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Developing United States Space Force Acquisition Occupational Competencies

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Abstract

As part of its competency-based talent management strategy, which is outlined in *The Guardian Ideal* (U.S. Space Force [USSF], 2021), the U.S. Space Force (USSF) is identifying foundational and occupational competencies. Foundational competencies are those with which all Guardians will demonstrate some level of proficiency. Occupational competencies (one set for each of the four Space Force occupations—intelligence, operations, cyber, and acquisitions) will be used to code each position within the USSF and to guide Guardian professional development. This paper outlines the challenges associated with identifying a set of acquisition occupational competencies for the USSF by documenting the planning, execution, and results of the Acquisition Occupational Competency Study held in January 2022. It is hoped that by capturing the USSF experience, other acquisition competency-related efforts can be informed.

The U.S. Space Force (USSF) was established in late 2019 dedicated to the defense of space because space capabilities are essential to the security and prosperity of the United States (U.S. Space Force [USSF], n.d.). One of the reasons the USSF was established as a separate service was to improve space systems and services acquisition. The establishment of a new uniformed military service—the first since the Air Force became a service in 1947—provides opportunities to establish new practices for the management of its people. A key personnel initiative of the new USSF is competency-based talent management. In order to perform this type of talent management, the USSF is identifying foundational and occupational competencies. During the winter of 2021–2022, the USSF began the process of documenting USSF acquisition occupational competencies. Analysis of the process and results of this effort should inform further efforts across all services to codify and implement acquisition competencies.

The initial Space Capstone Publication, *Spacepower Doctrine for Space Services*, identifies engineering/acquisitions as one of seven Spacepower Disciplines. Guardians who specialize in this discipline do so as part of the acquisitions career field. The acquisitions career field is one of four active duty Guardian officer career fields (the others are space operations, cyber operations, and intelligence). In the USSF, the acquisition career field consists of acquisition program managers (formerly Air Force Specialty Code, AFSC, 63) and developmental engineers (formerly the 62 AFSC).

The USSF is embarking on a radically different military talent management methodology. Taking the best practices from other services' recruiting, development, retaining, and development processes as well as having a unique opportunity to incorporate innovative practices from industry and academia, the USSF published *The Guardian Ideal* in 2021. One of the key tenets of this innovative strategy is the concept of performing competency-based talent management. *The Guardian Ideal* describes this concept further:

> Guardians will have more choices about their future as we migrate from highly structured career paths to a regulated market approach and talent

management based on a competency framework. In the near future, Guardians will be able to see the competencies needed for every position in the Space Force and their current competency levels to inform decisions about development and next steps. (USSF, 2021)

In order to effect a competency-based talent management approach, the USSF must have a set of well-defined competencies. "Some competencies are foundational to all Guardians, while others are specific to mission sets, occupations, or positions" (USSF, 2021). As such, the USSF first moved out on the identification and codification of a set of foundational competencies. This effort was spearheaded by the USSF Chief Human Capital Office (USSF/S1), working with the Air Force Air Education and Training Command (AETC). They formed a diverse team of high-performing airmen and Guardians to participate in studies and focus groups. In order to identify those competencies that are foundational to all Guardians, the focus group addressed questions such as: "What makes a Guardian likely to be successful across a USSF career?" and, "As the USSF changes, what competencies will prepare Guardians to be most successful in the future?" (Barron, 2021). This effort resulted in a draft set of Guardian foundational competencies that are being coordinated by USSF senior leadership.

With the foundational competencies identified and submitted for coordination, attention turned to the definition of the occupational competencies. These were to be identified by career field, resulting in space operations, cyber operations, intelligence, and acquisition occupational competencies. *The Guardian Ideal* (USSF, 2021) calls for the Space Force occupational competencies to be complete by June 2022. With the competencies baselined, each position within the USSF would then be coded with the requisite proficiency level thresholds (this is scheduled to be complete by September 2022). In September 2021, USSF/S1 partnered with the AETC to begin the effort of identifying the USSF acquisition occupational competencies. The first order of business was to identify the team of subject matter experts (SMEs) that would be involved in the study that would result in a draft set of acquisition occupational competencies.

Study Planning

The Acquisition Occupational Competency Study was scheduled for early January 2022. The study was facilitated by the AETC Occupational Competency Branch Chief. Additional AETC competency staff also participates as needed. The team was composed of USSF acquisition SMEs. These SMEs were pulled from organizations across the Department of the Air Force (DAF). USSF acquisition career management is the purview of the office of the assistant secretary of the Air Force for Acquisition, Technology, and Logistics (SAF/AQ). The military deputy in that office and the Space Acquisition Workforce Integrator were key initial team members. A preponderance of the USSF acquisition workforce is assigned to the Space Systems Command (SSC); as that is the field command responsible for developing, delivering and sustaining innovative capabilities to protect our interests in space (insideSSC Hub, n.d.). The SSC Chief Learning Officer and members of the SSC Talent Management organization— particularly from the SSC Career Field Teams—were also identified as team members. Finally, as these identified team members were primarily senior in grade and experience, study participants identified a need for including junior USSF acquisition personnel in order to get a fresh perspective on the career field. Alumni from the SSC Galaxy development program (a competitively-selected SSC junior force 6-month rapid professional development program) were identified to participate in the study as well. These junior officers provided a necessary diversity of thought to the team.

The study effort needed to be scoped to the appropriate competencies to be identified. The DoD acquisitions workforce consists of six functional areas: Program Management (PM), Engineering and Technical Management (ETM), Contracting (PK), Logistics (LG), Business

(both Financial Management [FM] and Cost Estimating [CE]), and Test and Evaluation (T&E). Would the study be identifying competencies for all six functional areas, as an "Acquisition Occupational Competency Study" might imply? The answer was no—the study would identify the 63 PM and 62 ETM occupational competencies only. This is because the first iterations of USSF occupational competency identification were to focus on active duty Guardian competencies. When the USSF was stood up, only the PM and ETM career fields were established within the force as career fields. Remaining acquisition functional support would be provided by airmen and DAF civilians (there are no USSF civilians; all civilians supporting the USSF are DAF civilians).

This limiting of the scope of the study caused some consternation, particularly within the SSC. In an effort to be inclusive of the totality of the workforce, when many in SSC leadership use the term "Guardian" they are referring to not only the 62 and 63 active duty officers, but also the DAF civilians and airmen assigned to and supporting SSC program offices. As the activities and responsibilities of active duty and civilian PMs and ETM personnel overlap significantly, the study was deemed to be identifying the occupational competencies for all USSF PM and ETM personnel, military or civilian. However, a review of the civilian positions within the SSC indicated that this would still not include 51% of the SSC workforce. When pressed on this, study leadership decided to progress with the limited scope as a first iteration of identifying acquisition occupational competencies with a plan to evaluate the necessity and process for capturing occupational competencies associated with other USSF acquisition functional areas.

With the scope of the study established, efforts turned to preparation for the study itself. The study was schedule for January 10–13, 2022 in the SSC Innovation Lab at Los Angeles Air Force Base. Read-ahead materials were distributed to team members. These included documents capturing existing acquisition-related competency models and a briefing highlighting the process and methodology for the study. The methodology involved a Future Scanning discussion, activities to identify a draft set of competencies, identifying the behaviors for each level of proficiency within each competency, and finally a mapping of the "soft skills" to each competency.

Study Execution

An initial challenge with the study itself was the lack of availability of key team members. As the study kicked off, the SSC Program Manager Career Field Team Lead was on paternity leave and the Engineering Career Field Team Lead was in transition to a new position within a program office and neither were able to participate in the study. No suitable substitutes were available, either. On the positive side, the team was augmented with an acquisition officer from the USSF Space Operations Command (SpOC). The Lieutenant Colonel brought a perspective of an acquisition professional not assigned to a program office. In addition, an SME who had participated as an acquisition representative on the foundational competency development effort also participated—even though he was stationed in Germany and had a significant time difference to deal with. Finally, a mid-level Guardian program manager who had previously taken it upon himself to dive into the service's PM development processes was also invited to participate, as he brought both a mid-level professional's perspective and a passion for the topic. The AETC facilitator and team decided the team was suitable enough to develop a draft set of competencies and continued with the study effort.

The study itself began with a baselining of terminology. Some of this material had been sent out as "think-aheads" to the study participants, but the AETC Occupational Competency Branch Chief presented them for discussion to ensure that the study team was on the same page with regards to the fundamental terms that would be used throughout the week. Specifically, the team used the definition of the term "competency" from *The Guardian Ideal*: "A

competency is the combination of knowledge, skills, abilities, experiences, and characteristics that manifest in the behaviors needed in designated roles" (USSF, 2021). The team was also presented with definitions and examples of knowledge, skills, abilities, experiences, and characteristics, as they would all be wrapped up in the identification of the acquisition occupational competencies.

A key definition was for "behaviors," as it is distinct from the competency that results in the behavior as well as the tasks that are associated with the behaviors. Further, the team would be identifying behaviors later in the study as they are associated with each level of proficiency within a competency. For purposes of the study, a behavior is "an activity performed to achieve objectives of the job. Involves observable (physical) components and unobservable (mental) components. Behaviors consist of the performance of one or more tasks. Knowledge, skills, and abilities are not behaviors, although they may be applied to work behaviors" (Villanueava, 2022). To further the team's understanding of the concepts, an excellent graphic was shown of an iceberg. The word "Behaviors" was on the iceberg and the words "Experiences," "Knowledge, "Skills," and "Abilities" were depicted on the portion of the iceberg below the water line (Villanueava, 2022).

With a common understanding of the terminology, the team began the work of identifying the competencies themselves. Led by the facilitator, the team performed a Future Scan discussion where we discussed the challenges our acquisition workforce is likely to encounter in the future and the desired characteristics of that future workforce. This led to the team's day 1 homework: from a list of identified competencies, identify the top 20 for consideration for USSF acquisition occupational competencies. A discussion item for clarification came up regarding whether the output of the study would be a single set of acquisition occupational competencies that could include PM and ETM subsets or distinct sets of PM (63) occupational competencies and ETM (62) occupational competencies. The team landed on the study's task being to identify 63 acquisition occupational competencies and 62 acquisition occupational competencies.

As the homework was assigned, and along with the clarification that two sets of competencies were to be created, another team composition-related shortfall was identified. Specifically, the team was short on 62 ETM experience. Recall the SSC ETM Career Field Team Lead was unable to participate. That left a small team of 62s to perform the homework and subsequent ETM occupational competency work. To compensate, the team decided that the SAF/AQ career field manager (an experienced colonel) and the SSC chief learning officer (retired lieutenant colonel and senior civilian) would rely on their experience, not as actual 62 officers but in working with them and having them assigned to work for them, to also identify their top 20 62 competencies.

The team sought clarification with regards from where to pull the top 20 candidate competencies. Specifically, could the team start with a blank sheet of paper or was there a master list of competencies from which to select? The AETC facilitator suggested and the group agreed to start with the competencies that were sent to the group as read-aheads. These included a generic competency set, the Office of Personnel Management's 2013 Multipurpose Occupational Systems Analysis Inventory—Close-Ended (MOSAIC) list. With regards to the 63 PM competencies, the master set included the 2021 Office of Secretary Defense (OSD) PM competency list, a comparison of those to the Project Management Institute's Knowledge Areas, and a 2002 Federal Acquisition Institute Technical Competency Validation Report. For the 62 ETM competencies, the master set included the OSD Engineering Career Field Competency Model, Version 2.0 and a 2014 Naval Postgraduate School paper, *Development of a Systems Engineering Competency Career Development Model: An Analytical Approach Using Bloom's Taxonomy*.

The participants submitted their top 20 competencies to the AETC facilitator such that he could consolidate the input into a product the entire team could review the morning of day 2. The facilitator was able to highlight the competencies that were identified by the most study team members. This allowed the team to group like competencies, e.g., individual competencies like "acquisition strategic planning" and "technical planning" were wrapped up in the broader draft competency of "program planning." This exercise resulted in a draft set of 63 PM competencies. The exercise was then performed for the 62 ETM competencies. In both cases, these draft lists set up the remainder of the study effort.

It was becoming increasingly clear to the team that the intent to develop a full competency list for both 63 PM and 62 ETM Guardians within the four days allotted for the study was perhaps aggressive. In fact, the AETC facilitator had suggested as much at the outset, i.e., he hadn't tried to do two AFSC competency definition efforts in the same week before. The next step in the process started to bear this out. The team was broken into two teams; one for 63 PM competencies and the other for 62 ETM competencies. The teams were charged with defining each competency and identifying a proficiency delineation framework and representative behaviors associated with each level of proficiency. The proficiency levels in this model are basic, intermediate, advanced, and expert. The proficiency framework provided a scaffolding to assist in identifying the behaviors at each level. For example, a proficiency framework might be that people are only able to demonstrate certain behaviors based on their position within the organization. Completing this activity for the 63 PMs closed out the study.

Study Results

Given the aggressive agenda—two career field competency lists in a one-week study— the results of the study are not surprising. The team was not able to create the intended results of the study, i.e., complete draft lists of 63 PM and 62 ETM competency lists with proficiency level behaviors drafted and soft skills competencies mapped. At the completion of the study, the team had a draft list of 63 PM competencies with representative behaviors for each proficiency level. As for the 62 ETM competencies, at the end of the study, the team had a draft list of competencies. [NOTE: As of this paper's writing, the draft competency lists have not been fully coordinated with senior leadership and therefore are not releasable.] The team was not able to complete and review as a group the representative behaviors associated with each proficiency level. As such, the teams left with an expectation of follow-on work to complete the lists.

The study team met the expectations of the original study plan by completing the deferred work after the study itself. The 63 PM team performed the soft skills mapping exercise to select the top 3 soft skills (derived from the draft USSF Foundational Competency List) that most applied to each of the 63 PM competencies. The 62 ETM team—this time augmented by additional experienced and available engineering career field SMEs—finished their competency work remotely. In a virtual follow-on session, they finished defining the competencies, identifying representative behaviors for each proficiency level, and mapping the soft skills that most fit each competency.

The next step in the formal baselining of the competency lists is for them to be validated. A survey was created to validate the occupational competency model the study team came up with. There are two surveys: a senior leader survey for lieutenant colonels and colonels and a general survey for the rest of the rest of the workforce within each career field (i.e., separate surveys for 63 PM Lt Cols and Cols, other 63 PMs, 62 ETM Lt Cols and Cols, and other 62 ETM personnel). As this paper is being written, survey participation has not been high enough to allow for validation of the competency lists and the AETC staff is working to improve the response rate.

Analysis

Although likely not by the date called for in *The Guardian Ideal* (USSF, 2021), the USSF will soon baseline a set of acquisition (both 63 PM and 62 ETM) occupational competencies and begin to use them as part of an innovative competency-based talent management methodology. It was a benefit that AETC had an existing process and methodology for identifying occupational competencies. However, instead of providing broad guardrails for the study team to operate within, the process was highly prescriptive. This resulted in some question as to whether appropriate consideration was given to existing competency models in these career fields. Further, the direction within the study itself to identify the candidate competencies from existing (predominantly OSD) competency lists had the inevitable consequence that the resulting USSF Acquisition Occupational Competency lists were a subset of previously identified OSD competencies. A question remains … is that appropriate for the USSF? Finally, given the initial issues with the number and experience levels of SME participation in the study, the validation by the workforce becomes all the more important. However, as of this paper's writing, this validation process is not progressing as survey participation is low. This could also contribute to challenges with broader workforce acceptance of the competency models.

How could the task of identifying acquisition occupational competencies have gone differently to address the challenges previously identified in study planning, execution, and results? These challenges largely regarded identifying the scope of the study. Specifically, for whom was the team developing competencies; just military Guardians? Which acquisition career fields would be covered with the resulting competencies? Within the study itself, what would be the approach for identifying candidate competencies: start with a blank sheet of paper or with an existing framework? Although the study team reached consensus on the resulting competency lists, i.e., they could support the list to external stakeholders and would not undermine the validation of the results, what follows are alternative methods for deriving Guardian acquisition occupational competencies.

Going into the study planning activities, there was a question whether the task was to identify "acquisition" occupational competencies for the USSF or 63 PM and 62 ETM competencies. This question involves two concerns: are the competencies to be developed military-only or for both military and civilian personnel, and what about competencies associated with the other acquisition functional areas (FM, PK, LG, T&E)? The study team was directed to focus on the military AFSCs with the belief that the competencies created would also apply to the corresponding civilians supporting the USSF in the PM and ETM functional areas. Implementation of the fully competency-based talent management framework for DAF civilians comes with many challenges as, whereas the USSF completely owns the military recruiting, evaluation, promotion, and development processes, DAF civilians fall under OSD civilian manpower policies and procedures. However, to the extent possible, it makes sense to have the same competencies for all acquisition PMs and engineers, regardless of whether they are military or civilian.

With regard to the question of which acquisition functional areas should be covered by the resulting competency list, more discussion before or during the study might have resulted in a different construct for the draft competency lists. A proposal was floated before and briefly during the study to identify a broad set of USSF acquisition occupational competencies; that is, not a list for each acquisition functional area. The idea would be for there to be a handful of competencies that applied to all acquisition Guardians with the option/provision that functional area-specific sub-competencies could also be developed. The present study would have sought to identify the 63 PM and 62 ETM sub-competencies. As the 63 PM and 62 ETM competency lists the study team came up with have several overlapping competencies, this seems to support the idea that there are competencies that apply across the board within USSF

acquisitions. Further, this methodology would have had the effect of allowing for identifying BUS-FM, BUS-CE, PK, LG, and T&E sub-competencies to cover the remainder of the Guardian and DAF civilians supporting USSF acquisitions in subsequent iterations.

Finally, there is the question of starting with a "clean sheet of paper" versus an existing framework. With the establishment of a new military service comes the opportunity to be truly innovative in all business practices. USSF leadership has encouraged this type of behavior so that USSF policies and procedures are not shackled or beholden to Air Force or even OSD practices, if there's a better way to do things. During the study, both the 63 PM and 62 ETM teams selected their candidate competencies from OSD competencies. As mentioned previously, this has the effect of essentially directing that the resulting competency lists are subsets of existing competency lists. What if the study participants had been instructed through a facilitated process to draft from scratch the most important competencies within their functional areas? The team could reference existing competency frameworks—and not just the OSD ones—but would be encouraged to tailor those to fit those collections of knowledge, skills, abilities, experiences, and characteristics that they felt would lead to desired USSF acquisition behaviors.

There is no guarantee that the competency lists resulting from the modified processes described here would be better than the list the study team came up with. What is the objective measure of competency "goodness," anyway? Further, who is to say that following a different methodology, the study team would not have come up with the same—or for all intents and purposes, the same—list of competencies? As the draft Guardian 63 PM and 62 ETM competency models progress through the validation process, the workforce will have a say in whether the study team got it right.

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