appropriate accounting method. As well, the options for calculating percentage completion are similar under ASC 606 as they were under Topic 605-35, so much of the previous guidance remained practically relevant. However, it has been suggested that significant accounting systems changes, especially for small or mid-sized entities, may still be required to properly capture and track information needed to comply with ASC 606 guidance for accounting and disclosure.[37]

In summary, the PoC accounting method allows for revenue and costs to be recognized based on earned progress of the overall project, but only if it is reasonably certain that the entire contractual obligation will eventually be met and that payment from the customer will be received. As well, a company's accounting system would need to be capable of estimating the total value of the performance obligations contained in a contract (including profitability) and to be able to accurately measure progress toward project completion.

The ability to measure, assign, and allocate costs resembles the functionality needed by companies that are expected to perform on government contracts with certain cost accounting requirements. In particular, the assignment of direct costs to a contract and consistent allocation of indirect costs are required for the PoC method. The government concept of segregating unallowable costs, however, is not found in GAAP. The government requirements are detailed in the Section 4.0.

3.5 Commercial Sector Accounting Practices

The following attempts to summarize the above literature review of cost accounting information systems, the purpose of cost data, and the impact of GAAP requirements on (mostly) publicly traded companies. This section is also informed by interviews with government and commercial sector subject matter experts conducted for as part of the background research into commercial cost accounting practices.

First, there appears to be two major purposes for the implementation and use of a cost accounting information system:

1. To assist in management and internal controls, managerial decision-making, planning, establishing profitability, encouraging operational efficiencies, and other similar efforts. These are functional, business operations reasons that likely exist regardless of other considerations or factors like company size or industry.

2. To provide information that informs reporting requirements such revenue recognition and matching for GAAP compliance, financial statements for external parties, and satisfies audits related to contractual obligations such as government cost accounting requirements

Following from this dual purpose of cost data, several general observations can be made based on a review of literature and insights gleaned interviews with government and commercial industry subject matter experts.

1. There are no strict requirements on private companies for how to track and assign costs. Absent any external contract monitoring mechanisms or loan covenants, companies are likely to track and assign costs only to whatever level is deemed necessary for internal control purposes, to satisfy loan covenants, or to determine profitability.

2. If a company is publicly traded or financed with loan covenants that require financial audits, this likely requires more complicated higher-level reporting to the SEC, banks, and other lenders. Public companies must follow GAAP, but GAAP mostly addresses financial reporting and does not contain strict guidance on how to track costs. It is important to note that even if GAAP is adopted for external financial reporting purposes, it is possible for GAAP information to not be used in making financial management decisions (e.g., budgetary decisions). Similarly, some private companies may follow GAAP or have controls in place if only to present a good image to external parties.

3. The larger the company, the more likely it will have more detailed costing (generally speaking) if only for management purposes. Similarly, larger companies are more likely to have complex software in place and/or track costs to a finer level for management purposes. If a company is larger, one would expect them to already have a more robust cost accounting system in place, or one that is more easily customizable to handle specific additional requirements in the future. Also, a larger company is more likely to be publicly traded and therefore require such a system to assist in financial reporting.

4. The nature of the business matters for tracking costs (e.g., services vs manufacturing, maturity of the industry). Job order systems are more often used for custom manufactured products or professional services than they are used by manufacturers of commodities or innovative technology companies. In the same vein, different business models in different industries will also influence the level of cost tracking that is performed.

5. Existing commercial cost accounting systems may or may not be sufficient for government contracting; this was a matter of dispute among the SMEs interviewed for this study. This will be discussed in greater detail in the Dual Narratives section.

In summary, the level of detail with which companies track and assign costs, how useful it is to assign costs to projects, and the use of job-costing systems is highly variable. Industry type, publicly traded status, and company size are all key factors. Some patterns can be observed; for instance, in the manufacturing sector there is an increased likelihood of using job-order accounting or an accounting system capable of drilling down to a fine level of detail on costing. However, every company likely operates differently based on their unique history, management needs, and contracting requirements. Several SMEs noted specific examples of companies that did not perform extensive cost accounting because they could determine the profitability of their services or products without detailed job order accounting. For these companies, it was not necessary to implement a highly granular accounting system in order to cost every component of a product, or to assign staff hours to specific projects, in order to adequately recognize the profitability of the overall business. This point was also reinforced by later interviews with two companies that do not have a FAR/DFARS compliant accounting system (Companies #9 and #12).

Operational functions that require an accurate assessment and allocation of costs to jobs drive the adoption of AISs among commercial companies more so than regulatory requirements. Private commercial companies are not beholden to any accounting system requirements beyond what is needed to satisfy their own functional business needs and possibly a few external stakeholders due to loan covenants. They may adopt commonly accepted accounting standards for non-economic reasons such as to promote an impression of legitimacy or in response to institutional forces like mimetic pressure. For publicly traded firms, GAAP compliance is mandatory, but the requirements are limited to those accounting issues that impact external financial reporting. The next section will detail more fully the cost accounting requirements imposed on government contractors.

4.0 Cost Accounting System Requirements

The Department of Defense expects contractors to demonstrate best practices that are supported by FAR/DFARS compliant business processes and systems in order to be awarded major contracts. DCAA performs audits made necessary by DoD contract requirements and provides additional accounting and financial advisory services to DoD departments. DCAA is responsible for accounting system reviews involving pre-award activities such as accounting system surveys, price proposal audits, and forward pricing rate audits as well as post-award services such as incurred cost audits and Cost Accounting Standards compliance and adequacy reviews.[41] The timing of DCAA audits is guided largely by the type of contract that will be awarded.[5] Most audits involving firm-fixed price contracts take place during the proposal stage, whereas audits of flexibly priced contracts such as cost-reimbursable and time-and-materials/labor-hour contracts are generally audited after those costs are incurred[5]: DCAA Major Areas of Emphasis, p. 8

A FAR/DFARS compliant accounting system is common vernacular for describing an accounting system and associated set of policies and procedures that would be deemed compliant with federal requirements following a DCAA audit. The specific attributes of an accounting system that would be deemed adequate or acceptable (per the specific requirement) are outlined in a variety of government statutes and referenced in the DCAA audit manual.[42] The primary concern behind the existence of many of these regulations is with how costs are classified, segregated, allocated, and reported by government contractors.

Generally, compliance means that the accounting system is capable of tracking different types of costs separately and that all accounting-related policies and procedures are documented and strictly followed. For example, a compliant accounting system would need to be able to identify and report on allowable costs, unallowable costs, direct costs, indirect costs, pooling of indirect costs, procurement costs, billing costs, and labor costs. Criteria for accumulating indirect costs into homogenous pools need to be identified, as well as a logical and consistent rationale for how indirect costs pools are allocated to cost objectives. An internal control system or auditing process needs to be in place, and written statements or flow diagrams including descriptions of the personnel involved need to accompany the system.

The following section begins with a brief review of the primary federal regulations related to accounting system requirements. This consists of a description of what the requirement means for a contractor's accounting operations, the circumstances when the requirement applies, and when a contractor is exempt from the requirement. The final part of this section will depict how the accounting requirements compare to one another. The regulations to be reviewed include the following:

- Standard Form 1408 – Preaward Survey of Prospective Contractor
- 48 C.F.R. §252.242-7006 – Accounting System Administration
- Federal Acquisition Regulation (FAR) 31 – Contract Cost Principles and Procedures
- 41 US Code §1502 and 48 C.F.R. Part 9904 – Cost Accounting Standards

4.1 Standard Form 1408: Preaward Survey of Prospective Contractor

Standard Form (SF) 1408 is a checklist used by cognizant administrative contracting officers and DCAA auditors to assess the adequacy of a prospective contractor's accounting system prior to contract award.[5] It is a part of a broader preaward survey process initiated by FAR 9.106 that evaluates a prospective contractor's ability to perform based on considerations of technical, production, and financial capability. SF 1408 also meets the requirements of 44 U.S.C 3507.

Fourteen attributes of an adequate accounting system are listed in the checklist; for example, "Segregation of preproduction costs from production costs" and "Identification and accumulation of direct costs by contract." In cases where a prospective contractor does not yet have a FAR/DFARS compliant accounting system in place, an operable accounting system must be developed and be ready to be implemented prior to the contractor incurring any costs on a prescribed government contract. A contractor will submit the completed SF 1408 checklist along with its proposal to be eligible for award. See Appendix 5 for a copy of the SF 1408 checklist.

As described in FAR 9.106, a preaward survey is "normally required only when the information on hand or readily available to the contracting officer, including information from commercial sources, is not sufficient to make a determination regarding responsibility." The only restrictions on a contracting officer's ability to request a preaward survey are contracts anticipated to be below the simplified acquisition threshold or contracts that involve the acquisition of commercial items. All other contract situations may trigger the preaward survey if the contracting officer is unable to make a responsibility determination.

The SF 1408 preaward survey request is almost always triggered by a cost-reimbursable contract. FAR 16.301-3(a)(3) states that a cost-reimbursement may only be used when the "contractor's accounting system is adequate for determining costs applicable to the contract or order." Other factors that may trigger the SF 1408 preaward survey including situations described in the FAR that require an "adequate accounting system." These include progress payments (FAR 32.503-3(a)(2)), price redetermination (FAR 16.205-3(b), FAR 16.206-3(b)), and certain fixed price incentive contracts (FAR 16.403-1(c)(1), FAR 16.403-2(c), FAR 16.402-1). Time & Materials contracts are also likely to require an SF 1408 preaward survey because reimbursement is made on actual labor hours and material costs (FAR 16.601(b)).

Applicability – SF-1408 Preaward Survey of Prospective Contractor-Accounting System

Required:	**Optional:**	**Exemptions:**
FAR 16.301-3(a)(3) Cost-reimbursable contracts	FAR 9.106 At contracting officer's discretion	FAR 9.106-1(a) Below Simplified Acquisition Threshold Commercial Items

4.2 48 C.F.R. §252.242-7006: Accounting System Administration

The Defense Federal Acquisition Regulation Supplement (DFARS) is a set of regulations that implement and supplement the FAR within the context of DoD contracts. They are codified in Chapter 2 in Title 48, Code of Federal Regulations. According to the Federal Register,[43] the DFARS contain requirements of law, DoD-wide policies, delegations of FAR authorities, deviations from FAR requirements, and significant policies/procedures.

In 2012, DoD amended the contract clause contained in 48 C.F.R. §252.242-7006 to define an acceptable accounting system and to provide the 18 criteria for acceptability (See Appendix 6 for the list of criteria). DFARS 252.242-7006(a)(2) defines an accounting system in part as a "Contractor's system or systems for accounting methods, procedures, and controls established to gather, record, classify, analyze, summarize, interpret, and present accurate and timely financial data for reporting in compliance with applicable laws, regulations, and management decisions." This clause also alludes to possible subsystems of an accounting system built to handle specific areas such as indirect and other direct costs, compensation, billing, labor, and general information technology. It defines an "acceptable" accounting system as one that complies with a variety of general criteria such as "proper segregation of direct costs from indirect costs" so that there is reasonable assurance that cost data are reliable, the risk of allocations and mischarges are minimized, and the contract allocation and charges are consistent with billing procedures.[44]

DCMA or the Cognizant Federal Agency is responsible for approving or disapproving contractor business systems, including the accounting system. DCAA conducts the accounting system review in accordance with the DFARS clause and issues a report to the Administrative Contracting Officer.[45] According to DCAA audit guidance, accounting system reviews are a part of broader contractor business audits that are to be performed every three years unless an earlier review is warranted due to significant changes in the contractor's accounting system or if significant deficiencies or material weaknesses are identified by real-time audits.[44] Many of the requirements in DFARS 252.242-7006 overlap with the SF 1408 preaward survey, although more extensive compliance is required to be declared acceptable and free of significant deficiencies as the result of a system review.[46] For instance, an audit typically includes contractor system demonstrations and walk-throughs by the applicable contractor personnel, and the accounting system needs to handle additional processes like requiring approval and documentation of adjusted entries, management reviews and internal audits of compliance, and reconciliation of subsidiary cost ledgers to the general ledger.

Applicability – DFARS 252.242-7006 Accounting System Administration
Required: DFARS 242.7503 - Cost-reimbursable - Time & Materials - Labor-hour - Progress payments - Incentive contract

4.3 Federal Acquisition Regulation Part 31

The FAR is the principle set of rules that executive branch agencies of the U.S. federal government use when purchasing goods and services. FAR Part 31 is the section that details which costs incurred by a contractor are reimbursable by the government and how these costs should be accounted for while executing a government contract.

According to FAR 31.201-2, a cost is considered allowable (i.e., reimbursable) when it is deemed reasonable (i.e., prudent for business), allocable (i.e., relevant to the job), meets the terms of the contract, and complies with GAAP rules that are appropriate to the circumstances or, if applicable, meets CAS standards. The bulk of FAR 31 consists of a list of costs that are expressly unallowable for government contracts, such as entertainment, lobbying, fines/penalties, and advertising (see Appendix 3). The concept of unallowable costs is a unique one to government contracting and is typically not a concern in the conduct of commercial practice.[11], [47]–[50] FAR 31 requires that a commercial company's accounting system be able to distinguish between allowable and unallowable expenses in order to charge them (or not) in appropriate circumstances. Therefore, FAR Part 31 is important to a contractor for two reasons; inappropriately charging costs that are unallowable may result in penalties for the contractor, and failing to report possibly reimbursable costs may reduce a contractor's profit margin.[51] In addition to defining unallowable costs, FAR 31 also defines many terms related to direct and indirect costs used in the SF 1408 preaward survey and DFARS 252.242-7006 accounting system administration.

FAR Part 31 is applicable in the cases of fixed-price contracts, subcontracts, and modifications to contracts and subcontracts whenever cost analysis is performed, or when a fixed-price contract clause is included that requires the determination or negotiation of costs (FAR 31.102). It is also applicable in cases of cost-reimbursable contracts and subcontracts, and most cost-reimbursable sections of time-and-materials contracts (FAR 31.103). Additionally, FAR 31 is used to determine reimbursable costs under a few scenarios such as negotiating indirect cost rates, determining pricing under terminated contracts, revising pricing on fixed-price incentive contracts, setting price redeterminations, and setting other pricing changes (FAR 31.103).

It is worth noting that there is some overlap between the concept of "unallowable" costs and "nondeductible" costs, the latter of which is utilized by the Internal Revenue Service (IRS) to identify expenses that cannot be subtracted from a company's income before it is subjected to taxation. This can be seen by cross-referencing FAR31.205: Unallowable Selected Costs with IRS Publication 535: Business Expenses. Several items can be identified that are both unallowable and nondeductible: taxes, capital expenses, fines, entertainment, lobbying and political activity. At least one item is both allowable and deductible: memberships in professional or trade organizations. At least one item is deductible but unallowable: business advertisement. The focus of this report will remain on "unallowable" costs as they exist in FAR Part 31.

Applicability – FAR 31

Required:

FAR 31.102/31.103
- Cost-reimbursable
- Time & Materials
- Labor-hour
- Fixed price (where cost analysis or cost determination is required)

4.4 Cost Accounting Standards

The CAS are designed to ensure that contractors measure, assign, and allocate costs consistently over the life of a government contract.[52] The CAS are codified in Chapter 99 of Title 48 while FAR 30.201-4 requires the appropriate clauses (FAR 52.230) to be included in a government contract. The existing 19 standards were issued by the Cost Accounting Standards Board (CASB) between 1972-1980 and are legally binding on all executive agencies, their contractors, and their subcontractors. CASB is located in the Office of Federal Procurement Policy (OFPP) under the Office of Management and Budget (OMB). CASB was established as an agency of Congress in accordance with a provision of Public Law 91-379.[5] The standards cover a variety of areas involving cost accounting, such as calculating estimated costs, pension contributions, depreciation, personal compensation, setting indirect costs, and ensuring costs are not double-counted. CAS has been described in our SME interviews as a stricter set of rules compared with and GAAP and other government requirements.[49], [50] See Appendix 1 for a more complete description of each CAS requirement and its purpose.

Negotiated contracts are one of the primary targets of CAS. A negotiated contract is considered any contract that is awarded through an acquisition process other than sealed bidding procedures (FAR 14.101(d), FAR 15). A negotiated contract is subject to full, modified, or other types of CAS coverage unless it is deemed exempt for one of the reasons listed in 48 C.F.R. 9903.201-1(a) (see Table 1). There are several additional categories of contracts and subcontracts that are exempt from some or all CAS requirements (contained in 48 C.F.R. 9903.201-1(b)). Exemptions can be based on the contractor (e.g., small businesses, nontraditional contractors) and the contract itself (e.g., sealed bids, fixed price contracts based on adequate price competition).

There are two levels of potential compliance—full CAS coverage and modified CAS coverage—that are primarily triggered by the dollar value of the contract.

Modified CAS compliance:
Contractors subject to modified CAS compliance are required to adhere to only four of the 19 CAS, specifically 401, 402, 405, and 406 (FAR 30.201-4 Contract clauses requires the insertion of relevant contract clauses, in this case one contained in FAR 52.230-3: Disclosure and Consistency of Cost Accounting Practices). In general, modified CAS coverage does not commence until a single contract of $7.5 million (the “trigger” contract) is received by a contractor’s business unit. Thereafter, modified CAS coverage applies to any single covered contract valued between $7.5 million and $50 million, as well as any other prospective non-exempt contract valued over the threshold for certified cost or pricing data.[53] Modified CAS-coverage is in place until the combined value of CAS-covered contracts received by the business unit exceeds $50 million, at which point full CAS coverage activates.

Full CAS coverage:
Contractors subject to full CAS coverage are required to adhere to all 19 Cost Accounting Standards, to disclose their cost accounting practices, and to follow those practices consistently throughout the life of the CAS-covered contract(s).[5] Full CAS coverage applies to a contractor business segment or unit that has received a single CAS-covered contract award of $50 million or more, or that has received $50 million or more in net CAS-covered awards during its preceding cost accounting period. Contractors are required to submit a disclosure statement using Form

CASB DS-1, "Cost Accounting Standards Board Disclosure Statement Required by Public Law 100-679" or, for educational institutions, Form CASB DS-2, "Cost Accounting Standards Board Disclosure Statement Required by Public Law 100-679 Educational Institutions." The disclosure statement details the contractor's methods or techniques for measuring, assigning, and allocating costs, and its adequacy is judged first by the cognizant administrative contracting officer and then reviewed by DCAA.

The full set of rules for determining the applicable type of CAS coverage are contained in 48 C.F.R. 9903.201-2, represented graphically in a flowchart issued by the DCAA (see Appendix 2).

Table 1: CAS Exemptions

1. Sealed bid contracts
2. Negotiated contracts and subcontracts (including interdivisional work orders) less than the Truth in Negotiations Act (TINA) threshold, as adjusted for inflation (41 U.S.C. 1908 and 41 U.S.C. 1502(b)(1)(B))
3. Contracts and subcontracts with small businesses
4. Contracts and subcontracts with foreign governments or their agents or instrumentalities or, insofar as the requirements of CAS other than 9904.401 and 9904.402 are concerned, any contract or subcontract awarded to a foreign concern
5. Contracts and subcontracts in which the price is set by law or regulation
6. Contracts and subcontracts authorized in 48 C.F.R. 12.207 for the acquisition of commercial items
7. Contracts or subcontracts of less than $7.5 million, provided that, at the time of award, the business unit of the contractor or subcontractor is not currently performing any CAS-covered contracts or subcontracts valued at $7.5 million or greater[1]
8. Subcontractors under the NATO PHM Ship program to be performed outside the United States by a foreign concern
9. Firm-fixed-price contracts or subcontracts awarded on the basis of adequate price competition without submission of certified cost or pricing data
10. In cases where the prime contract is exempt from CAS under any of the exemptions at 9903.201-1 any subcontract under that prime is always exempt from CAS.

[1] The first covered contract over $7.5 million initiates modified CAS coverage, while $50 million or more total CAS-covered contracts initiates full CAS.

4.5 Comparison of Accounting System Requirements

The following table (Table 2) shows the areas where an accounting system requirement is either similar to another requirement or is directly referenced in another set of requirements. For example, FAR 31 is directly referenced in the system criteria subsection of DFARS 252.242-7006(c)(12) where the latter states that a contractor's accounting system must be capable of excluding "from costs charged to Government contracts of amounts which are not allowable in terms of Federal Acquisition Regulation (FAR) part 31." Besides direction references to other requirements, other instances of overlap may represent references to definitions or required clauses. The table was constructed by first pulling the language for each of set of requirements discussed above. Then the research team used their expert judgment to categorize all components of the sets of requirements and decide where overlaps existed. In cases of near-duplication of a contractor system requirement, only one instance using the version with the simplest language is listed. This table is best understood from the perspective of a contractor required to implement an accounting system.

Table 2: Comparison of Accounting System Requirements

Category		Contractor System Requirements	SF 1408	DFARS	Modified CAS	Full CAS	FAR 31	GAAP
Unallowable		Accounting for unallowable costs	2.h	12	405	405	31.201-2; 31.201-6; 31.205	
Consistency	Cost & Price	Consistency in allocating costs incurred for the same purpose			402	402	31.201-1	FASB Concept Statement 2; APB 4; APB 20
		Adequate, reliable data for use in pricing follow-on acquisitions	4	17	401	401		
	Billing	Billings reconciled to the cost accounts and comply with contract terms		16				
		Accounting system support requests for progress payments	3.b					
	Clauses	Cost accounting information, as required by contract clauses concerning limitation of cost (FAR 52.232-20), limitation of funds (FAR 52.232-22)	3.a	15.ii				
		Cost accounting information, as required by contract clauses concerning allowable cost and payment (FAR 52.216-7)		15.ii				
	Policies & Process	A sound internal control environment, accounting framework, and org. structure		1				Principle of Permanence of Methods
		Approval and documentation of adjusting entries		7				
		Management reviews or internal audits of the system to ensure compliance with the Contractor's established policies, procedures, and accounting practices		8				
Period	Fiscal Year	Cost accounting period (12 month fiscal year)			406	406	31.203(g)	Principle of Periodicity
	Monthly	Interim (at least monthly) determination of costs charged to a contract	2.g	11				
Direct vs. indirect	Allocation	Logical and consistent method for allocating indirect costs to the intermediate and final cost objectives	2.c	4	418	418	31.201-4; 31.203(a)	
		Readily calculate indirect cost rates from the books of accounts		15.ii			31.203(b-h)	
	Segregation	Proper segregation of direct costs from indirect costs	2.a	2				
	Contract	Identification and accumulation of direct costs by contract	2.b	3			31.202	
	CLIN/Unit	Identification of costs by contract line item and by units (as if each unit or line item were a separate contract), if required by the contract	2.i	13				
	R/NR	Segregation of preproduction costs from production costs, as applicable	2.j	14				
General Ledger		Accumulation of costs under general ledger control	2.d	5				
		Reconciliation of subsidiary cost ledgers and cost objectives to general ledger		6				
Labor	Allocation	A timekeeping system that identifies employees' labor by intermediate or final cost objectives	2.e	9				
		A labor distribution system that charges direct and indirect labor to the appropriate cost objectives	2.f	10				
GAAP		The accounting system is in accordance with GAAP applicable in the circumstance	1					Entire GAAP
Implementation		Is the accounting system in full operation?	5					

Table 2: Comparison of Accounting System Requirements, cont'd

Category		Contractor System Requirements	SF 1408	DFARS	Modified CAS	Full CAS	FAR 31	GAAP
Fringe	Leave	Accounting for Costs of Compensated Personal Absence				408	31.205-6(m)(1)	ASC 710-10-25-1; ASC 710-10-25-2; ASC 710-10-25-3
	Deferred Comp	Accounting for the Cost of Deferred Compensation				415	31.205-6(k)(1); 31.205-6(q)(2)(i)	Principle of Periodicity
	Pension	Composition and Measurement of Pension Costs				412	31.205-6(j)	Some indication that pension costs are now addressed in GAAP
		Adjustment and Allocation of Pension Cost				413	31.205-6(j)	
FCCM		Cost of Money as an Element of the Cost of Facilities Capital				414	31.205-10	FASB Accounting Standards Update No. 2016-02
		Cost of Money as an Element of the Cost of Capital Assets Under Construction				417	31.205-10	FASB 34
G&A	Allocation	Allocation of Home Office Expenses to Segments				403		FASB Accounting Standards Update No. 2016-02; ASC 606-10-20
		Allocation of Business Unit General and Administrative Expenses to Final Cost Objectives				410		
	IRAD/B&P	Accounting for Independent Research and Development Costs and Bid and Proposal Costs (IR&D and B&P)				420	31.205-18	
Material		Accounting for Acquisition Costs of Material		252.242-7004(d) (1,5,7, 8)		411	31.205-26; 31.205-26(d)	Note 2
Capital		Capitalization of Tangible Assets				404	31.205-52	Note 3
		Depreciation of Tangible Capital Assets				409	Note 1	Note 4
Other		Accounting for Insurance Cost				416	31.205-19	
		Use of Standard Costs for Direct Material and Direct Labor				407		ARB 43
		Determining reasonableness					31.201-3; 31.204	
		Credits					31.201-5	
		Excessive pass-through charge					31.203(i)	

Note 1: 31.205.11; 31.109(a); 31.201-6(c); 31.203(b); 31.203(c); 31.205-11(a); 31.205-11(g)(2); 31.205-11(h); 31.205-16(a); 31.205-16(c); 31.205-16(e)(2); 31.205-16(f); 31.205-16(f)(2); 31.205-16(g); 31.205-16(g)(2); see 31.205-19; 31.205-52; 31.205-52(a); Subparts 31.2, 31.3, 31.6, and 31.7
Note 2: ASC 330-10-05-02; ASC 330-10-05-3; ASC 330-10-30-1; ASC 330-10-30-9; ASC 330-10-30-12; ASC 330-10-30-14; ASC 330-10-30-15; ASC 330-10-50-1; ASC 340-40-25-7; ASC 606-10-05-3; ASC 606-10-05-4; ASC 360 Property, Plant and Equipment; GAAP Master Glossary Definition – Inventory
Note 3: ASC 105-10-70-2; ASC-205-10-20; ASC 210-10-S99-13; ASC 210-10-45-4; ASC 235-10-50-1; ASC 360-10-05-3; ASC 360-10-20; ASC 360-10-35-4; ASC 360-10-35-33; ASC 805-10-25-1; ASC 805-20-30-1; ASC 805-50-30-5; ASC 835-20-05-1; ASC 820-10-05; ASC 835-20-05-1; ASC 835-20-25-5; ASC 845-10-30-1; ASC 845-10-50-1; FASB Statements on Accounting Concepts No. 5; FASB Statements on Accounting Concepts No. 6
Note 4: ASC 250-10-20; ASC 250-10-45-1; ASC 250-10-45-2(b); ASC 250-10-45-17 through 45-20; ASC 250-10-50-4; ASC 350-30-35-1 through 35-5; ASC 360-10-35-3; ASC 360-10-35-4; ASC 360-10-40-5; ASC 360-10-35-7; ASC 360-10-35-8; ASC 360-10-35-21; ASC 360-10-35-22; ASC 360-10-35-30; ASC 360-10-35-31 through 35-32; ASC 360-10-35-33; ASC 360-10-40-4; ASC 805-20-25-1; ASC 835-20-25-5

5.0 Contract Scenarios

The government uses several contract types to provide flexibility in procuring a large variety of goods and services.[54] These contract types are tailored to the specific needs of the procurement involved in order to lower cost, speed up delivery, and lower risk. To address the accounting requirement placed on contractors, a brief outline of the contract types and their intended use is required to show the impact it has on the respective accounting system requirements.

FAR 16.102(a) states that "Selecting the contract type is generally a matter for negotiation and requires the exercise of sound judgment… The objective is to negotiate a contract type and price (or estimated cost and fee) that will result in reasonable contractor risk and provide the contractor with the greatest incentive for efficient and economical performance."

Although there are several types of contracts, and hybrid contracts that can be constructed as needed, there are two main contract types; cost-reimbursed and fixed price contracts. Lesser used contract types include incentive contracts, time-and-materials, labor-hour, and letter contracts. Outside of the FAR the government has additional Other Transactional Authority (OTA). The discussion of OTA contracts is outside the scope of this research project. This section provides a more complete discussion on each of the following contract types:

CONTRACT TYPES TO BE ADDRESSED

- Fixed Price Commercial Items
- Fixed Price Non-Commercial Items
    - Fixed Price with No Financing
    - Contract Financing
        - Performance Based Payments
        - Progress Payments
    - Other Fixed Price Contracts
        - Economic Price adjustment
        - Prospective and Retroactive Pricing
        - Fixed Price Level of Effort
    - Undefinitized Contract Action
    - Incentive Contracts
        - Incentive Contracts (Firm Target)
        - Incentive Contract (Successive Target)
        - Other Incentive Contracts
- Cost Reimbursement
- Time & Material and Labor-Hour

In order to explain and cite the government and DoD accounting system requirements imposed on commercial companies doing business with the government, a wide spectrum of accounting requirements associated with different possible contract types and circumstances must be discussed. On one side of the spectrum is Firm Fixed Price (FFP) contracts referenced in FAR 16.202-2 where there are few accounting system requirements and only under specific circumstances. On the other side of the spectrum are cost-reimbursement contracts referenced in FAR 16.3 which often requires the contractor to have an accounting system that tracks details according to government unique standards.

In this section, each of the contract types and sub-types are analyzed to determine the specified accounting system requirements placed on contractors bidding on, or performing contracts for, the government and DoD in particular. After a description of the purpose and use of each contract type the accounting system requirements is cited along with regulatory references. The preceding definition of an "approved" accounting system associated with DFARS 252.242-7006 will be applied to each of the contract types and subtypes.

5.1 Fixed Price Commercial

The Federal Acquisition Streamlining Act (FASA) of 1994 significantly improved the business-to-government contract environment by establishing acquisition procedures for commercial items. Prior to this, many commercial contractors refrained from selling goods and services to the federal government based on the significant additional costs and risks associated with the government-unique specifications, auditing requirements, and other terms and conditions.[55] In 1995 the FAR council implemented FASA by revising FAR Part 12 to contain policies and procedures applicable only to commercial times.

The use of commercial items allows the government, in some cases, to reap the benefit of lower prices due to competitive markets, economies of scale due to shared capital, and lowers the risk of managing parts obsolescence. The government also benefits by reducing the administrative burden needed to conduct an accounting review or to validate fair pricing under TINA. There is, however, a downside; purchasing commercial items means the vendor controls the item and the government has little say as to the performance or functionality of the commercial item outside what the contract stipulates.[56] Over the past few decades, the government has been incentivized to purchase commercial items and Commercial Off the Shelf (COTS) products. Thus, there has been a steady increase in the desire to purchase commercial items.[57]

For contractors, Government contracting for commercial items present positives. A substantial benefit of contracting for commercial items is it allows access to the federal marketplace to companies that would not otherwise be able to participate in procurement processes.[58] Contractors also have a potentially larger customer base, thus increasing competition and driving down cost. They can use these larger volumes, pooling government and commercial customers, to negotiate better pricing with their suppliers. They also benefit in the contract itself through less onerous clauses, reduced compliance risk, and they have access to a greater number of goods and services to sell to the government. In discussion with SMEs on this topic it appears there is a consensus that selling commercial items is a significant benefit to the contractors because they are not held to cost accounting requirements which increases their administrative burden and reduces their opportunity for profit margins.

There are some possible difficulties to utilizing commercial item contracting, as highlighted in a July 14, 2000 document titled *Commercial Item Acquisitions* signed by both the Assistant Secretary of Defense for Command, Control, Communications and Intelligence and the Under Secretary of Defense for Acquisition, Technology & Logistics. In it the authors state that the price of a commercial item is often determined by marketplace factors not taken into account in traditional DoD cost models. This can result in a disconnect between how vendors price their products or services and government expectations for cost data. The document also noted that when traditional cost accounting data is not required, the number of competitive commercial offerings increase.[59] To help address potential issues regarding commercial items, the DoD has established the DCMA Commercial Item Group, published commercial item guidelines, and provided program managers with additional commercial item training.

FAR 2.101 requires that commercial products or services be established in a catalog, been sold or offered for sale to the general public, or the product has evolved from one offered to the public. However, the definition of the term "of a type" opens the definition of commercial even further. The contractor must demonstrate that the good or service offered to the government are of a type, or require routine modifications, offered for sale or sold to the general public. It does not have to be identical to the good or service sold to the public. Nor does the contractor have to offer or sell the good or service to the general public. The important thing is whether a contracting officer has made a commercial item determination for the product or service. The definition of commercial items from FAR 2.101 is provided in Appendix 6.

Applicability. While contractors selling commercial items to the government must comply with some government requirements, they are exempt from many of the accounting system requirements imposed on traditional non-commercial items. FAR 12.214 exempts all commercial item contracts from the Cost Accounting Standards. FAR 9.106-1(a) exempts all commercial item contracts from the SF 1408 preaward survey. The applicability of DFARS accounting system review and FAR 31 cost principles are often exempted as well from commercial item contracts except in specific circumstances.

Commercial items may only use the contract types found in FAR 12.207, namely firm-fixed price contracts or fixed price with economic price adjustment (commercial services may use T&M or labor hours contracts subject to certain conditions). Neither contract type by itself would incur any accounting requirements. However, one of the three types of economic price adjustment described in FAR 16.203-1(a)(2) is based on actual labor or material costs. While this does not trigger any accounting requirements, it does require insertion of the clause FAR 52.216-4 which includes the following statement, "The Contracting Officer may examine the Contractor's books, records, and other supporting data relevant to the cost of labor (including fringe benefits) and material." This requirement could add to workflow and reporting requirements associated with the existing configuration of the commercial accounting system, though, from a practical standpoint, this rarely happens.

Finally, although not a fixed price contract, time-and-materials and labor-hour contracts can also be used to purchase commercial items provided the contracting officer executes a Determination & Findings. T&M and labor-hour are the least preferred contract type for commercial items, useable if no other type is suitable and competition is available. In addition to triggering DFARS

252.242-7006 accounting system review, these commercial item contracts also trigger FAR 31 cost principles and the corresponding accounting system validations.

5.2 Fixed Price Non-Commercial

Fixed price contracts that do not use commercial item procedures are subject to a wider array of contract types and financing options which may trigger accounting system requirements. A discussion of each of these situations is provided in detail below.

5.2.1 Firm-Fixed Price with No Financing

FAR 16.2 defines firm-fixed price (FFP) contracts in the following way: "A firm-fixed price contract provides for a price that is not subject to any adjustment based on the contractor's cost experience in performing the contract. This contract type places upon the contractor maximum risk and full responsibility for all costs and resulting profit or loss. It provides maximum incentive for the contractor to control costs and perform effectively and imposes a minimum administrative burden upon the contracting parties." The definition makes clear that when awarded based on adequate price competition, FFP are not subject to government accounting system requirements. A fair and reasonable price is set using factors such as competition and comparisons to prior purchases.

Contractors on FFP contracts may be subject to accounting requirements, however, in cases where there is not adequate price competition as defined in FAR 15.403-1. Unless other exceptions to certified cost or pricing data requirements apply above the TINA threshold, FFP contracts without adequate price competition must provide certified cost or pricing data. Moreover, non-competitive new work or modifications to the FFP above the TINA threshold contract require the submission of certified cost or pricing data. If applicable, contractors are also required to be compliant with Cost Accounting Standards.

***Applicability*.** With very few exceptions, there are no specific accounting requirements for competitive firm-fixed price contracts with no financing. Government faces minimal risk and therefore does not require the contractor to have an accounting system to validate costs against except in the cases where there is not adequate price competition or when there is new or modified work.

5.3 Contract Financing

In certain cases, the government recognizes the need of contractor for cash prior to the delivery a final product. To accommodate this need, the government can offer financing. The intent of contract financing is to benefit the government and the contractor. For the government it is a useful working tool which expedites the performance of contracts as described in FAR 32.104(a)(1). For the contractor it assists in paying costs incurred during the performance of the contract without the need for higher interest payments associated with private-sector financing.

Contract financing is covered in FAR Part 32 and is defined as government authorized payment of funds to the contractor prior to acceptance of supplies or services. Contract financing does not include invoice payments, payments for partial acceptance, lease payments, or rental payments.

Payments of invoices on cost-reimbursement contracts are considered interim financing per FAR 32.001.

Financing helps fund the purchase and is intended to be self-liquidating through contract performance. This means agencies can use financing for working capital but not for the expansion of contractor-owned facilities or the acquisition of fixed assets, per FAR 32.105(a). There are several possible methods of contract financing for non-commercial items. Per FAR 32.102, these include advance payment, loan agreements, and payments for accepted supplies but the two most common forms of contract financing are performance-based payments (PBP) and progress payments.

5.3.1 Performance Based Payments (PBP) Financing

PBPs are a form of contract financing that allows payment based on objective, quantifiably measurable milestones rather than more traditional periodic payment. In a PBP context, when a contractor meets the criteria for a designated milestone, it receives the corresponding payment.[60] Ethan Brown and Cara Wulf from the law firm McCarter and English explain, "For the uninitiated, PBPs are a mechanism available to the Government intended to encourage cash-strapped contractors to enter and flourish in the federal marketplace."[60]

PBPs are a customary contract financing method for various types of goods and services. They are based on performance rather than advance payments, partial payments, or progress payments (FAR 32.102 (a)(b)). Performance based payments are contract finance payment made of the basis of: (1) Performance as measured by objective or quantifiable methods; (2) Accomplishment of defined events; or (3) Other quantifiable results (FAR 32.102(f)). PBPs are fully recoverable in the event of default. However, they are not payments for goods or services, partial deliveries, or payment based solely on incurrence of costs or an incentive arrangement. PBPs must be tied to a basis of performance in quantifiable terms which can be measured.

Applicability. Section 831 of the National Defense Authorization Act (NDAA) for Fiscal Year (FY) 2017, amended 10 U.S.C. § 2307(b) to: (1) establish a preference for performance-based payments for contractor financing, whenever practicable; (2) provided that, for a contractor to receive PBPs, its accounting system must be compliant with Generally Accepted Accounting Practices (GAAP); and (3) ensure that nontraditional defense contractors and other private sector companies are eligible for performance-based payments, consistent with best commercial practices.

On April 8, 2020, DoD amended the DFARS to: (1) permit all contractors that comply with GAAP to receive performance-based payments; and (2) remove prohibitions limiting PBPs to amounts not greater than costs incurred up to the time of payment. As a result, and in accordance with DFARS 232.1003-70 and 252.232-7015, the contractor's financial accounting requirements are to be GAAP compliant to receive PBPs. This, however, does not affect how contractors perform cost accounting

DoD established a PBP Analysis Tool with the intention of allowing the contracting officer to identify a "Win-Win" solution. The PBP Analysis Tool calculates the final cost to the Government and the financial value to the contractor under two scenarios (PBPs and Progress Payments). The cost to the Government is determined by adding the cost the government incurred by borrowing the funds used to pay the contractor. Therefore, “The financial value to the contractor is based on calculating the Internal Rate of Return (IRR) and Net Present Value (NPV) of the cash flows.” The intent of the tool is to lower the final cost to the Government while generating greater IRR and NPV for the contractor. The potential for improved cash flow has proven to be real and provides a unique opportunity for a financial Win-Win deal to be negotiated.

5.3.2 Progress Payment Financing

Another common form of contract financing is provided through progress payments. Using progress payments, the government provides interim financing to the contractor, allowing the government and the contractor to share the financial burden of the contract while the work is being performed.

A progress payment is a payment provided to the contractor based on the amount of work they have performed. It is usually based on a schedule of anticipated progress, either on a percentage of cost basis or percentage of work completed, which the contractor has achieved. There are two primary methods for the use of progress payments. The first is to provide an incentive to keep the contractor on schedule to prevent work being delayed until the end of the delivery period. The second is to provide the contractor with capital to continue operations on the contract.

The progress payment rate has varied over the years. Currently, the FAR rate is 80% for large business and 85% for small (FAR 232. 501-1), while for DOD contracts, the rate is 80% for large, 90% for small, and 95% for small disadvantaged concerns.[2] The total amount payable for fixed price contracts is limited to a specified percentage of the “contract price” which is defined as the current price plus any unpriced modifications for which funds have been obligated (FAR 32.501-3 a (1)). Specific cost-reimbursement portions of the contract (e.g., CLINs for travel and other direct costs) must be excluded from the contract price.

When a contractor requests progress payments, they must use Standard Form 1443 or something equivalent. Once a contractor submits a request for progress payments, “Contacting officers should normally approve requests for progress payments. However, the contracting officer may reduce or suspend progress payments if the contractor’s performance is not satisfactory in key areas including meeting terms and conditions of the contract… or if there is evidence of unsatisfactory accounting system or questionable financial stability.”[61]

***Applicability*.** The references to the accounting system requirements are found in FAR 52.232-16(f) which states “The Contractor shall maintain an accounting system and controls adequate for the proper administration of this clause require.” This is further supported in 32.506-3(b)(1), “The contractor must comply with all material requirements of the contract. This includes the requirement to maintain an efficient and reliable accounting system and controls, adequate for the proper administration of progress payments.”

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[2] Under Class Deviation 2020-O0010, Progress Payment Rates, defense progress payments were increased to 95% for small business and 90% for all other businesses.

While the exact standards are not specified in the FAR, the progress payment checklist found in SF 1443 and prescribed by FAR 53.232 provide an indication of the types of accounting information required, including incurred costs to the contract, estimated total cost, and eligible subcontractor financing or delivery payments. Moreover, the contractor may not earn progress payments on unallowable costs which requires adherence to FAR 31 cost principles for allowability.[62] For contractors working with the Department of Defense, there is a further requirement under DFARS 252.7503(b), which requires the insertion of the clause 252.242-7006 accounting system administration for progress payments based on costs incurred or on a percentage or stage of completion. Finally, discussions with subject matter experts indicate that in most instances, contracting officers will request an SF 1408 preaward survey for progress payment financing.

5.4 Other Fixed Price

5.4.1 Economic Price Adjustment (EPA)

Fixed price with economic price adjustments is used when there is reasonable doubt about the cost over time in contracts which last and extended period of time. Another reason to use this type of contract is when there are circumstances which would normally be address by FFP contracts but there is too much uncertainty about the cost or cost drivers. These cost drivers could be market stability, resources availability or labor conditions.

There are three types of price adjustment under FP-EPA, adjustments made based on: (1) established prices; (2) actual increase or decrease in costs associated with labor or material costs; and (3) increases or decreases in specified labor or material cost standards or indexes, such as the Employment Cost Index or Producer's Price Index. These adjustments can be the result of changes in labor, materials or resources cost, inflation, commodities price fluctuation, changes in bank interest rates or fluctuation in currently markets.[63] However, only the second type of FP-EPA, based on actual labor or material costs, requires reference to accounting system information to determine the final contract price.

There are limits on FP-EPA as stated in FAR 52-216-4. No upward adjustment applies if the upward adjustment is not at least 3% higher than the current total contract price. And FAR 52.216-4(c)(4) puts an upside limit of 10% that can be charged to the government. As for the Government benefit, there is no downside limit which the government may benefit from by causing a reduction in cost.

Applicability. Only one type of FP-EPA triggers any kind of accounting system requirement, which is described in FAR 16.203-1(a)(2), adjustments based on actual costs of labor or material. This FP-EPA contract is required by FAR 16.203-4(c) to include the clause FAR 52.216-4 which states: "The Contracting Officer may examine the contractor's books, records, and other supporting data relevant to the cost of labor (including fringe benefits) and material during all reasonable times until the end of 3 years after the date of final payment under this contract or the time periods." While this clause does not require the contractor to maintain an acceptable accounting system or make any changes to the normal operations of the commercial accounting system, it could create additional workflow and reporting for the accounting department should the contracting officer choose to have such examination performed.

5.4.2 Prospective and Retroactive Price Redetermination

Price redetermination can happen in two ways; prospective priced redetermination (FAR 16.205), and retroactive price redetermination (FAR 16.206). This contract scenarios begins with a firm-fixed price effort for the initial period of performance but allows for redeterminations in subsequent periods of performance. A firm-fixed ceiling price contract with retroactive price redetermination is typically only used for research and development contracts estimated at the simplified acquisition threshold or less. When initially established at the outset a fair and reasonable firm-fixed price cannot be negotiated and that the amount involved and short performance period make the use of any other fixed-price contract type impracticable.

Applicability. Due to the potential for wide fluctuations in cost which could lead to a price redetermination the government must validate the impact on the contract costs. For this reason, FAR 16.205-3(b) and FAR 16.206-3(b) established that the contractor's accounting system should be "adequate" for redetermination. FAR 31 cost principles also apply to this contract type as specified in FAR 31.103(b)(5). Finally, required FAR clause 52.215-2 allows contracting officer to inspect company accounting records.

5.4.3 Level of Effort (LOE)

Firm-fixed price level of effort (FFP/LOE) contracts are outlined in FAR 16.207. FFP/LOE contracts are used when work cannot be clearly defined but the level of effort desired can be identified and agreed upon at time of award. FFP/LOE is commonly used in research or exploratory development, and outcome-based education. FAR 16.207 requires the contractor to provide a specified level of effort over a stated period of time on work that can be stated only in general terms, and the government is to pay the contractor a fixed-dollar amount.

To utilize and FFP/LOE contract the LOE must be agreed upon at the time of the award. This must include a specific number of labor hours during a stated period of time. An LOE contract will describe the scope of work in general terms and the contractor will usually be required to submit a report which shows the results achieved with the level of effort. This type of contract is beneficial because the contractor must perform without increase in price or level of effort. However, there is no guarantee that desired results will be achieved. Because of this FFP/LOE contracts should only be used when the work to be performed cannot be clearly defined. Another consideration for the LOE contracts is that the desired results cannot be realistically achieved with less than the agreed upon effort to achieve with fewer hours.[64]

Applicability. Where there is no specific regulatory language regarding the contractors accounting system requirements for FFP/LOE. However, the DCAA audit manual 6-10S1 Supplement - Billing System Examination Considerations for Contract Types states "Firm-fixed-price level of effort (FFP/LOE) contracts are classified as fixed price, but the data submitted on billings under such contracts closely resembles that submitted on time-and-materials (T&M) contracts in that profit is included in the direct labor billing rates… In reviewing billing systems at contractor locations having a significant volume of FFP/LOE work, treat these contracts as if they were T&M." The time keeping requirements are specifically spelled out in detail in the DCAA auditor procedures for evaluating time keeping controls 6-405.2(b) in which the auditor must "Establish the validity of the time records by observing the contractor's time keeping system in operations. This includes observation and evaluation of the method for recording time and periodic physical observation of work areas."

5.5 Undefinitized Contract Action (UCA)

According to DFARS 217.7401(3) an "Undefinitized contract action" means any contract action for which the contract terms, specifications, or price are not agreed upon before performance is begun under the action. Common forms of UCAs are letter contracts, orders under a basic ordering agreement and provisioned items order.[65] When using a UCA the government must place a not-to-exceed limitation on the UCA action. DFARS 217.7404-4 limits the obligation to 50% of the not-to-exceed price before the contract has been definitized and requires contract definitization within 180 days. However, if a contractor submits a qualifying proposal before 50% of the not-to-exceed price has been obligated, the limitation may be increased to no more than 75% before definitization.

Applicability**.** One example of accounting requirements is found in DFARS 252.217-7027(b). If definitization is not reached by the target date, the contracting officer may use cost analysis methods found in FAR 15.4 and FAR 31 to determine a fair and reasonable price. Moreover, for contracts subject to the Truth in Negotiations Act, DFARS 217.7404-6(c) requires government to ensure the profit allowed in the final negotiated price reflects the requirements in 215.404-71-3(d)(2), which gives the instructions associated with DD 1547, "Insert the amount of costs incurred as of the date the contractor submits a qualifying proposal, such as under an undefinitized contract action." In applicable cases, the contractor must accumulate direct costs according to the contract and allocate only allowable indirect costs compliant with FAR 31 cost principles.

5.6 Incentive Contracts

The Government may use incentive contracts as a means of providing the contractors with an incentive to perform efficiently or focus efforts on a specific prioritization of objectives. There are two categories of incentives, fixed price incentives and cost reimbursement incentives. Incentives are used when the required supplies and services can be purchased at a lower cost than would be offered in a FFP contract and when a formulaic pay arrangement can be designed to increase efficiency or increase technical performance objectives (FAR 16.401).

Applicability**.** Three FAR incentive type contracts (16.403-1, 16.403-2, and 16.402-1) also require an "adequate" accounting system as well as compliance with FAR 31 cost principles (FAR 31.103(b)(4)). These incentive types have price adjustment formulas that depend on the contractor's costs and therefore rely on accounting system data.

Incentive contracts based on cost are required by DFARS 242.7503 to contain the clause DFARS 252.242-7006, Accounting system administration. In accordance with FAR 16.202-1, firm fixed price contracts remain firm fixed price when the award fee or incentive is based solely on factors other than cost. For example, performance incentives have a formula that depends on contractor behavior or product characteristics such as missile range or aircraft speed. Accordingly, use of these non cost-based incentives with firm fixed price contract types do not require an approved accounting system

FAR/DFARS Accounting System Administration Applicability to Incentive Contract Types

Required:	**Not Required**
FAR 16.403-1 Successive Target	FAR 16.402-2 Performance Incentives
FAR 16.403-2 Firm Target	FAR 16.402-3 Delivery Incentives
FAR 16.402-1 Cost Incentive	FAR 16.404 Award Fees

5.7 Cost Reimbursement

Cost-reimbursable contracts are issued when the government or the contractor cannot know enough about the true cost of the contract to establish a fixed-price type contract prior to the contract being signed. These contracts establish an estimate of total cost for the purpose of obligating funds and establishing a ceiling that the contractor may not exceed (except at its own risk) without the approval of the contracting officer (FAR 16.301-1). When cost contract types are used, the government accepts all the risk.

A cost-type contract, in theory, can be less expensive because the contractor does not have to increase the price of the contract to cover risk.[66] Situations likely to contribute to risk premiums include when the work is sufficiently different from historical data factored into the bases of estimates, or when there are significant raw material inputs which exhibit price volatility. The cost-type contract may reduce the amount of risk factored into prices, but also require more government oversight of prime. Cost-type contracts are also useful when there is a high likelihood that there will be changes to the requirements which could increase the cost of the contract.

Until the Government imposed accounting system requirements, it lacked visibility into the actual cost of performance. Historically, this created situations where contractors had an opportunity to take advantage of the government by either charging more than they incurred or by misallocating the costs of other business activities to the government (Virginia Law Review, 1968). To alleviate this information asymmetry, the government has established several monitoring rules described below.

***Applicability*.** All cost-reimbursable contracts are subject to the DFARS accounting system administration per DFARS 242.7503. Contractors received such contracts must demonstrate they have an adequate accounting system for determination costs applicable to the contract or order according to FAR 16.301-3(a)(3). This often triggers DCAA review under SF 1408 or a written verification from a prime contractor. FAR 31 cost principles also apply as prescribed in FAR 31.103(b)(1)(ii). Cost-reimbursable contracts may also be CAS-covered unless otherwise exempted per 48 CFR 9903.201-1(b).

5.8 Time & Material (T&M) and Labor Hour Non-Commercial

Time-and-Materials (T&M) contracts provide for acquiring supplies or services on the basis of direct labor hours at specific fixed hourly rates that include wages, overhead, general and administrative expenses and profit, and the actual cost of materials (FAR 16.601(b)). A time and materials contract may be used only when it’s not possible at the time of placing the contract to estimate accurately the extent or duration of the work or to anticipate costs with any reasonable degree of confidence. This opens the government to risk because (1) there is no incentive for cost control because the contractor's profit is tied to the number of hours worked, and (2) the government cannot be sure the labor category delivered is the one proposed.

> “Federal agencies have used time-and-materials (T&M) contracts to purchase billions of dollars in services… These contracts are risky because the government bears the risk of cost overruns. T&M contracts constitute a high risk to the government. The contractor provides its best efforts to accomplish the objectives of the contract up to the maximum number of hours authorized under the contract. Each hour of work authorizes the contractor to charge the government an established labor rate which includes profit. These contracts are considered high risk for the government because the contractor’s profit is tied to the number of hours worked.”[67]

***Applicability*.** T&M contracts are subject to DFARS accounting system administration per DFARS 242.7503, and to FAR 31 cost principles per FAR 31.103(b)(1)(ii) except for materials priced on the basis other than cost. Government surveillance of T&M contracts are covered under FAR 16.601(c)(1). It states, “a time and materials contract provide no positive profit incentive to the contractor for cost control or labor efficiency, therefore appropriate government surveillance of contract performance is required to give reasonable assurance that efficient methods and effective controls are being used.”

Table 3: Contract Scenarios That Trigger Accounting System Requirements

		Accounting System Requirements					
	References	**Pre-Award Survey SF 1408 (Note 1)**	**DFARS 252.242-7006**	**FAR 31 Cost Principles (Note 2)**	**FAR "Adequate" accounting system**	**Cost Accounting Standards (Note 3)**	**Comments**
Fixed Price Commercial	FAR 12						Exempt from all accounting system requirements unless paired certain types of financing, FAR 12.210, or incentives, FAR 12.207(d).
Fixed Price Non-Commercial							
Firm-Fixed Price No Financing	FAR 16.202						FAR 31.103(b)(6) requires commercial contractors be subject to FAR 31 for modifications or price changes, while 31.103(b)(3) requires FAR 31 for determining costs of terminated contracts.
(Contract Financing) Performance-Based Payments	FAR 32.10; FAR 52.232-32; FAR 16.402-2; FAR 16.404; 10 U.S.C. 2307(b)(4)(A)						DFARS 232.1005-70(b) requires companies to comply with GAAP. DoD PBP Analysis tool requires contractor to report contract expenditures. Found in Performance Based Payment Guide. Also, DFARS 252.232-7012 and FAR 52.232-32(f)(2) for gov't property titles require GAAP accounting.
(Contract Financing) Progress Payments	FAR 32.503-3; FAR 32.503-4; FAR 32.503-5; FAR 52.232-16		232.501; 242.7503		32.503-3(a)(2); 232.506-6		In most cases, pre-award survey SF 2403 will be required for progress payments. 232.503-6(g)(iii), SF 1443 Contractor's Request for Progress Payments
Economic Price Adjustment based on actual labor or material cost	FAR 16.203-1(a)(2)						FAR clause 52.216-4(d) states that "the Contracting Officer may examine the Contractor's books, records, and other supporting data relevant to the cost of labor (including fringe benefits) and material."
Retroactive or Prospective Price Redetermination	FAR 16.205-3(b); FAR 16.206-3(b)			31.103(b)(5)	16.205-3(b); 16.206-3(b)		FAR clause 52.215-2 allows contracting officer to inspect company accounting records.
Level of Effort	FAR 16.207						Requires an adequate timekeeping system per DCAA DCAA Manual 7640.1, Chapter 6-10S1.
Undefinitized Contract Action (UCA)	FAR 16.603; DFARS 217.74						For TINA-covered contracts, DFARS 217.7404-6(c) requires government to ensure the profit allowed in the final negotiated price reflects the requirements in 215.404-71-3(d)(2).
Incentive Firm Target *Incentive Successive Target* *Cost Incentive*	FAR 16.403-1 FAR 16.403-2 FAR 16.402-1		242.7503 242.7503 242.7503	31.103(b)(4) 31.103(b)(4) 31.103(b)(4)	16.403-1(c) 16.403-2(c) 16.402-1		See also "Appropriate Government Surveillance " OUSD/AT&L Guiance on Using Incentive and Other Contract Types dated April 01 2016, pg 9.
Other Incentive Contracts	FAR 16.402-2; FAR 16.402-3; FAR 16.404		242.7503				Final price determination not based on accounting costs.
Cost-Reimbursable Non-Commercial	FAR 16.3; FAR 9.105-1(b); FAR 9.106-4(a); FAR 52.215-2;	16.301-3(a)(3)	242.7503	31.103 (b)(1)(i)	16.104(i)		Cost reimbursement is prohibited for commercial item contracts, per FAR 16.301-3.
Time & Material (T&M) and Labor-Hour Non-Commercial	FAR 16.104(i); FAR 16.601; FAR 16.602; FAR 52.215-2; DFARS 216.601		242.7503	31.103 (b)(1)(ii)			When price analysis allows T&M/LH to use commercial procedures (FAR 12.207), contracts are exempt from CAS. When materials are priced on the basis other than cost, FAR 31 cost principles do not apply, per FAR 31.103(b)(1)(ii).

1. Pre-award survey (including SF 1408) may be required at the contracting officer's discretion except fixed-price below simplified acquisition threshold and commercial items (FAR 9.106-1).
2. FAR 31 cost principles also applies to all fixed-price contracts subject to cost analysis or fixed-price contracts containing a clause that requires the determination or negotiation of costs, per FAR 31.102, as well as contract terminations.
3. Modified or full Cost Accounting Standards (CAS) coverage will apply unless exempted, see requirements and thresholds found in Title 41 §1502 and 48 CFR 9903.201-1.
4. Terminations with settlement of payment require additional accounting information provided in SF 1438 or SF 1439, see FAR 49.105, and settlement proposals greater than $2M require submission of certified cost or pricing data [FAR 49.105(c)(15)] as well as an audit [FAR 49.107(a)]. Commercial item terminations are covered in FAR 12.403. In cases of settlement based on cost, FAR 31 cost principles apply (discussed further in FAR 31.205-42).

5.9 Other Requirements with Accounting Systems Implications

The following requirements also affect how a contractor may operate an accounting system. These requirements have implications for how an accounting system is set up to meet certain objectives, utilize accounting system data, or report costs to meet the above requirements.

5.9.1 Truth In Negotiations Act (TINA)

TINA was originally passed by Congress in 1962 due to series of failures to abide by existing fair pricing rules by contractors. This law requires contractors to submit certified cost or pricing data if a procurement's value exceeds the specified threshold. TINA requires contractors to submit cost or pricing data to the government and certify that it is current, accurate, and complete. There are exceptions to the law. TINA does not apply to firm-fixed price contracts with adequate price competition, when purchasing commercial items, when prices are set by law, or when the contractor is granted a waiver. The original TINA threshold in 1962 was set at $100,000. Between the years of 1962 and 2015 the threshold periodically increased to $750,000 and in June 2018 Congress authorized a substantial increase in the threshold limit to $2 million.

There are cases where TINA applies and CAS does not, such as for negotiated contracts greater than $2 million and less than $7.5 million. All small businesses are exempt from CAS, but not from TINA. In these cases, TINA could drive some accounting system requirements in practice. FAR 15.404-1(a)(3) states that "Cost analysis shall be used to evaluate the reasonableness of individual cost elements when certified cost or pricing data are required." The condition of cost analysis associated with certified cost or pricing data in effect requires the contractor to produce cost accounting data to support pricing. This triggers FAR 31 cost principles, even for FFP contracts with no financing. For example, a small business that includes alcohol as part of its sole source proposed costs would not have this cost recognized by the contracting officer as an allowable cost in the negotiation of the contract price.

Finally, there is the workflow and processing associated with pulling existing accounting information to support TINA compliance and getting it certified. Formatting and submission instructions are detailed in FAR 15.403-5 and includes Table 15-2.

5.9.2 Other Than Certified Cost or Pricing Data

Contracting officers still have a responsibility to assess price reasonableness even when TINA does not apply, particularly in negotiated contracts. FAR 15.403-3 describes how contracting officers should require "submission of data other than certified cost or pricing data" from offerors if other sources are inadequate to support a cost realism analysis. The definition of "Data other than certified cost or pricing data" is found in FAR 2.101 which includes the following statement. "Such data may include the identical types of data as certified cost or pricing data…but without the certification."

The FAR requires contracting officers to investigate several forms of price analysis before requesting pricing information from the contractor. Requesting cost data is a last resort, such as for commercial "of a type" items that the contractor has never sold on the commercial market. FAR 15.404-1(b)(2) lists seven price analysis techniques by which the Government can make a fair and reasonable price determination. FAR 15.403-3(c)(2)(ii) states that "The contracting officer shall, to the maximum extent practicable, limit the scope of the request for data relating to commercial items to include only data that are in the form regularly maintained by the offeror as part of its commercial operations."

However, if the cost or pricing data is not sufficient to determine price reasonableness, the FAR 15.403-1(c)(3)(ii)(C) allows the contracting officer to request "information on labor costs, material costs and overhead rates." This cost information may not be available at all companies. Even if the contractor follows FAR 31 cost principles, such as segregating direct from indirect and unallowable costs, it does not assure that the contractor will have estimates of product costs readily available. When the contractor's existing cost accounting does not sufficiently perform job or process costing, as may be the case for small businesses or software companies, the lack of product cost information could impact negotiations. SMEs interviewed for this research study gave anecdotal evidence that accounting systems can be a tacit requirement for producing the kind of information contracting officers expect to see. This friction incentivizes the contractor to start collecting product costs to improve future negotiations with the government.

One subject matter expert in the commercial sector indicated there were few instances where government needs more cost information than the contractor is able to provide from its accounting system. "Other than" certified cost or pricing data are most often required for commercial items that have not been sold yet or are still developmental. Anecdotally, this expert found that contracting officers do not accept pricing data and prefer cost data instead.[48] This viewpoint was repeated by a government SME who provided an example. There is an aircraft mission system used in the commercial world to track, record, and lock-in on property. This basic commercial item needed substantial modifications for military use, such as longer range and operations in night or adverse weather environments. The commercial item was therefore "of a type," but the pricing offered to the Department of Defense was 25-fold greater than the basic commercial version. In this situation, the contracting officer was compelled to ask for cost information to understand the price difference.[68]

5.9.3 Cost Monitoring Program/Forward Pricing Rates

The Cognizant Federal Agency must establish Cost Monitoring Program (CMP) for all contractors whose sales to the Government, during the contractor's next Contractor Fiscal Year (CFY), are expected to exceed $200 million based on costs incurred or negotiated based on projected costs as outlined at DFARS PGI 242.302(a)(S-75)(c)(1)(i)(A). The CMP may be optionally established for contractors whose sales are less than $200 million in other than firm fixed-price and fixed-price with economic price adjustment contracts; or significant government business exists and is specifically directed by the head of the contracting activity, in accordance with FAR 42.1701.

Negotiation of forward pricing rates (FPRs) may be requested by the contracting officer, the administrative contracting officer, or the contractor. Normally, FPRs should be negotiated only with contractors having a significant volume of government contract proposals. In the process, the contractor must submit a forward pricing rate proposal (FPRP) that is compliant with the adequacy checklist found in DFARS Table 215.403-1.

When certified cost or pricing data are required, FAR 15.407-3 requires offerors to describe any forward pricing rate agreements (FPRAs) in each specific pricing proposal to which the rates apply and to identify the latest cost or pricing data already submitted in accordance with the FPRA. Although the FPRA process drives a fair amount of contractor workflow, it usually does not require adding detail to the accounting system or prescribed formats.

5.9.4 Earned Value Management System

Earned Value Management Systems (EVMS) are not accounting systems, but they have implications for accounting systems. The DoD's EVMS Implementation Guide states that "the accounting system is critical to ensuring EVM performance data is reliable and auditable."[69, p. 40] The EVMS requirements outlined in American National Standards Institute/Electronic Industries Alliance Standard 748 (ANSI/EIA-748) do not specifically require conformance with Cost Accounting Standards or other regulations. However, the EVMS Implementation Guide states that "All financial transactions are expected to be documented, approved, and recorded properly in the financial accounting system on a consistent and timely basis in accordance with Generally Accepted Accounting Principles (GAAP) and applicable Cost Accounting Standards (CAS)."[69, p. 40] For example, charging material from inventory in Guideline 21 requires conformance with the CAS #411.[70]

ANSI-EIA-748 Guidelines 16 through 24 largely ensure that cost data is accurately collected for comparison to budgets and performance. EVMS may drive additional accounting effort than other government accounting requirements discussed above. For example, Guideline 17 requires accounting for actual costs at more detailed levels including the Work Breakdown Structure, while Guideline 20 requires accounting for unit or lot cost as well as recurring or nonrecurring.[70] This can cause a proliferation of charge numbers necessary for tracking costs to specified objectives, such as recurring labor costs associated with the landing gear of a particular aircraft tail number.[71]

DFARS 234.201 requires all cost or incentive contracts and subcontracts valued at $20 million or more to insert the clause 252.234-7001 and 252.234-7002. Contractors must submit monthly reports from the EVMS which must comply with the guidelines in the ANSI/EIA-748. This requirement is optional for cost or incentive contracts valued at less than $20 million based on contract risk. It is also optional for firm-fixed price contracts in extraordinary circumstances when a waiver is obtained per PGI 243.201(1)(iv).

For cost or incentive contracts and subcontracts valued at $50 million or more ($100 million or more under DoD Class Deviation 2015-O0017), the contractor shall have an EVMS that has been determined by the Cognizant Federal Agency (CFA) to comply with the guidelines in ANSI/EIA-748, as required by DFARS 252.234-7001. One consulting company that specializes in EVMS found that it can take up to three years for the CFA to complete the 16-step certification process.[72]

5.9.5 Cost and Software Data Reports

Section 2334(g) of U.S. Code Title 10 provides the Director of Cost Assessment and Program Evaluation (DCAPE) the authority to collect contract cost data on acquisition programs greater than $100 million in then-year dollars. The Cost and Software Data Reporting (CSDR) system serves as the primary source of contract cost data for defense acquisition programs to support cost estimation. The thresholds which trigger CSDR reporting are described DoD Instruction 5000.73, with additional context detailed in DoD Manual 5000.04-M-1. CSDR requirements are contained in the DFARS clauses 252.234-7003 and 252.234-7004 as prescribed in 234.7101. Post-award reviews of contractor compliance with the CSDR system are prescribed in DFARS 242.503-2.[73]

The conditions for CSDR requirements are based on a combination of the program's classification and the contract's size. All Acquisition Category I and II programs are subject to the CSDR requirement provided the contracts breach additional thresholds. All Information System and Middle-Tier of Acquisition programs greater than $100 million in then year dollars are also subject to the CSDR. Finally, CSDR approval authority may also subject any other high-interest or high-risk programs greater than $100 million to the CSDR requirements.

Provided program applicability to the CSDR, there are also contract thresholds. CSDRs apply to all contracts and subcontracts which breach the thresholds, including non-FAR contracts like OTAs. For most formats, the threshold is $50 million. For high interest areas like software and middle-tier of acquisition, it is $20 million. The specific requirements inserted into contract solicitations are outlined in the CSDR plan (DD Form 2794) developed by the representatives of the program office, the service cost agency, DCAPE, and the defense cost and resources center. There are a total of 13 submission formats and associated Data Item Descriptions that could be required via the CSDR Plan.[74] Four excel submission formats (DD Forms 1921, 1921-1, 1921-2, and 1921-5) are being phased out and replaced by two machine-readable file format specifications associated with DI-FNCL-82162 and DI-MGMT-82164.

The CSDR's requirements overlap with those of EVMS and FPRs but are tailored to the needs of cost estimation. As specified in the CSDR plan, contract cost actuals are often reported at a lower level of the Work Breakdown Structure than EVMS requirements alone. DFARS 252.234-7003(b)(2) requires the contractor to "Demonstrate how contractor cost and data reporting (CCDR) will be based, to the maximum extent possible, upon actual cost transactions and not cost allocations." However, if the contractor chooses to accumulate costs at a higher level, it must show the allocation to lower level WBS items when submitting the newer CCDR format DI-FNCL-82162. The contractor's labor and material categories are also required, along with assignment to standardized DoD categories. CLIN, unit or lot, and end item are other categories of contract cost reporting.

For software-intensive efforts, labor hours from the timekeeping system are required at a level lower than the WBS, including by release, computer software configuration item, and software activity type (e.g., detailed design, code & unit test). Maintenance and repair efforts also have to track the cost of maintenance events (e.g., depot level repairable) by location, WBS, end item, and lot, as well as the cost of each repair part by part number, action, WBS, and function.

The only CSDR requirement that is not contract focused is the Contractor Business Data Report, DD Form 1921-3. It has an Excel format, but most of the data requirements overlap with a Forward Pricing Rate Proposal. Additional types of information include direct costs for the top 10 DoD programs. The annual 1921-3 report is due 60 days after the close of each contractor fiscal year for each business unit that has $250 million of more of CSDR requirements.

5.9.6 Services Contract Reporting

Services contracts governed by FAR Part 37 have to adhere to two primary reporting requirements that affect the accounting system. Service Contract Act reporting found in FAR clauses 52.304-14 and 52.304-15 for indefinite-quantity vehicles is required by FAR 4.17 for the prime and first-tier subcontractors. All cost reimbursement, time and materials, and labor-hour contracts with awards above the simplified acquisition threshold are required to report the cost and labor hours of services contracts. All fixed-price service contracts greater than $500,000 also have to report. Similarly, DoD Manpower Service Contract Reporting is still being written into the DFARS but comes from Section 2330a of U.S. Code Title 10. All service contract awards, except indefinite-quantity vehicles, greater than $3 million are required to report cost and labor hours down to the first-tier subcontractors.[75]

5.9.7 Transactional Data Reporting

The General Services Administration also requires contractors to report their sales for each government-wide indefinite-quantity vehicle. This includes federal supply schedules and government-wide acquisition contracts.[76] One subject matter expert said that the requirement does not necessarily affect the accounting system if sales are tracked in customer relationship management (CRM) tools.

Table 4: Other Requirements with Accounting System Implications

			Practical Requirements		
	Reference	**Threshold**	**Drives accounting detail**	**Drives workflow & reporting**	**Comments**
Systems to Mitigate Asymmetric Information					
Truth in Negotiations Act (TINA)	Title 10 §2306a; FAR 15.403-1; FAR 15.403-4	$2M or more of negotiated, non-commercial contracts and subcontracts; or $2M or more of modifications to a competitively awarded contract.	TINA does not create any accounting system requirements, but to support cost analysis (15.404-1) the contractor may have to tailor the accounting system if individually priced items are not tracked.	FAR 15.403-5 provides instructions for submitting certified cost or pricing data.	Non-commercial modifications to a commercial item over $2M or 5% of the contract requires certified cost or pricing data. Exemptions: Head of procuring activity provides a waiver, adequate price competition (any contract type), and if prices are set by law/regulation.
"Other than" certified cost or pricing data	FAR 15.403-3; FAR 15.404-1(a)(4); FAR 15.404-1(b)(2)	If contracting officer cannot determine price reasonable using price analysis alone.	Same as above.	Similar to above, but without a required format or certification process.	Preference for commercial items is to use price analysis first before requesting information from the company, which may result in cost data.
Cost Monitoring Program & Forward Pricing Rates (FPR)	DFARS 242.302 (a)(S-75)(c)(1)(i)(A)	$200M or more in sales for next contractor fiscal year.		FPRP takes analysis and time per FPR adequacy checklist (DFARS 215.403-1). FPRP/R/A process can take 6 months, and may include a DCAA audit.	When certified cost or pricing data is required, FPRA information is required to be described (FAR 15.407-3).
Optionally required	FAR 42.1701	Less than $200M in sales for next contractor fiscal year.		Same as above.	As requested by contracting officer and initiated by administrative contracting officer
Earned Value Management System (EVMS)	DFARS 234.201; DFARS 252.234-7001/7002; PGI 243.201	$20M or more of cost or incentive type. Optional: $20M or more of FFP. Less than $20M for cost or incentive type.	Accounting by WBS, unit or lot, cost type, and R/NR.	Monthly reporting of lower level cost actuals as part of the Contract Performance Report.	Accounting must be done at the Control Account level, but is often done for Work Packages. Optional for extraordinary circumstances of risk.
EVMS certified by Cognizant Federal Agency (CFA)	DoD Class Deviation 2015-O0017	$100M or more of cost or incentive type.		DCMA compliance review has a 16-step process (DCMA-INST 208). Process may take up to three years.	CFA certification raised from $50M in DoD class deviation 2015-O0017. Standard surveillance covered in DCMA Manual 2301-01.
Cost and Software Data Reports (CSDR)	Title 10 §2334(g); DoDI 5000.73; DoDM 5000.04; DFARS 234.71	Program Thresholds: (1) ACAT I and II; (2) All info system & MTA programs > TY$100M; (3) Optional: All other programs > TY$100M.			CSDR requirements established based on type of acquisition program (Adaptive Aquisition Framework) and program size, as well as contract size/content (detailed below). Non-FAR and commercial items are not exempt from CSDR.
Contractor Cost Data Report	DI-FNCL-82162	All contracts and subcontracts (including non-FAR) greater than $50M, or greater than $20M for high interest contracts (MTA contracts required at $20M).	Cost and hours by end item (and unit/tail number if required), WBS (may be at a lower level than for EVMS), resource categories, and month.	Frequency of reporting specified in the CSDR plan. File Format Specification shows 20 required data tables. Assigning resource expenditures to standard categories is required.	The "FlexFile" along with the "Quantity" (DI-MGMT-82164) reports are replacing legacy formats found in DD Forms 1921, 1921-1, 1921-2, and 1921-5.
Contractor Business Data Report	DI-FNCL-81765C	Contract requirement when the business unit has $250M or more of CSDR requirements.	Similar data as FPRP, but includes direct costs be broken out by top 10 DoD programs and revenue reporting.	1921-3 Excel submission has a different format and process than a typical FPRP submissions, and is due 60 days after the close of each contractor fiscal year.	
Maintenance and Repair Data Report	DI-MGMT-82163	All sustainment contracts more than $50M at the discretion of CSDR planning approval authority.	Requires cost and labor hours by lot, end item, WBS, location/org, maintenance event (depot level repairable). Also, cost of repair parts by part number, action, WBS, and functional working group.	Frequency of reporting specified in the CSDR plan. Format prescribed according to 6 excel tables.	

Table 4: Other Requirements with Accounting System Implications, cont'd

			Practical Requirements		
	Reference	**Threshold**	**Drives accounting detail**	**Drives workflow & reporting**	**Comments**
Services Contract Reporting					
Service Contract Act Reporting	FAR 4.1703; FAR 4.1705; FAR 52.204-14; FAR 52.204-15	All cost reimbursement, T&M/LH service contracts above the SAT, as well as all fixed-price services contracts above $500K.		Provides total cost and labor hours by contract. Also required for first-tier subcontractors to provide their labor hours (not cost).	Exempt: Orders below the simplified acquisition threshold.
Service Contract Reporting (DoD Manpower)	Title 10 §2330a	All service contract awards, except IDVs, greater than $3M in obligations and deobligations.		Contractor reporting to SAM outlined in OSD memorandum, "Revised Department of Defense Contractor Manpower Reporting Initiative," dated Oct. 16, 2019.	DFARS rule is being written to require manpower reporting.
General Services Administration (GSA)					
Transactional Data Reporting	GSAR Alternate I, 552.238-74; GSAR 552.216-75	All Federal Supply Schedule, Government-Wide Acquisition Contract, or other Government-Wide IDVs.		Annual report to SAM. Requires tracking sales by contract.	Does not necessarily affect accounting system if tracked and reported in other ways such as customer relationship management tools.

Definitions:

ACAT = Acquisition Category
CSCI = Computer Software Configuration Item
FFP = Firm-Fixed Price
FPRP/R/A = FPR Proposal/Recommendation/Agreement
GAAP = Generally Accepted Accounting Principles
IDV = Indefinite Delivery Vehicle
MTA = Middle Tier of Acquisition, DoDI 5000.80
R/NR = Recurring/Nonrecurring
SAM = System for Award Management
SAT = Simplified Acquisition Threshold
T&M/LH = Time & Materials/Labor-Hour
WBS = Work Breakdown Structure

6.0 GAAP and Government Accounting Requirements

U.S. securities law requires publicly traded companies to follow GAAP principles and procedures. Government requirements for contractor accounting systems explicitly require general GAAP compliance in two circumstances. First, when undergoing a SF 1408 preaward survey, and second, in a fixed price performance-based payments contract scenario where a clause requiring GAAP compliance is required by DFARS 232.1005-70(b). More specific aspects of GAAP compliance are found in FAR 31.2 cost principles such as allocating indirect costs according to base periods that align with fiscal year and the allowability of taxes if accrued in accordance with GAAP.

GAAP differ in purpose and scope from many of the existing government contractual requirements related to cost accounting. GAAP are focused on businesses' high-level financial performance, whereas most government accounting requirements are focused on the proper allocation of costs to individual government contracts. The purpose of GAAP is to provide commercial firms a standard basis for recognizing costs in financial statements, which in turn enables the public and investors to look across companies and evaluate them in a consistent manner. The purpose of cost accounting standards is to make sure government contractors appropriately charge costs to contracts by measuring, assigning, and allocating costs consistently over the life of a contract. Due to their differing purposes, the prescriptions of both sets of standards are also different. For instance, GAAP do not require contractors to allocate their costs (such as overhead expenses) to specific contracts, which is central to most government accounting requirements. In addition to having different purposes, GAAP and government requirements also differ in scope. GAAP can change year-to-year and a company needs to abide to them for that given year whereas many government standards require compliance for the life of a given contract. Hence contractor efforts required to remain compliant with each set of requirements are distinct.

Since they are designed differently, government accounting standards provide benefits to the U.S. government above and beyond anything afforded by assurances of GAAP compliance. First, as noted by one federal government SME interviewed for this study, defining and removing unallowable costs from a contract has the effect of reducing the overall costs of contracts.[11] Second, certain government requirements like CAS enable the government to recover increased costs due to accounting practice changes and contractor failure to comply with CAS standards or disclosed practices. This limits the government's exposure to any increases in contract cost. Third, government requirements facilitate an easier comparison of proposals and contracts from one contractor to another, thereby assisting the acquisition process.

Several risks to the government for modifying or eliminating cost accounting requirements have been noted in previous documents.[53], [77] One risk to the government for not maintaining CAS compliance measures would be to lose the right to contract price adjustments due to a contractor's failure to comply with the required practices.[77] Another concern noted in the same document was that contractors may strategically use the broader FAR or GAAP criteria to justify reallocating costs between cost-type government contracts and other contracts. Additionally, many of the CAS include requirements for contactors to maintain written records of accounting practices, without which it would be more difficult for government auditors to cite a contractor for noncompliance with disclosed practices.

Despite their differences, there have been efforts to reconcile GAAP with government requirements. Arguably the most significant effort to do so has been conducted by CASB since it was directed to do so in Section 820 of the National Defense Authorization Act for Fiscal Year 2017.[78] Section 820 included an explicit provision for CASB to ensure that cost accounting standards used by Federal contractors rely on commercial standards and accounting practices and systems "to the maximum extent practicable." CASB was also directed to report on its actions taken to conform CAS with GAAP and to minimize the burden on contractors while protecting the interests of the Federal Government.[78]§ 820(e)

As noted by a GAO report issued in 2020, CASB has generally been meeting its legislative requirements.[53] CASB has taken initial steps by producing two Staff Discussion Papers[79], [80], publishing an Advance Notice of Proposed Rulemaking[81], and responding to public comment on their initial efforts.[82] As part of their first Staff Discussion paper, CASB made an initial assessment of the conceptual nature of the 19 CAS rules and their potential for overlap with GAAP (see Appendix 4). The Board prioritized the cost accounting standards that were deemed to have the greatest possibility of overlap with GAAP and have therefore focused initial conformance efforts on cost measurement and assignment of costs to accounting periods.

6.1 Example of comparing GAAP to FAR 31 and CAS 411

There is an inherent difficulty in reconciling line-by-line multiple sets of requirements designed to address different concerns, a point reinforced by some of the public comment on CASB's first Staff Discussion paper. As mentioned above, CAS deal specifically with the proper measurement, assignment, and allocation of contract costs whereas GAAP are concerned with financial reporting. Also, GAAP have been revised significantly since its inception whereas most of CAS have remained static since their original promulgation in 1972-1980. This makes any comparison between these two sets of requirements a moving target, and it can be potentially outdated even within a year's time. Finally, some of the statutes differ from one another only in level of detail or specificity, but not in content. For example, CAS provides far greater detail in many instances than does GAAP or even other federal government regulations such as FAR 31 on the same topic. A closer comparison between 48 C.F.R. 9904.411 (hereafter abbreviated as "CAS 411"), GAAP, and FAR Part 31 will serve to illustrate this difficulty.

CAS 411 is titled *Accounting for Acquisition Costs of Material* and provides criteria for the accounting of acquisition costs of material and the use of inventory costing methods during the life of a contract. The standard was initially published May 5, 1975, in 40 FR 19425 and later amended in 1992 (57 FR 34167). Among other things, CAS 411-50(b) delineates five acceptable inventory costing methods: first-in, first-out (FIFO), moving average, weighted average, standard cost, and last-in, last-out (LIFO). CAS 411-30(a)(6) and CAS 411-40(a)(7) provide specific definitions for two of those methods: moving average and weighted average cost, respectively. By comparison, GAAP does not describe in detail nor define specific inventory costing methods, merely referencing the use of an "average" method, and instead offers the general constraint that "the major objective in selecting a method [for inventory costs] should be to choose the one which, under the circumstances, most clearly reflects periodic income" (ASC 330-10-30-9). Similarly, FAR 31.205-26 only requires that the purchase costs of store materials used in the performance of a contract be captured by "any generally recognized method of pricing such material is acceptable if that method is consistently applied and the results are equitable" (FAR 31.205-26(d)). This comparison illustrates how the CAS requirements are significantly more detailed than other rules concerned with the same topic, making any one-to-one comparison more complicated.

7.0 Dual Narratives

This section explores two narratives regarding government cost accounting requirements and whether they are a true barrier to commercial company participation in the B2G marketplace.

The preceding sections have detailed how government accounting requirements are more rigorous than GAAP because they require contract costing to a level that many commercial companies may not track otherwise. This observation was supported by subject matter expert interviews conducted with representatives from both commercial and government sectors. The observation that government requirements exert additional cost and effort on commercial companies does not seem in doubt. However, there are two distinct narratives expressed by the SMEs and found in existing literature as to whether these extra requirements represent a true barrier to entry. Most of the government SMEs believed the requirements were not overly onerous and were worthwhile to both government and its suppliers. Most of the commercial company SMEs differed in this perception; they felt that the accounting requirements were heavily considered as a negative factor in the decision-making processes of commercial companies seeking to become government contractors. Certain factors like size of company, industry type, and years of incumbency were mentioned as possible factors that can moderate how prohibitive the accounting system requirements may be for a new entrant.

When it created CASB in 1970, Congress directed that it "shall take into account the probable costs of implementation compared to the probable benefits" when setting CAS requirements.[83] Indeed, some of the initial amendments to the requirements reflected this sentiment; for example, the creation of a modified-CAS level of coverage in 1977 that today requires compliance with only four of the 19 standards was done in this spirit. The intent and purpose of CAS and other similar cost accounting requirements remains clear. The outstanding question, and one that is characterized by two camps of thought with some theoretical basis and limited evidence for each, is whether the cost of compliance is overly burdensome and an actual barrier for commercial company participation in the B2G market.

Some evidence that cost accounting requirements represent a barrier to commercial company participation in government, and defense, marketplace include the following:

1. There is a healthy amount of evidence and public testimony from commercial companies, defense contractors, and professional and trade associations that have expressed this view over time[77], e.g., [84], [85] The Section 809 panel, a panel established to advise Congress on streamlining defense acquisition regulations, noted in the second of three volumes of its 2018 report that several independent studies had confirmed the existence of companies that declined pursuing Government contracts due to cost accounting requirements (in most cases, CAS-covered contracts).[86] That same report also noted that despite substantial changes in what and how DoD conducts purchases, CAS have remained largely unchanged since the 1970s except for changes in monetary thresholds. In this report, the panel recommended that CAS program requirements be modernized considering the evolving nature of both the commercial marketplace and government acquisition practices. For instance, at the time that CAS were created most major defense contracts were for hardware and it may be difficult to apply to services or software purchases. Additionally, according to the report, the growing use of indefinite quantity and task order contracts has created

issues regarding coverage and cost impact that were unforeseen when CAS were created.[86] The report also commented that "DoD acquisition policies, procedures, and practices have evolved, and improvements in technology, business practices, and pricing policies have lessened the government's contract cost accounting risks."[86, p. 114] Finally, the report made several recommendations intended to make CAS requirements less of a burden on the defense acquisition supplier base, repeatedly referencing Congress's original dictate that the probable costs of implementation should be compared to the probable benefits. It concluded that to varying degrees CAS-related requirements can impose systemic, financial, and administrative obligations on contractors, sometimes substantively as in the case of contract subject to full CAS coverage.[86]

Various government agencies and consulting reports have also reported that regulations such as CAS can create high entry barriers for companies looking to enter the B2G market. For example, a report titled *Assessing and Strengthening the Manufacturing and Defense Industrial Base and Supply Chain Resiliency of the United States* prepared by the Office of the Under Secretary of Defense for Acquisition and Sustainment, included bespoke accounting standards as one DoD business practice that may have a deleterious effect on the viability of the private sector supplier base.[87] A Defense Business Board study titled *Innovation: Attracting and Retaining the Best of the Private Sector* noted that many commercial companies are focused on GAAP compliance and are likely to eschew stricter and more costly DoD contracts with associated audit requirements. That same study stated that many companies are unable to make the business case for either replacing preexisting accounting systems or developing a parallel system in order to comply with federal requirements.[88] Empirical evidence from Government Accountability Office (GAO) reports have also reported on the probable negative impact of CAS-specific requirements on private sector operations and intentions to become federal contractors.[84], [89]

2. Short of outright withdrawal from the B2G marketplace, certain contractor behavior can serve as evidence that cost accounting system requirements are a burden. For example, many companies purposely create business segments devoted solely to government contracts that remain isolated from other business units in order to avoid exposure to Government requirements. This has been reported on in government documents,[77], [89] is reflected in CAS-specific consulting and training,[90] and was commented on during several SME interviews.[11], [47], [48], [91]–[93] At a minimum, compliance with government cost accounting requirements seems to require thoughtful reorganization or management by companies, which means additional resources have to be brought to bear.

3. There are unique things about government contracting like unallowable costs that are likely to not be addressed by default in existing commercial cost accounting systems. [11], [47]–[49], [68], [92], [94] Therefore, most existing commercial systems will require at least some modification to be deemed compliant with government requirements.[48] Only one SME expressed an opinion that existing commercial systems were likely to be sufficient for immediate application to government contracting work.[47] Additionally, although many packages like QuickBooks can be tweaked, they were not originally designed to be government-compliant, so there can be unforeseen issues with customization.[95] Finally, the accounting system likely does not exist in isolation of other business systems (e.g.,

time-tracking system, estimating system), so implementation efforts need to take into account the complexity of interrelated systems.[11], [47]–[49], [94]

In contrast to the above narrative, there are clear benefits to the government and several counterpoints that cost accounting requirements do not truly represent a barrier for a commercial company becoming a government supplier.

1. There is a strong rationale that these cost accounting systems should be in place to reflect "good" accounting practices, and that good accounting systems increase the confidence in a contractor's business operations and ability to perform. This sentiment was encapsulated in a Federal Register response to supplier comments about rules surrounding performance-based payments: "Systems that identify costs with the projects for which they are incurred (''job costing,'' as a broad term) are not at all unique to Government requirements. It would be highly unlikely for a fiscally sound company to have no means of identifying the costs of performing a contract."[85, p. 19684] To that end, every SME interviewed for this study made some comment regarding the necessity of a commercial company to track costs for GAAP compliance, internal management, or loan purposes distinct from any governmental requirements. Several SMEs felt that companies likely have existing systems in place to provide cost accounting info as it is critical for business matters like reliably estimating costs on future work.[49], [50], [95] Some SMEs mentioned that the more rigorous standards would only apply to larger companies, and these companies are even more likely to have access to this information given their commercial standing. These SMEs felt that, for example, modified-CAS requirements are largely covered by FAR 31 requirements covering cost reimbursable contracts.[49], [50], [92], [94]

2. Many SMEs commented on various benefits to the government resulting from cost accounting requirements.[11], [48], [49], [68], [94], [95] One benefit of the rules was that they adequately resolved the initial problem for which requirements such as CAS were created. The oversight assures taxpayers that companies are not overpricing their products or not submitting inappropriate costs for reimbursement to the government; in essence, the rules ensure fairness and accountability.[49], [50] Several SMEs noted that companies can try to shift costs from fixed price contracts or other underperforming government contracts to cost-reimbursable contracts.[11], [49], [50] These SMEs also stressed that the requirements help prevent cost accounting changes that would result in greater costs to the government. There are cost savings to the government resulting from price adjustments based on contractor unilateral cost accounting changes.[49], [50] It was also mentioned that cost accounting standards allow the government to compare the costs of production between companies during a competitive bidding process and assist in later evaluation of contractor performance on similar products and services.[47], [49], [50] Finally, one SME felt that the very concept of unallowable expenses in effect represents a form of cost avoidance for the government.[11]

3. Beyond noting the benefits for the government, many SMEs explicitly stated that cost accounting requirements were either a necessary cost or that they even benefit contractors in some fashion. Some SMEs mentioned that any costs related to these requirements should be considered necessary for engaging in the B2G marketplace, especially on a prime contractor level.[49], [50], [68], [94], [95] One SME described in detail how she felt compliance

with the rules outweighed any original costs required to do so.[95] It was also noted that accounting system implementation costs can be considered allowable and recoverable by the contractor in many instances.[48], [49], [68], [95] Several SMEs noted the cash-flow advantage to companies who qualified for progress payments by providing cost-type data.[11], [47], [68] Finally, there was a consistent refrain that the government is a reliable customer that always makes its payments, which in itself is beneficial to any commercial company.[11], [47], [49], [68], [94], [95]

Two final themes involving small businesses and technology companies were heavily represented in the SME interviews conducted for this study. These themes will be considered in the design of the original research to be conducted for the second half of this report.

First, there was a strong sentiment among many of the SMEs that cost accounting requirements are likely to exact a greater toll on smaller companies.[47], [49], [68], [91], [92], [94], [95] Although some of the system costs may be reimbursable under a government contract, some of this capability (software, staff, expertise) likely needs to be in place prior to any award.[68], [94], [95] One consultant who deals with small businesses seeking to become prime contractors remarked that these businesses often do not have written policies or documentation in terms of their accounting processes and procedures.[95] Another SME working in government contracting commented that many small businesses have not had an accounting system audit performed in the past, and that there seems to be a perception that this review was required in order to be legitimately considered for prime work.[94] Also, there are ancillary costs that necessarily accompany the cost of the accounting software system, especially in terms of human capital and staff expertise.[93]–[95] Most small businesses do not have a accountant who has been specifically involved in government contracting.[94], [95] Finally, perhaps relevant to larger companies as well, there may also be negative implications for the management processes or culture of a company. One SME offered the example of a software development company that had declined a large contracting opportunity in part because the majority of their staff balked at the timekeeping requirements of logging work hours against a specific project.[93]

Second, several SMEs noted that government accounting requirements probably indirectly promote incumbency if incumbent firms are better situated to possess important institutional knowledge and are more likely to have legacy systems that have been deemed complaint with government regulations. One consulting agency report noted that traditional aerospace and defense (A&D) industry firms likely have incumbency advantages based on years of government contracting, and as a result technology companies less experienced with government contracting may be more inclined to sell off-the-shelf commercial products rather than engage in long-term defense contracts.[96] This might hurt efforts to attract new, innovative companies that have not previously been awarded government contracts. As noted in the Section 809 panel report, several independent studies have shown that the government has had trouble accessing important technologies because of supplier hesitancy to accept a CAS-covered contract.[86] Another paper found a substantial decline in new companies supplying to DoD each year over the last decade, and that the majority of first time companies were not innovative commercial technology companies.[97] It should be noted that a direct causal link between accounting requirements and substantial decline in new DoD suppliers has not been established. There are many other potential factors at play including procurement complexity, lengthy contract timelines, security clearance processes, and cybersecurity requirements.[87] However, there appears to be a possibility that accounting system requirements may in part reduce the incentive to become a DoD supplier and therefore contribute to the decline in both first time suppliers and innovative commercial technology companies.

8.0 Commercial Company Interviews

Twelve semi-structured interviews with senior-level company representatives were conducted by GMU researchers over the course of two months. These companies were mostly identified through a combination of the researchers' personal contacts and referrals, but also through company searches of USASpending.gov and SAM.gov data. The interviews focused on the experiences of the company representatives related to government contract work and accounting requirements and addressed topics such as the decision-making processes and costs of implementing a FAR/DFARS compliant cost accounting system.

Table 5 presents the interviewee and company information for the final interview sample of this study. One interview (Company #8) did not contribute to the study as the company was founded in March 2020 and had not yet been awarded or even pursued government contracting work. All the remaining 11 interviews informed the findings for the costs of accounting system compliance while only some of the interviews (especially Companies #9 and #12) were relevant to instances where companies declined government contracts.

The objective of the interviews was to understand the impact of government accounting system requirements on commercial companies, defined to be companies that derived less than 25 percent of 2019 revenue from the following customers: Department of Defense, Department of Homeland Security, or National Aeronautics and Space Administration. This definition encountered a number of difficulties. For example, Company #7 of our interviews reported 90-95 percent of revenue came from defense dollars, but only 15 percent was in prime contract awards and so it met the strict profile of commercial companies. Company #11 is another interesting case. They were able to win a large defense subcontract that represents a significant portion of total revenue. While prime awards represent zero percent of their business, 77-85 percent of revenue ultimately supports defense work. However, Company #11 does not see defense as a growth area, instead focusing development and marketing on commercial customers. Rather than create a federal subsidiary, Company #11 runs a second accounting system specially for federal work to stay compliant.

Besides focusing on prime awards, the profile also focused on subsidiaries rather than parent companies. Five companies were subsidiaries, but only four existed in 2019. Company #2 is an information systems startup that was less than 10 percent government revenue in 2019. In 2020, they decided to set up a subsidiary directly targeting the federal sector and installed a FAR/DFARS compliant accounting system. Federal revenue in 2021 grew to be closer to 30 percent. However, DFARS 212.102 may exempt nontraditionals from contracts with CAS or TINA requirements. Company #3, a major professional services provider, created a subsidiary in 2015 focused not only on federal, but state and local government. DoD represents 16 percent of total subsidiary revenue, with DHS and NASA a marginal amount more. They run the same accounting system across the subsidiary. Company #6 is a majority defense contractor, as is its parent company. Company #1 is a large subsidiary with 24 percent government work that was bought by a conglomerate even more focused on government. By contrast, Company #9 has 80 percent of revenue in defense prime awards but is a subsidiary of a larger commercial conglomerate.

While Companies #6 and #9 did not meet the commercial profile, Company #9 was an important interview for the study. While 80 percent of their revenue came from defense customers, Company

#9 did not have a FAR/DFARS compliant accounting system. As a result, they decline to pursue defense contracts that contain the requirement.

Companies #4 and #10 are also majority defense contractors. The research team found it difficult to verify before talking to companies whether they met the commercial company profile or not. While the recruitment material included the study parameters, some companies were given by referral. Findings from these interviews will not be thrown out in the following discussion, but instead compared and contrasted to those that met the commercial company definition.

Company #8 does not meet the profile because even though it has less than 25 percent government contracts, it has not yet contracted with government at all and thus cannot be considered a supplier. It has not even started down the path towards compliance or their first federal contract. It thus provided no insight into their experience navigating accounting system requirements. The company responded to the interview because it has donated products to government in the past and wishes to do business in the future. It is weary, however, of entering through Small Business Innovation Research (SBIR) program because of perception among venture investors.

Companies #5 and #12 are both manufacturers who have supplied DoD customers for decades, but government represents less than 25 percent of their revenue. Company #5 is FAR/DFARS compliant throughout its business units. Only one business unit is CAS-compliant, and they acquired it along with the accounting system several years ago out of bankruptcy. The CAS-compliant business unit is the only one that handles defense prime contracts, the others perform on subcontracts only. Company #12 is not FAR/DFARS compliant and never intends to become compliant. They do not seek out federal contracts, preferring to let defense customers come to them with contracts that do not have accounting system requirements.

Table 5: Interviewee and Company Information

Company	Company Representative Title	Industry	Company Size	% Revenue from DoD/DHS/NASA	Business Notes	Fits profile
1	Director, Government Contracts*	Manufacturing	Large	24%	Experienced DoD supplier, bought by large govt-focused conglomerate.	Yes
2	President/GM & Board Director	Information Technology	Small	less than 10%	New IT company, created govt subsidiary after 2019. This subsidiary helped the company grow proportion of revenue from federal contracts from 10% to 30%.	Yes
3	Managing Director, Finance	Services	Large	16%	Experienced DoD supplier. Subsidiary created a few years ago for govt, including state and local.	Yes
4	Vice President/CFO	Services	Small	60-80%	Experienced DoD supplier. No subsidiaries.	No
5	V.P. of Finance/CFO	Manufacturing	Large	15-25%	Experienced DoD supplier. No subsidiaries.	Yes
6	Senior Manager, Government Compliance	Manufacturing	Large	50-77%	Experienced DoD supplier, bought by large govt-focused conglomerate.	No
7	Chief Financial Officer	Services	Small	15%	Experienced DoD supplier. 90-95% of work goes to govt, but 80% is as a subcontractor.	Yes

8	Founder & CEO	Information Technology	Small	0%	New IT company, wants to do business with DoD but is not mature enough to go after contracts yet. Donated products to govt customer.	No
9	Vice President, Contracts & Legal	Manufacturing	Small	65-70%	Experienced DoD supplier, bought by large commercial conglomerate. Not FAR/DFARS compliant by choice.	No
10	Director of Accounting*	Services	Small	40-60%	Experienced DoD supplier. 90% DoD and Veteran's Affairs, both prime and sub. No subsidiaries.	No
11	Sr. Vice President of Finance & Operations*	Information Technology	Small	0%	New IT company, one large DoD subcontract (77-85% of revenue), but sees commercial as its future.	Yes
12	Chief Financial Officer	Manufacturing	Small	Less than 25%	Experienced DoD supplier, 100% employee owned. Not FAR/DFARS compliant by choice.	Yes

* Additional representative(s) from the same company were present in the same interview in addition to the one listed here.

The following sections will focus on the experiences of the nine companies that implemented an accounting system compliant with government requirements. The section begins with an overview of the cost accounting systems used by all the companies interviewed for this study. It contains general information regarding the types of systems used and perceptions of the efficacy of commercial accounting systems to handle processes required by government regulations. The next subsection contains information regarding the costs of a FAR/DFARS compliant cost accounting system (e.g., software licenses, implementation consultants, upskilling or hiring staff with government expertise), including estimates of cost as a percent of revenue. The final subsection includes descriptions of any cost-benefit decision making processes undertaken by the companies as they considered becoming government suppliers or specifically pursuing cost-type contract work. It concludes with observations of the additional utility of using a FAR/DFARS compliant accounting system for commercial work or a company's broader business operations.

8.1 Accounting System Software

Nine of the 12 companies implemented an accounting system compliant with Government requirements. Of the remaining three companies, two (Companies #9 and #12) have developed in-house, proprietary systems that are not considered FAR/DFARS compliant. The third non-compliant company (Company #8) uses an off-the-shelf version of QuickBooks and was primarily focused on tax compliance.

The three companies that were not FAR/DFARS compliant ran their accounting systems the same way across their company and did not have any subsidiaries or parent companies. Compliant companies, by contrast, were more of a mixed bag. Two commercial companies created government-unique subsidiaries which had different accounting systems than the parent (Companies #2 and #3). Two other companies (Companies #1 and #5) had different accounting systems across their business units with varying levels of compliance. This is largely a consequence of mergers and acquisitions over time. Within a business unit, however, Company #5 ran their accounting systems uniformly across commercial and government work while Company #1 had special processes for federal work that did not use FAR 12 commercial item procedures. This outcome may reflect the fact that almost all federal contracts Company #5 received were firm-fixed price or fixed price EPA, while Company #1 received a wider range of contract types including cost-type. Company #11 has no subsidiaries or business units. It runs two accounting systems to maintain FAR/DFARS compliance. Their commercial work runs on NetSuite alone, while federal work runs on NetSuite and Unanet (specially licensed to handle timekeeping). Company #11, however, cautioned that they have not tested the workability of this dual system since they have not yet been awarded a cost-type contract where it is required.

Companies that derived more than 25 percent of their revenue from federal sources were more likely to run their accounting systems the same across federal and commercial work. All four companies that did not meet the definition of commercial for this study ran accounting systems the same across their company (Companies #4, #6, #9, and #10). Of the non-commercial cohort, only Company #9 was not FAR/DFARS compliant. Company #7 also ran their accounting system the same across federal and commercial work, and while they met the definition of "commercial" company for this study with just 15 percent prime contract awards, 90-95 percent of their total business ultimately services defense customers.

The small sample of companies interviewed for this study suggest there is not a single strategy for accounting system compliance, and indeed outcomes may be contingent on the unique history of each company. Companies whose customers are primarily federal are likely to deploy a FAR/DFARS compliant accounting system throughout their company and run it the same regardless of customer type. Company #9, however, is a glaring example of the opposite. It is not compliant at all. By contrast, companies that focus on commercial work have a few strategies available to them. First, create a government-only subsidiary. Second, create compliance within certain business units but not others. And third, maintain multiple accounting systems in the company and run FAR/DFARS compliant processes only for federal contracts requiring it.

Most of the companies have deployed a FAR/DFARS compliant accounting system specially designed to handle government accounting requirements, with Deltek Costpoint present in half of the companies. Five of the companies (Companies #3, #4, #7, #10, and #11) purchased their system to replace an existing commercial accounting system while one start-up company (Company #2) had decided to proceed at the outset with such a system. Two of the other companies inherited their compliant accounting systems through company acquisitions. One of these companies (Company #5) was using a previously developed in-house system while the other company (Company #1) had similarly chosen to retain the commercial accounting systems were already embedded in their multiple business units. Only one (Company #6) of the nine companies with FAR/DFARS compliant accounting systems was using a customized version of a commercial accounting system, in this case PeopleSoft. Interestingly enough, this company is a majority defense contractor and so is its parent.

Of the 11 companies that performed on defense contracts, eight incurred costs to implement a FAR/DFARS compliant accounting system. Company #5 reported that it did not incur additional costs to implement or even maintain their FAR/DFARS accounting system. It’s CAS-compliant business unit was obtained in a company acquisition, and so it did not know the cost involved with its implementation. Companies #9 and #12, on the other hand, do business with DoD without a government approved accounting system. Company #9 is a sole source provider of its product. Company #12 is not a sole source provider but is in a concentrated sector within the United States. Neither Company #9 nor #12 actively seek to bid on defense contracts, but rather let the customer come to them.

Several company representatives provided additional details about why their company had chosen to implement a specialized accounting system rather than attempt to modify an existing commercial system. Interestingly, none of the companies appear to have conducted an extensive cost-benefit analysis for implementing a new government-compliant accounting system versus adapting an existing system to meet government compliance. Rather, their respective decisions to use specialized government accounting software platforms were mostly grounded in prior, difficult experiences with using commercial systems for government contract work. For instance, one company representative provided extensive detail about the difficulty of getting CLIN-level detail and proper allocation of indirect costs out of their previous commercial system (PeachTree) (Company #7).

Two companies mentioned QuickBooks as their original cost accounting system that had to be replaced with software capable of handling government requirements. One of these companies

(Company #10) reported that QuickBooks was capable of being compliant earlier when the company only held three government contracts, but even so it required additional work to make it compliant. With the advent of more contracts it turned out to be too cumbersome to maintain. Another company reported that they had failed an earlier audit involving a Department of Energy contract; the experience highlighted to management that a new accounting system and set of policies was going to be required for future DoD work (Company #2). Finally, another company reported that they had initially shared an SAP accounting system with their parent company, but that over time all its systems and operations had to be firewalled from the larger organization in order to adequately handle more stringent levels of contract compliance (Company #3).

Unfortunately, the representative for the only company that modified a commercial system to be FAR-DFARS compliant (Company #6) was a new employee of that company and could not provide any details about that decision. He did, however, mention that while "[PeopleSoft] has CAS-compliant capabilities, it is just more effort to get out of it what you need for government reporting" and preferred the ease of using Deltek Costpoint software in a previous company.

Table 6 below displays cost accounting system information for the companies included in this study. Details include what FAR/DFARS compliant cost accounting system is currently being used (if applicable), how the system was acquired, what the prior system was, whether the company is FAR/DFARS compliant, and business notes that provide additional context to the information.

Table 6: Accounting Systems of the Companies in the Interview Sample

Company	New Cost Accounting System	Acquired the system by…	Former System	FAR/ DFARS compliant?	Business Notes
1	No Change	Company acquisition	Multiple (JD Edwards, Deltek, SAP)*	Yes	Has 10 or 11 different accounting systems at separate business units obtained through acquisitions, varying degrees of FAR/DFARS compliance. Any non-FAR 12 federal contracts must go through lengthy legal review, ensure compliance. Takes manual effort to perform job cost and comply with govt requirements.
2	Deltek Costpoint	Bought newly	*Unknown*	Yes	Created federal subsidiary that is FAR/DFARS compliant while the parent company focuses primarily on financial accounting. Company has not yet had to run their FAR/DFARS compliant system. Waiting until there's a large enough cost-type contract that makes business sense.
3	Deltek Costpoint	Bought newly	SAP	Yes	Accounting runs the same for all customers within govt subsidiary, but differently from parent company. Mostly competitive FFP & T&M contracts, 8% cost-type.
4	Deltek Costpoint	Bought newly	QuickBooks	Yes	Accounting run the same for all customers. Primarily a defense contractor. 95% FFP contracts, some T&M. Avoids cost-type.
5	In-house	Company acquisition	In-house	Yes	Acquired business unit that does all prime contracts, is CAS-compliant. Other units are subcontractors to govt, are FAR/DFARS compliant. Mostly FFP and fixed price EPA contracts.
6	PeopleSoft	Converted existing system	PeopleSoft	Yes	Accounting run the same for all customers. Primarily a defense contractor. Prefer FFP with FAR 12, but 20% is cost-type development work. About 10% of work is CAS-covered.

7	Unanet	Bought newly	Peachtree (Sage)	Yes	Accounting run the same for all customers. Primarily a defense subcontractor. Work shifted over time from mostly cost-type to now mostly fixed-price with a little T&M. Excepts greater cost-type in future.
8	No change	N/A	QuickBooks	No	Does not run a cost accounting system, focuses on financial and tax reporting. Has not yet been awarded a govt contract.
9	No change	N/A	In house	No	Accounting runs the same for all customers. Primarily a defense contractor. Says 90% of product cost is "assumption." Does not accept any govt contract with accounting system requirements.
10	Deltek Costpoint	Bought newly	QuickBooks	Yes	Accounting run the same for all customers. Primarily a defense contractor.
11	Unanet**	Bought newly	NetSuite**	Yes	Runs accounting systems differently for govt customers, adds Unanet layer on top for timekeeping. Has not been used yet on a federal contract.
12	No change	N/A	JD Edwards, customized	No	Accounting run the same for all customers. Does not accept any govt contract with accounting system requirements.

* The company representatives did not mention any instances of converting existing systems or purchasing other systems newly. All existing systems were kept in place after company acquisitions.

** The company will retain the former system to handle all accounting functions except timekeeping and indirect costs recording, functions which the new system will handle.

8.2 Costs of Implementation and Maintenance

This subsection addresses the costs reported by existing government suppliers for implementing and maintaining a government-compliant accounting system. First, costs as reported by company representatives are analyzed according to three categories: (1) Startup costs including initial configuration and consultants; (2) Employee costs stemming from increased staffing and higher compensation rates; and (3) Accounting system software costs. Second, the costs will be estimated as a percent of company revenue. Third, ancillary costs will be addressed including other concerns reported by company representatives that cannot be reported in terms of dollars or labor hours.

8.2.1 Estimated Cost of Compliance

In most cases, companies did not know the full cost of fulfilling government's accounting system requirements. Eight out of nine companies that implemented a FAR/DFARS compliant system reported additional expense. Yet the bases of estimates varied from one company representative to another, often excluding various elements of cost. Table 7 below summarizes the additional cost of implementation and maintenance of an accounting system that meets government requirements relative to the prior system cost.

Table 7: The Cost of Accounting System Compliance Compared to the Prior System

Company	Startup Costs	Annual Employee Costs	Annual Software Costs
1	Not available.	FAR 15 is bw 4 and 8 times greater administrative costs compared to FAR 12, includes compliance to six FAR/DFARS business systems.	Not reported.
2	$1 million first-year costs including consultants, employee salaries, and software licenses.	Had to hire govcon accountant with 30 years of experience and a contract hire as relief valve for staff accountant.	Not reported.
3	Not available.	Of 14 people in the accounting department ($2 million a year budget), 10 exist solely to satisfy govt requirements.	Not reported.
4	Not available.	One additional person to manage indirect costs.	Accounting system license cost four-times more than commercial.
5	Not available.	Little difference.	No additional cost.
6	Not available.	Not Reported. 15-20 total people in accounting compliance.	Not reported.
7	$100,000 and one year.	Small increase.	$100,000 additional cost for licenses.
8	N/A	N/A	N/A
9	N/A	N/A	N/A
10	$25,000 for consultants.	Not Reported. Total added cost reported at $150,000.	$32,000 for licenses.
11	$10,000 for consultants.	Not Reported.	$30,000 additional license costs on top of existing licenses that cost $36,000 annually.
12	N/A	N/A	N/A

Monetary costs differ substantially based on multiple factors. This includes size of the company and the number of users, the business sector, the types of contracts they take on, whether they run job-cost systems for commercial customers, and other context specific to the company.

The wide range of accounting system costs also came out of our subject matter expert interviews. For example, SME # 8 estimated the additional employee costs to gear up for compliance was $700,000, not including the cost of the system or consultants. SME #1 was the Director of Government Accounting and Compliance for a large DoD contractor. He reported spending at approximately $100 million over the past two years on modernizing the accounting system. He said most of the large defense contractors have invested about the same but at a minimum the total cost is in the tens of millions.

It is difficult to find corroborating information in open sources. However, market research on FAR/DFARS compliant accounting systems provided additional details about configuration and licensing costs. The market research included looking at pricing sheets as well as informal discussions with software vendors. Most accounting system software are priced by the total number of employees at the company. Software vendors confirmed that the per license cost goes down marginally as the number of employees goes up. For a company with 50-60 employees, annual license costs per employee range between $400 and $700 whereas commercial accounting software counterparts are between $100 and $200 (often on the lower end). As for configuration costs, estimates range between $9,000 and $25,000 for a small company of 50-60 people.

These prices seem in-line with the information provided by company representatives. Two companies reported how the cost of a FAR/DFARS compliant accounting system compared to their prior or other commercial accounting systems. One company reported Deltek license costs of $531 per person per year for each of their 48 staff. However, the cost jumped to $710 person per year for 1099 workers. That same company also reported that their previous QuickBooks licenses (last held in 2018) had been roughly $120 person/year (Company #10). This is comparable to the other company that had also previously used QuickBooks; that company's representative estimated that the licenses for their previous off-the-shelf commercial accounting software had cost about 25% of the licenses for specialized FAR-DFARS-compliant software (Company #4).

Several other companies offered additional cost estimates. One small, information technology company of 100-150 people reported Unanet costs of $30,000 a year and NetSuite costs of $36,000 a year but cautioned that they had only licensed the timekeeping module of Unanet for their business. A small services company (Company #7) with 200 staff estimated the cost for initial training, licenses, and start-up to be $100,000, with annual maintenance costs to be $100,000. This excluded additional costs of accounting staff effort within the company. Finally, a small, startup information technology company estimated $1 million for total costs over the first year of implementing a FAR/DFARS compliant accounting system, mostly for infrastructure, building technical connections to other business systems, hiring personnel with government experience, and getting expert advice from what he considers a "cottage industry." (Company #2)

Multiple SMEs and company representatives reported the largest cost driver for contract compliance was the personnel needed to support compliance work and that this was driven by the contract type. A government SME stated, "For the most part, fixed price contracts do not trigger the requirement, however, cost reimbursable contracts do. The most common is cost plus fix fee" (SME interview #9). This same relationships between cost and contract type were echoed by multiple contractor representatives. "We like to stay in the FFP contracts. There is a lot more maintenance in a cost-type contract." (Company #4) The representative of Company #6, a large defense-focused firm, said that the personnel required for accounting compliance scales with cost-type contracts. "The volume of transactions and number of issues will be greater." The Cost Accounting Standards were also a concern to him. "It's a few, large CAS-covered contracts that drive all the work." About 10 percent of their contract work was CAS-covered.

8.2.2 Additional Cost for Compliance as a Percent of Revenue

Determining the additional cost as a percent of annual revenue did not provide a consistent percentage due to many factors. In our sample of companies, revenue did not reliably correlate with additional costs of government accounting system requirements. As discussed above, the most significant drivers of additional costs for compliance appears to be the type of contract as well as number of employees. Additional cost variances were caused by the type of business and the number of accounting systems used by the company. Due to these complexities, none of the companies provided an estimate for the additional cost as a percentage of revenue. However, GMU researchers were able to calculate rough estimates for five companies.

Two companies were able to provide enough information to directly calculate the additional cost as a percentage of revenue, one for annual maintenance and one for implementation. To determine the additional cost for companies with less information we constructed a simple cost model. In this way we estimate the additional cost of maintaining a compliant accounting system as a percent of revenue for three more companies.

Company #10 is a small business with 40-60 percent of revenue derived from defense customers. The company provided both the current cost of their compliant system ($250,000) and their estimate for the total cost if they were not compliant and instead used software such as QuickBooks ($100,000). Both estimates included the software, employees, and all other costs. In this case, the additional cost of accounting compliance is $150,000, or 1.5% of their $10 million annual revenue. This is an on-going cost that the company incurs every year.

Company #2 is a small business with 10 percent of revenue derived from federal sources in 2019. The following year, they stood up a federal subsidiary that is FAR/DFARS compliant. They also believe it could be CAS-compliant if necessary. The representative reported that the initial rationale for creating a federal subsidiary was accounting compliance. The company went through a DCAA audit after receiving a T&M contract and received several deficiencies. The total cost directly related to accounting system in the formation of the subsidiary, including consultants, employees, and software, was $1 million and one year, or roughly 4 percent of the total parent company's revenue in 2019. However, over the course of implementation in 2020-2021, the company grew its revenue, particularly in defense contractors. As a percentage of 2021 revenues, the implementation cost of accounting system requirements was just above 2 percent.

Company #5, a large manufacturer, stated it had little or no additional costs of complying with government accounting system requirements, or zero percent of revenue. This company primarily worked on firm fixed price or fixed price EPA contracts. They had not taken on a cost-type contract in at least 10 years.

GMU researchers were able to calculate the additional cost as a percentage of revenue for three other companies by constructing a cost model. SME #6 and representatives from Companies #10 and #11 reported that the average wages for an accountant with no government accounting experience is approximately $100,000 per year and $150,000 per year for an accountant with government experience. For comparison, the Bureau of Labor Statistics reported in the May 2020 Occupational Employment and Wage Statistics survey that accountants and auditors make an average annual wage of $81,660 while the 90th percentile accountant/auditor earns $128,680. Moreover, the Employer Cost of Employee Compensation survey reports that 68.4 percent of an employee’s total compensation costs are covered by wages for management, business, and financial occupations.[98] This means the total cost of an average accounting employee is nearly $120,000 (or $81,660 / 0.684). This helps validate the ballpark estimates provided in the conversations. The following analysis uses the rough annual estimates of $100,000 for a regular accounting professional and $150,000 for one with experience in government compliance. Moreover, accounting software costs detailed above suggest that FAR/DFARS-compliant software licenses are bought at roughly a $400 premium for every employee in the company on an annual basis.

Using the assumptions above to dollarize employee and software licenses costs, additional estimates of cost as a percent of company revenue are possible to calculate for annual maintenance costs of compliant systems. For example, Company #2 said they had to hire an accountant with 30 years of experience in compliance with government accounting (extra $50,000 per year), as well as a full-time contract hire as a relief valve for their staff accountant (extra $150,000 per year). With an estimated 30 individuals in the federal subsidiary, the additional software cost is roughly $12,000. Taken as a proportion of the parent company’s total revenue of $25 million in 2019, this represents 0.85 percent. While the company might want to prepare for growing defense contracts, it is worth noting that consultants may artificially increase demand for their services by driving excessive compliance. DCAA also provides information and consultation on accounting requirements through small business focal points.

Company #3, a large professional services company, had a revenue of roughly $10 billion in their government subsidiary. The company representative stated it had an additional 10 employees on staff solely devoted to federal accounting compliance, dollarized at $1.5 million a year. In terms of software license costs, the subsidiary employs roughly 75,000 individuals implying an additional license cost of $30 million ($400 per employee x 75,000). Together, the $31.5 million in additional accounting compliance costs represents 0.3 percent of revenue.

Company #4, a small services firm focused on sustainment activities for defense customers, reported requiring just a single additional employee to manage indirect costs ($150,000) and incurred four-times greater costs in software licenses per employee ($400 x 500 employees, or $200,000). The additional cost of accounting system compliance for government work is estimated at 0.18 percent of their $200 million revenue.

The estimated cost of accounting system compliance provides a wide range of estimates, from zero percent at Company #5 to 1.5 percent for Company #10. However, both companies on the higher end were both small companies. The three on the lower end were larger companies who have been supplying defense customers for many decades (Company #4 is classified small by the SBA thresholds but is still relatively large with more than $200 million). The information is shown in Table 8 below. As previously discussed, there are numerous other factors affecting the accounting compliance costs besides company size.

Table 8: Estimates of the Additional Cost of Compliance with Government Accounting System Requirements as a Percentage of Revenue

			Costs as a % of Revenue	
Company	Type	2019 Revenue ($M)	Annual Maintenance	First-Year Implementation
10	Not Commercial	$10	1.50%	--
2	Commercial	$25	0.85%*	4.00%
4	Not Commercial	$200	0.18%*	--
5	Commercial	$500	0.00%	--
3	Commercial	$10,000	0.30%*	--

* Estimated by dollarizing additional employee requirements at $150,000 per year and an annual accounting software premium of $400 per employee.

8.2.3 Compliance Considerations

Technical modifications and manual effort

More than half of the companies (Companies #1, #2, #3, #6, and #10) described "significant" additional resources that had to be diverted in order to make their FAR/DFARS compliant accounting system fully functional. Two other companies (Companies #4 and #5) acknowledged that although ongoing efforts to use the system were not labor-intensive or costlier than their commercial work, there had been substantial costs to implement the system along the lines described by the other companies. Importantly, both of those companies also reported that their systems and processes had been in place for over two decades.

The most frequent ancillary cost remarked upon by company representatives was the additional work to integrate the new FAR/DFARS compliant accounting system with other business systems (Companies #1, #2, #3, #5, and #6). This difficulty was not reserved for long-established companies with legacy business systems. The representative for the startup information technology company (Company #2) described the frustration of having to build an Application Protocol Interface (API) to make their accounting system properly connect with their travel management system (SAP Concur). This sentiment was similarly reflected in comments made by some of the other company representatives. For example, another company representative (Company #3) spoke about "Excel files being passed back and forth" between different departments and the parent company because of the lack of proper systems integration ever since the subsidiary moved to their FAR/DFARS compliant accounting system in 2015.

The other major category of additional work involved the need to manually manipulate the data produced by the accounting system. Five companies (Companies #1, #2, #3, #6, and #10) commented that despite the specialized nature of their cost accounting system, additional manipulation of the resulting data was still required to be compliant for government work. As one of these company representatives phrased it, the "volume of transactions and potential issues are just greater, the complexity as well… [especially] with CAS, the audit scrutiny, the number of audits, will grow exponentially" (Company #6). Two of those same companies (Companies #1 and #2) also reported that extra work was required to properly incorporate the data with their GAAP-required reporting. Finally, several companies described challenges to roll-up or reconcile the information with their parent company or other business segments (Companies #1, #2, and #3).

Staff and consulting personnel

A few company representatives spoke of cost factors involving staffing that can accompany the technical tools required for government contracting work. These factors included needing additional staff or upskilling existing staff, hiring people with specialized government experience, and hiring consultants, especially during the implementation phase of a new accounting system.

Most frequently, company representatives spoke of needing more staff to handle government compliance. One company representative reported that on a previous job working for one of the company's subsidiaries, saying "the staffing we had supporting our highly customized version of SAP was substantially greater than anything you would see on the commercial side" (Company #1). A representative for another company mentioned that "one thing for sure you need in a government environment is someone to manage your indirect rates, so that is probably one more person on your staff. If I had to follow CAS, I would need another person just to handle the disclosure statement" (Company #4). Another company representative reported having at least 10 people on staff directly interacting with government auditors that would not normally exist on their commercial side (Company #3).

One company (Company #4) that reported little present-day burdens associated with their accounting system said it took about a decade to develop the internal knowledge and culture for effective government work. The other company that had similarly reported no significant current burdens acknowledged that even though "there are no additional costs to respond to government standards because they have been adopted throughout the company, there is still a need to understand the government accounting process beyond the system itself," resulting in additional new-staff training of six-twelve months to get up to speed on government-specific requirements (Company #5).

Sometimes, rather than requiring more staff or upskilling existing staff, some company representatives spoke of the necessity to hire people with specialized government experience. For instance, one company CEO acknowledged that due to the expected compliance requirements he searched longer, paid more, and hired earlier a controller with specific government accounting experience (Company #2). The Director of Accounting for Company #10 noted that the company would not have been able to successfully switch to a FAR/DFARS compliant system without her

20+ years of experience working for various Federal agencies (DCAA, State Department, and Internal Revenue Service). The representative for Company #6, who had previously worked as a government accounting compliance consultant, described the value of "expensive" staff like himself because he was knowledgeable at setting up organizational structures to minimize negative impacts on operations that can result from high levels of audit scrutiny. Although not every company commented on the potential difficulty of recruitment, only one company explicitly reported no difficulty with hiring people of a certain type or level of expertise in government accounting (Company #5).

Finally, several company representatives (Companies #1, #2, #10, and #11) mentioned the need to hire consultants to assist in the implementation of the accounting system and the accompanying policies and procedures. Two of these companies (Companies #10 and #11) mentioned that the consulting companies had been referred by their respective accounting system providers, with one company (Company #10) estimating the cost of the consulting team at half the total cost of implementation.

Negative impacts on overall company operations

More than half of the company representatives (Companies #1, #2, #3, #6, #7, and #11) spoke about how government accounting requirements can produce negative impacts on company operations or force a company to make decisions that it would not otherwise make. This was expressed in a variety of ways by different representatives, but most of the comments highlighted the practical differences between commercial work and government work more heavily focused on compliance.

One representative mentioned that his company (Company #1) was unable to "grow internal teams organically anymore" and that it was hard to get financing when using the same instance of an accounting system for both commercial and government contract work. Another representative in that same interview noted that many administrative tasks were streamlined more easily on the commercial side because they could be handled within other functions, but that it was not feasible to do this on the government contracts side. A representative for another company (Company #2) noted that the need to always maintain a focus on compliance slows down business cycles in general, and that the fear of doing the wrong thing (e.g., accidentally mischarging time, taking someone out to dinner, etc.) means that "there has been a significant portion of distraction cost and team labor to get adjusted."

A few representatives (Companies #3, #6, and #12) noted that despite the benefits of running a company on a single system, this was a double-edged sword because it is hard to truly bifurcate operations in a hybrid company. One company representative characterized several managerial decisions (e.g., setting up two distinct procurement departments) as "not cost-effective, but done in order to maintain the separation… you sometimes have to make decisions in the business that you would not normally do; inefficiencies and redundancies can result, but it is necessary to maintain the firewall with the commercial business" (Company #6).

Another company operation that was highlighted as negatively impacted by government compliance requirements was timekeeping procedures. This arose as an issue for those companies that reported having an already established culture of not tracking staff time on specific projects.

Staff timekeeping issues was also mentioned as a key issue for the two companies (Companies #9 and #12) that have opted to not pursue government work that requires a FAR/DFARS compliant accounting system. For most of the companies that spoke on this issue, it revolved around explaining the business need of time-tracking to employees.

One company representative (Company #7) spoke about how timekeeping for government projects required extensive back-and-forth interactions between a manager and an employee to ensure it was 100% accurate even though most of the employees did not care about specific line items (in his words, “Blue-collar workers don’t like doing this”). He noted that even though white-collar staff were used to time tracking, previously blue-collar workers were accustomed to clocking in and out, not attributing time to jobs. Supervisors had been responsible for attributing time to jobs, but that process was no longer workable for government contracts. Everyone had moved onto Unanet timesheets. Before the move to Unanet, whenever the company wanted to subcontract on defense work with a prime contractor, it had to use the prime’s accounting system. “Timekeeping is the hardest piece.”

Another company representative (Company #11) spoke about the efforts to implement a culture of detailed time tracking in his current position. He also mentioned how it took years in a previous company to get people to properly track hours. He highlighted how his company’s government work included strict guidelines for tracking time that complicated his overall business operations, including no bulk tracking, not being able to log vacations in advance, and having to build additional approval steps into the process. Finally, in a lengthy segment of another interview, another company representative touched on both functional and cultural aspects that made timekeeping for government contracts more onerous:

> “When we kick off a contract, we have to understand with a different level of care how to structure that contract so that it translates into revenue recognition, how to bucket and track costs against different CLINs, these are all different practices from the commercial market. I am not saying that commercial companies care less, but there is a different amount of traceability that is required. Even when it is not per se required, you still have to maintain that focus on compliance; you can’t just not flex the muscle, you still have to do it right. On the qualitative side, it has caused people to slow down their pace, because they are worried about doing something wrong…. You can see this cloud hanging over their heads sometimes, and I think this is a big piece of it.” (Company #2)

8.3 Cost-benefit analyses to become a Government supplier

As mentioned earlier, there was no example of a company having conducted an extensive cost-benefit analysis of implementing a new government-compliant accounting system versus adapting an existing system to meet government compliance. Similarly, and even more interestingly, none of the companies indicated that they had conducted a detailed cost-benefit analysis to become a Government supplier in the first place. Rather, their decision-making seemed to be characterized as a more subjective estimation of the value proposition of government work. Along these lines, many company representatives spoke about the importance of having either a particular “government” mindset or a strong commitment to compete in the B2G market. They also highlighted operational benefits derived from their FAR/DFARS compliant system and rigorous cost accounting practices that went beyond gaining the ability to engage in Government work.

Several companies mentioned that the nature of their work dictated the type of contract they would normally pursue. For example, a sustainment company (Company #7) mentioned that they often received equipment without knowing their condition in advance, which meant that cost-type contracts were most appropriate for their work. Alternatively, a manufacturing company (Company #5) mentioned that they operate in a mature industry and because cost-plus contracts are usually associated with early-stage developmental products, they don't typically pursue them and that it had been ten years since their last one. A software company (Company #11) similarly mentioned that the majority of their contracts are "naturally fixed" price, and a management advisory firm representative (Company #10) described firm-fixed price contracts as the right balance of flexibility and firmness for their services.

Nearly all the representatives for the nine companies that implemented a FAR/DFARS compliant accounting system pointed out that their primary purpose in doing so was to gain access to the B2G market. Several of these companies (Companies #1, #2, and #7) mentioned the practical benefit that stable government work can often balance a bad year of commercial business, while others highlighted a cash flow advantage (Company #1) or support for developmental projects (Company #6). One of the companies (Company #7) had implemented their FAR/DFARS compliant system precisely because they realized they are losing work by not having the proper system in place. Another company representative described his thought process as follows:

> "[This business] is a mix of leveraging what has worked really well for the parent company in commercial markets, but it is also meeting the customer where they are, which is not where the commercial markets are. In order to be most relevant, I think we have to work with specific customer groups, specific colors of money, and some of that will be in the cost-type world of FAR 15. And knowing that, we have to play a different game." (Company #2)

Several company representatives cautioned that their approach to engaging in the B2G market was characterized by a careful strategy to pursue certain types of contracts only if it was deemed worthwhile. This will be dealt with in more detail in a later section.

8.3.1 A "Government" Mindset

Several company representatives described how being a government supplier requires a different mindset from being a commercial-oriented company. Comments made along these lines suggested that this often meant that company operations had to be looked at through the lens of what will satisfy government regulators. As described by one company representative, this was being able to see from the government's perspective what would be considered "reasonable." (Company #3) Another company representative characterized this as making sure they saw "eye-to-eye" with their contract officers and DCAA auditors (Company #1).

As part of this "government mindset" there was the idea that it required a deep level of commitment to be successful in the B2G market. This was alternatively expressed as either an express desire to work in the realm of cost-plus contracts or that following the rules was simply a necessary requirement of this realm. One representative noted that "It was an absolute business decision at the time that we were going to move into the government space and we needed to be able to do that appropriately, [even] knowing that you were going to have to either educate the people you have or bring on the expertise that you need.” (Company #4)

A representative for one of the companies that reported no difficulties with accounting requirements because they had been adopted decades earlier was asked if he would have any issues as a new company in the market. His reply was illustrative of the sentiment expressed by many of the company representatives that this is what it takes to be a government supplier:

> “My personal perspective would be ‘No, that would not be a deterrent’, as long as that's a desire of the way I wanted to position my organization and my company going into it. So, if I was about to start my own company, and I said I wanted to get into being a Defense contractor, my personal perspective would be, ‘Okay, here's the field, what are the rules that I have to play by and let me figure that out’. It would not deter me… [When we] take a step back and look at our organization as a whole, there's nothing that we haven't been able to overcome to continue to participate in expanding our Defense related business.” (Company #5)

The best example of this commitment is two companies (Companies #2 and #11), neither of which has yet performed on cost-type contracts, already having implemented a FAR/DFARS compliant accounting system in anticipation of the work. Although both companies have only performed on FFP government contracts or relied on commercial sales so far, they both felt it beneficial to prepare for cost-type work in the event an opportunity arose. As one company noted, “It was a cost of doing business. If we were serious about growth in the segment, at going after the largest addressable market that we could… we just said, ‘It is what it is’” (Company #2). The other company (Company #11) noted that while the costs were easy to measure and the possible benefits were harder to judge, they were being purposely proactive about implementing the system to engage in cost-type work.

8.3.2 Operational Benefits

Nearly all the nine companies acknowledged that they had reaped additional benefits from having a government-compliant accounting system that went beyond simply being eligible for certain government contracting opportunities. In fact, only one company representative (Company #6) explicitly said that there were likely no additional benefits beyond bidding on government work, while another representative (Company #7) equivocated by saying that although the accounting system and associated requirements probably contributed to better business operations on all contracts, the primary purpose of their system was for growth opportunities in the government contracting space. The remaining companies all spoke positively about how the more rigorous attention to costs and contract compliance had elevated the overall operations of the company.

Several company representatives (Companies #3, #4, #7, and #10) made comments indicating that many of the government accounting requirements do not demand more effort or information out of a company than it would otherwise want anyway. As one company representative described it, “The rules force you to have a granular understanding, but you would want to know the info internally anyway” (Company #3). Another representative (Company #10) noted that a company, especially one that used job-order accounting, would use the same type of accounting anyway Another company representative (Company #2) acknowledged there was no more guesswork on pricing products; he felt that his company had become “smarter at lower levels of the company about how we are creating value” for even non-governmental clients. This line of thought was also expressed by another company representative (Company #7) who felt the requirements forced their managers to consider the implications of change order costs in a more thoughtful way.

Other companies noted how they appreciated having the detailed cost information for internal profitability analyses and evaluating the financial status of specific projects. One company representative (Company #10) noted several specific benefits derived from her FAR/DFARS compliant system, such as having insight into indirect rates, making smarter decisions on pricing and costing on bids, and deciding on investments based on desired revenue levels. The representative for one of the companies (Company #11) that has not yet been awarded a government cost-type contract said he wished he already had this type of cost information to be able to perform client profitability analyses. Even one of the companies that have chosen to not implement a FAR/DFARS compliant accounting system still acknowledged the potential value to be gained from using a more precise cost accounting system. As that company’s representative characterized it, “most companies can get good operational benefits from the data, but we just don’t need as much of it as the government requires” (Company #12).

A couple companies also spoke of how operational benefits had gone even beyond the company itself to affect other business units or parent company operations. One company representative (Company #2) spoke of how their cost accounting procedures had helped inform the employee timekeeping practices of their parent company. Another company representative reported that their operational capabilities had exceeded those of their parent company, saying how while they had started to use cost data to perform internal profitability analyses their parent company was still seeking to develop their own capacity to do so (Company #3).

A final intangible benefit frequently mentioned in the interviews was that having a FAR/DFARS compliant accounting system signaled competency to both governmental and commercial clients (Companies #2, #3, #4, #6, #7, and #10). For some companies this was a necessary part of becoming a government supplier. As one company representative put it, “if we are going to be entrusted as a partner in this space, we have to be compliant. We have an obligation to do it the right way” (Company #2). This sense of providing customers with the sense that the company is “doing things the right way” was also explicitly mentioned by another representative (Company #6). Another representative phrased it as “the government relaxes when they see a [FAR/DFARS] compliant system in place” (Company #7). This sentiment was echoed by another representative (Company #10) who stated that having an accounting system capable of accumulating, segregating and reporting costs for all types of contracts gave confidence to their partners (larger prime companies) and government clients.

9.0 Government contracts declined or discontinued (SOO#5)

9.1 Common Characteristics for Declining Government Contracts

To determine any possible correlation between companies which declined or discontinued government contracts we assessed the characteristics of the twelve companies (see Table 5 above). Six companies stated they have not declined contracts due to FAR/DFARS compliance requirements (Companies #3, #4, #6, #7, #10, #11). Company #8 was in the initial stages of pursuing government contracts but had not considered FAR/DFARS compliance yet. Five companies reported either declining or not pursuing Government contracts in the past where accounting system requirements played a factor. Size and industry did not appear to be a common characteristic for declining government contracts based on the accounting system requirements alone.

- Company #1, a large manufacturing company, has declined contracts but made it clear it was due to more than just accounting system concerns. "The reason is more than cost; you have a risk of reputational harm if not compliant. Negative past performance can result in sanctions, making you unable to get financing. There is also more audit scrutiny. If DCAA finds something in one unit, it will look in all units. We want to be very careful."

- Company #2, a small IT firm, reported turning down cost-reimbursable contracts due to a fear of failing a DCAA audit despite having recently put in a FAR/DFARS compliant system "We won't pressure test a DCAA audit on low dollar contracts… For a $100,000 T&M or CPFF that feels like a one-off, the cost would be beyond the benefit."

- Company #5, a large manufacturing firm, stated they have declined work due to the type of contract and low profitability. "We have turned down business for all of the above reasons... We absolutely decide on contracts based on contract type. FFP is very difficult for us in the steel industry because of the price fluctuations. When we price in the risk it makes us uncompetitive."

- Company #9, a small services company, has not pursued contracts and has strategically chosen to not become FAR/DFARS compliant. "[It's] too difficult to get involved with the federal government. We've made decisions not to proceed on certain programs, too high on the regulatory side, didn't make sense to us."

- Company #12, a small manufacturing supplier, has not pursued contracts and has strategically chosen to not become FAR/DFARS compliant. "There are things we don't get to quote or bid because we are not set up for that. I don't know of any business we have said no to but we have said we won't comply with certain standards. We are not aware of the business that has not come to us because of our limitations. We could go more aggressively towards it. Until we get to a point where the government accounting is not onerous were not going to consider it."

9.2 Company Information Sources and Strategic Approach

The process companies used for deciding not to pursue government contracts was not well documented and relied more on strategy and general knowledge than on a quantitative cost-benefit analysis.

Consulting Other Companies or Government Suppliers

None of the company representatives specifically stated they consulted with other companies or suppliers before declining to pursue a contract. However, each representative we spoke with had a mix of prior experience and knowledge of other companies which influenced their decisions. One large manufacturing company referenced their competitor which did not pass an DCAA audit and as a result was denied financing for several years (Company #1). Losing financing on big contracts was a significant threat to their business strategy. The concern about failing a DCAA audit was shared by Company #2, a small IT company. They recently implemented a FAR/DFARS compliant system but had not gone after a contract which required it because they did not want to go through the process of auditability if the contract value was not high enough. “Is the juice worth the squeeze? Won’t pressure test a DCAA audit on a low dollar contract.”

Consulting Industry Experts and Consultants

None of the companies we spoke with specifically stated they chose not to pursue government contracts based on the advice of contracting experts or consultants. Rather, they based their decisions on internal decision-making processes. When ask if they consulted external sources one company stated clearly, “Not specifically, we are very confident in our assessment.” Conversely, Company #11, the strategy is simply to get any contract possible regardless of contract type. When referring to taking on cost-reimbursable work they commented, “They’re not ideal… [but] we’re a scrappy startup right now so we take those on.”

Company #9 chose not to comply with FAR/DFARS standards despite 80 percent of sales coming from defense customers. The representative estimated that “The company would have to be shut down and rebuilt from the ground up to satisfy those requirements, and one of them is the cost accounting system… When we switched to a new ERP system it felt like the sky was falling on us.” He valued the “lean workforce” at his company and “cross-training among engineers and manufacturing.” He believed that FAR/DFARS compliant timekeeping would upset the culture. “Don’t take time to track time.” Overall, he said that “Our hesitation is the unknown. We can’t know what will happen. It will really impact having two markets, our ability to design and develop.”

The second company, Company #12, which strategically decided not to become FAR/DFARS compliant stated the following:

> “If we could snap our fingers and be government compliant, we might be more open to it. It’s the time tracking and recording the costs. I’ve seen it in other companies. It’s hard to bifurcate. They can be from anywhere to three to five times more effort. It just doesn’t make sense to have two sets of books. We would never consider it because we run so lean. We don’t have the back-office support that would be required… We could go more

> aggressively towards it. Until we get to a point where the government accounting is not onerous were not going to consider it."

9.3 Barriers to Entry for Small Companies

FAR/DFARS compliance makes a difference in strategy for small businesses. The concern for small businesses was brought up in the two rounds of interviews, first with the industry SMEs, and later with the contractors themselves. In the discussion about strategy, several companies voiced the concern that the FAR/DFARS compliance requirements are a significant hurdle for small businesses trying to enter the government contracting world. "The benefits depend on who you are. Small companies would have a lot of problems, very different. Once you cross the barrier, acquire the knowledge and the systems, it becomes workable, before that it's very hard and confusing" (Company #4).

FAR/DFARS compliance takes a significant investment with no guarantee of contracts. One industry consultant we spoke with discussed the investment required to prime contracts with the government. Their conclusion was that many small businesses are only set up to be subcontractors specifically because they don't have the accounting system and expertise. While some are happy with this situation others don't understand the amount of investment required.

> "It's an issue for small subcontractors, they just never get to prime because they want to continue to operate with just a CEO, CFO, etc. They don't want to put the infrastructure in place, to bring in or hire accountants, to understand their business and to help them grow their business. In my opinion, and based on my experience, the ones that know that were ready to move to large contractors. They put that infrastructure in place, they stopped outsourcing those accounting responsibilities and brought those people in to grow their business. I do see that in the ones that don't do it, I see them not priming for 20 years because they want to operate with a skeleton staff."[89]

In addition to investment, there is also a significant knowledge gap which prevents many small businesses from becoming government contractors. "I know small businesses that are interested in Cost Plus contracts but they don't know how to start or who to turn to. It's a lack of information." [89]

Several of our SMEs and contractors referenced a more systemic bias against small businesses that have not been declared FAR/DFARS compliant. This issue was referenced by contractors and discussed at length with a government SME.

> "I've seen primes that are not good or they don't want to share with the subs. So, a lot of the small businesses are never growing. I also see a lot of primes who have to monitor subs, they don't want to do that. They try to put that back on the government. If no one does it the sub gets hosed. Often there is no DCAA certified accounting system. … The smalls are losing some opportunity. I will also add, smalls will say the government will ask if the small has been audited by the DCAA. The reality is that a contractor can be awarded a contract without an audit but there are contracting officers who don't award because it's safer to go with a company that has been audited."[88]

Company #4, a small business who has not declined to pursue a defense contract, also have to be concerned about cashflow and the speed of ongoing financing due to delayed audits.

> "If you're working a flexibly pried contract, it's very hard to get square. You will bill the provisional and the actual will come later, sometimes it take the auditors years to complete it. If the government owes you a lot of money it could be very difficult for small businesses."

A large manufacturer, Company #1, spoke on the strategy position of their small subcontract suppliers.

> "We have a company that produces a product for us, and they are small. There's no value proposition for them from the full compliance oversight, the risk mitigation, and the amount of effort, and the time horizon. There's not a value proposition, not only for them, but for the government, for the same product that they've been making for decades."

An SME that worked with a venture-backed software startup described an instance where the company had to decline a nearly $3 million contract from a defense customer who insisted on using a cost-reimbursable contract. The company looked at setting up a subsidiary but decided not to and instead would self-fund the development of the product. One major concern was timekeeping, which was believed to "take away from high-quality collaborative work." He said that "This collaboration flows down into projects, not projects flowing up into collaboration." Accounting system requirements, in his view, matched a "staff augmentation shop" rather than a software business model.

Discussions with SMEs and company representatives indicate that there is a knowledge gap in what it takes to become FAR/DFARS compliant. Obtaining the knowledge and investing in systems represents a real cost not only in dollars, but also time. A small IT company mentioned the "distraction cost" and losing an entire year on compliance that could have been devoted to product development. But if they were going to be "relevant" to defense customers, they recognize some contracts will be negotiated cost-type contracts. Certainly, accounting system costs represent an additional barrier to entry for small businesses—compliance is not free—but the costs are often not prohibitive and can be surmounted if company leadership is committed to growth in government contracts.

10.0 Conclusion

The George Mason University Center for Government Contracting, on behalf of OUSD/DPC, conducted a study to analyze government accounting system requirements and whether they create a barrier to entry for commercial companies. The examination included understanding: (1) accounting systems and practices used in the commercial sector for large, small, private, and public companies; (2) differences between GAAP and government requirements; (3) the government's requirements for accounting systems under range of contracting scenarios; and (4) a survey of commercial industry compliance costs related to government requirements on accounting systems, analyses of entry or exit, and instances of adapting existing systems to meet the requirements.

Most accounting systems that satisfy commercial requirements or standards are not sufficient to be considered complaint with FAR/DFARS requirements without significant customization. Commercial-focused businesses, or segments of businesses, can operate in ways that are more flexible without having to worry about government cost accounting compliance. The difficulties associated with implementing a cost accounting system and distinct organizational framework that are deemed FAR/DFARS compliant may be too costly for a company to justify entering the B2G market. Many government contractors consider having a FAR/DFARS accounting system to be the cost of doing business with the DoD. To successfully grow government business, they must adopt a "government mindset." However, there are also significant ancillary costs which impact company strategy and willingness to work in the B2G space. Engaging in the B2G market is therefore a cost-benefit exercise for commercial companies, and some companies may choose to not pursue government contracts if they deem the associated accounting requirements as too costly or otherwise onerous. However, no company performed a quantitative cost-benefit analysis and instead relied on subjective estimates as to the burdens or opportunities related to compliance.

The benefit each contractor receives from complying with FAR/DFARS rules differs based on the business type and perception. While most of the benefit from complying with FAR/DFARS requirements is derived from the opportunity to do additional work with the government, some companies found the FAR/DFARS compliant cost allocation requirements improved their non-government business as well. Despite the desirability of being a government contractor, many commercial companies may not be able to make the business case for any additional resources necessary to comply with accounting requirements.[87] Quantifying the additional cost directly related to the a FAR/DFARS compliance requirements is difficult but estimates from the sample of company interviews indicates that the cost as a percent of revenue appears to be higher for small businesses. This, in addition to a general lack of understanding about the compliance requirements, represents a barrier to entry for new entrants into the B2G space.

Future research includes the impact of accounting system requirements on other DFARS-required business systems including estimating systems, purchasing systems, property management systems, and material management systems. Other Transactions agreements are another area of interest in terms of accounting system requirements. More remains to be understood in the difficulties encountered by companies using process-cost accounting systems for their commercial business as opposed to job-cost systems. Information technology is another area of difficulty where most of the company cost is in enterprise capabilities rather than the direct cost related to fulfilling particular customer orders. One SME said that he's "never seen a software company identify the cost of a license because the economics don't work that way." A final area for future research is the interaction between cost accounting and pricing practices.

11.0 Abbreviations and Definitions

Following are a list of abbreviations and terms used in the report.

AIS	Accounting Information System
AIT	Audit Issue Tracking
ANPRM	Advance Notice of Proposed Rulemaking
B2G	Business-to-Government
CAS	Cost Accounting Standards
CASB	Cost Accounting Standards Board
CBAR	Contract Business Analysis Repository
CLIN	Contract Line Item Number
DCAA	Defense Contract Audit Agency
DCMA	Defense Contract Management Agency
DFARS	Defense Federal Acquisition Regulation Supplement
DHS	Department of Homeland Security
DoD	Department of Defense
DUNS	Data Universal Numbering System produced by Dun & Bradstreet
EVMS	Earned Value Management System
FAR	Federal Acquisition Regulation
FASB	Financial Accounting Standards Board
FFP/LOE	Firm-Fixed Price, Level of Effort
FIFO	First-In, First-Out
FPR	Forward Pricing Rate
GAAP	Generally Accepted Accounting Principles
GAAS	Generally Accepted Auditing Standards
GAO	Government Accountability Office
GASB	Governmental Accounting Standards Board
IDIQ	Indefinite Delivery, Indefinite Quantity
LIFO	Last-In, Last-Out
NAICS	North American Industry Classification System
NASA	National Aeronautics and Space Administration, U.S.A.
OFPP	Office of Federal Procurement Policy
OMB	Office of Management and Budget
OTA/OT	Other Transaction Agreements/Other Transactions
PCM	Percentage Completion Method
PIID	Procurement Instrument Identifier
PSC	Product and Service
TINA	Truth in Negotiations Act

12.0 Appendices

12.1 Appendix 1: 19 CAS and Their Requirements

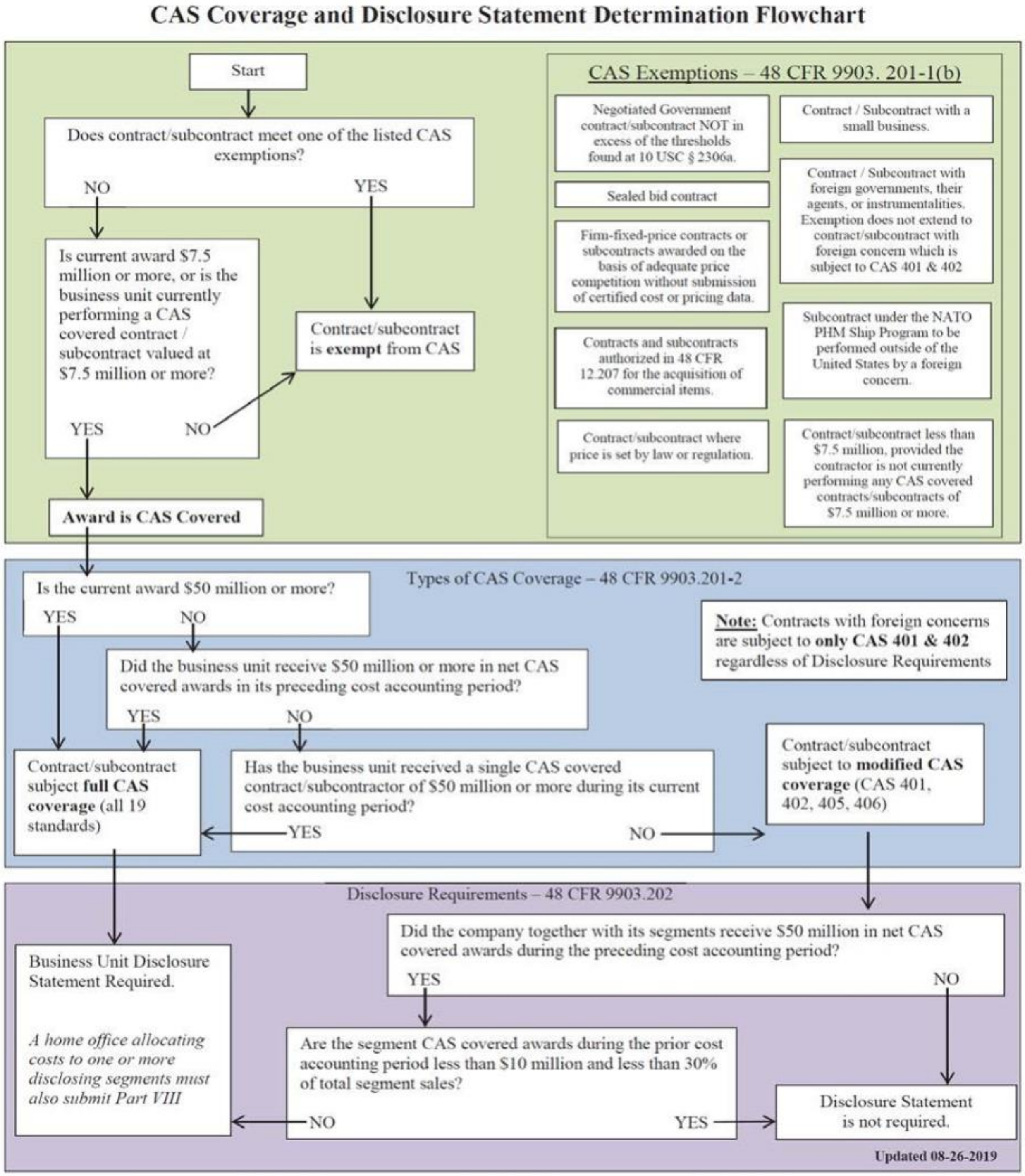
Cost Accounting Standard (CAS)	Requirement
401. Consistency in Estimating, Accumulating and Reporting Costs	Requires that costs estimated in proposals be developed consistently with the practices used by the contractor in accumulating and reporting costs.
402. Consistency in Allocating Costs Incurred for the Same Purpose	Ensures that each type of cost is allocated only once and on only one basis to any contract or other cost objective.
403. Allocation of Home Office Expenses to Segments	Establishes criteria for allocation of home office expenses to the segments of the organization on the basis of a beneficial or causal relationship.
404. Capitalization of Tangible Assets	Establishes that the acquisition costs of tangible assets shall be capitalized based upon an established policy.
405. Accounting for Unallowable Costs	Facilitates the negotiation, audit, administration, and settlement of contracts. It contains guidelines on (1) identification of costs specifically described as unallowable, at the time such costs first become defined or authoritatively designated as unallowable, and (2) the cost accounting treatment to be accorded such identified unallowable costs to promote the consistent application of sound cost accounting principles covering all incurred costs.
406. Cost Accounting Period	Provides criteria for selecting the time periods to be used as cost accounting periods for contract cost estimating, accumulating, and reporting.
407. Use of Standard Costs for Direct Material and Direct Labor	Provides criteria: (1) under which standard costs may be used for estimating accumulating, and reporting costs of direct material and direct labor, and (2) relating to the establishment of standards, accumulation of standard costs, and accumulation and disposition of variances from standard costs.
408. Accounting for Costs of Compensated Personal Absence	Establishes criteria for measuring and allocating the costs of compensated personal absences to final cost objectives. These costs include compensation paid by contractors to their employees for such benefits as vacation, sick leave, holiday, military leave, among others.
409. Depreciation of Tangible Capital Assets	Provides criteria for assigning costs of tangible capital assets to cost accounting periods and for allocating such costs in an objective and consistent manner.

Cost Accounting Standard (CAS)	Requirement
410. Allocation of Business Unit General and Administrative Expenses to Final Cost Objectives	Provides criteria for the allocation of general and administrative (G&A) expenses to final cost objectives and furnishes guidelines for the type of expense that should be included in the G&A expense pool. It also establishes that G&A expense shall be allocated on a cost input base that represents total activity.
411. Accounting for Acquisition Costs of Material	Provides criteria for the accounting of acquisition costs of material and includes provisions on using inventory costing methods. This standard does not cover accounting for the acquisition costs of tangible capital assets or accountability for government-furnished materials.
412. Composition and Measurement of Pension Costs	Provides guidance for determining and measuring the components of pension costs and establishes the basis for assigning pension costs to cost accounting periods. [CAS 413 addresses the accounting treatment of actuarial gains and losses and the allocation of pension costs to segments of an organization].
413. Adjustment and Allocation of Pension Cost	Establishes criteria for (1) measuring actuarial gains and losses; (2) assigning actuarial gains and losses to cost accounting periods; and (3) allocating pension costs to segments of an organization.
414. Cost of Money as an Element of the Cost of Facilities Capital	Provides criteria for measuring and allocating the cost of capital committed to facilities as an element of contract cost.
415. Accounting for the Cost of Deferred Compensation	Provides criteria for measuring deferred compensation costs and assigning those costs to cost accounting periods. It applies to all deferred compensation costs except for compensated personal absences (CAS 408) and certain pension costs (CAS 412).
416. Accounting for Insurance Cost	Provides criteria for the measurement of insurance costs, the assignment of such costs to cost accounting periods, and their allocation to cost objectives.
417. Cost of Money as an Element of the Cost of Capital Assets Under Construction	Establishes criteria for the measurement of the cost of money attributable to capital assets under construction, fabrication, or development as an element of the cost of those assets.
418. Allocation of Direct and Indirect Costs	Requires the consistent classification of costs as direct or indirect, establishes criteria for accumulating indirect costs in indirect cost pools, and provides guidance relating to allocating indirect cost pools.
419. Reserved (blank)	N/A

Cost Accounting Standard (CAS)	Requirement
420. Accounting for Independent Research and Development Costs and Bid and Proposal Costs	Provides criteria for the accumulation of independent research and development costs and bid and proposal costs and for the allocation of such costs to cost objectives.

Source: Reproduced in part from GAO-20-266, p. 21-23: Table 5

12.2 Appendix 2: CAS Coverage Flowchart



Source: DCAAM 7640.1, p. 17: Figure 8-1-1

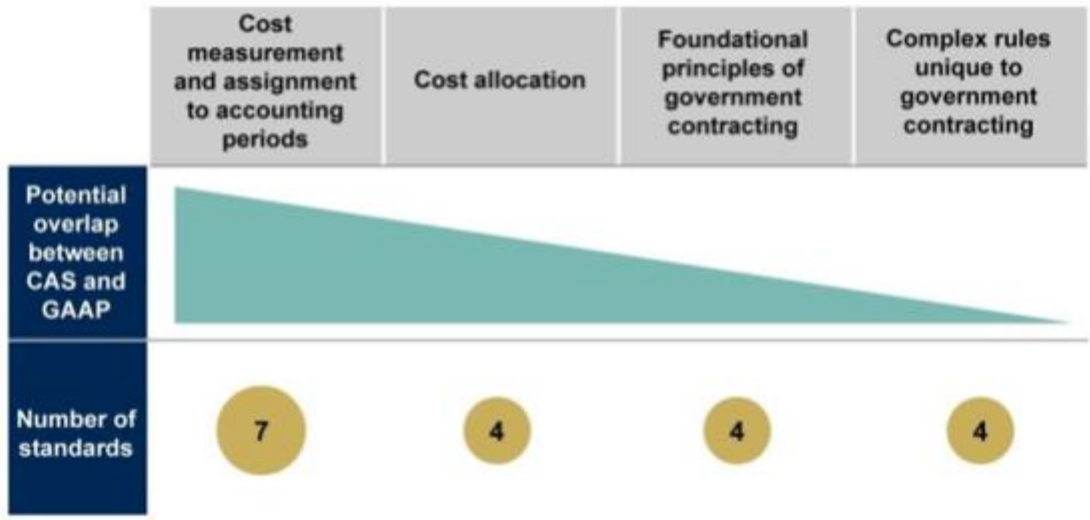
12.3 Appendix 3: Selected Unallowable Costs, FAR 31.205

Public relations and advertising	Interest and other financial costs	Rental
Bad debts	Labor relations	Royalties and other costs for use of patents
Bonding	Lobbying and political activity	Selling
Compensation for personal services	Losses on other contracts	Service and warranty
Contributions or donations	Manufacturing and production engineering	Special tooling and special test equipment
Capital cost of money	Raw materials and collateral items	Taxes
Depreciation	Organizational (business structure or reorganization)	Termination
Economic planning	Other business expenses (e.g., shareholder meetings)	Trade, business, technical and professional activity
Employer-employee related matters (e.g., employee morale, health, welfare, food service)	Plant protection	Training and education
Entertainment	Plant reconversions	Travel
Fines, penalties, and mischarging	Patents	Legal and other proceedings
Disposition or impairment of depreciable property or other capital assets	Precontract costs	Research and development (independent and grant sponsored)
Idle facilities and idle capacity	Professional and consultant service	Goodwill
Bid and proposal costs	Recruitment	Alcoholic beverages
Insurance and indemnification	Relocation	Asset valuations resulting from business combinations

Source: Adapted from FAR 31.205

12.4 Appendix 4: Potential Overlap Between CAS and GAAP

Figure 3: Cost Accounting Standards Board Initial Assessment of the Potential Overlap between the 19 Cost Accounting Standards (CAS) and Generally Accepted Accounting Principles (GAAP)



Source: GAO-20-266, p. 16

12.5 Appendix 5: SF1408-14e - Preaward Survey of Prospective Contractor (Section II)

SECTION II - EVALUATION CHECKLIST			
MARK "X" IN THE APPROPRIATE COLUMN *(Explain any deficiencies in SECTION I NARRATIVE)*	YES	NO	NOT APPLI-CABLE
1. EXCEPT AS STATED IN SECTION I NARRATIVE, IS THE ACCOUNTING SYSTEM IN ACCORD WITH GENERALLY ACCEPTED ACCOUNTING PRINCIPLES APPLICABLE IN THE CIRCUMSTANCES?			
2. ACCOUNTING SYSTEM PROVIDES FOR:			
a. Proper segregation of direct costs from indirect costs.			
b. Identification and accumulation of direct costs by contract.			
c. A logical and consistent method for the allocation of indirect costs to intermediate and final cost objectives. (A contract is final cost objective.)			
d. Accumulation of costs under general ledger control.			
e. A timekeeping system that identifies employees' labor by intermediate or final cost objectives.			
f. A labor distribution system that charges direct and indirect labor to the appropriate cost objectives.			
g. Interim (at least monthly) determination of costs charged to a contract through routine posting of books of account.			
h. Exclusion from costs charged to government contracts of amounts which are not allowable in terms of FAR 31, Contract Cost Principles and Procedures, or other contract provisions.			
i. Identification of costs by contract line item and by units (as if each unit or line item were a separate contract) if required by the proposed contract.			
j. Segregation of preproduction costs from production costs.			
3. ACCOUNTING SYSTEM PROVIDES FINANCIAL INFORMATION:			
a. Required by contract clauses concerning limitation of cost (FAR 52.232-20 and 21) or limitation on payments (FAR 52.216-16).			
b. Required to support requests for progress payments.			
4. IS THE ACCOUNTING SYSTEM DESIGNED, AND ARE THE RECORDS MAINTAINED IN SUCH A MANNER THAT ADEQUATE, RELIABLE DATA ARE DEVELOPED FOR USE IN PRICING FOLLOW-ON ACQUISITIONS?			
5. IS THE ACCOUNTING SYSTEM CURRENTLY IN FULL OPERATION? (If not, describe in Section I Narrative which portions are (1) in operation, (2) set up, but not yet in operation, (3) anticipated, or (4) nonexistent.)			

12.6 Appendix 6: Commercial Product and Commercial Service Definitions

Commercial Product and Commercial Service, FAR 2.101 Definitions:

Commercial product means—

(1) A product, other than real property, that is of a type customarily used by the general public or by nongovernmental entities for purposes other than governmental purposes, and–

(i) Has been sold, leased, or licensed to the general public; or

(ii) Has been offered for sale, lease, or license to the general public;

(2) A product that evolved from a product described in paragraph (1) of this definition through advances in technology or performance and that is not yet available in the commercial marketplace, but will be available in the commercial marketplace in time to satisfy the delivery requirements under a Government solicitation ;

(3) A product that would satisfy a criterion expressed in paragraph (1) or (2) of this definition, except for-

(i) Modifications of a type customarily available in the commercial marketplace; or

(ii) Minor modifications of a type not customarily available in the commercial marketplace made to meet Federal Government requirements. "Minor modifications" means modifications that do not significantly alter the nongovernmental function or essential physical characteristics of an item or component , or change the purpose of a process. Factors to be considered in determining whether a modification is minor include the value and size of the modification and the comparative value and size of the final product. Dollar values and percentages may be used as guideposts, but are not conclusive evidence that a modification is minor;

(4) Any combination of products meeting the requirements of paragraph (1), (2), or (3) of this definition that are of a type customarily combined and sold in combination to the general public;

(5) A product, or combination of products , referred to in paragraphs (1) through (4) of this definition, even though the product, or combination of products , is transferred between or among separate divisions, subsidiaries, or affiliates of a contractor; or

(6)A nondevelopmental item , if the procuring agency determines the product was developed exclusively at private expense and sold in substantial quantities, on a competitive basis, to multiple State and local governments or to multiple foreign governments.

Commercial service means—

(1)Installation services, maintenance services, repair services, training services, and other services if–

(i)Such services are procured for support of a commercial product as defined in this section, regardless of whether such services are provided by the same source or at the same time as the commercial product ; and

(ii)The source of such services provides similar services contemporaneously to the general public under terms and conditions similar to those offered to the Federal Government;

(2)Services of a type offered and sold competitively in substantial quantities in the commercial marketplace based on established catalog or market prices for specific tasks performed or specific outcomes to be achieved and under standard commercial terms and conditions. For purposes of these services–

(i) *Catalog price* means a price included in a catalog, price list, schedule, or other form that is regularly maintained by the manufacturer or vendor, is either published or otherwise available for inspection by customers, and states prices at which sales are currently, or were last, made to a significant number of buyers constituting the general public; and

(ii) *Market prices* means current prices that are established in the course of ordinary trade between buyers and sellers free to bargain and that can be substantiated through competition or from sources independent of the offerors; or

(3)A service referred to in paragraph (1) or (2) of this definition, even though the service is transferred between or among separate divisions, subsidiaries, or affiliates of a contractor.

12.7 Appendix 6: 48 C.F.R. §252.242-7006(c): System Criteria

(1) A sound internal control environment, accounting framework, and organizational structure

(2) Proper segregation of direct costs from indirect costs

(3) Identification and accumulation of direct costs by contract

(4) A logical and consistent method for the accumulation and allocation of indirect costs to intermediate and final cost objectives

(5) Accumulation of costs under general ledger control

(6) Reconciliation of subsidiary cost ledgers and cost objectives to general ledger

(7) Approval and documentation of adjusting entries

(8) Management reviews or internal audits of the system to ensure compliance with the Contractor's established policies, procedures, and accounting practices

(9) A timekeeping system that identifies employees' labor by intermediate or final cost objectives

(10) A labor distribution system that charges direct and indirect labor to the appropriate cost objectives

(11) Interim (at least monthly) determination of costs charged to a contract through routine posting of books of account

(12) Exclusion from costs charged to Government contracts of amounts which are not allowable in terms of Federal Acquisition Regulation (FAR) part 31, Contract Cost Principles and Procedures, and other contract provisions

(13) Identification of costs by contract line item and by units (as if each unit or line item were a separate contract), if required by the contract

(14) Segregation of preproduction costs from production costs, as applicable

(15) Cost accounting information, as required

- (i) By contract clauses concerning limitation of cost (FAR 52.232-20), limitation of funds (FAR 52.232-22), or allowable cost and payment (FAR 52.216-7); and
- (ii) To readily calculate indirect cost rates from the books of accounts

(16) Billings that can be reconciled to the cost accounts for both current and cumulative amounts claimed and comply with contract terms

(17) Adequate, reliable data for use in pricing follow-on acquisitions

(18) Accounting practices in accordance with standards promulgated by the Cost Accounting Standards Board, if applicable, otherwise, Generally Accepted Accounting Principles

12.8 Appendix 8: Company Interview Guide

1. Approximately what percent of your business unit or company's revenue is derived from DoD, NASA, & DHS sources? Would you say it is more or less than 25 percent?
2. Do you have a business strategy in terms of types of Govt contracts your company is willing to take on specifically due to the accounting requirements they may entail?
3. Has your company been required to implement an accounting system compliant with Government requirements? If no, skip the following sub-questions.
    a. When did you implement the Govt-compliant system? (*year*)
    b. Did you adapt an existing cost accounting system to become Govt-compliant, or did you purchase a new system?
    c. Was a cost-benefit analysis performed prior to purchasing a new system or adapting an existing system (whichever is applicable)?
    d. How does the cost of implementation and maintenance of the Govt-compliant system compare to the cost of your prior system?
    e. Are there other costs to implementing a Govt-compliant accounting system, such as impact to company culture or product development?
    f. Are there any other benefits to having a Govt-compliant system, such as greater cost control or enterprise efficiencies?
4. If you haven't transitioned systems recently, what is the on-going cost of your Govt-compliant system?
5. Is the Govt-compliant accounting system also used for products and services that are not intended for government customers? If not, how do they differ?
6. Has your company declined or discontinued a government contract due to accounting system requirements?
    a. What cost-benefit analysis was performed to inform the decision?
    b. Did you consult with other commercial companies, Govt suppliers, or consultants?

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