Competency Modeling in the USSF: Development and Applications

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ABSTRACT

Competency modeling is a critical component of talent management programs, providing a structured approach to identifying higher-level knowledge, skills, abilities, and other attributes necessary for successful performance, and specific behaviors that exemplify them. By focusing on high performance job behaviors, competency models enable organizations to optimize person-job fit, identify training gaps, and make informed talent development decisions. The United States Space Force (USSF) undertook a multi-year effort to develop a comprehensive and impactful competency model, labeled as a Capability and Skills Framework. This paper provides an overview of the USSF's process and shares key lessons learned. Specifically, we will focus on the two main phases of the project. The first phase involved survey administration and engagements with senior leaders to identify the essential competencies required for Guardians. This effort identified and validated 28 Guardian Foundational Capabilities (GFCs) relevant to all Guardians, and 96 Specialty Skills (SSs) that are relevant to specific career fields. The second phase involved developing rubrics for each capability, outlining example behaviors at different proficiency levels (basic, intermediate, advanced, and expert). To inform these rubrics, researchers conducted critical incident interviews with Subject Matter Experts (SME) from each career field and translated the responses into observable behavior statements representative of each proficiency level. Through this iterative process, the model underwent validation efforts and several revisions, ultimately resulting in 14 GFCs and 82 SSs.

In this paper, we discuss key lessons learned including the importance of recruiting a diverse range of participants, relying on expert judgment and empirical data to build the model, and ensuring that the model remains flexible and adaptable to changing organizational needs. We also discuss the future applications of the Capability and Skills Framework within the USSF and how competency models can be leveraged to make key decisions and develop Guardian talent.

ABOUT THE AUTHORS

Dr. Shane Sizemore has worked with the DoD as an Industrial Organizational Psychologist for over 3 years. His experience includes developing new assessments that support current Air Force selection methods to enable higher employee performance, higher engagement and satisfaction, and lower turnover. Notable efforts include psychometric evaluation and improvement of large-scale selection and classification measures within the Air Force, including work with the Selection and Classification for UAS Personnel (SUPer) test battery, developing a Situational Judgment Test, and developing performance appraisals. Further, Dr. Sizemore led work to improve the assessment and improvement of Guardians in the Space Force. Specifically, he led a team to develop structured interviews for officers, worked with SMEs to develop a detailed competency model, and generated multi-source rater instruments to evaluate Guardian performance. His work has been published on the Defense Technical Information Center and has been presented at national conferences.

Ms. Julia Brown is a Scientist and Capability Lead in the Training, Learning, and Readiness Division at Aptima, Inc. Ms. Brown has experience in selection, training, quantitative and qualitative analysis, and leadership development. She specializes in multi-rater, multi-method performance assessments, competency model development, and talent management. Ms. Brown earned an MS in Industrial/Organizational Psychology from San Diego State University and a BS in Psychology from James Madison University.

Dr. Emily Anderson is a personnel psychologist who leads the Command Assessment Program within the United States Space Force's Enterprise Talent Management Office. She earned her Doctorate in Clinical Psychology from the University of Indianapolis in 2011 and previously served as an active-duty Air Force psychologist. She specializes in assessment and selection, with a focus on developing leadership evaluation tools and talent identification processes that inform high-stakes decisions. Her work supports the Space Force's broader effort to build a deliberate, data-informed approach to talent management.

Dr. Jennifer Tucker currently serves as Chief of the Assessments and Data Analysis Branch with the Enterprise Talent Management Office at the United States Space Force. She received her Ph.D. in Systems Science: Industrial/Organizational Psychology from Portland State University in 2005. Dr. Tucker has led teams of scientists and technical/military experts in the areas of organizational development and talent management to assess and develop military leaders and team members. She has led programs to develop innovative methods to assess, track, and provide feedback on critical cognitive, social, and other attributes that are needed to optimize military members' performance across their careers.

Dr. Alex Barelka is a Professor in the Department of Management at Illinois State University. He is also a retired USAF Lt. Col. and has extensive experience with DoD HR programs and People Strategy domains. His interests include leadership, trust, suspicion, culture, and psychometric assessment. He has published in the top journals in the field and has obtained over $2.5 million in educationally focused grants. Alex's prior work includes being a Management Professor at AFIT and Technical Advisor in an AFRL branch with 31 PhD level organizational researchers. He also served as Program Manager for over 21 years, managing multiple world-wide IT and optical programs valued at more than $354 million. Other previous work includes (i) Chief of Strategic Communication Assessment (NATO assignment) in Kabul AFG, (ii) leading a team that developed a framework for a corporate wide cultural certification program, and (iii) leading an effort to create a new leadership development curriculum and assessment program for the two largest USAF officer leadership academies. Alex has contributed to the USSF Guardian Ideal and helped both Air Force and Space Force create and validate its competency model.

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THE UNIQUE CONTEXT OF THE UNITED STATES SPACE FORCE

Established as the sixth military branch on December 20, 2019, the United States Space Force (USSF) distinguishes itself as the youngest and smallest branch of the military. Its members are known as Guardians, a name that traces back to the former Air Force Space Command's motto, "Guardians of the High Frontier" (Space Force 101). The Space Force was created to ensure freedom of action in space for U.S. forces, while denying that advantage to adversaries. Its mission reflects the recognition of space as a critical warfighting domain and emphasizes the need for a force capable of deterring and defeating rival powers in this increasingly contested environment. As a new, purpose-built service, the Space Force is deliberately shaping a distinctive organizational culture separate from its parent service, the Department of the Air Force (Cohen, 2024). With approximately 14,000 personnel, its small size provides opportunities to streamline decision-making, modernize organizational structures, and reimagine core functions such as talent management.

The USSF is comprised of five career fields: Space Operations, Space Intelligence, Space Cyber Operations, Engineering, and Acquisition. Given its heavy reliance on specialized, STEM-intensive career fields, the Space Force competes directly with the private sector for talent, particularly in industries such as aerospace, cyber, and advanced technologies. To address this challenge, the service is implementing novel talent management strategies, including a congressionally approved personnel system designed for flexibility and efficiency (Air Force Secretary of Public Affairs, 2024). These efforts focus on targeted recruitment, career path customization, and continuous professional development to build a workforce of "joint-minded warfighters" with deep technical expertise and operational awareness across the space domain who can also leverage strategic partnerships with sister services, international allies, and the public domain (Guardian Ideal). This combination of small scale and technical focus allows the service to experiment with agile personnel systems that prioritize individual skills, joint operations, and mission-focused development.

The Guardian Ideal is one of USSF's foundational documents that outlines the service's innovative approach to talent management (Air Force Secretary of Public Affairs, 2021). The Guardian Ideal describes the unique talent requirements needed to achieve this mission. Importantly, it states that the USSF will need to rely on innovation, automation, and digital technology to become "the military's first truly digital service" (Guardian Ideal, p. 1). With the focus on talent specifically related to the space domain and a need to constantly remain at the cutting edge of technological advancements, the USSF requires a unique and agile solution in modeling the attributes needed to build a successful force. Many of the talent requirements resemble those of the United States Air Force (USAF). For example, being a leader, working in teams, and communicating effectively are important qualities across the services. However, to accurately reflect the core values of the USSF (outlined in the Guardian Spirit) and address the USSF's dynamic talent needs, the USSF competency model must also remain dynamic, evolving alongside the mission, technology, and organizational context of the USSF.

This paper provides an overview of the development of the USSF competency model, referred to as the Guardian Capability and Skills Framework, key lessons learned, and future applications.

BASICS OF COMPETENCY MODELING

Before describing the development process, it is important to define terms. A competency model is a structured framework that represents the important qualities required for effective job performance (Schippmann et al., 2000). It reflects the unique talents and values required to build a successful USSF (Campion et al., 2011). More specifically, a competency is a complex human attribute, including a collection of knowledge, skills, and abilities, required to be effective in a specific role (Sanghi, 2016). Within an organization and for any given position, many competencies are required to perform successfully. To organize and understand all of the required competencies, an organization will generate a competency model.

Unlike traditional job analysis, which inductively identifies job tasks and required knowledge, skills, abilities, and other attributes (KSAOs), competency modeling is more deductive, focusing on desired outcomes and organizational values, working backward to determine necessary competencies (Campion et al., 2011). This approach allows organizations to align competencies with strategic objectives, ensuring that employees develop attributes essential for success in evolving job roles. Competency modeling is a critical component of talent management programs, providing a structured approach to identifying higher-level KSAOs necessary for successful performance, and specific behaviors that exemplify them.

The competency model can encompass both task-specific skills and human attributes such as adaptability, interpersonal skills, and creative thinking (Rodriguez et al., 2002). Building a model at a broader perspective, rather than focusing on the more precise KSAOs, enhances flexibility and adaptability, preparing individuals to navigate evolving roles and unpredictable environments. Further, developing a USSF-specific competency model facilitates talent management objectives aimed at optimizing person-job fit, identifying and narrowing training gaps, and making data-informed talent development decisions. Consequently, the USSF relied on best practices to build a competency model that would directly support the USSF's mission and values.

PROCESS FOR DEVELOPING THE CAPABILITIES AND SKILLS FRAMEWORK

The USSF undertook a multi-year effort to develop a comprehensive and impactful competency model, labeled as a Capability and Skills Framework. The three-phase process followed much the same methodology as the development of the USAF competency model detailed in Barelka et al. (2019) and AFH 36-2647 "Competency Modeling".

Ultimately, the USSF built a Capability and Skills Framework that is comprised of two layers of competencies: Guardian Foundational Capabilities (GFCs) and Specialty Skills. The Air Force distinguishes between institutional and occupational competencies, with the former being KSAOs that are applicable to all Airmen, and the latter targeting technical and mission-specific expertise (Roberson et al., 2017). For the USSF's framework, the GFCs are akin to the Air Force's "institutional competencies" and are comprised of person-attributes that are required and expected of all Guardians, regardless of career field. The Specialty Skills are similar to the Air Force's occupational competencies and meant to be specific to the technical requirements for each role. The authors of this paper were primarily involved in various stages of the development of the GFCs. As such, the GFCs will be the focus of this paper. However, it is important to note that both foundational capabilities and Specialty Skills are critical to the success of the applications in talent management.

Phase 1: Initial Development of Foundational Capabilities

The initial development of the foundational capabilities included input from Subject Matters Experts (SMEs) ranging from Guardians, Senior leaders, and personnel psychologists, followed by a force-wide survey that was sent out to all Guardians. The use of SMEs is critical at this stage as it allows for top-down model building, such that organizational values and requirements are built into the model. This is important as competency models are both a reflection of organizational values and can serve as a signal to the workforce as to what is valued (Campion et al., 2011).

The process began with the SMEs generating an initial list of competencies. To elicit SME input, USAF AETC/A3J facilitated three focus groups. The first two focus groups included 24 SMEs, with representation across all five career fields. Specifically, participants included six Lieutenant Colonels, five Majors, three Captains, one Chief Master Sergeant, two Senior Master Sergeants, three Master Sergeants, one tech Sergeant, one specialist, and two civilians

from a range of Air Force Specialty Codes (13S, 1C6, 61, 62, 63, 17D, 3D, 14N, 1N). The focus group discussions addressed three primary questions:
1. What makes a Guardian likely to be successful across a USSF career?
2. As the USSF changes, what competencies will prepare Guardians to be most successful in the future?
3. If you think about members who would not be successful in a USSF career, why would they not be successful?

During the first two focus groups, SMEs engaged in open discussions about important competencies, provided independent ratings for inclusion, and then discussed the results to build consensus. The third focus group included a smaller group of senior leaders who reviewed the products from the first two focus groups and identified two additional competencies to include. The focus groups resulted in the identification of 14 competencies (see Table 1).

After this initial list was developed by SMEs, a literature review was conducted by a group of personnel psychologists to ensure that any other traditional foundational competencies were not inadvertently omitted. The purpose of this step was to leverage scientific literature to ensure that competencies that have been shown to be important to job performance across a range of studies were included. During this stage, an inclusive and comprehensive approach was taken to lean towards inclusion for a force-wide survey and then have the option to down-select for the final model based on the results of the survey. While many sources were consulted during this stage, two primary sources of information for this activity were the great eight competencies by Bartram (2005) and foundational doctrines, such as the Guardian Ideal. This step resulted in the inclusion of six additional competencies (see Table 1).

The competencies were then included in a force-wide survey. Often this is accomplished by asking a question about the importance of each of the competencies. However, such an approach is effectively based on one item measures; thus, reliability statistics cannot be computed. Therefore, we chose to use multi-item measures with known psychometric properties. To do this, a team of four senior, personnel psychologists mapped each competency to known constructs in the literature with preexisting measures. This approach had the additional benefit of ensuring that the final list of competencies was unidimensional in nature. For example, in some cases it was difficult to select a single construct that incorporated all of the ideas behind the competency definition created by the focus groups, so in this case several constructs were selected to ensure proper coverage of the definition. Table 1 lists each of the original list of competencies and their corresponding unidimensional constructs from the literature.

Table 1. Identified Competencies and Mapped Constructs

Competency	Mapped Constructs
Accelerating Innovation[1]	Creativity Creative Thinking Risk Opportunity Recognition
Accountability[1]	Accountability
Adaptability[1]	Adaptability
Analytical Thinking[3]	Analytical Thinking
Boldness[1]	Voice Initiative
Change Management[3]	Change Management
Collaboration[1]	Collaboration
Communication[1]	Communicator Competence
Curiosity[1]	Curiosity Information Seeking
Digital Literacy[3]	Digital Literacy
Fostering Inclusion[1]	Fosters Inclusion Removes diversity barriers
Humility[1]	Humility
Leadership[2]	Leadership Developing Others
Problem Solving[1]	Problem Solving

Relationship Building[3]	Relationship Building
Resilience[1]	Resilience
Strategic Thinking[3]	Systems Thinking
Self-Management[3]	Self-Management
Trust[1]	Autonomy Collective Efficacy
Warfighting Ethos[2]	[N/A]

[1]Competencies identified by initial two focus groups
[2]Competencies identified by senior leaders in third focus group
[3]Competenices identified by researchers during literature review

The items selected from pre-existing measures were included in a survey along with demographic items. This effort was part of a larger study that was distributed to all USSF personnel, totaling approximately 14,000 members. The survey software was programmed to randomly assign half of the participants to respond to this competency survey, resulting in a potential sample of 7,000 members. From the 1,346 surveys returned, 1,187 were retained with complete responses (yielding a 19% total response rate and 17% of the responses being usable). This response rate is consistent with job analysis and survey efforts when distributed force-wide and is within 1 SD of the mean response rate for organizational studies (Baruch & Holtom, 2008)

An analysis on missing data indicated no significant discrepancies in response rates or base rates across 28 demographic variables. Subsequent Confirmatory Factor Analysis (CFA) and Cronbach's Alpha analysis ($\alpha_{mean} = .85$ with a α_{min} of .73) affirmed the high-quality psychometric properties of each scale, supporting the calculation of means and standard deviations for each. We also included a measure of Directiveness—operationalized as Assertiveness—as an attention check. As anticipated, this scale received the lowest ratings, confirming that participants were engaged and thoughtful in their responses. Together, these results provide evidence that our sample represented the USSF population and provided both reliable and valid data.

Typically, the next step in the process would be to establish a "cut line," which is a value used to decrease the number of competencies in the model. This cut line can be established using a data-informed approach to understand where there is a steep decrease in the importance of competencies. However, in our case, the researchers confirmed there was no clear drop off point and such an approach would be an arbitrary value. Instead, we opted for a second-order factor analysis to logically group constructs. After several iterations of Principal Components Analysis (PCA) and the application of various techniques such as parallel analysis, the most coherent item-level structure emerged with eight distinct components. These were labeled as The Big Six, Embracing Opportunity, Embracing Change, Personal Management, Unnamed, Encouraging Autonomy and Independence, Digital Literacy, and Relationship Building.

Further analysis at the scale-score level, which involved averaging items related to each of the competencies, suggested a bifurcated model. The resulting PCA delineated two overarching components: one encompassing competencies with an interpersonal focus and the other with a self-directed focus. Notably, several competencies demonstrated theoretical relevance by cross-loading on both components.

The model then underwent a rigorous review by senior leaders, who were briefed on the thorough and methodical process underpinning its development. This review primarily focused on refining the names of factors and competencies to enhance their relevance and comprehensibility for Guardians, ensuring alignment with the USSF's core values and objectives. This review also included finalizing construct definitions. The team ultimately landed on three higher level groupings: self, team, and service. These competency groupings were chosen to resonate with USSF personnel and align with the organization's culture and mission. The final model, including 28 foundational capabilities, can be seen in Table 2 below.

Phase 2: Rubric Development

The second phase involved developing rubrics for each capability that outlined example behaviors at different proficiency levels (basic, intermediate, advanced, and expert). To complete the second phase, we conducted critical incident interviews, generated example behaviors, and conducted a validation study.

Critical incidents represent work-related situations where excellent or poor behaviors are observed (Shattuck & Woods, 1994). The value of critical incidents is to collect rich information about the context leading to the incident, the behavior, and the outcome of that behavior. To support rubric development, we recruited at least two Subject Matter Experts (SMEs) from each career field and provided an introductory training on critical incidents. Then, we shared the capabilities and asked SMEs to "Describe a job situation in which you observed your colleagues exhibiting Excellent/Poor behavior on the job" followed by some probing questions. We provided a label and description for each capability to each SME and asked them to generate a critical incident for each capability.

Table 2. Competency Model and Definitions

Domain	Capability	Definition
Service Competencies to Enable Spacepower Success	Recognize Patterns and Interactions	Recognizes patterns and interactions between various components of a system. Understands how actions in time, space, society, technology and culture may reinforce or counteract each other.
	Champion a Vision	Enthusiastically and confidently expresses a vision that offers followers meaning and purpose; actively models the values that underlie the mission.
	Use Problem Solving Skills	Responds to problems by processing information, weighing the relevance and accuracy of information, and determining the best course of action to maintain efficiency and effectiveness of operations.
	Learn and Improve	Expresses a desire to develop the self by acquiring new skills, mastering new situations, and improving one's competence through education, training, and experience.
	Advocate Boldly	Speaks up and out to enact change that improves the organization; transparently conveys their thoughts and opinions pertaining to the work environment, even if others express more popular or opposing views.
	Effectively Plan and Organize	Systematically plans, organizes, and coordinates resources to achieve organizations goals efficiently and effectively.
	Engage Creatively	Develops new insights into new situations; questions conventional approaches. Creates meaningful new ideas, methods, and solutions that transcend traditional ideas, rules, patterns, or relationships.
	Manage Change	Adapts, helps others adapt, or implements change with the goal of ensuring unit goals are properly aligned to the desired end state.
	Adapt	Is open to change and new information; rapidly adapts to new information, changing conditions and strategy, or unexpected obstacles, processes and requirements
	Demonstrate Curiosity	Demonstrates motivation to see out knowledge and new experiences and a willingness to embrace the novel, uncertain, and unpredictable nature of everyday life.
	Trust in Teammates	Displays confidence in the capabilities of others.
	Understand the Joint Warfight	Explains all domain operations conducted by Joint Forces and Allies through their Combatant Commands and Service Forces.
	Space Domain Awareness	The timely, relevant, and actionable understanding of the operational environment that allows military forces to plan, integrate, execute and assess space operations.
Team Competencies to Ensure Mission Success	Be Accountable to Others	Demonstrates ownership for one's decisions and actions; reliably exerts effort to influence outcomes and have an impact.
	Advance Inclusion and Equality	Forms and maintains supportive and caring relationship with team members that contributes to a sense of belongingness. Makes honest and reasonable efforts to remove barriers to success and prevent discrimination.
	Demonstrate Humility	Demonstrates awareness of one's own personal limitations; accepts feedback and from others; avoids displays of arrogance.
	Communicate Effectively	Actively listens and attends to verbal and nonverbal cues; clearly and tactfully presents information and ideas orally and in writing.

	Develop Others	Provides professional development opportunities; committed to helping others improve their skills and enhance self-efficacy, commitment, and competency.
	Promote Autonomy	Provides independence; allows others to determine how to direct their efforts, determine the method, and set the pace to best accomplish their work.
	Foster Cooperation	Works well with others to achieve a common goal; fosters a cooperative rather than a competitive work environment.
Individual Competencies to Exemplify Guardian Identity	Demonstrate Initiative	Taking an active and self-starting approach to work and going beyond what is formally required in a given job.
	Recognize Opportunities	Perceives, gathers, interprets, and applies information to identify opportunities across boundaries to build strategic relationships and achieve common goals.
	Be Digitally Literate	Uses technology to identify, critically evaluate and synthesize data and information; explore, create and manage digital content; and appropriately interact in a virtual environment.
	Network	Develops relationships and networks; builds alliances; collaborates across boundaries to build strategic relationships and achieve common goals.
	Think Analytically	Breaks down complex information into smaller parts to identify connections/determine cause and effect; systematically devises action plans, evaluates outcomes, and adjusts activities to achieve objectives.
	Embrace Risk	Tries novel approaches and makes decisions that have a high potential of reward, knowing and accepting that disappointment and failure are also possible outcomes.
	Be Resilient	Demonstrates the ability to bounce back and recover from stress.
	Apply Military Force Ethically	Understands and effectively applies rules of engagement in execution or support of space operations.

The next step was to generate behavioral examples that represented Basic, Intermediate, Advanced, and Expert proficiency-level behaviors for each capability. A team of Industrial and Organizational Psychologists reviewed the responses and extracted situational information and corresponding behaviors. These were translated into behavioral statements that varied in (a) scope, (b) complexity, and/or (c) type of behavior to differentiate between proficiency levels. As a preliminary review, we distributed the existing rubrics among three SMEs (2 enlisted and 1 officer) to provide feedback on phrasing, alignment with capability, and alignment with proficiency level. All three SMEs reviewed and provided feedback on all of the competencies. Revisions were made based on this feedback.

The last step in developing the rubrics was a validation study to empirically demonstrate the alignment of each behavior and its proficiency level. We received data from 18-25 USSF personnel (enlisted, officers, and civilians), depending on the capability. In this survey, we asked participants to evaluate each behavioral example and rate its proficiency level on a 4-point scale, corresponding to the four proficiency levels. There was also an option to select "Does not relate to this capability", followed by an open-text option to provide details or recommendations. We used these data to inform the proficiency level of each behavior. Consequently, higher proficiency-levels included behaviors that were rated as higher proficiency compared to lower proficiency-level behaviors (see Figure 1 for an example).

Figure 1 depicts the average proficiency ratings for each behavioral example in just one capability—Champion a Vision. Each bar represents the average rating for a single behavior (also Standard Error is included for spread of ratings). Bars are grouped and color coded by their targeted proficiency level. As shown, the group of behaviors progressively decline in their average proficiency rating, supporting the initial intent of identifying behaviors that mapped onto their targeted proficiency level. When ratings were close (e.g., top rated in Basic compared to lowest rated in Intermediate) and not statistically significantly different from one another, we retained the behavior's proficiency-level that was originally targeted.

This phase resulted in a rubric for each capability (see Table 3 for an example with the Champion a Vision capability) that included the capability label, the capability description, and the list of example behaviors organized into proficiency levels.
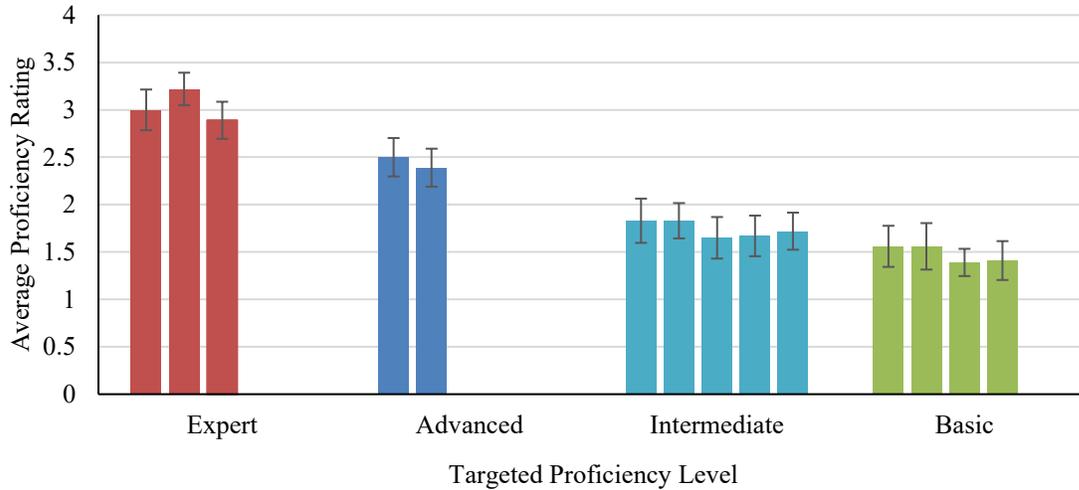
Figure 1. Mean Rating (with Standard Error) for Each Behavior in Champion a Vision

Table 3. Example Rubric for the Capability: "Champion a Vision"

Competency	Description
Champion a Vision	Enthusiastically and confidently expresses a vision that offers followers meaning and purpose; actively models the values that underlie the mission.
Proficiency Levels	**Observable Behaviors**
Expert	- Synthesizes organizational goals into a strategic vision to align diverse operations. - Develops enterprise- and portfolio-wide policies and procedures that guide activities towards advancing the vision. - Leverages collaborations with strategic partnerships, alliances, and coalitions to create a vision that takes a long-term view and acts as a catalyst for organizational change.
Advanced	- Builds a shared vision with team members by including diverse perspectives, suggestions, ideas, and recommendations in the overall vision. - Continuously evaluates own and team's processes to ensure alignment with the USSF vision and mission objectives.
Intermediate	- Actively communicates and promotes USSF values and a vision for all Guardians. - Proactively requests performance feedback to ensure alignment with the USSF vision and mission objectives. - Models the desired USSF values and behaviors to inspire others. - Requests clarity about how individual activities align with the organization's vision. - Seeks feedback to ensure decisions and actions are aligned with the USSF vision to achieve mission objectives.
Basic	- Follows policies and procedures that contribute to the success of the USSF vision and achievement of mission objectives. - Performs individual and team tasks that align with the USSF vision and aim to successfully achieve mission objectives. - Participates in unit and team activities that are aligned with and support the USSF vision. - Promotes USSF values and positive attributes as instructed by leadership.

Phase 3: Framework Refinement

The goal for the third phase was to refine the model by synthesizing capabilities that demonstrated conceptual overlap and merging similar capabilities into a higher-order capability. The revision process resembled an iterative content analysis where expert judges identified dimensional groupings of capabilities based on the capability definitions and example behaviors. First, a team of three USSF personnel with extent experience in psychological theory and assessment development worked independently to review all of the capabilities, making independent judgments to sort capabilities that were similar in their content and/or behavioral examples. Experts were free to determine how many capabilities should be merged, with no restrictions on the number of dimensional groupings. The end result for this first step consisted of recommendations for merging similar capabilities or retaining unique capabilities. Then, they met to compare recommendations. Any discrepancies were discussed to understand the motivation for merging/not merging capabilities, followed by the next iteration of independent reviews and recommendations. After seven cycles of reviews/revisions, including the input of a senior Industrial and Organizational Psychologist to provide an outside review and feedback after each cycle, the competency model ultimately resulted in 14 GFCs and 82 SSs. Table 4 shows how the original GFCs map with the refined capability model.

Table 4. Refined Guardian Foundational Capabilities

New Capability	Original Capabilities	Description
Flexibility	Adapt	The ability to swiftly adapt strategies and operations to maintain effectiveness and achieve organizational goals in response to rapidly changing conditions.
	Manage Change	
Digital Fluency	Be Digitally Literate	Engages with digital technologies to gather, evaluate, and utilize information, enhancing professional capabilities and operational efficiency.
Creative Engagement	Engage Creatively	Approaches problems and opportunities with innovative thinking and originality, developing new insights and transformative solutions.
Dynamic Planning	Effectively Plan and Organize	Strategically plans and optimizes resources to achieve mission objectives, balancing risk and innovation to ensure success in challenging and complex environments.
	Embrace Risk	
Systems Thinking	Recognize Patterns and Interactions	Recognizes and analyzes complex processes by understanding their interconnections and patterns to enable holistic decision-making.
Strategic Partnering	Recognize Opportunities	Deliberately builds and maintains relationships within and across teams, fostering growth by identifying key collaborators, sharing resources, and driving strategic goals through collective efforts.
	Network	
Leadership	Develop Others	Inspires and guides individuals and teams toward organizational goals, fostering talent, cooperation, and a clear strategic vision.
	Foster Cooperation	
	Champion a Vision	
Team Building	Advance Inclusion and Equity[1]	Cultivates confidence in team members by granting autonomy and fostering an environment where trust and empowerment enhance both individual growth and overall team performance.
	Trust in Teammates	
	Promote Autonomy	
Impactful Communication	Communicate Effectively	Articulates ideas clearly and persuasively, boldly advocating for change when needed, to influence decisions and drive progress aligned with organizational values and goals.
	Advocate Boldly	
Resilience	Be Resilient	Demonstrates perseverance in the capacity to recover quickly from difficulties, maintaining effectiveness and composure under stress.

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[1]Advance Inclusion and Equity was removed per EO.

Accountability	Be Accountable to Others	Takes responsibility for personal decisions and actions, demonstrating a commitment to achieving impactful outcomes and positively influencing others.
Initiative	Demonstrate Initiative	Proactively identifies opportunities and acts decisively to implement solutions or improvements without waiting for direction.
Critical Thinking	Think Analytically	Leverages critical thinking and a data-driven approach to diagnose challenging issues, identify root causes, and develop innovative, evidence-based solution
	Use Problem Solving Skills	
Growth Mindset	Learn and Improve	Pursues continuous knowledge and development with curiosity, humbly welcoming feedback as essential for personal and professional growth.
	Demonstrate Curiosity	
	Demonstrate Humility	
Moved to Specialty Skills	Apply Military Force Ethically	
Moved to Specialty Skills	Space Domain Awareness	
Moved to Specialty Skills	Understand the Joint Warfight	

APPLICATIONS OF THE COMPETENCY MODEL

The Capability and Skills Framework is central to USSF's talent management strategy. Two primary applications of this framework are education and training (development) and strategic workforce management, both of which are essential for cultivating a technically proficient, adaptable, and mission-ready force.

In education and training, the Capability and Skills Framework provides a structured foundation for developing Guardian talent across both foundational and specialty skill areas. The USSF is currently validating capability measures to assess Guardian proficiency levels. Guardians will be able to assess their current proficiency levels against established standards, enabling them to identify strengths, target developmental gaps, and pursue training opportunities aligned with career goals. This process supports continuous and dynamic learning by allowing Guardians to compare their current capabilities to those required for specific assignments or career transitions, facilitating long-term professional development. Additionally, Skill Managers will be able to leverage assessment data to guide Guardians toward validated training resources and tailored developmental pathways, ensuring that investments in education and training translate into mission-relevant skills and improved operational performance. Through these mechanisms, the Capability and Skills Framework will enable Guardians to take a more proactive role in shaping their careers while providing leadership with a data-driven foundation for mentoring and developmental planning.

When developing capability assessments, we took three steps to develop measures. First, it is important to identify all of the underlying mechanisms/elements of each capability. We developed a model that organized the knowledge, skills, abilities, and other characteristics for each capability. Using this as a foundation for assessment development ensured full coverage of the capability. Second, we are ensuring that assessments measure the full scope of proficiency levels. This involves evaluating the assessment content and linking scores to performance ratings. For some measures, respondents could receive a perfect score, yet it would fail to be indicative of the highest proficiency. Instead, it is important to include questions in the assessment that map to all levels of proficiency. Third, we are attempting to validate multiple assessment methods. For example, we are incorporating cognitive ability tests, interest inventories, situational judgment tests, and personality assessments that are sometimes purported to measure the same capability. This strategy involves conducting construct validity analyses to identify the best method for measuring each capability.

Workforce planning represents the second major application of the Capability and Skills Framework. By linking individual capabilities and skills to mission requirements, the framework enables a more deliberate and transparent approach to assignment decisions, career field management, and organizational readiness. Skill Managers, in collaboration with Career Field Managers, will use the framework to ensure that Guardians are aligned to positions that maximize both individual potential and organizational effectiveness. This includes informing initial career

classifications, facilitating reassignment decisions, and supporting board selections for specialized opportunities. Additionally, the framework provides a foundation for identifying emerging skill requirements as the operational landscape evolves, allowing the USSF to adapt position requirements and develop the force accordingly. As new missions, systems, and technologies emerge, the Capability and Skills Framework ensures that the USSF retains the flexibility to incorporate additional skill identifiers and update workforce planning processes to remain aligned with strategic objectives.

By intentionally applying the Capability and Skills Framework to both development and workforce planning, the USSF is laying the groundwork for a more agile, skilled, and strategically aligned Guardian workforce. These applications will not only strengthen individual professional growth but also enhance the service's overall ability to meet evolving national security challenges in the space domain.

CONCLUSION AND LESSONS LEARNED

Several key lessons emerged from the development of the Capability and Skills Framework. First, the importance of sustained engagement with subject matter experts (SMEs) cannot be overstated. Involving SMEs throughout all phases of the process ensured that the model was grounded in operational reality and supported by both expert judgment and empirical data. Of particular value was the rich, detailed feedback provided by participants, including not only recommended revisions but also the contextual rationale behind those recommendations. By incorporating diverse perspectives from across the USSF, the process benefited from broad insights into how the capabilities and rubrics would function across career fields and operational contexts.

Second, the development of the framework required balancing domain-specific expertise with established best practices in competency modeling. SMEs provided the technical and operational content necessary to define relevant capabilities, while competency experts translated this information into structured, validated models. Subsequent rounds of expert review, empirical validation, and refinement helped ensure that the final framework was both evidence-based and practically useful for the USSF. Importantly, this iterative, multi-step process also supported the development of a parsimonious model that balanced comprehensive coverage with clarity and usability.

Finally, flexibility emerged as a critical requirement for both the development process and the long-term maintenance of the framework. Iterative engagement with SMEs occasionally yielded conflicting feedback, underscoring the need for an adaptable process that could accommodate differing perspectives while converging on a coherent and functional model. Additionally, competency models must remain dynamic, evolving alongside the mission, technology, and organizational context of the USSF. Maintaining the relevance and utility of the Capability and Skills Framework will require ongoing monitoring, periodic updates, and continued SME engagement to ensure that it reflects emerging demands and remains aligned with the USSF's strategic objectives. Aside from initial validation efforts, one option planned by the USSF to monitor the validity is to measure Guardian capabilities throughout their career. Regular measurement and validation efforts can provide a trajectory of when the importance/validity of a capability begins to decrease and offers the benefit of developing skill decay models to detect and monitor perishable skills. Additionally, best practices include periodically repeating the developmental steps by administering a survey to collect data on the importance of each capability across the USSF. This practice will provide direct evidence for the importance of each capability. At this point, revisiting the importance of that capability is needed, both as part of the capability model or perhaps simply updating the definition and measurement.

While more work remains to fully integrate the Capability and Skills Framework into the broader talent management systems of the U.S. Space Force, its development marks a critical step toward professionalizing and modernizing how the service identifies, develops, and employs talent. As the Space Force continues to refine its personnel systems, the framework provides a solid foundation for aligning Guardian capabilities with mission requirements in a rapidly evolving operational environment. Its deliberate, evidence-based development process ensures that it reflects both the unique demands of the space domain and the USSF's commitment to cultivating a highly skilled, adaptable force. The next steps and key to implementation is working with military and industry professionals, Guardians directly impacted by the capability model, and senior decision makers. We are testing the model in different samples across the USSF, which helps to identify any needed adjustments and paves the way for broader implementation. Moving forward, sustained investment in implementation, validation, and continuous refinement will be essential to fully realize the framework's potential in supporting the Space Force's strategic objectives.

REFERENCES

Bartram, D. (2005). The great eight competencies: A criterion-centric approach to validation. *Journal of Applied Psychology*, *90*(6), 1185-1203.

Baruch, Y., & Holtom, B. C. (2008). Survey response rate levels and trends in organizational research. *Human Relations*, *61*(8), 1139-1160.

Campion, M. A., Fink, A. A., Ruggeberg, B. J., Carr, L., Phillips, G. M., & Odman, R. B. (2011). Doing competencies well: Best practices in competency modeling. *Personnel Psychology*, 64, 225-262.

Air Force Secretary of Public Affairs (2021, September 21). *CSO unveils Guardian Ideal, Space Force values at AFA*. Official United States Space Force Website. https://www.spaceforce.mil/news/article/2782534/cso-unveils-guardian-ideal-space-force-values-at-afa

Air Force Secretary of Public Affairs. (2024, February 12). *Saltzman outlines plan to reoptimize Space Force for great power competition*. Official United States Space Force Website. https://www.spaceforce.com/news-events/saltzman-outlines-plan-to-reoptimize-space-force-for-great-power-competition

Cohen, R. (2024, February 22). Space Force builds momentum on creating unique culture. *Air & Space Forces Magazine*. https://www.airandspaceforces.com/space-force-momentum-unique-culture/

Guardian Ideal. (2021). *The guardian ideal*. Retrieved 11June2025 from: https://www.airandspaceforces.com/app/uploads/2021/09/21SEPT-USSF-GUARDIAN-IDEAL.pdf.

Roberson, D. L., Stafford, M. C., & Air University Press. (2017). *The Redesigned Air Force Continuum of Learning* (pp. 1-2). Air University Press.

Rodriguez, D., Patel, R., Bright, A., Gregory, D., & Gowing, M. K. (2002). Developing competency models to promote integrated human resource practices. *Human Resource Management*, 41, 309-324

Sanghi, S. (2016). *The handbook of competency mapping: Understanding, designing and implementing competency models in organizations*. (3rd ed.). Sage Publications, Inc.

Schippmann J., Ash R., Battista M, Carr L, Eyde LD, Hesketh B, ...Sanchez I. (2000). The practice of competency modeling. *Personnel Psychology*, 53,703–740.

Shattuck, L. G., & Woods, D. D. (1994, October). The critical incident technique: 40 years later. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 38, No. 17, pp. 1080-1084). Sage CA: Los Angeles, CA: SAGE Publications.

U.S. Space Force. (2023). *Space Force 101: Glossary overview*. https://www.spaceforce.mil/Portals/2/Documents/SF101/ussf_101_glossy_FINAL_e-version.pdf