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A Review of Alternative Methods to Inventory Contracted Services in the Department of Defense[1]

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Preface

Title 10, Section 2330a, of the U.S. Code requires the Secretary of Defense to "submit to Congress an annual inventory of the activities performed during the preceding fiscal year pursuant to contracts for services." Persistent concerns regarding both the methods for collecting these data in the Inventory of Contracted Services (ICS) and the utility of the data led the conferees for the National Defense Authorization Act for Fiscal Year 2016 to direct the Secretary of Defense to examine the approach that the U.S. Department of Defense (DoD) is taking to comply with this statutory requirement. Congress directed the Secretary of Defense, as part of this examination, to determine whether the ICS produced by the DoD enhances oversight of contracting activities and to submit a report to the congressional defense committees explaining the results of that examination, outlining efforts to better manage contractor and civilian personnel costs within the DoD, and outlining potential alternative methods of meeting ICS requirements.

To assist the Secretary of Defense in making this determination, the Principal Deputy Assistant Secretary of Defense for Manpower and Reserve Affairs asked the RAND Corporation to conduct the mandated research. This final report builds on an interim report delivered in advance of the March 1, 2016, deadline for reporting to Congress. It should be of interest to policymakers concerned with DoD purchases of services as well as to DoD officials charged with ensuring better oversight of purchased services.

This research was sponsored by the Principal Deputy Assistant Secretary of Defense for Manpower and Reserve Affairs and conducted within the Forces and Resources Policy Center of the RAND National Defense Research Institute, a federally funded research and development center sponsored by the Office of the Secretary of Defense, the Joint Staff, the Unified Combatant Commands, the Navy, the Marine Corps, the defense agencies, and the defense Intelligence Community. For more information on the RAND Forces and Resources

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Summary

Since the late 1940s, U.S. Department of Defense (DoD) purchases of services have increased consistently, from less than 30% to more than 60% of the department's overall budget. This increase reflects both the growth of services in the overall economy and the initiatives of political administrations over time to procure services from the private sector on behalf of the DoD to the greatest extent possible. Nevertheless, such growth has led to concerns regarding contracting of inherently governmental functions, contract oversight, contractor accountability, and contract waste, fraud, and abuse.

Concerns about the growth in the DoD's purchases of services have led Congress to institute several policies aimed at strengthening oversight of such purchases. These policies have included 2001 legislation requiring the DoD to collect and track data on the procurement of services, 2002 and 2008 congressional language expressing an interest in spend analyses that might be used to increase buying leverage and improve contractor performance, and a 2008 requirement in Title 10, Section 2330a, of the U.S. Code establishing the DoD Inventory of Contracted Services (ICS) to collect information on activities performed under DoD service contracts.

Concern regarding both the methods for collecting data in the ICS and the utility of these data led Congress to request that the Secretary of Defense review the methods used to create the ICS, as well as the products resulting from these efforts. Congress specifically requested that the Secretary of Defense examine the extent to which the ICS provides data on service contracts that are useful to the DoD and congressional stakeholders, the extent of gaps between ICS data and data that the DoD and Congress would find most useful, whether existing databases or other information technology systems could provide a timely solution and data that are relevant to workforce planning, and the strengths and weaknesses of different methods for reporting on the DoD's use of contractor personnel. The DoD asked RAND to assist the Secretary of Defense in fulfilling this congressional mandate.

This report documents the final results of that research. It explores the congressional intent underlying the ICS requirement, gaps between the ICS data and data most useful to the DoD and congressional stakeholders, insights on the issues that Congress seeks to address through the ICS requirement that can be derived from analyses of non-ICS data found in alternative databases, and the strengths and weaknesses of different methods for estimating and reporting contractor personnel use.

Research Methods

This study employed multiple research methods and was conducted in a compressed time frame. The bulk of the data collection and analysis was completed between mid-December 2015 and mid-February 2016 to produce an interim report in advance of the Secretary of Defense's March 1, 2016, deadline for reporting to Congress. During that time, we reviewed relevant legislation and literature; analyzed relevant data from the ICS, the Federal Procurement Data System—Next Generation (FPDS-NG), and the System for Award Management (SAM); and interviewed key stakeholders in Congress, the DoD, non-DoD federal agencies, and the offices of relevant service contractors. Over the course of the project, we interviewed 83 individuals and reviewed more than 80 documents, focusing on the legislative and historical context underlying the ICS, as well as insights from the economics literature. We also analyzed ICS and FPDS-NG data to develop distribution

and trend data on spending, contracts, business size, and type of service, as well as to identify contractors to interview. Finally, we devised and tested several alternative metrics for calculating contractor full-time equivalents (FTEs) using existing non-ICS data sources.

What Does the Current ICS Look Like?

The current ICS is produced approximately one year after the end of the fiscal year (FY) for which data are reported and is captured in two publicly available formats: a report to Congress and 37 different defense-component spreadsheets on the Defense Procurement Acquisition Policy (DPAP) website. The ICS is produced using the Contractor Manpower Reporting Application (CMRA) system. The Army first developed the CMRA system, but now there are four separate "instances," or versions, of the system—one each for the Army, Air Force, and Navy, and a combined one for the other defense agencies. As currently planned, the different instances of CMRA will be combined into one "enterprise-wide" system (eCMRA) in the next several years, and all instances are now being moved under Defense Manpower Data Center stewardship.

We were unable to gain access to the raw CMRA data for this study, as access is limited in an attempt to protect contractors' proprietary data from competitors. However, it is critical to note that even without access to restricted CMRA data, we were able to link ICS-reported direct labor hours to particular service contractors using contract number information publicly available on the FPDS-NG website and the publicly available ICS data published on the DPAP website (which reports contract number as well as direct labor hours information). When we analyzed the ICS data and compared them to FPDS-NG data, we also found shortfalls in completeness and quality. These analyses reinforce some of what we heard in our interviews with various stakeholders and subject-matter experts.

How Well Does the ICS Meet Congressional Objectives and DoD Needs?

In our interviews with congressional staff and DoD stakeholders, we found that the current ICS falls short of meeting the needs of Congress and the DoD. Many congressional staff suggest that the format in which ICS data are reported to Congress is not useful and hinders assessment of the data. Several commented that the data, as reported, are too detailed and would be more useful if they were synthesized before reporting. Ultimately, it appears that Congress seeks analysis—not raw data—from the DoD, but this is not well specified in the statute.

The views of DoD stakeholders, meanwhile, vary based on the interests of their functional communities. Manpower and personnel, budgeting, and acquisition officials require different information to do their jobs most effectively. This, in turn, shapes their views of the utility of the ICS. Stakeholders who focus on manpower and personnel planning, for example, seek data on contractor FTEs and level of effort needed to enable strategic workforce planning and insourcing decisions. Those in the budgeting community seek data on total costs and data that integrate well into budget considerations, allowing them to budget more effectively. Meanwhile, those in the acquisition community seek data on level of performance and total costs to enable smart acquisition decision-making. Such variation in the preferred types of data on service contracts makes it difficult to determine what data need to be collected and why. Understanding the goals of collection is critical in making this determination.

The characteristics and types of data that appear to be most relevant to congressional and DoD stakeholders are (1) processed, analyzed data; (2) forward-looking data that can be integrated into budget processes; (3) data on contractor FTEs to compare with civilian FTEs in making sourcing decisions; (4) auditable and verifiable data; and (5) data distinguishing types of contracts by total costs, contractor FTEs, and other values of

interest. By contrast, the ICS includes data that are unprocessed, retrospective, and can largely be found elsewhere, with the exception of contractor direct labor hours. Moreover, the direct labor hours data included in the ICS were, at the time this research was conducted, largely estimated rather than contractor-reported, making them difficult to verify or even distinguish among contracts.

Meanwhile, our interviews with service contractors indicated that CMRA reporting can be burdensome for the contractor and that contractors are subject to a multiplicity of reporting requirements, some mandating that they enter overlapping data points into CMRA and other systems, such as SAM. Moreover, contractors questioned the utility of collecting direct labor hours data and were concerned about the exposure of their proprietary data and how that may affect their success in competing for future contracts.

Why Are There Gaps Between the Current ICS and What Congress and the DoD Envisioned?

To understand the shortcomings of the ICS and the challenges in meeting congressional intent related to the ICS requirement, it is critical to note that service contractors' production functions vary, so comparing metrics across these firms can be misleading. Yet the ICS is structured to measure contractors using equivalent inputs, as though they all pro- duce equivalent services. This has the potential to distort results, as there is extensive variability between service contractors in the *types* of services they provide and, particularly, the degree to which the services they provide replace or simply *augment* governmental functions. Furthermore, service contractors demonstrate great variability in how they produce outputs, specifically in terms of the degree to which they substitute capital for labor and their various types of labor input. Indeed, collected labor input data show that although direct labor accounts for about half of total contract costs, the direct labor fraction varies greatly by type of service, from about one-fourth to three-fourths of total costs.

Table 1 illustrates the spectrum of contracting activities in which the DoD may engage, ranging from staff augmentation contracting (also known as "labor contracting") to complete contracting, with mixed contracting lying between the two extremes. In instances of staff augmentation contracting, the DoD provides the facilities, materials, equipment, technologies, and other inputs to production. Meanwhile, in complete contracting, the DoD provides only contractor management. Because of the distinction in how these levels of contracting are managed, collecting direct labor hours for all DoD service contracts without distinction in terms of the types of services provided is problematic. Even assuming that data on direct labor hours are valid and precise, collecting them for complete contracting is inappropriate because each contractor engaged in complete contracting makes distinct decisions regarding the inputs, processes, and practices used to provide the service. Because direct labor hours do not account for distinctions between the various types of contracting activities, they are insufficient to inform strategic workforce planning or DoD budget decision-making and acquisition planning.

Exacerbating the insufficiency of direct labor hours for informing strategic workforce planning is the fact that substitutions between different components of the total force—military, civilian, and contractor—cannot always be exchanged one-for-one within and across sectors because of individual-, organization-, and sector-level variations and gaps in productivity. For instance, different organizations tend to hire workers from different backgrounds, motivate them in different ways, and train them to have different skill sets using distinct methods. Maximizing labor productivity would clearly be ideal. However, without precise measures of productivity, and with legal constraints on sourcing decisions and governmental influence in contractor labor decisions—such as a moratorium on

outsourcing competitions and constraints on military and civilian personnel hiring—the ability to use proxy measures of productivity correctly and appropriately is key to informing strategic workforce management. The collection of direct labor hours in the ICS is not an appropriate proxy measure of productivity, especially when these data make no distinction between the various types of contracting activities being performed.

Table 1. Distinct Contracting Activities Require Different Management

(Allen & Chandrashekar, 2000)

Provider	Staff Augmentation Contracting	Mixed Contracting	Complete Contracting
Host firm/ buyer	Some employees Materials Processes and systems Technology and equipment Facilities Management/ supervision	Some or all of the following: • Employees • Materials • Processes and systems • Technology and equipment • Facilities • Management/ supervision	Program management
Contractor	Some employees	Some or all of the following: • Employees • Materials • Processes and systems • Technology and equipment • Facilities • Management/ supervision	Employees Materials Processes and systems Technology and equipment Facilities Supervision

Insights on DoD Service Contracting Provided by Data Systems Other Than the ICS

Our work exploring the potential to meet congressional intent for the ICS with the use of other data systems focused primarily on data from the FPDS-NG (and, to a lesser extent, on budget data). While FPDS-NG data may contain some errors in data submission, it is the authoritative system for federal contract reporting, and the quality of its data has improved over time. The FPDS-NG provides, for contractions of at least $3,000, information on the amount of the contract action, identification codes indicating whether the firm providing the service is a small business, the North American Industry Classification System (NAICS) code for the firm, the Treasury Account Symbol for the transaction funding (which can be linked to budget categories), and the Product or Service Code (PSC), a more finely grained indicator than the NAICS code regarding the exact nature of goods and services purchased. Though subject to some delay in publication due to security measures and verification, these data can provide numerous insights on the services the DoD has recently purchased and, in doing so, can assist in addressing the various congressional concerns underlying the ICS requirement—namely, enabling the production of spend analyses, trend analyses, and forecasting to inform budgeting and acquisition decisions. As we discuss in greater detail in

the next section, FPDS-NG data can also be used to produce alternative metrics for calculating contractor FTEs in an effort to inform strategic workforce planning.

In terms of their contribution to spend and trend analyses, FPDS-NG data indicate that half of DoD service spending falls under three PSC categories: Support (Professional/Administrative/Management), Research and Development, and Maintenance, Repair, and Rebuilding of Equipment. Further probing of FPDS-NG data shows that four specific types of services—including engineering and technical services and general health care services—were significant drivers of increases in DoD support service spending. FPDS-NG data indicate some opportunities to leverage purchases (that is, to consolidate contracts or purchases across offices so as to increase buying power), but they also point to possible difficulties in doing so. These potential challenges include the large proportions of small businesses and the wide array of industries (denoted by NAICS codes) providing these services, each of which is likely to vary along a number of dimensions. Finally, FPDS-NG data also help to illustrate the extent to which current service purchases are open to competition, as well as the contract types used to purchase services.

Coupling FPDS-NG data with budget-category projections can yield insights regarding likely future trends in overall spending for services. Most spending (59%) for services is related to operations and maintenance (O&M), one of the categories Congress uses for budgeting. Current budget projections indicate that O&M spending will continue to decrease, meaning spending on contracted services is likely to decrease as well. Congress stated that it wanted the DoD to achieve a reduction in service spending of $4.1 billion by FY 2017, relative what it was spending in FY 2012 ($186 billion). This amount of reduction in services spending—$4.1 billion—is equivalent to a parallel reduction in military basic pay resulting from reductions in military end strength in the same period. Calculating actual spending reductions using FPDS-NG data indicated that the DoD had already more than met this goal in FY 2015, reducing service spending by $38 billion. Using the President's budget projections, and assuming that the DoD out-year spending matches these budget projections and a constant percentage use of service spending occurs in each budget category over time, we estimated that the reduction in service spending will continue along the same trend, decreasing by $60 billion between FY 2012 (when total service spending was $186 billion) and FY 2021 (when we project total service spending to be $126 billion).

Risks and Benefits of Different Methods for Estimating and Reporting Contractor Personnel Use

In our interviews, we found that one of the key motives underlying the collection of data on direct labor hours associated with a contract is to use this information to assess the scale of the contracted services relative to the size of comparable DoD in-house activities. However, due to the shortcomings of relying on direct labor hours data for strategic workforce planning and insourcing decisions, as discussed earlier, the DoD might consider alternative measures that do not require collecting, validating, auditing, and protecting proprietary data reported by contractors.

We identified three alternative metrics to estimate contractor manpower numbers, in addition to the current ICS metrics (both actual contractor-reported direct labor hours and direct labor hours calculated using Army algorithms that are based on previously reported data on firms providing similar services). These are as follows:

1. the number of civilian FTEs that could be hired with the contract dollars ("civilian labor FTE per contract")
2. the number of industry or location-average employees per contract dollars ("contractor labor FTE per contract")

3. contract employees as a proportion of overall contractor revenue

These metrics may be calculated from data available through the FPDS-NG, the Bureau of Labor Statistics, and the U.S. General Services Administration–owned SAM, which consolidates the Catalog of Federal Domestic Assistance and various federal procurement systems.

Because these alternatives draw on available, in-house federal data or publicly available data, they do not require the DoD to collect, validate, audit, and protect proprietary data from contractors as the current metrics do. This, in turn, would likely generate cost savings, as the expenses incurred by contractors to collect and report direct labor hours on a given contract are included in the overall price of that contract. The use of these alternative metrics in lieu of contractor-reported or estimated direct labor hours could also assist the DoD in producing an ICS in a more timely manner, as they might not be as time-consuming to generate. The common disadvantage of these three alternative metrics is that they assume equal productivity across employees, industries, and sectors. Nevertheless, our comparative analyses of the results of the current ICS-derived metrics and these alternative metrics for determining the relative importance of contracted versus noncontracted labor across functions—based on calculations performed using each respective metric on "case studies" of particular PSCs—indicate that these alternatives are close proxies for the ICS metrics.

Conclusions

Our findings suggest that the ICS products, and the processes used to create them, are not meeting either congressional or DoD stakeholder needs. Several factors led us to this conclusion. First, the congressional intent underlying the ICS requirement is multifaceted and not always clearly specified in statute. Second, different ICS stakeholders are based in distinct functional communities, each of which has its own interests and needs driving its purpose for utilizing ICS data—and these needs and purposes do not always align across these divergent communities. Third, opinions differ both inside and outside the DoD on the utility and quality of the current ICS data, with some stakeholders finding the data more valuable and some finding them less valuable. Fourth, because the majority of ICS data through FY 2014 (the most recent year for which ICS data were available during the period of research) are derived using algorithms developed by the Army that are based on unverified contractor-reported data, their validity is questionable from the outset—particularly for contracts held by military services and defense components other than the Army. Moreover, the ICS data do not currently support spend analyses, trend analyses, forecasting, or strategic sourcing, and more information would be needed to conduct effective labor comparisons to inform insourcing decisions. Finally, much of the information Congress seeks to allow oversight of service contracts is available in other systems.

These findings led to several recommendations. First, policymakers should institutionalize the development and reporting of DoD-wide spend analyses of services, including analyses of trends, forecasts, and FTEs. This would entail issuing a detailed requirement for an institutionalized capability to analyze data on DoD service contracts and providing the necessary funding for its development. The DoD would also likely need to employ dedicated research programmers or statistical analysts in long-term positions to produce ICS-related analyses.

Second, ICS-related statutory requirements could be refined to better distinguish between different types of contracting and, accordingly, to require the collection of different data elements for each. Our research found that DoD contracting practices vary with both the types of services purchased and the level of oversight the DoD expects over such

purchases. ICS requirements could be revised to identify and distinguish among staff augmentation, mixed contracting, and complete contracting arrangements. For staff augmentation contracts, ICS requirements could be revised to specify the use of multiple alternative metrics relying on existing data sources, such as the FPDS-NG, to estimate a likely range of contractor FTEs. For mixed and complete contracting, the ICS requirement could be rewritten to focus on measuring total cost and performance rather than direct labor hours. Finally, for operational support contracts—for which Congress wants increased oversight of the number of deployed contractors on the ground—reporting requirements should focus on the number of actual deployed contractors, not FTEs.

Third, the DoD should periodically perform sourcing analyses of selected commercial services to determine whether civilians or contractors deliver the required level of performance at the lowest total costs. Doing so will ensure continuous adjustment of task assignments across the total force, where necessary, to maintain the lowest cost and most effective staffing solutions for a diverse set of defense functions.

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