

**Technical Report 1436**

# **Army Talent Attribute Framework – FY24 Annual Update Using a Mixed Methods Research Design**

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**United States Army Research Institute  
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<b>14. ABSTRACT</b> The Army Talent Attribute Framework (ATAF) was developed by the Army Research Institute for the Behavioral and Social Sciences (ARI) and Army Talent Management Task Force (ATMTF) to create a universal, standardized taxonomy of the knowledge, skills, and behaviors (KSBs) required of Army personnel. The ATAF consists of three hierarchical tiers: (I) Talent Domains, (II) Talents, and (III) KSBs and is a critical baseline for a modernized, data-driven talent management system that increases Army readiness, guides strategic workforce planning, and reduces talent gaps. The ATAF has been adopted as a common lexicon used in all aspects of the Army People Strategy's (2019a) data-driven talent management processes. It is also being used in the Integrated Personnel and Pay System – Army (IPPS-A) and Assignment Interactive Module 2 (AIM2). To ensure the ATAF continues to support an up-to-date and effective personnel system, ATMTF and ARI have planned and implemented annual review cycles. This report documents ATAF refinements made during the FY24 review cycle that will ensure continued scientific rigor and increase utility for talent management, as informed by an exploratory sequential mixed method research design. Qualitative data was collected from subject matter experts (SMEs) who extensively reviewed the ATAF, including KSB definitions and labels. Thematic analysis was used to evaluate this qualitative feedback. To explore KSBs suggested as overlapping, researchers examined Pearson correlations between KSBs using job analysis data obtained from officers, warrant officers, and noncommissioned officers. Based on these results, we provide recommendations for KSB refinement and consolidation.					
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# ARMY TALENT ATTRIBUTE FRAMEWORK – FY24 ANNUAL UPDATES USING A MIXED METHODS RESEARCH DESIGN

## EXECUTIVE SUMMARY

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### Research Requirement:

As the critical foundation for supporting an updated and modernized Army Talent Management system (Army People Strategy, 2019a; Army Modernization Strategy, 2019b), the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) collaborated with Army Talent Management Task Force (ATMTF) to develop the Army Talent Attribute Framework (ATAF; Royston et al., 2022). The ATAF represents a unified taxonomy of Knowledge, Skills, and Behaviors (KSBs) required by Army personnel. As part of ensuring an up-to-date and relevant framework, yearly review cycles have been planned to refine the ATAF based on new data and changes in the workplace and to ensure that it continues to support a modernized, data-driven talent management system. This report summarizes the refinements made to the ATAF during the FY24 review cycle.

### Procedure:

We used an exploratory sequential mixed method research approach (Creswell & Plano Clark, 2018) to recommend refinements to the ATAF. We gathered both qualitative and quantitative data and used these results to suggest data-driven refinements to the ATAF. In terms of qualitative data collected, the ATAF went through an extensive review by subject matter experts (SMEs), comprised of both active-duty Army personnel and Army civilian research psychologists. Next, a thematic analysis approach to identify themes and sub-themes contained within the qualitative data. We then used quantitative data collected as part of three large-scale job analyses to further explore the relationships between these KSBs and determine whether there was empirical evidence of redundancy. This job analysis provided officer, warrant officer (WO), and noncommissioned officer (NCO) KSB importance ratings by rank across each Branch, Functional Area (FA), and MOS. We reviewed Pearson correlations between the pairs (or clusters) of KSBs suggested by SMEs as overlapping. Results of both qualitative and quantitative data analyses were then synthesized by research psychologists and used to inform potential refinements to the ATAF and KSBs.

### Findings:

Following this extensive, data-driven review of the ATAF, several content changes were made to KSB labels and definitions. Researchers conducted a thematic analysis of the qualitative data and found two overarching coding themes regarding structural and content updates. Structural updates consisted of the consolidation of KSBs, addition of KSBs, and the re-organization of KSBs under a different Talent. Content updates consisted of the clarification of KSB definitions, renaming of KSBs, and the elaboration on level of detail of a KSB's definition. Researchers found that 106 of the 194 KSBs received some form of structural- or content-oriented revision recommendation from SMEs. We provide detailed guidance for the recommended modifications to the ATAF supported by both qualitative and quantitative evidence. These themes were consolidated into an overarching framework that can be used to

guide future updates to the ATAF. If each of these recommended revisions are implemented, the ATAF will consist of 186 KSBs.

#### Utilization and Dissemination of Findings:

These recommended refinements can improve KSB usage across a myriad of talent management efforts Army-wide. This report and recommended revisions made to the ATAF have the potential to be incorporated into the Assignment Interactive Module 2.0 (AIM2) Marketplace and assist Army talent management when identifying important KSBs for positions. Army personnel assessments can be crosswalked with the ATAF to determine which KSBs they assess. Further, a decision model is included that may facilitate future reviews of the ATAF, and provide guidance on consolidating, retiring, or adding KSBs. This decision model can also help future reviewers ensure that the ATAF remains an up-to-date and relevant to current and future Army personnel requirements.

# ARMY TALENT ATTRIBUTE FRAMEWORK – FY24 ANNUAL UPDATES USING A MIXED METHODS RESEARCH DESIGN

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## **Army Talent Attribute Framework – FY24 Annual Updates Using a Mixed Methods Research Design**

The Army Talent Attribute Framework (ATAF) was developed and adopted as the common framework for describing the capabilities of Army personnel and the requirements of positions throughout the Army (Royston et al., 2022). The framework was a joint effort between U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) and Army Talent Management Task Force (ATMTF). The ATAF is a standardized framework used by the Army to summarize the knowledge, skills, and behaviors (KSBs)<sup>1</sup> required by Army personnel. Before its development and implementation, various Army organizations (e.g., Centers of Excellence, branches, functional areas, and other proponents) would often develop their own terminology and definitions to describe the attributes and behaviors required by their specific organization. This separation led to the use of different titles or terms to describe the same skill or attribute or even significantly different levels of detail in the definitions thereof. Further, differences in terminology and definitions can introduce challenges in collaborating and synchronizing talent management efforts across multiple Army organizations.

The ATAF addresses these issues by serving as a uniform framework of KSBs required by Army personnel that can be continuously updated and refined. Further, it consolidates attributes contained within the Office of Economic and Manpower Analysis' (OEMA) “21 Talents” (Colarusso et al., 2016), the Army Leader Requirements Model (ADP 6-22) (The U.S. Army, 2019c), and the Army Talent Alignment Process (ATAP) KSB-P list. It also contains attributes identified in the Department of Labor's Occupational Information Network (O\*NET; National Center for O\*NET Development, 1999) and from an extensive review of the academic literature. The ATAF has the support of the ATMTF, OEMA, TRADOC G-3/5/7, and the Combined Arms Center (CAC). It has been approved by the Assistant Secretary of the Army (Manpower & Reserve Affairs) to become the standard organizing framework for attributes and attribute data, and its implementation is directed in paragraph 3.D.1 of the Military Implementation Plan of the Army People Strategy (2019a).

The ATAF is organized within a 3-Tier structure (Royston et al., 2022). Providing a tiered structure makes the information more digestible at the user level and easier to navigate in an application setting. The Tier 1 Talent Domains reflect the major buckets into which attributes are typically organized within the industrial and organizational (IO) psychology literature. The seven categories are: 1) Cognitive, 2) Communication, 3) Disposition, 4) Interpersonal, 5) Leadership & Management, 6) Personal Competence & Expertise, and 7) Physical. Tier 2 further

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<sup>1</sup> The scientifically accepted delineation of human attributes within industrial/organizational psychology and related fields is Knowledge, Skills, Abilities, and Other characteristics (KSAOs). The use of KSA or KSAO has been the accepted terminology in Army publications prior to Wardynski et al. (2009). Beginning with Wardynski et al. (2009), a series of publications authored by OEMA articulated the possibility of transforming approaches to officer personnel management and began using the term “Knowledge, Skills, and Behaviors (KSB),” and sometimes added “Preferences” (KSB-P). To be consistent with accepted industry and scientific practice, we use KSAO here unless specifically referring to the implementation of ATAF. However, to avoid confusion throughout the document we have used the more general terms of “attributes” or “attributes and characteristics” in lieu of either KSAO or KSB.

arranges these categories into sub-categories, titled Talents. Finally, Tier 3 consists of the measurable KSBs contained within the Talent categories.

During its initial development, the ATAF consisted of seven Tier 1 Talent Domains, 42 Tier 2 Talents, and 198 Tier 3 KSBs (Royston et al., 2022). As part of ensuring an up-to-date and relevant framework, the ATMTF and ARI have planned a yearly review cycle in which the ATAF is refined and revised to coincide with new data and changes in the workplace. Following its introduction and prior to the current review cycle, the ATAF had gone through two review cycles led by ARI.

In FY22, an additional Talent was introduced, bringing the number of Tier 2 Talents to 43, and the number of Tier 3 KSBs were reduced from 198 to 195 (Royston & Berger, 2023). A second annual review occurred in FY23, which consolidated two KSBs, bringing the total of Tier 3 KSBs to 194 (Royston & Glerum, 2023). A significant change to the ATAF during the FY23 review cycle involved leveraging a panel of subject matter experts (SMEs) to develop user descriptions for the KSBs with terminology that was more accessible to a variety of audiences and more generalizable across Army domains. These user descriptions were intended to encourage KSB usage across Army talent management efforts. Finally, the current FY24 report outlines additional changes to the ATAF occurring during this review cycle.

The ATAF has been implemented within the Integrated Personnel and Pay System-Army (IPPS-A) and is being used in Army talent management systems such as Assignment Interactive Module 2 (AIM2). This standardized framework unites all Army talent management initiatives under a uniform language of position requirements, enabling talent management experts to link data across different talent applications. Additionally, the ATAF has been used by proponents to build noncommissioned officer (NCO), warrant officer (WO), and officer storyboards which outline the proponent vision for each position along with educational requirements, experiences, and KSBs required for each rank and position. Furthermore, an extensive Army-wide job analysis resulted in data on the critical KSBs for officer, WO, and NCO positions in the Army (Royston & Lin, 2022; Royston & Lin, 2023; Royston & Amey, 2023).

This report summarizes the recommended refinements for the ATAF in FY24, which were informed by both qualitative and quantitative data sources using an exploratory sequential mixed methods research approach. Further, to facilitate future review cycles, we provide a guide to decision-making on modifying the structure and content of the ATAF.

## **Overview of ATAF Revisions for FY24**

During the FY24 review cycle for the ATAF, several changes were made to the structure, content, and definitions that make up the framework. To identify necessary revisions to the ATAF, we used an exploratory sequential mixed methods research design (Creswell & Plano Clark, 2018). “Mixed methods” research allows researchers to leverage strengths of both qualitative and quantitative research methods to answer complex and multifaceted research questions, gaining insight into phenomena which are best understood with multiple analytic approaches. An exploratory sequential mixed method approach involves first collecting qualitative data and then using quantitative data to clarify or elaborate on qualitative findings

(Creswell & Plano Clark, 2018; Office of Behavioral and Social Sciences Research (OBSSR), 2011).

In the context of this study and as part of the annual update process, we collected subject matter expert (SME) feedback to identify KSBs that required refinements. As a component of this qualitative data, we obtained SME evaluations of the ATAF structure and definitions. This qualitative feedback was then reviewed by ARI research psychologists to identify themes of feedback (e.g., revisions to definitions or labels). A common theme that emerged from this feedback was that a number of KSBs were perceived as overlapping. We also collected KSB importance ratings from a large-scale job analysis (Royston & Lin, 2022) for officers, warrant officers (WOs), and noncommissioned officers (NCOs). Using this quantitative data, we evaluated Pearson correlations between the KSBs that SMEs identified as overlapping to identify potential empirical redundancy.

The analyses and recommendations for this review cycle can be separated into four phases:

1. Qualitative analysis of data collected from the SME review panel.
2. Quantitative analysis of overlapping KSBs using job analytic data.
3. ATAF modifications informed by recommendations for consolidation based on the synthesized qualitative and quantitative analyses.
4. Guidelines and recommendations for future revision cycles.

Appendix A contains the complete, revised ATAF as it would appear if all recommendations in this report are implemented.

### **Refinement Phase 1: Qualitative analysis of data collected from SME review panel**

KSB user descriptions were developed during the FY23 review cycle (Royston & Glerum, 2023). These user descriptions were designed to be utilized alongside the scientific KSB definitions to enhance the usability of the ATAF (Royston & Glerum, 2023). Feedback from Army stakeholders and Army talent marketplace users indicated that some of KSB definitions and labels could be improved by using terminology that is more accessible to a variety of audiences and more generalizable across Army domains. These user descriptions were developed by a panel of talent management subject matter experts (SMEs) and incorporated into the ATAF during the FY23 annual review cycle (Royston & Glerum, 2023).

Following the introduction of user descriptions, Army stakeholders determined that during the next (e.g., FY24) review cycle, additional feedback should be gathered from SMEs on the entire ATAF with emphasis on evaluating these user descriptions. Six SMEs with backgrounds in Army talent management volunteered to serve as a panel (composed of two active-duty Army officers and four Army civilians) to independently review and provide feedback on the ATAF structure and definitions. These SMEs came from a diverse working group comprised of 20-30 active group members representing several Army organizations involved in talent management processes (e.g., ARI, ATMTF, OEMA, Army University) and focused on improving Army talent management systems. SMEs were each provided with the complete ATAF KSB list with definitions and invited to review and provide feedback focused on the KSB user descriptions over the course of two weeks. However, in addition to providing

extensive feedback on the KSB user descriptions, each SME also provided feedback on the ATAF overall, the Tier 2 Talent definitions, and the Tier 3 KSB technical definitions. A strength of the SMEs independent ATAF reviews was a diversity of perspectives. Providing independent feedback avoids response conformity, possible groupthink, and bias (e.g., Janis, 1982; Schulz-Hardt et al., 2000; Stasser & Titus, 1985). Independent SME feedback was then compiled for analysis by ARI researchers.

Two ARI research psychologists then conducted a “thematic analysis” to identify themes that emerged from SME feedback. Thematic analysis is a systematic, flexible method of identifying themes or patterns that appear in qualitative data, such as open-ended response data collected from surveys (Alhojailan, 2012; Clarke & Braun, 2013). Braun and Clarke (2006) describe the process of conducting a thematic analysis as consisting of six steps:

1. Coders become familiar with the data through reading and re-reading SME comments.
2. Generate initial annotative codes through an inductive approach, independently summarizing the general content of SME comments.
3. Search for themes by re-examining initial annotative codes and determining whether they fit together as a general theme.
4. Review themes identified by re-examining SME comments and determining whether the data was appropriately summarized by the theme.
5. Define themes identified by refining themes and sub-themes and providing definitions for each.
6. Re-evaluate themes and sub-themes, and document and write up findings.

Thematic analysis also relies upon using a deductive or inductive method to identify themes or patterns (Willig, 2019). Deductive methods involve examining data and using annotative codes from an existing framework or research questions, while inductive methods code responses driven by the data (Braun & Clarke, 2006). Because the ATAF is relatively new, we adopted an inductive approach to allow the data to drive our qualitative analysis, which allowed the results to be further explored during Phase 2 using quantitative data to identify potential candidates for dimension reduction (Mertler et al., 2021; Tabachnick & Fidell, 2014).

Both researchers independently became familiar with the data by carefully reading the feedback provided by each SME, along with all definitions of Talents and KSBs, which provided context to the SME feedback. Each researcher then inductively and independently generated initial sub-themes from the SME comments. Generating sub-themes involved reviewing and documenting where patterns or relevant features were observed in SME feedback, followed by creating a label that best described and reflected these sub-themes (e.g., overlap suggested between KSBs, suggestion of additional KSBs). After reviewing all SME feedback once, researchers then independently reviewed SME feedback and labels for themes several additional times to further refine themes by adding, subtracting, combining, and splitting themes to ensure themes were clearly defined based on an increased understanding of data (Saldaña, 2013).

Following this step, each researcher independently identified higher level themes that summarized and organized the initial themes. The researchers also met together to discuss and

come to consensus on the themes and sub-themes from the SME feedback. Initial agreement on which codes emerged that reflected SME feedback was high (91.30% agreement) – while there were minor differences in terminology used to describe the themes, the definitions generally matched. Consequently, these disagreements were resolved during a meeting to assess agreement. Once agreement was established, these themes were further reviewed to ensure that they fit together appropriately, and theme definitions were drafted and reviewed by both researchers. Table 1 provides a summary of themes and associated sub-themes.

## **Qualitative Analysis Results**

A total of 106 of the 194 KSBs received reviewer feedback, most of which were concentrated in the Cognitive, Disposition, and Expertise & Personal Competence talent domains. As the ATAF was developed by consolidating several previously used frameworks, it is not surprising that much of the feedback from SMEs reflected overlap between KSBs and recommended edits to KSB definitions. However, the nature of these comments varied in terms of the magnitude of suggested changes—for instance, some edits merely reflected minor grammatical changes, while others were geared towards consolidating multiple KSBs.

As shown in Table 1, SME feedback regarding the ATAF can be broadly categorized as belonging to one of 13 sub-themes related to *structural* change or *content* change. Structural changes referred to suggestions to reorganize Talents or KSBs, the addition of KSBs to the framework, the retirement of KSBs, consolidation of overlapping KSBs, or separating KSBs into multiple KSBs. In comparison, suggested content updates tended to be more minor in nature and generally referred to clarifying definitions, providing additional detail to KSBs, adjusting the scope or framing of a KSB, or relabeling a KSB. Additionally, each sub-theme was categorized in terms of whether it was directed at a Tier 2 Talent or Tier 3 KSB. Overall, most sub-theme targets were KSBs.

**Table 1***Themes and Sub-themes Identified from Thematic Analysis*

Theme	Sub-Theme	Level	Target	Description	Example(s)
<b>Structural Updates</b>	Re-organize (Talents)	Talent	Structure	Shift or re-configure ATAF elements at the Talent level	Recommend that a KSB be elevated to the talent level (e.g., elevating problem solver to the talent level, integrating with “problem solving”)
	Re-organize (KSBs)	KSB	Structure	Shift or re-configure ATAF elements at the KSB level	Recommend that a KSB be moved to a different talent (e.g., moving “knowledge of processes and procedures” from the “tactical / technical competence” talent)
	Add	KSB	Structure	Add a KSB to the ATAF	Add “Public Speaking” as a KSB
	Retire	KSB	Structure	Retire a KSB from the ATAF	Retire “Communicator” as a KSB
	Consolidate	KSB	Structure	Combine multiple KSBs into one	Combine “Analyzes Data or Information” and “Analyzes and Organizes Information to Create Knowledge” into one KSB
	Separate	KSB	Structure	Separate one KSB into multiple	Separate “Creative Problem Solving & Innovation” into “Creative Problem Solving” and “Innovation” as different KSBs
<b>Content Updates</b>	Clarify (Talent) Definition	Talent	Definitions	Make a Talent definition clear and concise	Condense the Talent definition for “Systems Thinking”
	Clarify (KSB) Definitions	KSB	Definitions	Make a KSB definition clear and concise	Revise the KSB definition for “Interdisciplinary” to make it clear that it involves “combining knowledge” and not “taking in knowledge”
	Elaborate	KSB	Definitions	Expound upon a KSB definition with additional information	Revise the KSB definition for “Spatially Intelligent” to include both physical and abstract aspects of the KSB
	Frame	KSB	Definitions	Mold or fit a KSB definition to fit with certain objectives or needs	Broaden the KSB definition of “Empathy” so that it does not contain Soldier-specific language
	Shape	KSB	Definitions	Form or mold a KSB definition to fashion the content aesthetically	Remove “not shy and reserved” from the definition of “Affiliation” to ensure that the definition reflects what the KSB is instead of what it is not
	Differentiate	Talent	Labels	Re-name the Talent to something else (when a KSB and Talent have the same label)	“Situational Awareness” should have a different label at the Talent level
	Rename	KSB	Labels	Re-name the KSB to something else	Rename “Tolerance” to “Tolerance for Differences”

Using this thematic coding scheme to analyze SME feedback on refinements to the ATAF, we found that most feedback on Talents and KSBs could be classified as being related to a single sub-theme (73 of 106 KSBs), while 33 KSBs required coders to assign two sub-themes to properly classify SME feedback. However, the second theme generally complemented the first theme and was often a recommended alternative for refinement to a given KSB (e.g., if a KSB was recommended for consolidation with another KSB in the first theme, the second theme suggested revising a KSB’s label or definition as an alternative to consolidation).



**Table 2***KSBs per Talent Domain Receiving Feedback*

Thematic Analysis		Talent Domain							
Theme	Sub-theme	Cognitive	Communication	Disposition	Expertise & Personal Competence	Interpersonal	Leadership & Management	Physical	Total Sub-themes
Structural Update	Re-organize (Talent)	1	0	0	0	0	0	0	1
	Re-organize (KSB)	0	0	0	1	0	0	1	2
	Add	0	1	0	2	1	0	1	5
	Retire	0	1	0	0	0	0	0	1
	Consolidate	12	5	8	12	6	2	1	46
	Separate	1	0	0	0	0	0	0	1
	Total Structural Updates	14	7	8	15	7	2	3	56
Content Update	Clarify (Talent)	1	0	0	0	0	0	0	1
	Definition Clarify (KSB)	2	0	6	1	0	1	0	10
	Elaborate	7	1	3	4	1	2	0	18
	Frame	0	0	5	1	1	0	0	7
	Shape	5	0	15	1	2	2	0	25
	Differentiate	2	0	1	0	0	0	0	3
	Rename	3	0	5	7	4	0	0	19
	Total Content Updates	20	1	35	14	8	5	0	83
Total KSBs with Sub-themes		26 (70.27% of 37 KSBs)	5 (50.00% of 10 KSBs)	34 (65.38% of 52 KSBs)	21 (52.50% of 40 KSBs)	10 (55.56% of 18 KSBs)	7 (25.93% of 27 KSBs)	3 (30.00% of 10 KSBs)	106 (54.64% of 194 KSBs)

*Note:* A total of 106 KSBs received SME feedback (33 of which received two sub-themes).

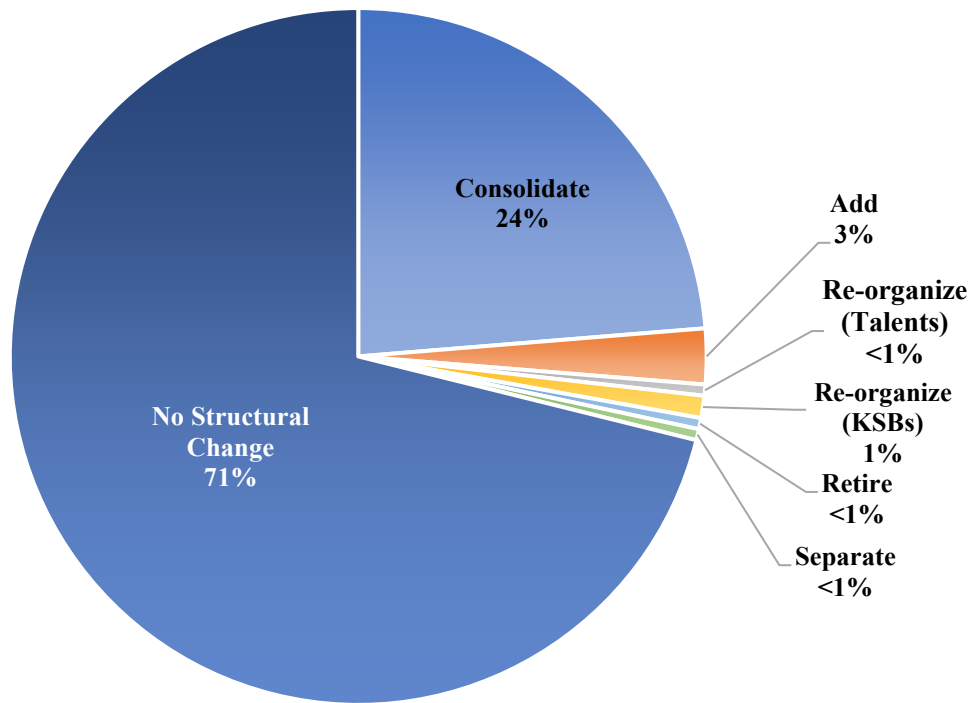
**Structural Refinements to the ATAF**

As described in Table 1, structural updates to the ATAF reflect SME suggestions for re-organization of KSBs or Talents, adding a potential KSB to the framework, retiring a KSB that may no longer be needed, consolidation of KSBs SMEs perceived to be overlapping, or separating a KSB into multiple KSBs. Overall, there tended to be fewer SME recommendations for structural refinements, with a total of 56 KSBs receiving recommendations for structural refinements, while 138 KSBs (71.13%) received no such recommendations – see Figure 1. From the qualitative data, most structural refinements reflected consolidation of KSBs. A total of 46 of the overall 194 (23.7%) KSBs were seen as overlapping with at least one other KSB. These overlapping KSBs were further explored in the quantitative data analysis phase of this study using Pearson correlations. Other structural sub-themes included SME recommendations for adding five KSBs, re-organizing two KSBs into another Talent, re-organizing one Talent into another Talent Domain, retiring one KSB, or separating one KSB into multiple KSBs. This

section provides detailed information on the sub-themes of SME-suggested structural updates summarized in Table 2. Complete results of SME structural feedback sub-themes can be found in Appendix B.

**Figure 1**

*ATAF Structural Updates based on SME Feedback*



### ***Re-organize (Talent) sub-theme***

The Re-organize (Talent) sub-theme, referring to elevating a KSB to a Talent level, was only applied to one KSB (*Problem Solver*). Feedback from three SMEs indicated that the *Problem Solver* KSB appeared to reflect a Talent level description rather than a KSB and that it appeared to be redundant with the overall Problem Solving Talent definition. SMEs further noted that the *Problem Solver* KSB appeared to overlap with other KSBs within the Problem Solving Talent (i.e., *Structured Problem Solving*, *Unstructured Problem Solving*, and *Troubleshooting*). Consequently, SMEs suggested that the *Problem Solver* KSB be consolidated with either the Talent or the other Problem Solving KSBs.

### ***Re-organize (KSB) sub-theme***

The Re-organize (KSB) sub-theme, which refers to moving a KSB to another Talent, was only applied to two KSBs – *Knowledge of Processes and Procedures* and *Health and Fitness Orientation*. One SME indicated that *Knowledge of Processes and Procedures* from the Tactical/Technical Competence Talent did not belong in that Talent, though no suggestion was

provided for a suitable alternative. Additionally, one SME indicated that *Health and Fitness Orientation* from the General Fitness Talent belonged in the Interests Talent.

### ***Add KSB sub-theme***

SMEs also suggested that several attributes were not clearly described in the current framework, providing recommendations for five KSBs that could be added to the ATAF to capture these attributes more closely. See Table 3 for recommendations.

**Table 3**

### ***Additional KSB recommendations and current associated KSBs***

<b>Proposed KSB</b>	<b>KSB Receiving Feedback</b>	<b>Talent</b>	<b>Talent Domain</b>	<b>Summary of Reviewer Feedback</b>
Public Speaking	Communication Ability	General Communication	Communication	Public speaking is not clearly part of any Communication Talents or KSBs. Recommend adding as new KSB or reference in an existing KSB definition.
Virtualized and Containerized Platforms	Database Programming & Engineering	IT Programs & Systems	Expertise & Personal Competence	A SME indicated this was not clearly part of any existing KSB. Proposed definition: “Understands and is comfortable with using Virtual Machines and Containers to maintain and deliver IT-related projects.”
Electromagnetic Spectrum (EMS)	Basic Electronics Knowledge	Mechanical & Electrical	Expertise & Personal Competence	A SME indicated this was not clearly part of any existing KSB. Proposed definition: “Is aware of the Electromagnetic Spectrum (EMS), how civilian and military equipment shares the EMS, and aware that EMS radiation is an important element to the protection and fires warfighting functions.”
Builds Rapport	Interpersonal Relationship Building	Social Skills	Interpersonal	One SME recommended addition as a Social Skill rather than Communication. Noted this could be included in Interpersonal Relationship Building, but building rapport does not imply long-term relationship building. Proposed new KSB definition: “Engages people in pleasant, respectful social interaction; initiates and sustains conversation with new people.”
Flexibility	Reaction Time	Psychomotor Ability	Physical	One SME noted that the only physical ability not clearly addressed in framework is flexibility (Hogan, 1991).

### ***Retire KSB sub-theme***

*Communicator* was the single KSB recommended for retirement from the ATAF framework. Half of the SMEs recognized significant overlap in KSB label and definition between *Communicator* and other KSBs within the Communication Talent Domain, with the

most overlap being noted with *Communication Ability*. Instances of overlap between *Communicator* and other KSBs were examined using Pearson correlations during the Synthesis Phase.

### ***KSB Consolidation sub-theme***

A common theme that emerged in the SME feedback was perceived overlap between clusters of KSBs. A total of 46 KSBs (23.7% of all ATAF KSBs) were perceived to overlap with at least one other KSB in label or definition. As the ATAF consolidated attributes from several previously used frameworks, it is not surprising that several KSBs would be perceived as having some degree of overlap. In total, SMEs identified 22 pairs or clusters of two or more KSBs as showing some degree of overlap. In some cases, SMEs provided recommendations for alleviating the overlap (e.g., consolidate KSBs, change label, or alter definition to differentiate a KSB from others).

Table 4 lists the clusters of overlapping KSBs, summarizes the form of overlap identified, and outlines a recommended action (when it was provided by SMEs). These overlapping KSBs would be the focus of Phase 2 of this mixed method research design, in which we used quantitative data collected as part of three large-scale job analyses to further explore the relationships between these KSBs. This job analysis provided officer, warrant officer (WO), and noncommissioned officer (NCO) KSB importance ratings by rank across all branches, Functional Areas (FAs) and MOSs. We examined Pearson correlations between the identified KSBs to further investigate whether there was empirical evidence for overlap between KSBs. While Pearson correlations in this study showed KSBs that were correlated, future studies may use techniques such as confirmatory factor analysis or principal components analysis using assessments of the overlapping KSBs (Glerum & Royston, 2023) to guide future revisions. For instance, while not exhaustive, Rönkkö and Cho (2022) provide a recent review of potential techniques.

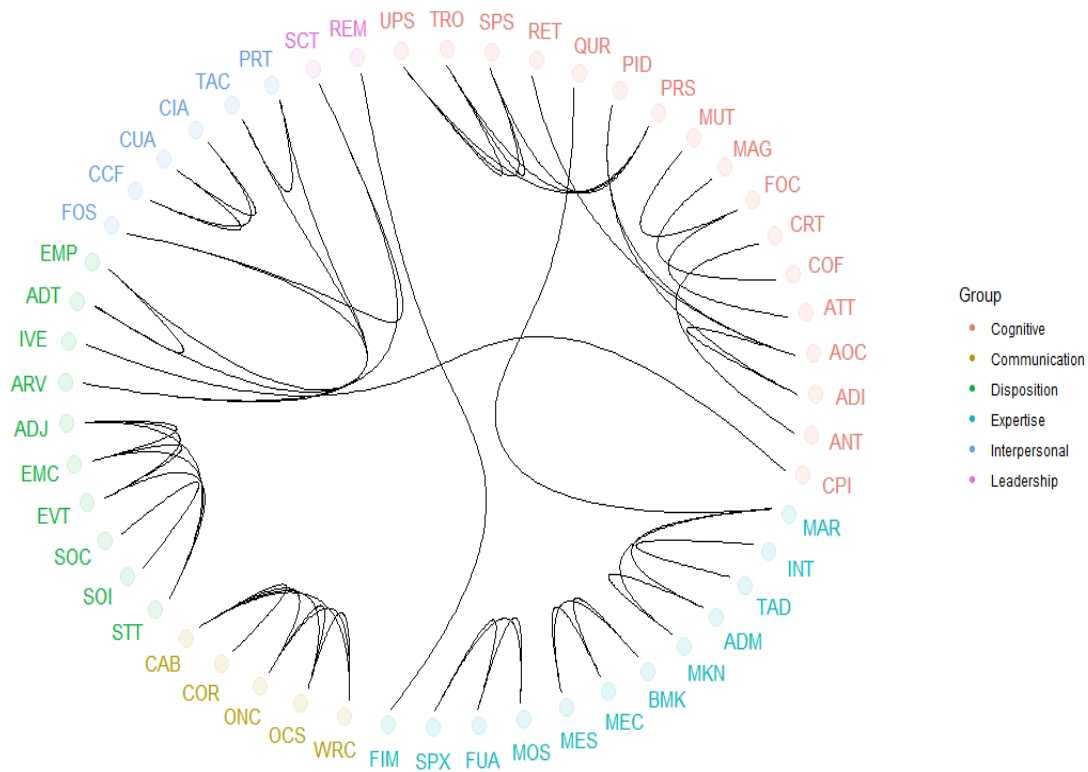
**Table 4***Structural Update - Consolidate Sub-Theme*

<b>KSBs Overlapping</b>	<b>Summary of SME Feedback</b>
<ul style="list-style-type: none"> <li>Focus</li> <li>Multi-Tasking</li> <li>Attentiveness</li> <li>Focus</li> </ul>	<p>Redundancy in Definitions. Clarify Definitions: Use “Concentration” rather than “Mentally processes multiple sources of information/data.”</p> <p>Similar constructs, but Attentiveness refers to shifting attention as appropriate. KSB Label Change: “Attentiveness” to “Shifting Attention” or “Prioritizing Attention.”</p>
<ul style="list-style-type: none"> <li>Mental Agility</li> <li>Cognitive Flexibility</li> </ul>	Redundancy in Definitions.
<ul style="list-style-type: none"> <li>Processes Information &amp; Data</li> <li>Analyze Data or Information</li> <li>Analyzes and Organizes Information to Create Knowledge</li> </ul>	Redundancy in Labels and Definitions.
<ul style="list-style-type: none"> <li>Analyzes and Organizes Information to Create Knowledge</li> <li>Reflective Thinking</li> </ul>	Redundancy in Definitions.
<ul style="list-style-type: none"> <li>Problem Solver</li> <li>Structured Problem Solving</li> <li>Unstructured Problem Solving</li> <li>Troubleshooting</li> </ul>	Problem Solver is either a Talent level construct or overlaps with KSBs within Problem Solving Talent. Retire “Problem Solver” or use to create new Talent, under which the other KSBs mentioned can be reorganized.
<ul style="list-style-type: none"> <li>Analytical Thinking</li> <li>Critical Thinking</li> </ul>	Redundancy in Definitions.
<ul style="list-style-type: none"> <li>Quantitative Reasoning</li> <li>Mathematical Reasoning</li> </ul>	Redundancy in Definitions.
<ul style="list-style-type: none"> <li>Communication Ability</li> <li>Communicator</li> </ul>	Redundancy in Definitions. Retire “Communicator.”
<ul style="list-style-type: none"> <li>Communication Ability</li> <li>Oral Communication Skill</li> <li>Oral and Nonverbal Comprehension</li> <li>Written Communication</li> </ul>	Redundancy in Definitions. Consolidate multiple KSBs.
<ul style="list-style-type: none"> <li>Adjustment</li> <li>Emotional Control</li> <li>Even-Tempered</li> <li>Stress Tolerance</li> </ul>	Redundancy in Definitions. Consolidate multiple KSBs. “Emotional Control” and “Even-Tempered” were specifically recommended for consolidation.
<ul style="list-style-type: none"> <li>Sociability</li> <li>Social Interests</li> </ul>	Redundancy in Definitions.
<ul style="list-style-type: none"> <li>Army Values</li> <li>Fosters Teamwork</li> <li>Sustains a Climate of Trust</li> </ul>	Redundancy in Definitions. Rename “Fosters Teamwork, Cohesion, Cooperation, Loyalty, and Esprit de Corps” as ‘Fosters Teamwork’ and define as “Cohesion, Cooperation, Loyalty, and Esprit de Corps” (feedback implemented FY23).
<ul style="list-style-type: none"> <li>Innovative</li> <li>Creative Problem Solving and Innovation</li> </ul>	Redundancy in Definitions. Shape definition to remove overlap.
<ul style="list-style-type: none"> <li>Innovating Technology</li> <li>Technologically Adept</li> </ul>	Redundancy in Definitions.
<ul style="list-style-type: none"> <li>Advanced Mathematics</li> <li>Mathematical Reasoning</li> <li>Mathematics Knowledge</li> </ul>	Redundancy in Labels and Definitions. Rename KSB Labels.
<ul style="list-style-type: none"> <li>Basic Mechanical Knowledge</li> <li>Mechanical Comprehension</li> <li>Mechanically Savvy</li> </ul>	Redundancy in Labels and Definitions. Rename KSB Labels.
<ul style="list-style-type: none"> <li>Occupation-Specific Knowledge and Skill</li> <li>Specialized Expertise</li> </ul>	Redundancy in Definitions. Shape definitions to differentiate or consolidate these KSBs.
<ul style="list-style-type: none"> <li>Cross-Culturally Fluent</li> <li>Cultural Awareness</li> <li>Cultural/Interpersonal Adaptability</li> </ul>	Redundancy in Labels and Definitions. Shape definitions to differentiate, consolidate KSBs, or Rename KSB Labels.
<ul style="list-style-type: none"> <li>Tactful</li> <li>Adaptability</li> <li>Empathy</li> <li>Perspective Taking</li> </ul>	Definition for “Tactful” is redundant across the other three KSBs listed here. Frame KSB definition to differentiate from other KSBs.
<ul style="list-style-type: none"> <li>Resource Management</li> <li>Financial Management</li> </ul>	Redundancy in Definitions.
<ul style="list-style-type: none"> <li>Bodily Kinesthetic</li> <li>Other Physical Talent Domain KSBs</li> </ul>	Redundancy in Definitions. Consolidate due to overlap with other Physical KSBs.

After identifying potentially overlapping KSBs suggested by the SMEs, we assessed whether they were seen as overlapping within and between Talents or Talent Domains. Figure 2 below provides a visualization of the 46 KSBs that SMEs perceived to overlap with at least one other KSB, using connecting lines to link KSBs that SMEs suggested were overlapping. As seen in Figure 2, most KSBs were seen as overlapping with KSBs within the same Talent and Talent Domain; however, several KSBs were identified as having overlap across other Domains as illustrated by connecting lines crossing the figure to a KSB in another Talent Domain. For instance, *Creative Problem Solving and Innovation* from the Cognitive Talent Domain was seen as overlapping with *Innovative* in the Disposition Talent Domain. Similarly, *Financial Management* from the Expertise & Personal Competence Talent Domain was seen as overlapping with *Resource Management* from the Leadership & Management Talent Domain.

**Figure 2**

*Overlap in KSBs Within and Across Talents*



### ***Separate KSB sub-theme***

The Separate KSB sub-theme, referring to instances in which a single KSB should be split into multiple KSBs, was only applied to one KSB: *Creative Problem Solving and Innovation*. One SME recommended separating *Creative Problem Solving* from *Innovation* due to *Innovation* being seen as a separate component of the creative process in the scientific

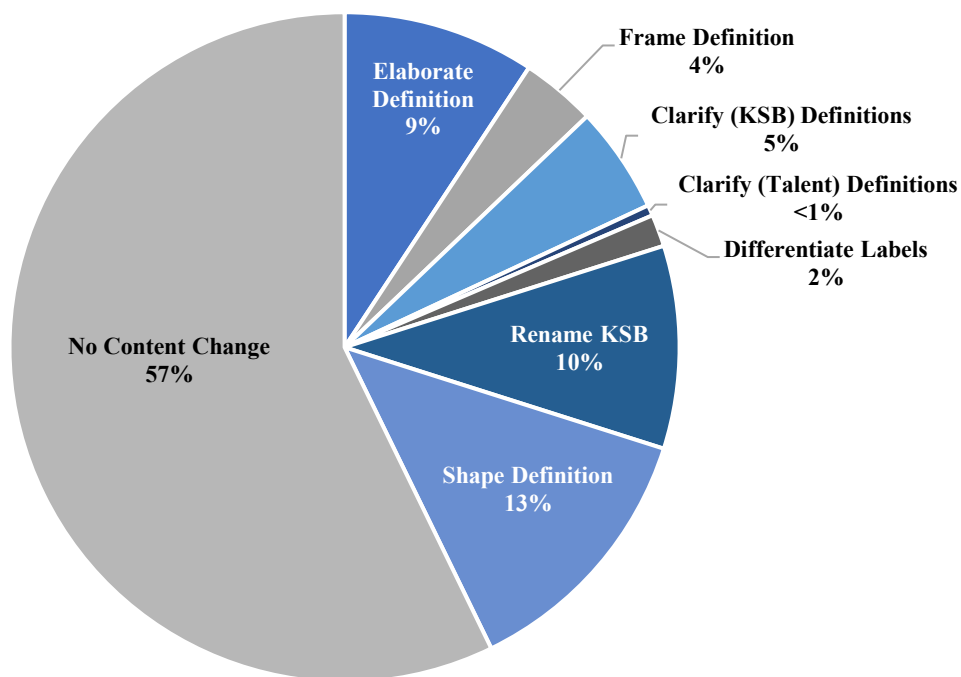
literature (e.g., *Innovation* is the implementation of a creative idea or solution, while *Creative Problem Solving* describes the generation and evaluation components of the creative process; Sawyer, 2012). Other SMEs suggested some degree of overlap with *Innovative* (see Table 4).

### Content Refinements to the ATAF

In addition to SME feedback regarding recommendations for structural updates, several recommendations reflected content refinements. Content-oriented refinements tended to reflect more minor suggestions such as clarifying talent and KSB definitions, providing further elaboration to KSB definitions, renaming KSBs, differentiating between labels shared by KSBs and Talents, as well as shaping or framing KSB names. In total, 83 KSBs (42.78%) received SME suggestions for content refinement, while 111 KSBs (57.22%) received no feedback on content revisions. Figure 3 below provides a summary of KSBs with suggested content refinements.

**Figure 3**

*ATAF Content Updates based on SME Feedback*



For a deeper examination of Talents and KSBs receiving content-related feedback, Table 5 provides examples of SME feedback for each aspect of content refinement and suggested refinements (where applicable). The full summary of SME feedback reflecting content-oriented themes can be found in Appendix B.

**Table 5***Example Content Refinements and sub-themes from SMEs*

<b>Content Sub-theme</b>	<b>KSB or Talent – Content Refinement</b>	<b>Talent</b>	<b>Talent Domain</b>	<b>Summary of SME Feedback</b>
<b>Clarify (Talent) Definitions</b>	Systems Thinking (Talent)	Systems Thinking	Cognitive	SME proposed new definition: “Understands relationships between his/her organization and environment and uses information to envision and pursue a desired future state” or “The use of a set of cognitive processes to synthesize an integrated perspective, envisioning and pursuing a desired future state.”
<b>Clarify (KSB) Definitions</b>	Artistic Interests	Interests	Disposition	Use O*NET definition: “Artistic occupations frequently involve working with forms, designs and patterns. They often require self-expression and the work can be done without following a clear set of rules.”
<b>Differentiate Labels</b>	Situational Awareness	Situational Awareness	Cognitive	Confusing for KSB and Talent to share label as term is defined differently at each level.
<b>Elaborate</b>	Active Learning	Reasoning	Cognitive	Use APA definition: learning through performance of behavior or acting out an idea OR the active seeking out of new information; active learners set goals, strategies, recognize when they understand, and work with others to further learning.
<b>Frame Definition</b>	Empathy	Empathy	Disposition	Revise scientific definition to remove Soldier-specific language to be domain general: “. . .to care for and take care of others.”
<b>Rename KSB</b>	Cooperation/ Teamwork	Teamwork	Interpersonal	Simplify label as <i>Cooperation</i>
<b>Shape Definition</b>	Affiliation	Agreeableness	Disposition	Remove “Not shy and reserved.” <i>Affiliation</i> refers to belongingness and connection, which should be added to definitions.

*Note:* Full content-oriented sub-themes can be found in Appendix B.



## **Refinement Phase 2: Quantitative analysis of overlapping KSBs using job analytic data**

A common structural refinement sub-theme in the thematic analysis was the consolidation of KSBs perceived by SMEs as overlapping. We sought to better understand this sub-theme using data from an extensive Army-wide job analysis that collected KSB importance ratings from officers (Royston & Lin, 2022), warrant officers (WOs) (Royston & Lin, 2023), and noncommissioned officers (NCOs) (Royston & Amey, 2023) using the ATAF as an organizing framework. During these job analytic efforts, each incumbent rated the importance of each ATAF KSB for successful performance in their job position. Consequently, this job analysis served as a critical baseline for supporting current and future Army talent management efforts based on the Army People Strategy (2019a) of acquiring, developing, employing, and retaining critical talent by accurately identifying key attributes necessary to perform a given job.

For the quantitative analysis in this mixed method study, we used the KSB importance ratings from three job analysis studies to further investigate potential overlap between KSBs. We evaluated correlation coefficients between KSBs that SMEs suggested as overlapping, but used both theory and data to guide our final recommendations for consolidating strongly correlated KSBs (e.g.,  $r = .60-.70$  or higher; Cohen, 1988; Cohen, 1992; Dancey & Reidy, 2007; Evans, 1996). However, note that when recommending refinements to the ATAF (e.g., consolidating overlapping KSBs), the authors maintained the exploratory sequential mixed method research design (Creswell & Plano Clark, 2018). Specifically, we synthesized qualitative and quantitative data analysis to better understand issues related to KSB overlap by allowing SME feedback to guide the follow-up quantitative analysis. Further, using the SME feedback allowed us to consider the practical significance of recommended changes (rather than only considering a specific threshold for high correlations) may be useful for maximizing the utility of the ATAF for end-users. Therefore, we allowed theory, empirical evidence, and practicality to guide our recommendations.

### **Samples**

Sample information from these separate efforts is summarized below. For details on survey administration, including measures and procedures, please see the technical reports for officers (Royston & Lin, 2022), WOs (Royston & Lin, 2023), and NCOs (Royston & Amey, 2023).

#### ***Officer Sample***

The officer sample was nearly evenly split between field-grade and company-grade officers. Approximately 49.28% ( $n = 1,610$ ) of participants were company-grade officers and 50.63% ( $n = 1,654$ ) were field-grade officers. CPTs represented the largest group of officers at 34.74% ( $n = 1,135$ ), followed by MAJs who composed 28.04% ( $n = 916$ ) of the sample. First/Second Lieutenants represented the smallest group at 14.53% ( $n = 475$ ) of the sample. See Table 6. For more detailed information about the sample, please reference Royston and Lin (2022).

**Table 6***Overall Army Officers by Rank (Frequencies)*

Officer Rank Group	Rank	<i>n</i>	%
Field Grade	Lieutenant Colonel (LTC)	738	22.58%
	Major (MAJ)	916	28.04%
Company Grade	Captain (CPT)	1,135	34.74%
	First/Second Lieutenant (1LT/2LT)	475	14.53%
Total		3,264	100

*Note:* Three individuals did not respond to the survey item regarding rank.

***Warrant Officer Sample***

As seen in Table 7, CW2s represented the largest group of WOs at 32.02% ( $n = 341$ ), followed by CW3s who comprised 27.79% of the sample ( $n = 296$ ). CW5s and WO1s represented the smallest groups at 9.95% ( $n = 106$ ) and 6.85% ( $n = 73$ ), respectively. For more detailed information about the sample, please reference Royston and Lin (2023).

**Table 7***Overall Army Warrant Officers by Rank (Frequencies)*

Rank	<i>n</i>	%
WO1 – Warrant Officer	73	6.85%
CW2 – Chief Warrant Officer	341	32.02%
CW3 – Chief Warrant Officer	296	27.79%
CW4 – Chief Warrant Officer	249	23.38%
CW5 – Chief Warrant Officer	106	9.95%
Total	1,065	100%

***Noncommissioned Officer Sample***

Army NCOs varied by rank as shown in Table 8. Sergeants (E-5) made up 13.82% of the sample ( $n = 791$ ), while Staff Sergeants (E-6) represented 29.95% of the sample ( $n = 1,714$ ). Sergeant First Class (E-7) were the largest group, comprising 36.35% of the sample ( $n = 2,080$ ). Master Sergeants and First Sergeants, both of which are E-8 ranks, represented 6.87% ( $n = 393$ ) and 4.65% ( $n = 266$ ) of the sample respectively. Sergeant Majors and Command Sergeant Majors, both E-9 ranks, made up the remaining sample at 4.28% ( $n = 245$ ) and 4.06% ( $n = 232$ ), respectively. For more detailed information about the sample, please reference Royston and Amey (2023).

**Table 8***Overall Army NCO Responses by Rank (Frequencies)*

Rank	<i>n</i>	%
Sergeant	791	13.82%
Staff Sergeant	1,714	29.95%
Sergeant First Class	2,080	36.35%
Master Sergeant	393	6.87%
First Sergeant	266	4.65%
Sergeant Major	245	4.28%
Command Sergeant Major	232	4.06%
Total	5,721	100%

**Procedure**

The Army-wide job analysis was administered online using software provided by the Army Analytics Group (AAG). Participants were invited to participate in the survey via email or through an open-access internet link. The survey contained a Privacy Act Statement and a Project Summary, which provided information about the survey's purpose, voluntary participation, confidentiality of data, and an estimate of the time needed to complete the survey. Participants responded to position and service questions (e.g., time in position, time in rank, Branch/FA/MOS). Based on their Branch/FA/MOS input, participants then responded to a Branch/FA/MOS-specific duty list or were provided with open-ended items to summarize their duties. From there, participants were presented with the complete list of KSBs from the ATAF and asked to rate the importance of each for performance in their position. Following KSB importance ratings, participants responded to several demographic items.

**Results of Correlation Analysis**

To further investigate SME feedback that some KSBs appeared to contain some degree of overlap with at least one other KSB and should be considered for consolidation (see Table 4), we then reviewed correlation coefficients between KSB importance ratings for each of the three job analysis samples (i.e., officers, WOs, NCOs). Specifically, we looked for patterns in which KSBs showed strong correlations across multiple samples. As previously mentioned, note that when recommending refinements to the ATAF (e.g., consolidating overlapping KSBs), the authors did not rely solely on qualitative or quantitative data to drive decisions. Keeping in line with the exploratory sequential mixed method research design (Creswell & Plano Clark, 2018), we utilized both forms of data analysis to better understand issues related to KSB overlap by allowing SME feedback to guide the follow-up quantitative analysis. When pairs or groups of KSBs showed strong correlations, these pairs or groups became candidates for potential consolidation. However, just because two or more KSBs were strongly correlated, this did not mean they would automatically be consolidated – KSBs could be strongly associated for a number of reasons (e.g., both rated as important for Army personnel). Rather, the correlation was viewed as an additional way of exploring how KSBs were related, allowing the authors to

critically evaluate the definitions and labels for KSBs. In short, our recommendations are guided by SME feedback, empirical evidence using job analysis data from three samples, and considering the practicality of refinements that will maximize the utility of the ATAF for end-users.

Table 9 provides a summary of pairs of KSBs that while mentioned by SMEs as overlapping – did not reach threshold criteria for further examination and are not recommended for consolidation or retirement upon closer inspection. Of particular note, *Attentiveness* and *Focus* were highly correlated in each sample. However, these constructs are generally considered conceptually distinct (e.g., Chun et al., 2011; Moran, 2012; Oberauer, 2019; Zeplin et al., 2014). Further, the American Psychological Association (APA) provides separate definitions for these attributes, with *Focus* being defined as “the concentration or centering of attention on a stimulus” while *Attentiveness* is defined as “1) the state of being alert and actively paying attention. 2) the quality of actively attending to the needs of others” (American Psychological Association, n.d.) reflects alertness, awareness, and shifting attention. Therefore, overlap may be better addressed by modifying the label or definition, rather than retiring or consolidating either KSB.

**Table 9**

*Correlation coefficients for pairs of KSBs not recommended for consolidation*

<b>KSBs Overlapping</b>	<b>Sample</b>	<b>Pearson Correlation Coefficients (<i>r</i>)</b>	<b>Summary of SME feedback</b>
• Focus	Officers	.40	Redundancy in Definitions - Clarify Definitions: Use “Concentration” rather than “Mentally processes multiple sources of information/data.”
• Multi-Tasking	WOs	.45	
	NCOs	.38	
• Attentiveness	Officers	.69	Similar constructs, but Attentiveness refers to shifting attention as appropriate. Potential KSB Label Change: “Attentiveness” to “Shifting Attention” or “Prioritizing Attention.”
• Focus	WOs	.68	
	NCOs	.74	
• Mental Agility	Officers	.61	Redundancy in Definitions
• Cognitive Flexibility	WOs	.64	
	NCOs	.53	
• Analytical Thinking	Officers	.67	Redundancy in Definitions
• Critical Thinking	WOs	.69	
	NCOs	.69	
• Quantitative Reasoning	Officers	.40	Redundancy in Definitions
	WOs	.36	
• Mathematical Reasoning	NCOs	.33	
• Sociability	Officers	.52	Redundancy in Definitions
• Social Interests	WOs	.52	
	NCOs	.52	
• Innovative	Officers	.54	Redundancy in Definitions - Shape definition to remove overlap
• Creative Problem Solving and Innovation	WOs	.54	
	NCOs	.48	
• Innovating Technology	Officers	.58	Redundancy in Definitions
	WOs	.60	
• Technologically Adept	NCOs	.62	
• Occupation-Specific Knowledge and Skill	Officers	.54	Redundancy in Definitions - Shape definitions to differentiate or consolidate these KSBs
	WOs	.51	
• Specialized Expertise	NCOs	N/A	
• Resource Management	Officers	.40	Redundancy in Definitions
	WOs	.37	
• Financial Management	NCOs	.31	

*Note:* Due to the large sample sizes, all correlations were significant at the  $p = .01$  level.

In addition to the pairs of KSBs outlined above, Tables 10 through 12 represent KSB clusters of three or more KSBs that SMEs suggested as overlapping in either definition or label. Each of these clusters will be summarized independently. SMEs suggested several KSBs in the Problem Solving Talent may show a degree of definitional redundancy. However, the definitions of each KSB reflect different forms of problem solving, which are frequently assessed separately and involve different cognitive processes (e.g., Butler & Scherer, 1997; Zaccaro et al., 2000). Considering how these KSBs can be differentiated in job analysis or assessment settings, we recommend these KSBs remain separate. Further, upon inspecting the correlations between

*Problem Solver, Structured Problem Solving, Unstructured Problem Solving, and Troubleshooting*, we found that few correlations were exceptionally high—although each of these attributes were somewhat related as one would expect. Consequently, no KSBs within this cluster are recommended for consolidation. See Table 10 for more information.

**Table 10**

*Correlation Analysis for Problem Solving Talent - KSB correlation coefficients per sample*

<i>KSB</i>	<i>Sample</i>	<i>1.</i>	<i>2.</i>	<i>3.</i>	<i>4.</i>
1. Problem Solver	Officers				
	WOs				
	NCOs				
2. Structured Problem Solving	Officers	.62			
	WOs	.68			
	NCOs	.73			
3. Unstructured Problem Solving	Officers	.62	.51		
	WOs	.66	.61		
	NCOs	.64	.60		
4. Troubleshooting	Officers	.55	.55	.54	
	WOs	.57	.53	.57	
	NCOs	.61	.61	.61	

*Note:* Due to the large sample sizes, all correlations were significant at the  $p = .01$  level.

SMEs also suggested a second cluster of KSBs in the Cognitive Talent Domain as having label or definitional overlap, specifically *Processes Information and Data* from the General Cognitive Ability Talent, *Analyze Data or Information* from the Reasoning Talent, *Analyzes and Organizes Information to Create Knowledge*, and *Reflective Thinking* (both from the Meta-Cognition Talent). However, although the KSB labels themselves are somewhat similar, upon examining correlation coefficients between these KSBs and re-examining KSB definitions, these attributes appear to be sufficiently differentiated. Consequently, we do not recommend any of these KSBs for retirement or consolidation. See Table 11 for more information.

**Table 11**

*Correlation Analysis of Cognitive Domain - KSB correlation coefficients per sample*

<i>KSB</i>	<i>Sample</i>	<i>1.</i>	<i>2.</i>	<i>3.</i>	<i>4.</i>
1. Processes Information and Data	Officers				
	WOs				
	NCOs				
2. Analyze Data or Information	Officers	.60			
	WOs	.63			
	NCOs	.58			
3. Analyzes and Organizes Information to Create Knowledge	Officers	.55	.56		
	WOs	.58	.62		
	NCOs	.60	.56		
4. Reflective Thinking	Officers	.39	.45	.56	
	WOs	.53	.55	.61	
	NCOs	.51	.52	.64	

*Note:* Due to the large sample sizes, all correlations were significant at the  $p = .01$  level.

Similarly, SMEs suggested that *Army Values* from the Military-specific Talent, *Fosters Teamwork* from the Teamwork Talent, and *Sustains a Climate of Trust* from the Leadership Talent shared some degree of definitional overlap. At face value, each of these KSBs appear to share some definitional similarities as they all reflect team leadership and management attributes. However, considering the KSB's respective Talent provides some context into how an individual may demonstrate each of these KSBs differently based on the work context and situation (Dierdorff & Morgeson, 2007; Dierdorff et al., 2009). For instance, *Army Values* is a domain-general attribute in which one models Army Values across contexts, while *Fosters Teamwork* refers specifically to actions aimed at facilitating teamwork regardless of leadership position. Finally, *Sustains a Climate of Trust* refers to leader behaviors that promote or hinder a team's trust in the leader (e.g., Burke et al., 2007; Menges et al., 2011). Further supporting these conceptual distinctions, correlations between these KSBs were not particularly high. Therefore, we do not recommend any KSBs for consolidation or retirement in this cluster of KSBs. See Table 12 for more information.

**Table 12**

*Correlation Analysis of Disposition, Teamwork, and Leadership Talent - KSB correlation coefficients per sample*

<i>KSB</i>	<i>Sample</i>	<i>1.</i>	<i>2.</i>	<i>3.</i>
1. Army Values	Officers			
	WOs			
	NCOs			
2. Fosters Teamwork	Officers	.51		
	WOs	.53		
	NCOs	.51		
3. Sustains a Climate of Trust	Officers	.53	.60	
	WOs	.54	.64	
	NCOs	.50	.59	

*Note:* Due to the large sample sizes, all correlations were significant at the  $p = .01$  level.

### **KSB Clusters Requiring Further Examination**

The correlational analysis did identify several groups of KSBs that should be further considered for consolidation. As seen in Table 10, relatively strong correlations exist between several KSBs in the Communication Domain suggesting a degree of overlap between *Communication Ability* and *Communicator*, and between *Oral and Nonverbal Communication* and *Oral Communication Skill*. Further, *Oral Communication Skill* also shows a relatively strong association with both *Communicator* and *Communication Ability*. Based on a combination of SME feedback and subsequent correlation analysis, we recommend consolidation of *Communication Ability* and *Communicator* into a single KSB. See Table 20 (p. 28) in Synthesis Section for recommended consolidation of KSB label and definition. While *Oral Communication Skill* and *Oral and Nonverbal Comprehension* also showed a relatively strong association, the labels and definitions appear to be sufficiently differentiated. See Table 13 for more information.

**Table 13**

*Correlation Analysis of Communication Talent Domain - KSB correlation coefficients per sample*

<i>KSB</i>	<i>Sample</i>	<i>1.</i>	<i>2.</i>	<i>3.</i>	<i>4.</i>	<i>5.</i>
1. Communication Ability	Officers					
	WOs					
	NCOs					
2. Communicator	Officers	.80				
	WOs	.82				
	NCOs	.82				
3. Oral Communication Skill	Officers	.68	.67			
	WOs	.69	.72			
	NCOs	.68	.68			
4. Oral and Nonverbal Comprehension	Officers	.60	.58	.75		
	WOs	.60	.60	.76		
	NCOs	.61	.60	.75		
5. Written Communication	Officers	.55	.56	.60	.54	
	WOs	.55	.60	.65	.58	
	NCOs	.50	.54	.56	.53	

*Note:* Due to the large sample sizes, all correlations were significant at the  $p = .01$  level.

SMEs also suggested a degree of overlap between several KSBs within the Disposition Talent Domain, including *Adjustment*, *Emotional Control*, *Even-Tempered* (each from the Emotional Control Talent), and *Stress Tolerance* from the Stress Tolerance Talent. Correlation analysis indicated that each KSB was moderately correlated, while only *Emotional Control*, and *Even-Tempered* showed a strong correlation across each sample. The definitions for *Emotional Control* and *Even-Tempered* both share similar language and include the word ‘calm’, which may suggest that individuals see these KSBs as equivalent. Therefore, we recommend *Emotional Control* and *Even-Tempered* be consolidated into a single KSB: *Even-Tempered*. See Table 14 for more information. All recommended consolidation of KSB labels and definitions can be found in the Synthesis section.

**Table 14**

*Correlation Analysis of Disposition Talent Domain - KSB correlation coefficients per sample*

<i>KSB</i>	<i>Sample</i>	<i>1.</i>	<i>2.</i>	<i>3.</i>	<i>4.</i>
1. Adjustment	Officers				
	WOs				
	NCOs				
2. Emotional Control	Officers	.69			
	WOs	.69			
	NCOs	.71			
3. Even-Tempered	Officers	.63	.81		
	WOs	.65	.80		
	NCOs	.65	.78		
4. Stress Tolerance	Officers	.50	.53	.47	
	WOs	.44	.49	.43	
	NCOs	.46	.47	.43	

*Note:* Due to the large sample sizes, all correlations were significant at the  $p = .01$  level.



SMEs suggested potential overlap in four other KSBs across the Disposition Talent Domain (i.e., *Adaptability* from the Openness to Experience Talent and *Empathy* from the Empathy Talent) and the Interpersonal Talent Domain (i.e., *Tactful* and *Perspective Taking* from the Social Skills Talent). Correlation analysis revealed only moderate associations between each of these KSBs, except for the correlation between *Tactful* and *Perspective Taking*, both from the Social Skills Talent (see Table 14). While these KSBs are conceptually distinct and their definitions appear to be differentiated within the ATAF, it is likely that these skills frequently are used together across situations. Perspective-taking is often seen as a predictor of interpersonal tact and conflict resolution (e.g., Franzoi et al., 1985), which may explain the association seen between these KSBs. Consequently, we do not recommend any consolidation of KSBs within this cluster. See Table 15 for more information.

**Table 15**

*Correlation Analysis of Disposition Talent Domain KSBs - KSB correlation coefficients per sample*

<i>KSB</i>	<i>Sample</i>	<i>1.</i>	<i>2.</i>	<i>3.</i>	<i>4.</i>
1. Tactful	Officers				
	WOs				
	NCOs				
2. Adaptability	Officers	.45			
	WOs	.48			
	NCOs	.45			
3. Empathy	Officers	.41	.36		
	WOs	.49	.36		
	NCOs	.43	.35		
4. Perspective Taking	Officers	.80	.46	.46	
	WOs	.86	.49	.51	
	NCOs	.84	.44	.46	

*Note:* Due to the large sample sizes, all correlations were significant at the  $p = .01$  level.

SMEs also suggested overlap in the definitions for three KSBs in the Math & Science Talent, specifically *Basic Mathematics*, *Mathematical Reasoning*, *Advanced Mathematics*, and *Mathematics Knowledge*. Examining the correlation coefficients indicated that *Mathematical Reasoning* and *Mathematics Knowledge* were correlated at nearly .90 in each sample. Upon review of these KSB definitions, both appear to reflect application of mathematical knowledge. Consequently, we suggest consolidation of these two KSBs into a single KSB, *Mathematical Reasoning*, and combining their definitions. See Table 16 for more information. See Table 20 (p. 28) in Synthesis Section for recommended consolidation of KSB label and definition.

**Table 16***Correlation Analysis of Math & Science Talent - KSB correlation coefficients per sample*

<i>KSB</i>	<i>Sample</i>	<i>1.</i>	<i>2.</i>	<i>3.</i>	<i>4.</i>
1. Basic Mathematics	Officers				
	WOs				
	NCOs				
2. Advanced Mathematics	Officers	.52			
	WOs	.53			
	NCOs	.53			
3. Mathematical Reasoning	Officers	.70	.63		
	WOs	.68	.63		
	NCOs	.73	.67		
4. Mathematics Knowledge	Officers	.69	.67	.87	
	WOs	.69	.65	.87	
	NCOs	.74	.68	.89	

*Note:* Due to the large sample sizes, all correlations were significant at the  $p = .01$  level.

Within the Expertise & Personal Competence Talent Domain, three KSBs were suggested as overlapping by SMEs. Each of these KSBs are nested within the Mechanical & Electrical Talent and demonstrated strong associations across all three Army samples. The definitions for each of these KSBs are close in meaning, but appear to reflect different levels of expertise. To illustrate, *Basic Mechanical Knowledge* begins with “Knows general information regarding...” which may reflect a novice level of expertise. *Mechanical Comprehension* starts with “Knows the principles of...” suggesting an intermediate level of competence or proficiency. In contrast, *Mechanically Savvy* begins with “Possesses deep expertise in...”, indicating an expert level proficiency. Consequently, we recommend consolidation of these three KSBs into a single KSB, *Mechanical Comprehension*, encapsulating the definitions of all three KSBs. See Table 17 for additional information and see Table 20 (p. 28) in Synthesis section for recommended consolidation of KSB label and definition.

**Table 17***Correlation Analysis of Mechanical & Electrical Talent – KSB correlation coefficients per sample*

<i>KSB</i>	<i>Sample</i>	<i>1.</i>	<i>2.</i>	<i>3.</i>
1. Basic Mechanical Knowledge	Officers			
	WOs			
	NCOs			
2. Mechanical Comprehension	Officers	.79		
	WOs	.86		
	NCOs	.84		
3. Mechanically Savvy	Officers	.74	.78	
	WOs	.77	.82	
	NCOs	.79	.86	

*Note:* Due to the large sample sizes, all correlations were significant at the  $p = .01$  level.

SMEs also suggested three KSBs within the Interpersonal Talent Domain as containing potential overlap including *Cross-Culturally Fluent*, *Cultural Awareness*, and *Cultural/Interpersonal Adaptability*. All three KSBs are contained within the Cultural Awareness Talent and demonstrate item correlations above .80 in each of the three samples, with correlations between *Cultural Awareness* and *Cultural/Interpersonal Adaptability* being above .90. Based on these high correlations and the high degree of similarity in KSB definitions, we recommend these three KSBs be consolidated into a single KSB, *Cross-Cultural Competence*. See Table 18 for more information and see Synthesis Section for recommended consolidation of KSB label and definition.

**Table 18**

*Correlation Analysis of Interpersonal Talent Domain - KSB correlation coefficients per sample*

<i>KSB</i>	<i>Sample</i>	<i>1.</i>	<i>2.</i>	<i>3.</i>
1. Cross-Culturally Fluent	Officers			
	WOs			
	NCOs			
2. Cultural Awareness	Officers	.82		
	WOs	.85		
	NCOs	.81		
3. Cultural/Interpersonal Adaptability	Officers	.82	.90	
	WOs	.82	.91	
	NCOs	.80	.91	

*Note:* Due to the large sample sizes, all correlations were significant at the  $p = .01$  level.

SMEs also indicated that within the Physical Talent Domain, the *Bodily-Kinesthetic* KSB appeared to overlap by some degree with each other KSB within the Physical Talent Domain. Correlational analysis indeed showed that *Bodily-Kinesthetic*, was highly associated with every other KSB within the General Fitness Talent. See Table 19 for more information. After reviewing the definition for the *Bodily-Kinesthetic* KSB and comparing to each other KSB within the Physical Talent Domain, we recommend retirement for this KSB as it appears that it is encapsulated in other KSBs. The other KSBs within the General Fitness Talent, while highly correlated, are well-established in taxonomies of physical abilities (e.g., Hogan, 1991).

**Table 19***Correlation Analysis of Physical Talent Domain - KSB correlation coefficients per sample*

<i>KSB</i>	<i>Sample</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>
1. Bodily Kinesthetic	Officers										
	WOs										
	NCOs										
2. Health Fitness Orientation	Officers	.80									
	WOs	.81									
	NCOs	.76									
3. Physical Endurance	Officers	.80	.82								
	WOs	.78	.85								
	NCOs	.78	.82								
4. Physical Strength	Officers	.81	.82	.92							
	WOs	.78	.82	.90							
	NCOs	.77	.80	.91							
5. Physically Fit	Officers	.75	.83	.88	.87						
	WOs	.77	.85	.88	.88						
	NCOs	.73	.83	.88	.87						
6. Swimming	Officers	.56	.50	.54	.57	.51					
	WOs	.53	.50	.51	.54	.51					
	NCOs	.53	.45	.48	.49	.45					
7. Balance	Officers	.73	.67	.71	.72	.67	.58				
	WOs	.67	.67	.64	.62	.65	.47				
	NCOs	.67	.65	.69	.69	.66	.51				
8. Control Precision	Officers	.71	.65	.68	.70	.64	.56	.90			
	WOs	.55	.53	.50	.48	.52	.39	.81			
	NCOs	.66	.62	.67	.68	.64	.49	.85			
9. Physical Coordination	Officers	.72	.67	.70	.72	.66	.56	.88	.91		
	WOs	.58	.56	.54	.52	.55	.41	.81	.91		
	NCOs	.68	.64	.70	.71	.68	.49	.84	.89		
10. Reaction Time	Officers	.69	.64	.69	.69	.64	.56	.85	.87	.89	
	WOs	.53	.52	.50	.48	.51	.41	.77	.87	.88	
	NCOs	.63	.60	.66	.66	.64	.48	.78	.83	.86	

*Note:* Due to the large sample sizes, all correlations were significant at the  $p = .01$  level.

### **Refinement Phase 3: ATAF modifications informed by recommendations for consolidation based on the synthesized qualitative and quantitative analyses**

Having collected and assessed both SME and quantitative survey data using an exploratory sequential mixed method research approach, we next provide our set of recommendations for potential alterations to the ATAF. The nature of these changes tends to reflect content refinements; however, we also provide a list of recommendations for structural refinements to the ATAF.

## Structural Recommendations

Table 20 below summarizes KSBs that we recommend for consolidation, and with the revised labels and definitions. For complete summary of recommendations, please see Appendix C.

Additionally, two other KSBs are recommended for retirement – *Machiavellianism* and *Hostility to Authority*. While neither of these KSBs were specifically suggested for retirement by the panel of SMEs, the authors reviewed SME feedback on these KSBs, which pointed out that they were the only negatively worded KSBs and that their usefulness in a talent management setting was questionable. SMEs had suggested that these KSBs could be inverted in label and definition to reflect a positive attribute. However, the inverse of these KSBs is already covered in the ATAF. For instance, *Selflessness*, *Empathy*, *Consideration*, and *Humility* reflect opposite components of *Machiavellianism* because they refer to putting the needs of others above one's own and considering others' feelings. Similarly, a number of KSBs reflect inverse aspects of *Hostility to Authority* such as *Non-Delinquency*, *Cooperation*, and other KSBs from the Teamwork Talent). Due to how the inverse attributes of the *Machiavellianism* and *Hostility to Authority* KSBs already exist within the ATAF, as well as the SME feedback suggesting limited usage within talent management settings, we recommend these KSBs for retirement. See Appendix C for more information.

**Table 20**

*Recommended KSB Consolidation and Revised Labels and Definitions*

KSBs and Definitions Recommended for Consolidation	Revised and Consolidated KSB	Revised and Consolidated Definition
<p><b><u>Communication Ability</u></b> - Uses verbal and nonverbal means to maintain listener interest. Adjusts information sharing strategy based on operating conditions. Ensures prompt information dissemination to all levels. Avoids miscommunication through verifying a shared understanding.</p> <p><b><u>Communicator</u></b> - Precise, efficient, and compelling in both written and spoken word.</p>	Communication Ability	Precise, efficient, and compelling in both written and spoken word.
<p><b><u>Emotional Control</u></b> - Acts rationally, displays a generally calm and even mood, maintains composure, and is not overly distraught by stressful situations.</p> <p><b><u>Even-tempered</u></b> - Calm and stable; does not often exhibit anger, hostility, or aggression.</p>	Even-Tempered	Acts rationally and maintains composure; displays a calm, even and stable mood.
<p><b><u>Mathematical Reasoning</u></b> - Uses the right mathematical methods or formulas to solve a problem.</p> <p><b><u>Mathematics Knowledge</u></b> - Knowledge of mathematical concepts and applications.</p>	Mathematical Reasoning	Possesses knowledge of mathematical concepts and methods and can apply mathematical knowledge to solve problems.
<p><b><u>Basic Mechanical Knowledge</u></b> – Knows general information regarding mechanical principles, tools, and mechanical equipment operation and repair.</p> <p><b><u>Mechanical Comprehension</u></b> - Knows the principles of mechanical devices, structural support, and properties of materials.</p> <p><b><u>Mechanically Savvy</u></b> - Possesses deep expertise in how specific machinery, equipment, or technology works. Uses specialized technology effectively or is able to diagnose and correct problems with technology or machines.</p>	Mechanical Comprehension	Comprehends principles of machinery, equipment, or technology operation and repair. Uses mechanical technology effectively and is able to diagnose and correct problems with machines.
<p><b><u>Cross-Culturally Fluent</u></b> – Aware of and able to operate across different cultural settings (e.g., organizational, demographic, ethnographic, and generational).</p> <p><b><u>Cultural Awareness</u></b> – Learning about and demonstrating acceptance and understanding of individuals from other cultural and social backgrounds, both in the context of the diversity of U.S. Army personnel and interactions with foreign nationals during deployments or when training for deployment.</p> <p><b><u>Cultural/Interpersonal Adaptability</u></b> - Modifies one's style and behavior to fit the situation and culture; open-minded.</p>	Cross-Cultural Competence	Understanding, acceptance, and ability to operate across different cultural settings, modifying one's style and behavior appropriately.
<b><u>Bodily-Kinesthetic</u></b>	None	N/A. KSB recommended for retirement.

Regarding SME recommendations for KSB additions to the ATAF, we have summarized our recommendations in Table 21. Of the five additions suggested by SMEs, we recommend the addition of only one, *Flexibility*, since this aspect of physical fitness is not addressed in the ATAF, but is an important facet in other established taxonomies of physical ability (e.g., Hogan, 1991). We do not recommend additions of any other KSBs.

**Table 21**

*Additional KSB recommendations and current associated KSBs*

Proposed KSB	KSB receiving feedback	Talent	Talent Domain	Summary of Reviewer Feedback	Recommendation
Public Speaking	Communication Ability	General Communication	Communication	Public speaking is not clearly part of any Communication Talents or KSBs. Recommend adding as new KSB or reference in an existing KSB definition.	Not recommended. Public Speaking is implied in current definition.
Virtualized and Containerized Platforms	Database Programming & Engineering	IT Programs & Systems	Expertise & Personal Competence	A SME indicated this was not clearly part of any existing KSB. Proposed definition: “Understands and is comfortable with using Virtual Machines and Containers to maintain and deliver IT-related projects.”	Not recommended. Suggested KSB and definition would be more appropriate as a branch-specific Tier 4 attribute (Tier 4 attributes have not yet been incorporated into the ATAF – see Royston et al., 2022).
Electromagnetic Spectrum (EMS)	Basic Electronics Knowledge	Mechanical & Electrical	Expertise & Personal Competence	A SME indicated this was not clearly part of any existing KSB. Proposed definition: “Is aware of the Electromagnetic Spectrum (EMS), how civilian and military equipment shares the EMS, and aware that EMS radiation is an important element to the protection and fires warfighting functions.”	Not recommended. Suggested KSB and definition would be more appropriate as a branch-specific Tier 4 attribute (which was not approved by Army senior leadership).
Builds Rapport	Interpersonal Relationship Building	Social Skills	Interpersonal	One SME recommended addition as a Social Skill rather than Communication. Noted this could be included in <i>Interpersonal Relationship Building</i> , but building rapport does not imply long-term relationship building. Proposed new KSB definition: “Engages people in pleasant, respectful social interaction; initiates and sustains conversation with new people.”	Not recommended. Suggested KSB addition is already contained in <i>Interpersonal Relationship Building</i> description.
Flexibility	Reaction Time	Psychomotor Ability	Physical	One SME noted that the only physical ability not clearly addressed in framework is flexibility (Hogan, 1991, Structure of physical performance in occupational tasks).	Recommended. New KSB Definition (Hogan, 1991): Flexing or extending the body limbs to work in awkward or contorted positions.

## Content Recommendations

A number of recommendations were made in terms of ATAF KSB content. A table summary of all recommendations/changes can be found in Appendix C.

### Revised Army Talent Attribute Framework

The fundamental purpose of the ATAF is to provide a unified, structured, and comprehensive list of KSBs relevant to Army personnel and support an effective and efficient Army Talent Management System. To ensure the ATAF continues to be part of an up-to-date, relevant, and effective personnel system, ATMTF and ARI have planned annual review cycles of its structure and content. This report catalogs the refinements recommended for the ATAF in FY24 that can be incorporated into IPPS-A and AIM2. Recommendations have been made based on extensive analysis of qualitative data collected from SMEs and analysis of quantitative job analysis data collected from three populations.

In terms of structural updates, recommendations for the current annual review cycle involved adding a single KSB (*Flexibility*), retiring one KSB (*Bodily-Kinesthetic*), consolidating several KSBs, and separating *Creative Problem Solving and Innovation* into two distinct KSBs. Several content-related recommendations were also provided in Appendix C. Most of these recommended modifications were relatively minor in nature and generally involved clarifying definitions, providing additional detail to KSBs, adjusting the scope or framing of a KSB, or relabeling a KSB. Additionally, two other KSBs were retired following review of content changes: *Machiavellianism* and *Hostility to Authority*. The retirement of these two KSBs was due to recommendations to inverse their labels and definitions, which rendered them obsolete. Their revised labels and definitions were covered by other KSBs already existing in the framework. If the recommended modifications are implemented the ATAF would consist of 186 KSBs. Please see Appendix A for the complete ATAF after recommended refinements. Figure 4 below presents the ATAF as if all recommended refinements are implemented.



**Figure 4**

*Updated FY24 Army Talent Attribute Framework Graphic Based on Recommendations*



Note: Tier 1 Talent Domains depicted in the inner circle, Tier 2 Talents in the outer circle, and Tier 3 measurable KSBs listed on outside of circle.

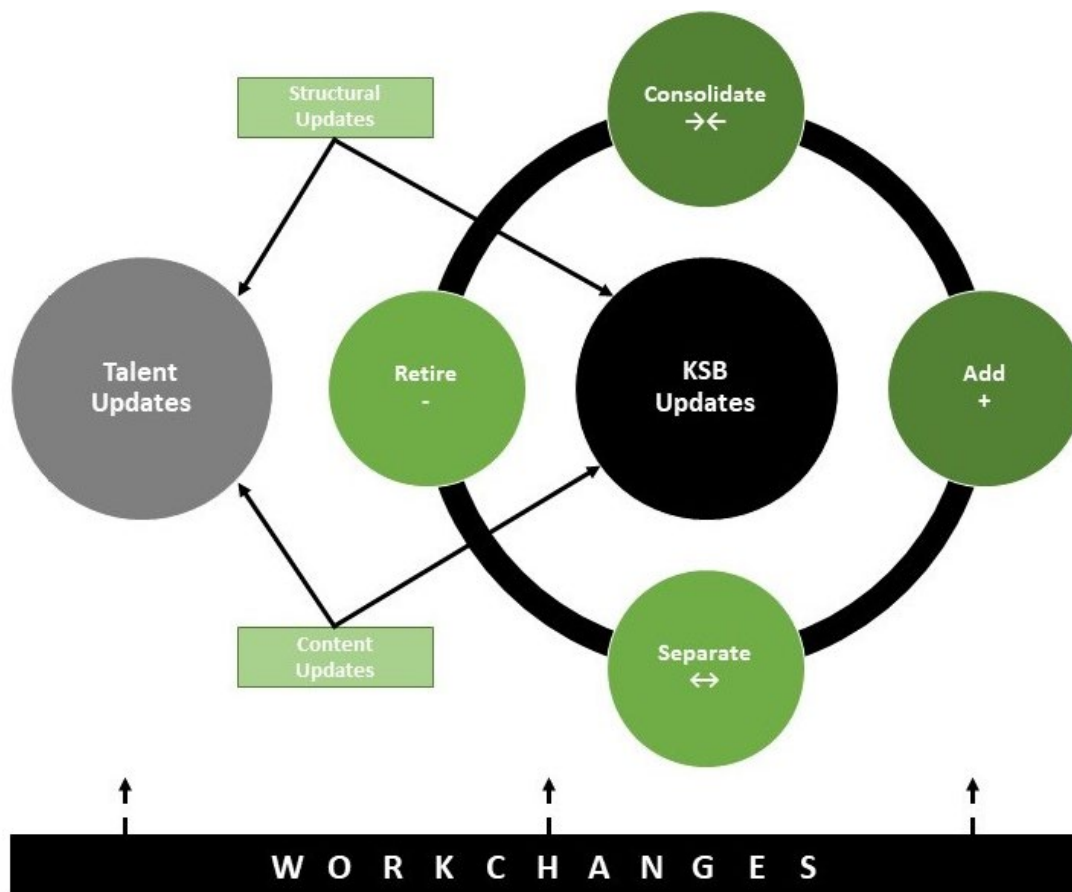
#### **Refinement Phase 4: Guidelines and Recommendations for Future Revision Cycles**

Following refinements and recommendations contained within the ATAF FY24 review cycle described in this report, Army Directive 2023-XT (Army Talent Attribute Framework and Personnel Knowledge, Skills, and Behaviors) is transitioning responsibility for future refinements of the ATAF to The Assistant Secretary of the Army (Manpower and Reserve Affairs (ASA (M&RA))). To facilitate this transition and ensure future ATAF review cycles are conducted in a systematic manner, ARI developed a guide containing reflective questions that should be addressed when considering future structural and content-oriented refinements. ARI recommends that the methodology described in Figure 5 and in Appendix D of this report be used by ASA (M&RA) in future reviews of the ATAF.

As the ATAF was designed as a taxonomy of personnel attributes that could be refined and modified in response to changes in the workforce, operating environment, and technology (Royston et al., 2022), it was necessary to develop a framework guiding future changes to the ATAF. Specifically, Figure 5 below provides a framework for understanding the types of changes to Talents and KSBs that may become necessary to meet the needs of the current and future Army. As demonstrated in the current study, refinements to Talents and KSBs tend to align with Structural or Content-related revisions. Structural refinements reflect reorganization of Talents or KSBs, addition of KSBs to the ATAF, retirement of KSBs, consolidation of overlapping KSBs, or separating KSBs into multiple KSBs. Content refinements tend to be more minor in nature and generally refer to clarifying KSB or Talent definitions, providing additional detail to KSBs, adjusting the scope or framing of a KSB, or relabeling a KSB. Providing a framework for determining necessary future changes to the ATAF will facilitate effective Army talent management practices (e.g., understanding position attribute requirements, and assigning individuals to positions based on alignment between their attributes and position requirements). Further, this refinement framework will allow Army talent management experts and researchers to revise and refine the ATAF in a systematic manner in the future to ensure it meets the changing and emerging needs of the Army.

**Figure 5**

*Framework for future refinements to ATAF Talents and KSBs*



Related to the model presented in Figure 5, we provide sets of questions outlining important points of consideration that should be taken into account when making decisions on implementing structural or content revisions to the ATAF. Specifically, we recommend Army organizations responsible for updating the ATAF to use the lists of questions for consideration in Appendix D to document responses to the relevant list of questions (i.e., structural updates in the form of retiring, adding, separating, or consolidating KSBs, or content updates for KSBs and Talents). For complete guidance on future refinements to the ATAF, please see Appendix D.

### **General Discussion**

The ATAF provides a unified, structured, and comprehensive list of KSBs relevant to Army personnel and support an effective and efficient Army Talent Management System. To ensure the ATAF continues to be part of an up-to-date, relevant, and effective personnel system, ATMTF and ARI have planned annual review cycles of its structure and content. This report presents the recommended refinements for the ATAF in FY24, which were informed by both qualitative and quantitative data sources using an exploratory sequential mixed methods research

approach. In addition to our recommendations for structural and content-oriented changes, we also provide a guide to decision-making on modifying the structure and content of the ATAF to facilitate future review cycles.

Using an exploratory sequential mixed method research design allowed us to gain rich and detailed insights and feedback from SMEs who are highly familiar with Army contexts, Army talent management systems, and the ATAF, then further exploring SME feedback using quantitative analysis. Overall, a significant benefit to this approach is capitalizing on the strengths of both qualitative and quantitative research approaches, while alleviating some of the shortcomings of both forms of research (Creswell & Plano Clark, 2018). While mixed methods research does tend to be time consuming, complex, and requires researchers to possess a wider range of analytic and research design knowledge, it allows a greater understanding and multifaceted approach to investigating research questions (OBSSR, 2011).

Using this mixed method research design provided researchers with the opportunity to critically evaluate the ATAF and KSBs using a systematic approach. The ATAF was extensively reviewed by a panel of subject matter experts (SMEs), then a thematic analysis was conducted by ARI research psychologists to identify themes and sub-themes contained within the qualitative data. Sub-themes of this thematic analysis revealed several structural and content-oriented refinements suggested by SMEs. Suggestions for consolidation of KSBs perceived as overlapping were then further explored by observing correlations between importance ratings of these KSBs. Finally, researchers evaluated, and recommended refinements based on a synthesis of both qualitative and quantitative data. The recommended revised ATAF can be found in Appendix A. If all recommended modifications in terms of consolidation are implemented, the ATAF would consist of 186 KSBs.

## **Future Directions and Changes**

As the workplace continues to change, the Army's operating environment continues to evolve, and as new technology emerges, the ATAF will need to be regularly reviewed to ensure it meets current and future Army requirements. We provided a guide (Appendix D) to facilitate systematic future reviews of the ATAF's structure for Army talent management experts.

Future studies can also explore opportunities for identifying or developing valid and reliable assessments of KSBs required by positions within each branch or Functional Area. Several recent Army job analytic efforts have identified important KSBs by rank and branch/FA/MOS (e.g., Royston & Lin, 2022) and related efforts outlined systematic approaches to identifying assessments (Glerum & Royston, 2023). Moreover, future studies can apply advanced analytic techniques such as natural language processing (NLP) or machine learning (ML) to text data to identify future changes in attribute requirements for specific jobs, which can inform future updates of the ATAF.

Additionally, future research could focus on identifying correlational effect size benchmarks (e.g., Bosco et al., 2015) based on accumulated job analysis data (e.g., ratings, criteria), allowing correlations between KSBs to be situated within an omnibus distribution of effect sizes observed across job analysis studies. Similarly, Army work contexts and

characteristics can be monitored to ensure social and structural contexts in which work tasks are performed are accurately captured in the ATAF (and determine whether any of the aforementioned effect size benchmarks exhibit context-specificity; Bosco et al., 2015). Finally, future research efforts should carefully consider potential ethical and legal challenges that may arise from updating the ATAF and ensuring that any changes accurately reflect work performed by Army personnel and do not contain any bias towards affect, characteristics, or attitudes.

In addition to recommendations around specific aspects of the ATAF, we also recommend a more general change. Specifically, we recommend reconsidering using the term *KSB* to describe the knowledge, skill, and ability requirements for job positions. The traditional Knowledge, Skill, and Ability (KSA) terminology was used in the Army prior to 2009, and which continues to be the terminology of choice in the scientific literature and in applied job research.

Beginning with Wardynski et al. (2009), a series of publications authored by OEMA articulated the possibility of transforming approaches to officer personnel management and began using the term “Knowledge, Skills, and Behaviors (KSB),” and sometimes added “Preferences” (KSB-P). A problem with including Behavior as one of the terms in this acronym is that it does not adequately address one’s *capacity* for performing a range of activities (e.g., Fleishman et al., 1999; Morgeson & Dierdorff, 2010). It also conflates the capacity to perform relevant tasks with the actual work behaviors and tasks that people perform, and the outcomes resulting from those behaviors. Work behaviors are frequently discussed as elements of job performance outcomes such as innovative work behavior (e.g., Muchiri et al., 2020; Zhang et al., 2021), counterproductive workplace behaviors (e.g., O’Boyle et al., 2012), and proactive work behaviors (e.g., Parker et al., 2006). In other words, a framework of work requirement attributes (e.g., ATAF) that includes Behaviors conflates the antecedents of work performance (i.e., requirements) with performance itself. For similar reasons, an initially conceived fourth ATAF tier was ultimately eliminated for similar reasons (for additional details, see Royston et al., 2022, p. 16-17). Using the KSB terminology introduces a number of unnecessary challenges in clearly determining what KSBs are in terms of a Skill versus a Behavior and identification of industry equivalents, which is problematic when identifying valid and reliable assessments.

Further, the introduction of the term KSB is an unnecessary change from accepted terminology used in both science and practice – terminology which continues to be used in other U.S. military branches such as the Air Force and Navy. Lastly, returning to the more widely accepted and traditional usage of KSA terminology will further promote the ATAF’s purpose as an organizing framework that unifies disparate frameworks into a common lexicon, and eases communication among different stakeholders inside and outside the military.

## **Conclusion**

The ATAF’s purpose is to provide a unified, structured, and encompassing list of KSBs that are relevant to Army personnel and supports an effective and efficient Army Talent Management System. To ensure the ATAF remains part of an up-to-date, relevant, and effective personnel system, ATMTF and ARI have planned annual review cycles of its structure. This

report catalogs the refinements we recommend be applied to the ATAF in FY24 that can be incorporated into Army talent management systems (e.g., IPPS-A, AIM2).

Based on the results of our exploratory sequential mixed method research design, in terms of structural changes, we recommend the consolidation of five clusters of KSBs, the retirement of *Bodily-Kinesthetic*, *Machiavellianism*, and *Hostility to Authority* KSBs, and the addition of *Flexibility* as a KSB within the Physical Domain. In terms of content-oriented changes, we provide recommendations for clarifying KSB or Talent definitions, providing additional detail to KSBs, adjusting the scope or framing of KSBs, or relabeling KSBs. If all recommendations are implemented, the ATAF will consist of 186 KSBs (see Appendix A). For full summary of recommended actions, please see Appendix C. Finally, this technical report provides extensive guidance on how to determine future structural and content-oriented refinements of the ATAF when the review cycles are transitioned to another Army organization.

## References

- Alhojailan, M. I. (2012). Thematic Analysis: A Critical Review of its Process and Evaluation. *West East Journal of Social Sciences*, 1(1), 39-47.
- American Psychological Association. (n.d.). Attentiveness. In *APA dictionary of psychology*. Retrieved March 15, 2023, from <https://dictionary.apa.org/attentiveness>
- American Psychological Association. (n.d.). Focus. In *APA dictionary of psychology*. Retrieved March 15, 2023, from <https://dictionary.apa.org/focus>
- Bobko, P. (2001). *Correlation and regression: Applications for industrial organizational psychology and management* (2<sup>nd</sup> ed.). SAGE Publications, Inc.
- Bosco, F. A., Aguinis, H., Singh, K., Field, J. G., & Pierce, C. A. (2015). Correlational effect size benchmarks. *The Journal of Applied Psychology*, 100(2), 431–449. <https://doi.org/10.1037/a0038047>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. <http://dx.doi.org/10.1191/1478088706qp063oa>
- Burke, C. S., Sims, D. E., Lazzara, E. H., & Salas, E. (2007). Trust in leadership: A multi-level review and integration. *The Leadership Quarterly*, 18(6), 606-632. <https://doi.org/10.1016/j.leaqua.2007.09.006>
- Butler, A. B., & Scherer, L. L. (1997). The effects of elicitation aids, knowledge, and problem content on option quantity and quality. *Organizational Behavior and Human Decision Processes*, 72(2), 184-202. <https://doi.org/10.1006/obhd.1997.2737>
- Chun, M. M., Golomb, J. D., & Turk-Browne, N. B. (2011). A taxonomy of external and internal attention. *Annual Review of Psychology*, 62, 73–101. <https://doi.org/10.1146/annurev.psych.093008.100427>
- Clarke, V. & Braun, V. (2013). *Successful qualitative research: A practical guide for beginners*. SAGE Publications, Inc.
- Cohen, J. (1988). Set correlation and contingency tables. *Applied Psychological Measurement*, 12(4), 425–434. <https://doi.org/10.1177/014662168801200410>
- Cohen, J. (1992). Statistical power analysis. *Current Directions in Psychological Science*, 1(3), 98–101. <https://doi.org/10.1111/1467-8721.ep10768783>
- Colarusso, M. J., Heckel, K. G., Lyle, D. S., & Skimmyhorn, W. L. (2016). *Starting strong: Talent-based branching of newly commissioned U.S. Army officers*. U.S. Army War College Press.

- Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). Sage Publications, Inc.
- Dancey, C. P., & Reidy, J. (2017). *Statistics without maths for psychology* (pp. 632-632). Pearson.
- Dierdorff, E. C., & Morgeson, F. P. (2007). Consensus in work role requirements: the influence of discrete occupational context on role expectations. *Journal of Applied Psychology*, 92(5), 1228–1241. <https://doi.org/10.1037/0021-9010.92.5.1228>
- Dierdorff, E. C., Rubin, R. S., & Morgeson, F. P. (2009). The milieu of managerial work: An integrative framework linking work context to role requirements. *Journal of Applied Psychology*, 94(4), 972–988. <https://doi.org/10.1037/a0015456>
- Evans, J. D. (1996). *Straightforward statistics for the behavioral sciences*. Thomson Brooks/Cole Publishing Co.
- Fleishman, E. A., Costanza, D. P., & Marshall-Mies, J. (1999). Abilities. In N.G. Peterson, M.D. Mumford, W. C. Borman, P. R. Jeanneret, & E. A. Fleishman (Eds.), *An occupational information system for the 21st century: The development of O\*NET* (pp. 175-196). American Psychological Association.
- Franzoi, S. L., Davis, M. H., & Young, R. D. (1985). The effects of private self-consciousness and perspective taking on satisfaction in close relationships. *Journal of Personality and Social Psychology*, 48(6), 1584–1594. <https://doi.org/10.1037/0022-3514.48.6.1584>
- Glerum, D. R. & Royston, R. P. (2023). *Utilizing the Army Talent Attribute Framework (ATAF) to develop measurement plans and specifications* (Research Note 2023-09). U.S. Army Research Institute for the Behavioral and Social Sciences. (DTIC No. AD1205535).
- Hogan, J. C. (1991). Physical abilities. In M. D. Dunnette & L. M. Hough (Eds.), *Handbook of Industrial and Organizational Psychology* (pp. 753–831). Consulting Psychologists Press.
- Janis, I. L. (1982). *Groupthink* (2nd ed., rev.). Houghton Mifflin.
- Menges, J. I., Walter, F., Vogel, B., & Bruch, H. (2011). Transformational leadership climate: Performance linkages, mechanisms, and boundary conditions at the organizational level. *The Leadership Quarterly*, 22(5), 893-909. <https://doi.org/10.1016/j.leaqua.2011.07.010>
- Mertler, C. A., Vannatta, R. A., & LaVenja, K. N. (2021). *Advanced and Multivariate Statistical Methods: Practical Application and Interpretation* (7th ed.). Routledge. <https://doi.org/10.4324/9781003047223>



- Moran, A. (2012). Concentration: Attention and performance. In S. M. Murphy (Ed.), *The Oxford handbook of sport and performance psychology* (pp. 117–130). Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780199731763.013.0006>
- Morgeson, F. P., & Dierdorff, E. C. (2011). Work analysis: From technique to theory. In S. Zedeck (Ed.), *APA handbook of industrial and organizational psychology, Vol. 2. Selecting and developing members for the organization* (pp. 3–41). American Psychological Association. <https://doi.org/10.1037/12170-001>
- Muchiri, M. K., McMurray, A. J., Nkhoma, M., & Pham, H. C. (2020). Mapping antecedents of innovative work behavior: A conceptual review. *The Journal of Developing Areas* 54(4), 33-40. <https://doi:10.1353/jda.2020.0047>.
- National Center for O\*NET Development. O\*NET ONLINE. Retrieved November 26, 2021, from <http://www.onetonline.org/>
- Oberauer, K. (2019). Working memory and attention—A conceptual analysis and review. *Journal of Cognition*, 2(1), Article 36. <https://doi.org/10.5334/joc.58>
- O'Boyle, E. H., Jr., Forsyth, D. R., Banks, G. C., & McDaniel, M. A. (2012). A meta-analysis of the Dark Triad and work behavior: A social exchange perspective. *Journal of Applied Psychology*, 97(3), 557–579. <https://doi.org/10.1037/a0025679>
- Office of Behavioral and Social Sciences Research (OBSSR) (2011). *Best practices for mixed methods research in the health science*. Office of Behavioral and Social Sciences Research (OBSSR) [https://obssr.od.nih.gov/sites/obssr/files/Best\\_Practices\\_for\\_Mixed\\_Methods\\_Research.pdf](https://obssr.od.nih.gov/sites/obssr/files/Best_Practices_for_Mixed_Methods_Research.pdf)
- Parker, S. K., Williams, H. M., & Turner, N. (2006). Modeling the antecedents of proactive behavior at work. *Journal of Applied Psychology*, 91(3), 636-652. <https://doi.org/10.1037/0021-9010.91.3.636>
- Rönkkö, M., & Cho, E. (2022). An updated guideline for assessing discriminant validity. *Organizational Research Methods*, 25(1), 6-14. <https://doi.org/10.1177/1094428120968614>
- Royston, R. P. & Amey, R. C. (2023). *Army-wide Job Analysis for Noncommissioned Officers: Knowledge, Skills, and Behaviors Requirements from the Army Talent Attribute Framework Volume I: Main Report* (Technical Report 1435). U. S. Army Research Institute for the Behavioral and Social Sciences.
- Royston, R. P. & Berger, S. E. (2023). *Army Talent Attribute Framework FY22 Annual Update* (Research Note 2023-08). U.S. Army Research Institute for the Behavioral and Social Sciences. (DTIC No. AD1204591).

- Royston, R. P. & Glerum, D. R. (2023). *Army Talent Attribute Framework FY23 Annual Update* (Research Note). U.S. Army Research Institute for the Behavioral and Social Sciences.
- Royston, R. P., Goodwin, G. F., Ness, A. M., Keil, C. T., Lockhart, P. G., & Jones, M. (2022). *Army Talent Attribute Framework: A Unified Framework for Defining Personnel Characteristics* (Technical Report 1421). U. S. Army Research Institute for the Behavioral and Social Sciences. (DTIC No. AD1190814).
- Royston, R. P. & Lin, N. (2022). *Army-wide Job Analysis for Officers: Branch and Functional Area-specific Knowledge, Skills, and Behaviors Requirements from the Army Talent Attribute Framework Volume I: Main Report* (Technical Report 1425). U. S. Army Research Institute for the Behavioral and Social Sciences. (DTIC No. AD1194370).
- Royston, R. P. & Lin, N. (2023). *Army-wide Job Analysis for Warrant Officers: Identifying Knowledge, Skills, and Behaviors Requirements from the Army Talent Attribute Framework Volume I: Main Report* (Technical Report 1431). U. S. Army Research Institute for the Behavioral and Social Sciences. (DTIC No. AD1206910).
- Saldaña, J. (2013). *The Coding Manual for Qualitative Researchers* (2nd ed.). Sage Publications, Inc.
- Sawyer, R. K. (2012). *Explaining Creativity: The Science of Human Innovation* (2nd ed.). Oxford University Press.
- Schulz-Hardt, S., Frey, D., Lüthgens, C., & Moscovici, S. (2000). Biased information search in group decision making. *Journal of Personality and Social Psychology*, 78(4), 655–669. <https://doi.org/10.1037/0022-3514.78.4.655>
- Stasser, G., & Titus, W. (1985). Pooling of unshared information in group decision making: Biased information sampling during discussion. *Journal of Personality and Social Psychology*, 48(6), 1467–1478. <https://doi.org/10.1037/0022-3514.48.6.1467>
- Tabachnick, B. G. & Fidell, L. S. (2014). *Using Multivariate Statistics* (6<sup>th</sup> ed.). Pearson.
- U.S. Department of the Army (2019a, October). *The Army People Strategy* (SD 05 Strategy Note 2019-01). Author. Retrieved from <https://armypubs.army.mil/>
- U.S. Department of the Army (2019b, October) *Army Modernization Strategy*. Retrieved from [https://www.army.mil/e2/downloads/rv7/2019\\_army\\_modernization\\_strategy\\_final.pdf](https://www.army.mil/e2/downloads/rv7/2019_army_modernization_strategy_final.pdf)
- U.S. Department of the Army (2019c, July). *Army Leadership and the Profession* (Army Doctrine Publication, APD 6-22). U.S. Army Training and Doctrine Command.
- Wardynski, C., Lyle, D. S., & Colarusso, M. J. (2009). *Talent: Implications for a U. S. Army officer corps strategy*. U.S. Army War College Press.

- Willig, C. (2019). What can qualitative psychology contribute to psychological knowledge? *Psychological Methods*, 24(6), 796-804. <https://doi.org/10.1037/MET0000218>
- Zaccaro, S. J., Mumford, M. D., Connelly, M. S., Marks, M. A., & Gilbert, J. A. (2000). Assessment of leader problem-solving capabilities. *The Leadership Quarterly*, 11(1), 37-64. [https://doi.org/10.1016/S1048-9843\(99\)00042-9](https://doi.org/10.1016/S1048-9843(99)00042-9)
- Zhang Z., Liu M., Yang Q. (2021). Examining the External Antecedents of Innovative Work Behavior: The Role of Government Support for Talent Policy. *International Journal of Environmental Research and Public Health*, 18(3), Article 1213. <https://doi.org/10.3390/ijerph18031213>
- Zeplin, S., Galli, N., Visek, A. J., & Staples, J. (2014). Concentration and Attention in Sport. *SportPsych Works* 2(1), 1-2. American Psychological Association Division 47, Exercise & Sport Psychology. Retrieved from <https://www.apadivisions.org/division-47/publications/sportpsych-works/concentration-and-attention.pdf>

## Appendix A

### Recommended Revised ATAF

Note: \* indicates KSB with recommended revisions. All attributes in Appendix A reflect all recommendations as if they were implemented.

Talent Domain	Talent	Talent Definition	Measurable KSB	Technical Definition	User Description
Cognitive	Attention Control	Ability to focus and control one's attention, process multiple sources of sensory information while avoiding distractions, and identify real and potential problems.	Attentiveness	Focuses on the problem or situation and shifts attention between activities when appropriate.	Focuses on the problem or situation; shifts attention between activities.
			Focus*	*Can concentrate on the task at hand without being distracted.	Can concentrate on the task at hand without being distracted.
			Problem Sensitivity	Identifies when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.	Identifies when something is wrong or is likely to go wrong.
Cognitive	Creativity	Ability to produce ideas, plans, approaches and solutions to problems, and outcomes that are both original and useful or effective to accomplish work or achieve goals when established methods and procedures are inapplicable or ineffective.	Cognitive Flexibility*	*Considers new plans or ideas, is able to switch between tasks, and is open to different ways of doing things.	*Considers new plans or ideas, is able to switch between tasks, and is open to different ways of doing things.
			Creative Problem Solving*	*Develops and utilizes new or novel and useful methods and strategies to accomplish work or achieve goals in both unexpected, unique or infrequent situations and in evolving and new work environments.	*Ability to generate new or original solutions to a situation/problem.
			Innovation*	*Applies and executes new or creative ideas to create value for organization or solve organizational challenges.	*Applies and executes new or creative ideas to create value for organization or solve organizational challenges.

<b>Talent Domain</b>	<b>Talent</b>	<b>Talent Definition</b>	<b>Measurable KSB</b>	<b>Technical Definition</b>	<b>User Description</b>
<b>Cognitive</b>	<b>Decision Making</b>	Ability to choose between alternatives by applying multiple perspectives, accurately and appropriately assessing the costs/benefits, and considering short- and long-term consequences of actions and solutions.	<b>Decision Making</b>	Makes decisions based on accurate and appropriate assessment of the costs/benefits and short- and long-term consequences of alternative actions and solutions. Makes timely decisions with incomplete information, while refraining from making hasty decisions in the absence of necessary information.	Able to logically evaluate multiple pieces of information and make good and timely decisions.
			<b>Mental Agility</b>	Flexibility of mind; the ability to break habitual thought patterns. Anticipate or adapt to uncertain or changing situations; to think through outcomes when current decisions or actions are not producing desired effects. Ability to apply multiple perspectives and approaches.	Flexibility of mind; the ability to break habitual thought patterns and consider multiple perspectives and approaches.
			<b>Sound Judgement*</b>	*Assesses situations shrewdly and draw sound conclusions. Tendency to form sound opinions, make sensible decisions and reliable guesses. Assesses strengths and weaknesses of subordinates, peers, and enemy to create appropriate solutions and action.	Assesses a given situation/problem and think of reasonable ways to solve it. Able to identify the strengths and weaknesses of solutions.
<b>Cognitive</b>	<b>General Cognitive Ability</b>	Perceives, orders, and recalls information quickly and accurately in order to achieve situational understanding and insight.	<b>General Cognitive Aptitude</b>	Capacity to understand and interpret information that is being presented, ability to identify and solve problems, and capability to learn new things quickly and efficiently.	Capacity to understand, interpret, and learn information that is being presented.
			<b>Information Ordering</b>	Capacity to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations).	Ability to arrange information in a certain order or pattern according to specific rules or set of rules.

Talent Domain	Talent	Talent Definition	Measurable KSB	Technical Definition	User Description
Cognitive			Memory	Capacity to retain and recall information without using external tools or aids.	Able to remember and recall information.
			Multi-Tasking	Rapidly processes and prioritizes multiple demands simultaneously. Takes appropriate action when multiple things compete for his or her attention.	Rapidly processes and prioritizes multiple demands at the same time.
			Perceptive	Effectively discerns the deeper meaning or significance of one's observations (e.g., events, people, and communication).	Understands the deeper meaning or importance of observations.
			Processes Information & Data	Compiles, codes, categorizes, calculates, tabulates, audits, or verifies information or data.	Accurately processes information and gathers, organizes, and verifies information/data.
	Meta-Cognition	Awareness of one's own thinking and biases. Uses reflective thinking, prior experience, and organizes information to create knowledge for future application.	Analyzes and Organizes Information to Create Knowledge	Reflects on prior learning; organizes insights for future application. Considers source, quality or relevance, and criticality of information to improve understanding. Identifies reliable resources for acquiring knowledge. Sets up systems of procedures to store knowledge for reuse.	Applies own knowledge and experience to problems. Considers quality and usefulness of information received; Creates ways for others to use information for other problems later.
			Awareness of Cognitive Biases*	*Recognizes how one's own thoughts, experiences, and habits of thinking impact decision making.	*Recognizes how one's own thoughts, experiences, and habits of thinking impact decision making.
			Reflective Thinking	Regularly and actively reflects on the connections between new information and existing knowledge.	Regularly and actively reflects on the connections between new information and existing knowledge.

<b>Talent Domain</b>	<b>Talent</b>	<b>Talent Definition</b>	<b>Measurable KSB</b>	<b>Technical Definition</b>	<b>User Description</b>
<b>Cognitive</b>	<b>Perceptual Speed and Accuracy</b>	Awareness of objects, relationships, and events allowing for organization and interpretation of objects and situations quickly and accurately.	<b>Pattern Recognition</b>	Detects similarities or differences in objects, words, or numbers.	Detects similarities or differences in objects, words, or numbers.
			<b>Perceptual Speed &amp; Accuracy</b>	Perceives objects quickly and accurately.	Perceives objects quickly and accurately.
			<b>Response Orientation*</b>	*Chooses quickly and accurately between two or more movements in response to two or more different signals (lights, sounds, pictures). It includes the speed with which the correct response is started with the hand, foot, or other body part.	Moves quickly and accurately when needing to react differently to different signals (lights, sounds, pictures).
<b>Cognitive</b>	<b>Problem Solving</b>	Ability to identify and define simple and complex problems, troubleshoot errors, generate solutions, evaluate and select a solution, and implement and monitor the selected solution to obtain a preferred outcome.	<b>Problem Solver</b>	Capacity to choose between best practices and unorthodox approaches to reach a solution. Accomplishes the task.	Able to choose between common or unusual approaches to reach a solution or accomplish a task.
			<b>Structured Problem Solving</b>	Analyzes readily obtained information and evaluates results to select the best solution from a set of existing approaches to solve a problem.	Analyzes readily obtained information and evaluates results to select the best solution from a set of existing approaches to solve a problem.
			<b>Troubleshooting</b>	Determines causes of operating errors and decides what to do about it.	Determines causes of operating errors and decides what to do about it.
			<b>Unstructured Problem Solving*</b>	*Identifies ill-defined and ambiguous problems, evaluates relevance and reliability of information, and generates alternative and flexible solutions.	*Identifies ill-defined and ambiguous problems, evaluates relevance and reliability of information, and generates alternative and flexible solutions.
<b>Cognitive</b>	<b>Reasoning</b>	Uses logic, critical thinking, inductive and deductive reasoning to draw conclusions based	<b>Active Learning*</b>	*Actively seeks out new information and learning experiences. Uses new information to set goals, select strategies, and to further learning.	*Actively seeks out new information and learning experiences. Uses new information to set goals, select strategies, and to further learning.

<b>Talent Domain</b>	<b>Talent</b>	<b>Talent Definition</b>	<b>Measurable KSB</b>	<b>Technical Definition</b>	<b>User Description</b>
		upon analysis of information, and understanding of underlying principles.	<b>Analytical Thinking</b>	Analyzes information and applies general rules and logic to address work-related issues and problems.	Analyzes information and applies general rules and logic to address work-related issues and problems.
			<b>Analyze Data or Information</b>	Identifies underlying principles, relationships, general rules, reasons, or facts by breaking down information or data into separate parts.	Identifies underlying principles, relationships, general rules, reasons, or facts by breaking down information or data into separate parts.
			<b>Assessing And Mitigating Harm</b>	Determines the potential for damaging outcomes and takes steps to minimize the risk of harm to self, others, or equipment (e.g., performing cost-benefits analysis; mandating training to mitigate risk, etc.).	Determines the potential for damaging outcomes and takes steps to minimize the risk of harm to self, others, or equipment (e.g., performing cost-benefits analysis; mandating training to mitigate risk, etc.).
			<b>Critical Thinking</b>	Uses logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.	Uses logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
			<b>Quantitative Reasoning</b>	Uses induction or deduction in reasoning with quantitative concepts (e.g., numbers, mathematical relations). Is able to solve problems that involve mathematical concepts or numbers.	Uses induction or deduction in reasoning with quantitative concepts (e.g., numbers, mathematical relations). Is able to solve problems that involve mathematical concepts or numbers.
			<b>Verbal Reasoning</b>	Reasons and draws conclusions based on verbal or written materials.	Reasons and draw conclusions based on verbal or written materials.
<b>Cognitive</b>	<b>Situational Awareness</b>	The perception of environmental elements and events with respect to time or space, the comprehension of their meaning, and the projection of their future status.	<b>Situational Awareness*</b>	*Perceives what is happening in the immediate environment and links it to current and near-term objectives.	*Perceives what is happening in the immediate environment and links it to current and near-term objectives.



<b>Talent Domain</b>	<b>Talent</b>	<b>Talent Definition</b>	<b>Measurable KSB</b>	<b>Technical Definition</b>	<b>User Description</b>
<b>Cognitive</b>	<b>Spatial Ability</b>	Knows one's physical location in relation to the environment or knows where other objects are in relation to oneself. Also, the ability to identify and mentally manipulate the position or direction of objects or points in space.	<b>Spatial Intelligence*</b>	Easily perceives, understands, and operates within the multi-dimensional world.	Easily perceives, understands, and operates within the multi-dimensional world.
			<b>Spatial Orientation</b>	Knows one's physical location in relation to the environment or knows where other objects are in relation to oneself; readily orients oneself in an unfamiliar environment; ability to read and interpret maps or diagrams; ability to form mental pictures of things (e.g., equipment, terrain).	Knows own physical location in relation to the environment or knows where other objects are in relation to self.
			<b>Spatial Visualization</b>	Capacity to mentally visualize the relative positions of objects in three-dimensional space, and how they will be positioned if they are moved in different ways; imagine objects from different perspectives and remain unconfused by different views.	Ability to mentally rotate and imagine the placement of objects in 3-Dimensional space.
<b>Cognitive</b>	<b>Systems Thinking*</b>	Considers the activity and changes of interconnected system elements. Anticipates the effects of actions on the system to promote or prevent a particular outcome from occurring.	<b>Strategic Thinking</b>	Develops a complex, systems-level understanding of the relationship between his/her Army unit or organization and the broader environment and uses that understanding to envision a desirable future state for the unit/organization.	Understands relationships between units and environment and uses information to imagine or plan for the future.
			<b>Systems Thinking*</b>	*Considers the factors of a situation or a solution of interrelated parts with inputs, processes, outputs and feedback.	*Considers the factors of a situation or a solution of interrelated parts with inputs, processes, outputs and feedback.

<b>Talent Domain</b>	<b>Talent</b>	<b>Talent Definition</b>	<b>Measurable KSB</b>	<b>Technical Definition</b>	<b>User Description</b>
<b>Communication</b>	<b>Active Listening</b>	Attends to and understands both overt and implied meanings of oral communications from others by accurately perceiving the content, context, tone of the speaker, and other non-verbal cues in order to improve mutual understanding.	<b>Active Listening</b>	Carefully attends to and understands both the overt and implied meaning of oral communications from others by accurately perceiving the content, context, and tone of the speaker; not interrupting at inappropriate times.	Carefully pays attention to and understands the meaning of what people say.
<b>Communication</b>	<b>General Communication</b>	Ability to effectively communicate through written and spoken word as well as use verbal and nonverbal communication. Encourages conversation and verifies for understanding. Shows ability to learn a different language and recognizes cultural differences in communication.	<b>Communication Ability*</b>	*Precise, efficient, and compelling in both written and spoken word.	*Precise, efficient, and compelling in both written and spoken word.
			<b>Encourages Discourse</b>	Promotes discussion and recognizes the importance of considering input from diverse perspectives.	Encourages discussion between others with different perspectives.
			<b>Intercultural Communication</b>	Communicates effectively with people from different cultures or nationalities.	Communicates effectively with people from different cultures or nationalities.
			<b>Language Learning Ability</b>	Cognitive ability to learn new languages.	Cognitive capacity to learn new languages.
<b>Communication</b>	<b>Oral Communication</b>	Speaks in a clear, organized, and logical manner. Communicates information and ideas or asks questions efficiently. Adapts communication to the situation; can be formal or informal.	<b>Oral and Nonverbal Comprehension</b>	Listens to and comprehends instructions and other related messages. Pays attention to nonverbal cues to help clarify/interpret messages. Asks questions as appropriate.	Listens to and understands verbal instructions. Pays attention to nonverbal cues to help clarify messages. Asks questions if needed.
			<b>Oral Communication Skill</b>	Speaks in a clear, organized, and logical manner. Communicates information or asks questions in an efficient and understandable way. Adapts communication styles to different situations. Uses nonverbal gestures to supplement and reinforce spoken messages.	Speaks in a clear, efficient, organized, and logical manner.

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<b>Communication</b>	<b>Written Communication</b>	Communication of written information and ideas to others in an effective manner. Comprehension of written information.	<b>Reading Comprehension</b>	Understands written sentences and paragraphs in instructions, operator's manuals, basic textbooks, letters of instructions, written orders, and job directives.	Understands written sentences and paragraphs in documents.
			<b>Written Communication*</b>	*Communicates written information and ideas to others in a clear, accurate, concise, grammatically correct, and well-organized manner. Tailors written communication products to different situations and audiences as appropriate.	*Communicates written information and ideas to others in a clear, accurate, concise, grammatically correct, and well-organized manner. Tailors written communication products to different situations and audiences as appropriate.
<b>Disposition</b>	<b>Agreeableness</b>	Tendency towards a general concern for social harmony and is connected to others.	<b>Affiliation*</b>	*Engages socially to pursue belonging, connection, and bonding with others.	*Engages socially to pursue belonging, connection, and bonding with others.
			<b>Consideration</b>	Considerate of others, affectionate, compassionate, sensitive, and caring.	Considerate of others. Affectionate, compassionate, sensitive, and caring.
			<b>Cooperation</b>	Compliant, non-critical, trusting, cordial, and easy to get along with.	Compliant, non-critical, trusting, cordial, and easy to get along with.
			<b>Humility*</b>	*Honest, sincere, and modest; lets others take the spotlight and gives others credit when it is due. Admits mistakes or shortcomings.	*Honest, sincere, and modest; lets others take the spotlight and gives others credit when it is due. Admits mistakes or shortcomings.
			<b>Selflessness*</b>	*Generous with one's time and resources and puts others' needs above one's own.	*Generous with one's time and resources and puts others' needs above one's own.
<b>Disposition</b>	<b>Conscientiousness</b>	Tendency towards self-discipline and duty, strives to follow rules, do what is right, and thoroughly	<b>Achievement Orientation</b>	Sets high personal goals and standards, is willing to give one's best effort, works hard to achieve difficult objectives, is confident and resourceful in striving for accomplishment.	Sets high personal goals and standards, is willing to give one's best effort, works hard to achieve difficult objectives, is confident and resourceful in striving for accomplishment.

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		accomplish work goals.	<b>Dependability*</b>	*Trustworthy, reliable, planful, and accountable. Accepts responsibility. Makes effort to keep promises.	*Trustworthy, reliable, planful, and accountable. Accepts responsibility. Makes effort to keep promises.
			<b>Detail-Focused*</b>	Attentive to detail and is thorough, accurate, and precise in completing a task.	Attentive to detail and thorough, accurate, and precise in completing a task.
			<b>Discipline*</b>	*Demonstrates self-control and resists impulses and desires in order to achieve long term goals.	*Demonstrates self-control and resists impulses and desires in order to achieve long term goals.
			<b>Introspective*</b>	*Contemplative and reflective by nature.	*Contemplative and reflective by nature.
			<b>Non-Delinquency</b>	Complies with rules, customs, norms, and expectations, and tends not to challenge authority.	Complies with rules, customs, norms, and expectations, and tends not to challenge authority.
			<b>Orderliness*</b>	*Organizes tasks and activities; maintains neat and clean surroundings.	*Organizes tasks and activities; maintains neat and clean surroundings.
			<b>Persistence</b>	Focuses on tasks and activities until they are completed and is determined to accomplish their goals even in the face of obstacles.	Focuses on tasks and activities until they are completed and is determined to accomplish their goals even in the face of obstacles.
			<b>Prudent Risk-Taker*</b>	*Acts boldly yet maintains appropriate focus on safety.	*Acts boldly yet maintains appropriate focus on safety.
			<b>Self-Management</b>	Effectively manages the full range of one's work and nonwork responsibilities (e.g., setting and prioritizing goals, allocating effort and personal resources, and assessing own performance).	Effectively manages both work and personal responsibilities, goals, and efforts.
			<b>Virtue</b>	Adheres to standards of honesty, morality, and selfless and charitable behavior.	Adheres to standards of honesty, morality, and selfless and charitable behavior.

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<b>Disposition</b>	<b>Emotional Stability</b>	Tendency towards being well-adjusted, in control of emotions, optimistic, even-tempered, resilient to challenges, and demonstrates self-control.	<b>Adjustment</b>	Is worry-free and handles stress well; low scoring individuals are generally high strung, self-conscious, and apprehensive.	Is worry-free; handles stress well; is not high-strung.
			<b>Even-Tempered*</b>	*Acts rationally and maintains composure; displays a calm, even and stable mood.	*Acts rationally and maintains composure; displays a calm, even and stable mood.
			<b>Optimism</b>	Tends to have positive outlook on life and tends to experience joy and a sense of well-being.	Tends to have positive outlook on life and tends to experience joy and a sense of well-being.
			<b>Resilience</b>	Quickly recovers from setbacks. Focuses on the mission and objectives during shock, injuries, and stress. Maintains organizational focus despite adversity. Learns from adverse situations and grows in resilience.	Quickly adapts to or recovers from setbacks, shocks, and stress. Maintains focus and learns from negative situations.
<b>Disposition</b>	<b>Empathy</b>	Tendency towards genuinely understanding the situation of another through a sense of shared feelings and/or motives.	<b>Self-Control</b>	Tends to be cautious, levelheaded, patient, and able to delay gratification.	Tends to be cautious, levelheaded, patient, and able to delay gratification.
			<b>Empathy*</b>	*Understands other peoples' feelings and emotions and sees things from another person's point of view.	*Understands other peoples' feelings and emotions and sees things from another person's point of view.
<b>Disposition</b>	<b>Extraversion</b>	Tendency towards enjoying attention and interactions with others, and being part of a group.	<b>Assertiveness</b>	Socially dominant, influential, energetic, and takes charge.	Socially dominant, influential, energetic, and takes charge.
			<b>Attention Seeking</b>	Engages in behaviors that attract social attention; loud, talkative, entertaining, and even boastful.	Engages in behaviors that attract social attention; loud, talkative, entertaining, and even boastful.
			<b>Enthusiasm*</b>	*Experiences excitement or passion throughout their activities and interactions.	*Experiences excitement or passion throughout their activities and interactions.
			<b>Initiative*</b>	*Proactive and willing to take independent action to achieve a goal.	*Proactive and willing to take independent action to achieve a goal.

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			<b>Sociability</b>	Interest in and engages in friendly social interactions.	Interest and engages in friendly social interactions.
<b>Disposition</b>	<b>Interests</b>	Preferences for work environments and outcomes	<b>Artistic Interests</b>	Interest in expressing oneself creatively.	Interests in expressing oneself creatively.
			<b>Conventional Interests</b>	Interest in organizing data, people, or physical environments.	Interest in working with data and numbers; prefers working in ordered or structured situations.
			<b>Enterprising Interests</b>	Interest in persuading people or exerting influence over others.	Interests in persuading people or exerting influence over others.
			<b>Interest in Leadership</b>	Interest in leading individuals and teams.	Interests in leading individuals and teams.
			<b>Investigative Interests</b>	Interest in rational and systematic reasoning and working with facts, data, and abstract concepts.	Interests in rational and systematic reasoning and working with facts, data, and abstract concepts.
			<b>Realistic Interests</b>	Interest in practical, hands-on, concrete activities with physical objects.	Interests in practical, hands-on, concrete activities with physical objects.
			<b>Social Interests</b>	Interest in working with and helping others.	Interests in working with and helping others.
<b>Disposition</b>	<b>Military-Specific</b>	Exemplifies Army values, commitment to service, successfully performs duties, and models the actions and internal shared attitudes and beliefs that embody the Army profession.	<b>Army Values</b>	Models loyalty, duty, respect, selfless service, honor, integrity, and personal courage. Promotes the associated principles, standards, and qualities in others.	Models loyalty, duty, respect, selfless service, honor, integrity, and personal courage. Promotes the associated principles, standards, and qualities in others.
			<b>Commitment to Serve</b>	Feels an obligation to serve or continue serving in the U.S. Military.	Feels an obligation to serve or continue serving in the U.S. Military.
			<b>Military And Professional Bearing</b>	Models a professional image of authority. Energizes others through a commanding presence. Exemplifies adherence to standards through appearance, demeanor, actions, and words.	Models a professional image of authority. Exemplifies adherence to standards through appearance, demeanor, actions, and words.

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			<b>Warrior Ethos</b>	Internal shared attitudes and beliefs that embody the spirit of the Army profession for Soldiers and Army Civilians alike.	Attitudes and beliefs that embody the spirit of the Army profession.
<b>Disposition</b>	<b>Motives</b>	Individual preference or reason for initiating and maintaining goal-oriented behaviors.	<b>Autonomy*</b>	*Prefers to be self-sufficient, independent, and working alone. Depends upon own abilities.	*Prefers to be self-sufficient, independent, and working alone. Depends upon own abilities.
			<b>Learning Orientation</b>	Seeks out learning opportunities, enjoys acquiring new knowledge and skills, and is comfortable applying new knowledge and skills on the job.	Seeks out learning opportunities, enjoys acquiring new knowledge and skills, and is comfortable applying new knowledge and skills on the job.
			<b>Internal Locus of Control*</b>	Belief in the amount of control one has over situations, outcomes, rewards, and punishments - versus other people or external factors having that control.	Belief in the amount of control one has over situations, outcomes, rewards, and punishments - versus other people or external factors having that control.
			<b>Self-Efficacy</b>	Confidence in one's ability to succeed, effectively meet challenges, and overcome obstacles.	Confidence in one's ability to succeed, effectively meet challenges, and overcome obstacles.
<b>Disposition</b>	<b>Openness to Experience</b>	Tendency towards intellectual curiosity, adaptability, and willingness to try new things.	<b>Curiosity</b>	Inquisitive and perceptive; interested in learning new information and attend courses and workshops whenever possible.	Inquisitive and perceptive; interested in learning new information and attend courses and workshops whenever possible.
			<b>Innovative</b>	Creative, inquisitive, and insightful. Easily identifies new solutions and catalyzes change.	Creative and curious. Finds new solutions and makes change happen.
			<b>Intellectual Efficiency*</b>	*Described by others as knowledgeable, intellectual, or academically oriented. Demonstrates optimal use of mental resources to reach learning or problem-solving goals.	*Described by others as knowledgeable, intellectual, or academically oriented. Demonstrates optimal use of mental resources to reach learning or problem-solving goals.

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			<b>Tolerance</b>	Interested in other cultures and opinions that may differ from one's own. Willing to adapt to novel environments and situations.	Accepts that others' opinions and beliefs may differ from one's own. Willing to adapt to new and different situations.
			<b>Tolerance for Ambiguity</b>	Capacity to tolerate work situations where the right goal or the correct path to the goal is unclear, vague, or ill-defined.	Capacity to tolerate work situations where the right goal or the correct path to the goal is unclear, vague, or ill-defined.
			<b>Adaptability</b>	Modifies behavior or plans as necessary to reach goals. Is able to maintain effectiveness in varying environments with various tasks, responsibilities, or people.	Changes behavior to meet goals. Performs well in different environments, on different tasks, and with different people.
<b>Disposition</b>	<b>Stress Tolerance</b>	Capacity to withstand pressures and strains, and maintains composure under pressure.	<b>Stress Tolerance*</b>	*Capacity to withstand pressures and strains, and maintains composure under pressure.	*Capacity to withstand pressures and strains, and maintains composure under pressure.
<b>Expertise &amp; Personal Competence</b>	<b>Budget &amp; Finance</b>	Knowledge of, and ability to, apply the basic principles, practices, and methods of financial management to set priorities and accomplish the goals of the organization.	<b>Financial Management</b>	Uses financial resources effectively to set priorities and accomplish goals.	Uses financial resources effectively to set priorities and accomplish goals.
<b>Expertise &amp; Personal Competence</b>	<b>IT Programs &amp; Systems</b>	Ability and knowledge of the tools, techniques, and necessary programming languages to develop, implement, innovate, and support IT-related projects and goals.	<b>Database Programming &amp; Engineering</b>	Designs, builds and maintains database applications to support enterprise and unit information requirements.	Designs, builds and maintains database applications to support enterprise and unit information requirements.
			<b>Information &amp; Systems Security</b>	Applies hardware and software methods to secure information systems, and information at rest and in transit.	Applies hardware and software methods to secure information systems and information at rest and in transit.



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			<b>Knowledge Management</b>	Applies controls to the flow of digital information. Uses knowledge management systems to sort, classify, combine, exclude, and present information so that it is useable by others.	Applies technical tools and systems to create, manage, store, and share information so that is useable by others.
			<b>Software Development</b>	Designs software applications and writes programming code in common programming languages (e.g., C#, java) for various purposes.	Designs software applications and writes programming code in common programming languages (e.g., C#, java) for various purposes.
			<b>Systems Architecture &amp; Engineering</b>	Designs, builds, and maintains computer hardware and software systems to support organizational or enterprise information system requirements.	Designs, builds, and maintains computer hardware and software systems to support organizational or enterprise information system requirements.
			<b>Web Development</b>	Designs web applications and develops part or all of front-end (visual), middleware (application interfaces), and back-end (information storage) aspects of web development. Able to participate in design and development activities for web applications.	Can design and develop web pages and web applications.
<b>Expertise &amp; Personal Competence</b>	<b>Technology Fluency</b>	An understanding, ability, and interest in using various forms of technology, allowing one to easily learn, adapt, and apply both familiar and new technologies to solve problems or improve processes.	<b>Advanced Computer Skills</b>	Understands numerous computer operating systems and applications such as Unix, NT, and Army specific systems. Can perform routine troubleshooting.	Understands different computer operating systems and applications, and Army-specific data systems. Can perform routine troubleshooting.
			<b>Basic Computer Skills</b>	Uses personal computers and office software programs to create documents, spreadsheets, and presentations. Creates and maintains computer files. Locates and uses information on the internet and uses other internet functions including e-mail.	Can use computers, office software, and internet to perform daily tasks.

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			<b>Cyber Knowledge</b>	Knowledge of the systems and services directly or indirectly connected to the internet, telecommunications, electronics, and computer networks.	Knowledge of the systems and services directly or indirectly connected to the internet, telecommunications, electronics, and computer networks.
			<b>Data Science*</b>	*Uses programming and statistical knowledge to collect, analyze, and interpret data in order to derive data-driven insights to support military operations.	*Uses programming and statistical knowledge to collect, analyze, and interpret data in order to derive data-driven insights to support military operations.
			<b>Innovating Technology</b>	Creates new technologies or adapts existing technologies to perform new functions.	Creates new technologies or adapts existing technologies to perform new functions.
			<b>Technologically Adept</b>	Learns how to use and apply advances in technologies or technological systems.	Learns how to use and apply advances in technologies or technological systems.
<b>Expertise &amp; Personal Competence</b>	<b>Math &amp; Science</b>	Proficiency in basic and advanced mathematics and scientific methods.	<b>Advanced Mathematics</b>	Uses advanced math such as geometry, statistics, or algebra to solve problems.	Uses higher math such as geometry, statistics, or algebra to solve problems.
			<b>Basic Mathematics</b>	Uses arithmetic (add, subtract, multiply, divide) and formulas to solve problems.	Uses arithmetic (add, subtract, multiply, divide) and formulas to solve problems.
			<b>General Science</b>	Knowledge of life science, earth and space science, and physical science.	Knowledge of life science, earth and space science, and physical science.
			<b>Mathematical Reasoning*</b>	*Possesses knowledge of mathematical concepts and methods and can apply mathematical knowledge to solve problems.	*Possesses knowledge of mathematical concepts and methods and can apply mathematical knowledge to solve problems.
			<b>Science Methods</b>	Uses scientific rules and methods to solve problems.	Uses scientific rules and methods to solve problems.
<b>Expertise &amp; Personal Competence</b>	<b>Mechanical &amp; Electrical</b>	Knowledge, skill, and understanding of mechanical and electrical equipment	<b>Auto &amp; Shop Information</b>	Knows information regarding automotive maintenance and repair, and wood and metal shop practices.	Knows information regarding automotive maintenance and repair, and wood and metal shop practices.

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		and systems, including ability to install, use, and maintain.	<b>Basic Electronics Knowledge</b>	Knows general information regarding electronics principles and electronics equipment operation and repair.	Knows general information regarding electronics principles and electronics equipment operation and repair.
			<b>Mechanical Comprehension*</b>	*Comprehends principles of machinery, equipment, or technology operation and repair. Uses mechanical technology effectively and is able to diagnose and correct problems with machines.	*Comprehends principles of machinery, equipment, or technology operation and repair. Uses mechanical technology effectively and is able to diagnose and correct problems with machines.
			<b>Inspecting Equipment, Objects, Structures, or Materials</b>	Inspects equipment, objects, structures, or materials to identify the cause of errors, problems, or defects.	Inspects equipment, objects, structures, or materials to identify the cause of errors, problems, or defects.
			<b>Machine/Equipment Installation</b>	Installs equipment, machines, wiring, or programs to meet specifications.	Installs equipment, machines, wiring, or programs to meet specifications.
<b>Expertise &amp; Personal Competence</b>	<b>Multi-Domain Collaboration</b>	Synthesizes and applies knowledge from multiple disciplines into a coherent overarching perspective. Ability to collaborate across multiple interdisciplinary groups and contexts.	<b>Interdisciplinary*</b>	*Synthesizes and applies knowledge from multiple disciplines or sources into a coherent overarching perspective. Collaborates with others who possess significant expertise very different from one's own.	*Synthesizes and applies knowledge from multiple disciplines or sources into a coherent overarching perspective. Collaborates with others who possess significant expertise very different from one's own.
			<b>Joint, Interagency, Intergovernmental, and Multinational (JIIM) Perspective*</b>	*Understands the perspectives of entities across multiple domains to collaborate towards accomplishing a common mission.	*Understands the perspectives of entities across multiple domains to collaborate towards accomplishing a common mission.
			<b>Working with the Public*</b>	*Understands differences between public and government communication strategies and methods while working with (non-government) civilians or civilian organizations.	*Understands differences between public and government communication strategies and methods while working with (non-government) civilians or civilian organizations.

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<b>Expertise &amp; Personal Competence</b>	<b>Safety &amp; Compliance</b>	Establishing or maintaining the safety standards and regulations to ensure a healthy and safe work environment.	<b>Evaluating Compliance</b>	Uses relevant information, knowledge, and individual judgement to determine whether events or processes comply with laws, regulations, or standards.	Uses relevant information, knowledge, and individual judgement to determine whether events or processes comply with laws, regulations, or standards.
			<b>Process-Disciplined</b>	Diligently abides by procedures designed to ensure accuracy, effectiveness, and safety.	Carefully follows procedures.
			<b>Quality Control Analysis</b>	Conducts tests and inspections of products, services, or processes to evaluate quality or performance.	Conducts tests and inspections of products, services, or processes to evaluate quality or performance.
			<b>Safety Compliance</b>	Follows safety guidelines and instructions. Monitors others to ensure compliance.	Follows safety guidelines and instructions. Monitors others to ensure compliance.
<b>Expertise &amp; Personal Competence</b>	<b>Tactical/ Technical Competence</b>	Employs appropriate technical procedures or organizational processes to accomplish tasks. Possesses necessary technical knowledge and skill to perform MOS/branch or functional area specific tasks. Applies knowledge of combined arms operations and sees how one's own unit relates to larger strategic picture and goals.	<b>Knowledge of Combined Arms Operations</b>	Applies and effectively integrates multiple warfighting functions such as direct and indirect fires, communications, intelligence, and combat service support.	Applies and effectively integrates multiple warfighting functions such as direct and indirect fires, communications, intelligence, and combat service support.
			<b>Knowledge of Processes and Procedures</b>	Employs appropriate technical procedures or organizational processes to accomplish tasks.	Employs appropriate technical procedures or organizational processes to accomplish tasks.
			<b>Systems Knowledge*</b>	*Understands how own unit operations relates to operations of other units and larger operational goals.	*Understands how own unit operations relates to operations of other units and larger operational goals.
			<b>Occupation-Specific Knowledge and Skill</b>	Possesses the necessary technical knowledge and skill to perform occupational-specific technical tasks. Stays informed of the latest developments in field.	Possesses the necessary technical knowledge and skill to perform occupational-specific technical tasks. Stays informed of the latest developments in field.
			<b>Proficiency with Mission Systems</b>	Uses weapons and mission information systems in training or operational contexts to acquire, synthesize, or use information/data to enable or support military operations.	Uses weapons and mission-information systems to support military operations.

Talent Domain	Talent	Talent Definition	Measurable KSB	Technical Definition	User Description
			<b>Soldier Common Task Knowledge and Skills</b>	Possesses the necessary knowledge and skill to perform common individual tasks at the appropriate skill level (e.g., land navigation, field survival techniques, and CBRN protection).	Possesses the necessary knowledge and skill to perform common individual tasks (e.g., land navigation, field survival techniques, and CBRN protection).
			<b>Specialized Expertise</b>	Applies advanced technical expertise to diagnose or solve problems and perform tasks. Is an expert in a highly technical or specialized domain (e.g., medicine, engineering, chemistry, explosives).	Applies advanced technical expertise to diagnose or solve problems and perform tasks. Is an expert in a highly technical or specialized domain (e.g., medicine, engineering, chemistry, explosives).
<b>Interpersonal</b>	<b>Cultural Awareness</b>	Learning about and demonstrating acceptance and understanding of individuals from other cultural and social backgrounds, both in the context of the diversity of U.S. Army personnel and interactions with foreign nationals during deployments or when training for deployment.	<b>Cross-Cultural Competence*</b>	*Understanding, acceptance, and ability to operate across different cultural settings, modifying one's style and behavior appropriately.	*Understanding, acceptance, and ability to operate across different cultural settings, modifying one's style and behavior appropriately.
			<b>Maintains Relevant Geopolitical Awareness</b>	Learns about relevant societies experiencing unrest. Recognizes Army influences on unified action partners and enemies. Understands the factors influencing conflict and peace building, peace enforcement, peacekeeping, peacemaking, and peace operations.	Learns about relevant societies experiencing unrest. Recognizes Army influences on unified action partners and enemies.
<b>Interpersonal</b>	<b>Social Skills</b>	Skills that are used to communicate and interact with each other, both verbally and non-verbally, through gestures, body language, and personal appearance.	<b>Interpersonal Relationship Building</b>	Develops and maintains effective working relationships with others. Understands how to leverage relationships to achieve objectives.	Develops and maintains effective working relationships with others. Understands how to leverage relationships to achieve objectives.
			<b>Negotiation*</b>	*Communicates, bargains, persuades, or compromises as appropriate in order to reach a mutually agreeable solution between two or more parties.	*Communicates, bargains, persuades, or compromises as appropriate in order to reach a mutually agreeable solution between two or more parties.

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Interpersonal	Teamwork	Individual skills to work effectively with others as part of a team resulting in a coordinated collective action to achieve a goal or to complete a task in the most effective and efficient way.	<b>Tactful*</b>	*Understands the character and motivation of others as well as how to act diplomatically and inoffensively. Modifies personal behavior accordingly to develop and maintain respectful exchange with others.	*Understands the character and motivation of others as well as how to act diplomatically and inoffensively. Modifies personal behavior accordingly to develop and maintain respectful exchange with others.
			<b>Perspective Taking</b>	Skill in understanding how people interpret events and interpersonal interactions.	Skill in understanding how people interpret events and interpersonal interactions.
			<b>Social Perceptiveness</b>	Accurately perceives and understands other people's motives, attitudes, and feelings based on what they do or say, and accurately perceives one's own impact on the behavior of others.	Accurately perceives and understands other people's motives, attitudes, and feelings based on what they do or say, and accurately perceives one's own impact on the behavior of others.
			<b>Conflict Management</b>	Anticipates and takes steps to prevent counterproductive confrontations. Manages and resolves conflicts and disagreements in a constructive manner.	Anticipates and takes steps to prevent counterproductive confrontations. Manages and resolves conflicts and disagreements in a constructive manner.
			<b>Collaboration*</b>	Works collaboratively with others to solve problems and achieve group goals and objectives.	Works collaboratively with others to solve problems and achieve group goals and objectives.
			<b>Coordination*</b>	*Adjusts the sequence and timing of one's actions in order to synchronize their actions with others.	*Adjusts the sequence and timing of one's actions in order to synchronize their actions with others.
			<b>Fosters Teamwork*</b>	*Encourages people to work together effectively. Promotes teamwork and team achievement through building a sense of trust, cohesion, cooperation, loyalty, and Esprit de Corps.	*Encourages people to work together effectively. Promotes teamwork and team achievement through building a sense of trust, cohesion, cooperation, loyalty, and Esprit de Corps.

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			<b>Team Building</b>	Assembles a team of people that work together effectively. Identifies and effectively utilizes the appropriate mix of mission-relevant skills. Fosters group identity and cohesion by clearly communicating team goals, and encouraging and rewarding cooperation among team members.	Assembles a team of people that work together effectively using a mix of different skills. Helps build a sense of belonging and supports coordination and cooperation among team members.
			<b>Team Development</b>	Presents challenging assignments for team or group interaction. Provides resources and support for realistic, mission-oriented training. Sustains and improves the relationships among team or group members. Provides feedback on team processes.	Presents challenging assignments for team interaction. Improves the relationships among team members and provides feedback on team processes.
			<b>Team Orientation</b>	Enjoys being part of a team, has a strong identification with one's team and other team members, and feels a sense of commitment and obligation to the team.	Enjoys being part of a team, has a strong identification with one's team and other team members, and feels a sense of commitment and obligation to the team.
			<b>Team Planning</b>	Organizes and orients team members to meet goals. Changes organization and focus of group to meet changing missions and conditions.	Organizes and orients team members to meet goals. Changes organization and focus of group to meet changing missions and conditions.
			<b>Coordinating Multiple Groups</b>	Coordinates the efforts of multiple, diverse groups to accomplish a mission.	Coordinates the efforts of multiple, diverse groups to accomplish a mission.
<b>Leadership &amp; Management</b>	<b>Leadership</b>	Influence people by providing purpose, direction, and motivation to accomplish the	<b>Consensus Building*</b>	*Facilitates general agreement among group members through using effective communication and collaborative exchange.	*Facilitates general agreement among group members through using effective communication and collaborative exchange.

Talent Domain	Talent	Talent Definition	Measurable KSB	Technical Definition	User Description
		mission and improve the organization.	<b>Encourages Subordinates</b>	Involves others in decisions and informs them of consequences. Allocates responsibility for performance. Guides subordinate leaders in thinking through problems for themselves. Allocates decision-making to the lowest appropriate level. Acts to expand and enhance subordinate's competence and self-confidence. Rewards initiative.	Encourages subordinates to take initiative, accept responsibility, and take ownership.
			<b>Improves the Organization</b>	Makes decisions and takes action to improve the organization beyond their tenure.	Makes decisions and takes action to improve the organization beyond their tenure.
			<b>Inspirational Leader*</b>	*Shares vision with followers and motivates teams to work harmoniously and productively towards a common goal.	*Shares vision with followers and motivates teams to work harmoniously and productively towards a common goal.
			<b>Leads By Example</b>	Serves as a decisive leader and positive role model who upholds standard and Army Ethic (legal and moral Army principles).	Acts as a positive role model who upholds standards and Army ethics and morals.
			<b>Motivating Others</b>	Generates support, involvement, energy, and enthusiasm for the mission among subordinates and others using appropriate influence techniques (e.g., inspiration, role modeling, collaboration, persuasion, mentoring, conflict management, etc.) given the mission, time, and conditions.	Creates support, involvement, energy, and enthusiasm for the mission and uses appropriate influence techniques <sup>2</sup> .

<sup>2</sup> During the peer review process, “and uses appropriate influence techniques” was added to *Motivating Others* KSB’s user description to better align with the technical definition.



Talent Domain	Talent	Talent Definition	Measurable KSB	Technical Definition	User Description
<b>Leadership &amp; Management</b>	<b>Management</b>	Leads the work activities of a team to achieve goals within a specified time.	<b>Organizational Perspective</b>	Assesses situations, missions, and assignments to determine the parties involved in decision-making, decision support, and possible interference or resistance.	Assesses situations, missions, and assignments to determine the parties involved in decision-making, decision support, and possible interference or resistance.
			<b>Peer Leadership</b>	Seeks positions of authority among peers. Comfortable with being in charge of a group and accepts responsibility for the group's performance.	Seeks positions of authority among peers. Comfortable with being in charge of a group and accepts responsibility for the group's performance.
			<b>Shared Leadership</b>	Identifies appropriate circumstances and empowers individuals with the right expertise to lead efforts and solve problems in response to situational needs and events (right person, right problem), while maintaining overall command or authority.	Allows others lead when they have the expertise for it.
			<b>Delegating</b>	Appropriately delegates authority and responsibility for decision making, and for planning and executing tasks.	Assigns authority and responsibility for decision making, planning or executing tasks.
			<b>Project Manager</b>	Able to determine requirements, develop work processes, delegate responsibilities, and lead teams to desired outcomes.	Identifies requirements, develop detailed plans, and manage the actions of the team to accomplish the task(s).
			<b>Resource Management</b>	Manages and tracks funding, people, and equipment to accomplish a mission. Allocates adequate time for task completion. Allocates time to prepare and conduct rehearsals. Continually seeks improvement in operating efficiency, resource conservation, and fiscal responsibility. Attracts, recognizes, and retains talent.	Manages and tracks funding, people, and equipment to accomplish a mission.

Talent Domain	Talent	Talent Definition	Measurable KSB	Technical Definition	User Description
Leadership & Management	Performance Management	Oversees, monitors, and facilitates work performance of subordinates. Ensures they meet organizational standards, provides feedback, recognizes and rewards good performance, and works to improve performance.	<b>Task Planning &amp; Management</b>	Schedules activities to meet commitments in critical performance areas. Notifies peers and subordinates in advance of required support. Keeps track of task assignments and suspenses; attends to details. Adjusts assignments, if necessary. Assesses progress toward mission accomplishment, provides additional guidance, or resets the team as necessary.	Schedules and tracks assignments and deadlines within team; Tracks progress of the team and resolves problems as needed.
			<b>Time Management</b>	Manages one's own time and the time of others.	Manages one's own time and the time of others.
			<b>Encourages Fairness and Inclusiveness</b>	Provides accurate evaluations and assessments. Supports equal opportunity. Prevents all forms of harassment. Encourages learning about and leveraging diversity.	Supports equal opportunity for all unit members. Acts to prevent all forms of harassment. Encourages learning about and leveraging diversity.
			<b>Enforces Standards</b>	Reinforces the importance and role of standards. Performs individual and collective tasks to standard. Recognizes and takes responsibility for poor performance; addresses it appropriately.	Reinforces the importance and role of standards. Performs individual and collective tasks to standard. Recognizes and takes responsibility for poor performance; addresses it appropriately.
			<b>Monitoring</b>	Monitors/assesses performance of oneself, other individuals, or organizations to make improvements or take corrective action.	Monitors/assesses performance of oneself, other individuals, or organizations to make improvements or take corrective action.
			<b>Providing Feedback*</b>	*Gives accurate, relevant, <sup>3</sup> and timely feedback. Uses feedback and counseling to modify duties, tasks, procedures, requirements, and goals.	*Gives accurate, relevant, and timely feedback. Uses feedback and counseling to modify duties, tasks, procedures, requirements, and goals.

<sup>3</sup> During the peer review process, 'relevant' was added to *Providing Feedback* KSB's technical definition and user description for additional clarification.

Talent Domain	Talent	Talent Definition	Measurable KSB	Technical Definition	User Description
			<b>Improves Unit Performance</b>	Employs learning strategies to improve unit performance. Uses assessment techniques and evaluation tools (such as after action reviews) to identify lessons learned and facilitate consistent improvement. Determines the appropriate setting and timing for feedback.	Uses techniques, such as After Action Reviews (AARs), to identify lessons learned after a task to improve performance. Gives feedback in the right situations and times to support learning.
			<b>Recognizes and Rewards Good Performance</b>	Recognizes individual and team accomplishments; rewards appropriately. Credits subordinates for good performance; builds on successes. Explores reward systems and individual reward motivations.	Recognizes individual and team accomplishments; Credits subordinates for good performance; rewards appropriately to motivate subordinates.
			<b>Balances Mission and Welfare of Followers</b>	Assesses and routinely monitors effects of mission fulfillment on mental, physical, and emotional attributes of subordinates. Monitors morale, physical condition, and safety of subordinates. Provides appropriate relief when conditions jeopardize success of the mission or present overwhelming risk to personnel. Addresses subordinates' and families' needs (health, welfare, and development). Stands up for subordinates. Routinely monitors morale and encourages honest feedback.	Monitors morale, physical condition, and safety of subordinates. Provides appropriate relief when conditions unnecessarily risk mission success or Soldier safety.
			<b>Sustains a Climate of Trust</b>	Assesses factors or conditions that promote or hinder trust. Keeps people informed of goals, actions, and results. Follows through on actions related to expectations of others. Is firm, fair, and respectful to gain trust.	Assesses factors or conditions that promote or hinder trust. Keeps people informed of goals, actions, and results. Follows through on actions related to expectations of others. Is firm, fair, and respectful to gain trust.
<b>Leadership &amp; Management</b>	<b>Sustains Climate &amp; Morale</b>	Supports a climate of trust, high morale, consideration of the welfare of followers, demonstrates perseverance and courage to followers in the face of adversity, and shows commitment to organizational missions and values.			

<b>Talent Domain</b>	<b>Talent</b>	<b>Talent Definition</b>	<b>Measurable KSB</b>	<b>Technical Definition</b>	<b>User Description</b>
<b>Leadership &amp; Management</b>	<b>Training and Developing Others</b>	Determines subordinate training needs and creates a learning environment where the leader trains, mentors, and instructs subordinates in order to enhance their performance, development, and motivation.	<b>Assesses Developmental Needs of Others</b>	Determines strengths and weaknesses of subordinates under different conditions. Evaluates subordinates in a fair and consistent manner. Assesses tasks and subordinate motivation to consider ways to improve work assignments, cross-train on tasks, and accomplish missions. Designs ways to challenge subordinates to improve weaknesses and sustain strengths. Encourages subordinates to improve processes.	Identifies strengths and weaknesses of subordinates under different conditions. Evaluates subordinates fairly.
			<b>Mentoring*</b>	*Provides developmental and career-related support to subordinates, leaders, or peers.	*Provides developmental and career-related support to subordinates, leaders, or peers.
			<b>Creates a Learning Environment</b>	Uses effective assessment and training methods. Encourages leaders and their subordinates to reach their full potential. Motivates others to develop themselves. Expresses the value of interacting with others and seeking counsel. Stimulates innovative and critical thinking in others. Seeks new approaches to problems. Communicates differences between professional standards and a zero-defects mentality. Emphasizes learning from one's mistakes.	Encourages unit members to learn and develop their skills; emphasizes learning from mistakes.
			<b>Instructing</b>	Teaches others how to do something.	Teaches others how to do something.

<b>Talent Domain</b>	<b>Talent</b>	<b>Talent Definition</b>	<b>Measurable KSB</b>	<b>Technical Definition</b>	<b>User Description</b>
			<b>Training and Developing Others</b>	Determines the training needs of individual subordinates, providing the appropriate level of instruction, guidance, and developmental opportunities. Uses counseling to provide personal and developmental feedback.	Provides training, coaching, and developmental opportunities to develop skills; Uses counseling and feedback to reinforce learning.
<b>Physical</b>	<b>General Fitness</b>	Demonstrates good health and physical conditioning by prioritizing good nutrition, physical exercise, and adequate sleep.	<b>Health and Fitness Orientation</b>	Tends to maintain good health and physical conditioning by prioritizing good nutrition, physical exercise, and adequate sleep. Committed to a lifestyle of physical fitness.	Motivated to maintain good health and physical fitness.
			<b>Physical Endurance</b>	Exerts oneself physically over long periods of time without getting winded or out of breath.	Exerts oneself physically over long periods of time without getting winded or out of breath.
			<b>Physical Strength</b>	Meets the physical strength demands of Army work (i.e., push, pull, carry, or throw objects; propel).	Meets the physical strength demands of Army work (i.e., push, pull, carry, or throw objects; propel).
			<b>Physically Fit</b>	Engages in activities to maintain physical conditioning, including vigorous sports or exercise. Performs well even under extreme physiological duress. Physically tough, gritty, and tenacious.	Engages in activities to maintain physical conditioning, including vigorous sports or exercise. Performs well even under extreme physiological duress. Physically tough, gritty, and tenacious.
			<b>Swimming</b>	Swims capably, uses water survival skills, avoids water hazards.	Remains afloat and propels self in water safely and under control.
<b>Physical</b>	<b>Psychomotor Ability</b>	The ability to perform physical motor movements, including balance and coordination, with	<b>Balance</b>	Keeps or regains one's body balance or stays upright when in an unstable position.	Remains physically stable without falling even in difficult situations.
			<b>Flexibility*</b>	*Flexing or extending the body limbs to work in awkward or contorted positions.	*Flexing or extending the body limbs to work in awkward or contorted positions.

<b>Talent Domain</b>	<b>Talent</b>	<b>Talent Definition</b>	<b>Measurable KSB</b>	<b>Technical Definition</b>	<b>User Description</b>
		precision, accuracy and strength.	<b>Control Precision</b>	Quickly and repeatedly adjusts the controls of a machine or a vehicle to exact positions.	Quickly and repeatedly adjusts the controls of a machine or a vehicle to exact positions.
			<b>Physical Coordination</b>	Performs activities that require eye-hand coordination, or coordinating the simultaneous movements of one's limbs.	Possesses eye-hand coordination; Coordinates different movements of arms/legs/body at the same time.
			<b>Reaction Time</b>	Quickly responds physically (e.g., with the hand, finger, or foot) to a signal (e.g., sound, light, picture) when it appears.	Quickly responds physically (e.g., with the hand, finger, or foot) to a signal (sound, light, picture) when it appears.

## Appendix B

### Summary of Qualitative Data from SME Panel on Structural and Content sub-themes

**Table B1**

#### *Structural Sub-themes from SME Panel*

Re-organize (Talent)	KSB Receiving Feedback for Refinement	Talent	Talent Domain	Summarized SME Feedback
	Problem Solver	Problem Solving	Cognitive	Three SMEs indicated that the <i>Problem Solver</i> KSB appeared to reflect a Talent level description rather than a KSB and that it appeared to be redundant with the overall Problem Solving Talent definition. SMEs further noted that the <i>Problem Solver</i> KSB appeared to overlap with other KSBs within the Problem Solving Talent. Consequently, SMEs suggested that the <i>Problem Solver</i> KSB be consolidated with either the Talent or the other Problem Solving KSBs.
Re-organize (KSB)	KSB Receiving Feedback for Refinement	Talent	Talent Domain	Summarized SME Feedback
	Knowledge of Processes and Procedures	Tactical/ Technical Competence	Expertise & Personal Competence	One SME indicated that <i>Knowledge of Processes and Procedures</i> from the Tactical/Technical Competence Talent did not belong in that Talent, though no suggestion was provided for a suitable alternative.
	Health and Fitness Orientation	General Fitness	Physical	One SME indicated that <i>Health and Fitness Orientation</i> from the General Fitness Talent belonged in the Interests Talent.
Add (KSB) - Proposed KSB	KSB Receiving Feedback for Refinement	Talent	Talent Domain	Summarized SME Feedback
Public Speaking	Communication Ability	General Communication	Communication	Public speaking is not clearly part of any Communication Talents or KSBs. Recommend adding as new KSB or reference in an existing KSB definition.
Virtualized and Containerized Platforms	Database Programming & Engineering	IT Programs & Systems	Expertise & Personal Competence	A SME indicated this was not clearly part of any existing KSB. Proposed definition: "Understands and is comfortable with using Virtual Machines and Containers to maintain and deliver IT-related projects."
Electromagnetic Spectrum (EMS)	Basic Electronics Knowledge	Mechanical & Electrical	Expertise & Personal Competence	A SME indicated this was not clearly part of any existing KSB. Proposed definition: "Is aware of the Electromagnetic Spectrum (EMS), how civilian and military equipment shares the EMS, and aware that EMS radiation is an important element to the protection and fires warfighting functions."
Builds Rapport	Interpersonal Relationship Building	Social Skills	Interpersonal	One SME recommended addition as a Social Skill rather than Communication. Noted this could be included in Interpersonal Relationship Building, but building rapport does not imply long-term relationship building. Proposed new KSB definition: "Engages people in pleasant, respectful social interaction; initiates and sustains conversation with new people."

Flexibility	Reaction Time	Psychomotor Ability	Physical	One SME noted that the only physical ability not clearly addressed in framework is flexibility (Hogan, 1991, Structure of physical performance in occupational tasks).
<b>Retire (KSB)</b>	<b>KSB Receiving Feedback for Refinement</b>	<b>Talent</b>	<b>Talent Domain</b>	<b>Summarized SME Feedback</b>
	Communicator	General Communication	Communication	Half of the SMEs recognized significant overlap in KSB label and definition between <i>Communicator</i> and other KSBs within the Communication Talent Domain, with the most overlap being noted with <i>Communication Ability</i> .
Separate (KSB)	Creative Problem Solving and Innovation	Creativity	Cognitive	One SME recommended separating Creative Problem Solving from Innovation as these are separate processes in the scientific literature.
<b>Consolidate (KSBs)</b>	<b>KSBs Receiving Feedback for Refinement</b>	<b>Talent</b>	<b>Talent Domain</b>	<b>Summarized SME Feedback</b>
	<ul style="list-style-type: none"> <li>Focus</li> <li>Multi-Tasking</li> </ul>	<ul style="list-style-type: none"> <li>Attention Control</li> <li>Attention Control</li> </ul>	<ul style="list-style-type: none"> <li>Cognitive</li> <li>Cognitive</li> </ul>	Redundancy in Definitions. Clarify Definitions: Use “Concentration” rather than “Mentally processes multiple sources of information/data.”
	<ul style="list-style-type: none"> <li>Attentiveness</li> <li>Focus</li> </ul>	<ul style="list-style-type: none"> <li>Attention Control</li> <li>Attention Control</li> </ul>	<ul style="list-style-type: none"> <li>Cognitive</li> <li>Cognitive</li> </ul>	Similar constructs, but Attentiveness refers to shifting attention as appropriate. KSB Label Change: “Attentiveness” to “Shifting Attention” or “Prioritizing Attention.”
	<ul style="list-style-type: none"> <li>Mental Agility</li> <li>Cognitive Flexibility</li> </ul>	<ul style="list-style-type: none"> <li>Decision Making</li> <li>Creativity</li> </ul>	<ul style="list-style-type: none"> <li>Cognitive</li> <li>Cognitive</li> </ul>	SMEs noted redundancy in definitions.
	<ul style="list-style-type: none"> <li>Processes Information &amp; Data</li> <li>Analyze Data or Information</li> <li>Analyzes and Organizes Information to Create Knowledge</li> </ul>	<ul style="list-style-type: none"> <li>General Cognitive Ability</li> <li>Reasoning</li> <li>Meta-Cognition</li> </ul>	<ul style="list-style-type: none"> <li>Cognitive</li> <li>Cognitive</li> <li>Cognitive</li> </ul>	SMEs noted redundancy in definitions.
	<ul style="list-style-type: none"> <li>Analyzes and Organizes Information to Create Knowledge</li> <li>Reflective Thinking</li> </ul>	<ul style="list-style-type: none"> <li>General Cognitive Ability</li> <li>Meta-Cognition</li> </ul>	<ul style="list-style-type: none"> <li>Cognitive</li> <li>Cognitive</li> </ul>	SMEs noted redundancy in definitions.
	<ul style="list-style-type: none"> <li>Problem Solver</li> <li>Structured Problem Solving</li> <li>Unstructured Problem Solving</li> <li>Troubleshooting</li> </ul>	<ul style="list-style-type: none"> <li>Problem Solver (All)</li> </ul>	<ul style="list-style-type: none"> <li>Cognitive (All)</li> </ul>	Problem Solver is either a Talent level construct or overlaps with KSBs within Problem Solving Talent. Retire <i>Problem Solver</i> or use to create new Talent, under which the other KSBs mentioned can be reorganized.
	<ul style="list-style-type: none"> <li>Analytical Thinking</li> <li>Critical Thinking</li> </ul>	<ul style="list-style-type: none"> <li>Reasoning</li> <li>Reasoning</li> </ul>	<ul style="list-style-type: none"> <li>Cognitive</li> <li>Cognitive</li> </ul>	SMEs noted redundancy in definitions.
	<ul style="list-style-type: none"> <li>Quantitative Reasoning</li> <li>Mathematical Reasoning</li> </ul>	<ul style="list-style-type: none"> <li>Reasoning</li> <li>Math &amp; Science</li> </ul>	<ul style="list-style-type: none"> <li>Cognitive</li> <li>Expertise &amp; Personal Competence</li> </ul>	SMEs noted redundancy in definitions.



<ul style="list-style-type: none"> <li>• Comm. Ability</li> <li>• Communicator</li> </ul>	<ul style="list-style-type: none"> <li>• General Comm.</li> <li>• General Comm.</li> </ul>	<ul style="list-style-type: none"> <li>• Communication</li> <li>• Communication</li> </ul>	SMEs noted redundancy in definitions. Recommended retirement of “Communicator”.
<ul style="list-style-type: none"> <li>• Communication Ability</li> <li>• Oral Comm. Skill</li> <li>• Oral and Nonverbal Comprehension</li> <li>• Written Communication</li> </ul>	<ul style="list-style-type: none"> <li>• General Comm.</li> <li>• Oral Comm.</li> <li>• Oral Comm.</li> <li>• Written Comm.</li> </ul>	<ul style="list-style-type: none"> <li>• Communication (All)</li> </ul>	SMEs noted redundancy in definitions. Recommended consolidation
<ul style="list-style-type: none"> <li>• Adjustment</li> <li>• Emotional Control</li> <li>• Even-tempered</li> <li>• Stress Tolerance</li> </ul>	<ul style="list-style-type: none"> <li>• Emotional Stability</li> <li>• Emotional Stability</li> <li>• Emotional Stability</li> <li>• Stress Tolerance</li> </ul>	<ul style="list-style-type: none"> <li>• Disposition (All)</li> </ul>	SMEs noted redundancy in definitions. Recommended consolidation of multiple KSBs. <i>Emotional Control</i> and <i>Even-tempered</i> were specifically recommended for consolidation.
<ul style="list-style-type: none"> <li>• Sociability</li> <li>• Social Interests</li> </ul>	<ul style="list-style-type: none"> <li>• Extraversion</li> <li>• Interests</li> </ul>	<ul style="list-style-type: none"> <li>• Disposition</li> <li>• Disposition</li> </ul>	SMEs noted redundancy in definitions.
<ul style="list-style-type: none"> <li>• Army Values</li> <li>• Fosters Teamwork</li> <li>• Sustains a Climate of Trust</li> </ul>	<ul style="list-style-type: none"> <li>• Military-Specific</li> <li>• Sustains Climate &amp; Morale</li> </ul>	<ul style="list-style-type: none"> <li>• Disposition</li> <li>• Leadership &amp; Management</li> </ul>	SMEs noted redundancy in definitions. Rename <i>Fosters Teamwork, Cohesion, Cooperation, Loyalty, and Esprit de Corps</i> as <i>Fosters Teamwork</i> and define as “Cohesion, Cooperation, Loyalty, and Esprit de Corps” (feedback implemented FY23).
<ul style="list-style-type: none"> <li>• Innovative</li> <li>• Creative Problem Solving and Innovation</li> </ul>	<ul style="list-style-type: none"> <li>• Openness to Experience</li> <li>• Creativity</li> </ul>	<ul style="list-style-type: none"> <li>• Disposition</li> <li>• Cognitive</li> </ul>	SMEs noted redundancy in definitions. Shape definition to remove overlap.
<ul style="list-style-type: none"> <li>• Innovating Technology</li> <li>• Technologically Adept</li> </ul>	<ul style="list-style-type: none"> <li>• Technology Fluency</li> <li>• Technology Fluency</li> </ul>	<ul style="list-style-type: none"> <li>• Expertise &amp; Personal Competence</li> <li>• Expertise &amp; Personal Competence</li> </ul>	SMEs noted redundancy in definitions and labels.
<ul style="list-style-type: none"> <li>• Advanced Mathematics</li> <li>• Mathematical Reasoning</li> <li>• Mathematics Knowledge</li> </ul>	<ul style="list-style-type: none"> <li>• Math &amp; Science (All)</li> </ul>	<ul style="list-style-type: none"> <li>• Expertise &amp; Personal Competence (All)</li> </ul>	SMEs noted redundancy in definitions and labels.
<ul style="list-style-type: none"> <li>• Basic Mechanical Knowledge</li> <li>• Mechanical Comprehension</li> <li>• Mechanically Savvy</li> </ul>	<ul style="list-style-type: none"> <li>• Mechanical &amp; Electrical</li> </ul>	<ul style="list-style-type: none"> <li>• Expertise &amp; Personal Competence</li> </ul>	SMEs noted redundancy in definitions and labels.
<ul style="list-style-type: none"> <li>• Occupation-Specific Knowledge and Skill</li> <li>• Specialized Expertise</li> </ul>	<ul style="list-style-type: none"> <li>• Tactical/ Technical Competence</li> <li>• Tactical/ Technical Competence</li> </ul>	<ul style="list-style-type: none"> <li>• Expertise &amp; Personal Competence</li> <li>• Expertise &amp; Personal Competence</li> </ul>	SMEs noted redundancy in definitions and labels. Shape definitions to differentiate or consolidate these KSBs.
<ul style="list-style-type: none"> <li>• Cross-Culturally Fluent</li> <li>• Cultural Awareness</li> <li>• Cultural/Interpersonal Adaptability</li> </ul>	<ul style="list-style-type: none"> <li>• Cultural Awareness (All)</li> </ul>	<ul style="list-style-type: none"> <li>• Interpersonal (All)</li> </ul>	SMEs noted redundancy in definitions. Shape definitions to differentiate, consolidate KSBs, or Rename KSB Labels.

<ul style="list-style-type: none"> <li>• Tactful</li> <li>• Adaptability</li> <li>• Empathy</li> <li>• Perspective Taking</li> </ul>	<ul style="list-style-type: none"> <li>• Social Skills</li> <li>• Openness to Experience</li> <li>• Empathy</li> <li>• Social Skills</li> </ul>	<ul style="list-style-type: none"> <li>• Interpersonal</li> <li>• Disposition</li> <li>• Disposition</li> <li>• Interpersonal</li> </ul>	Definition for <i>Tactful</i> is redundant across the other three KSBs listed here. Frame KSB definition to differentiate from other KSBs.
<ul style="list-style-type: none"> <li>• Resource Management</li> <li>• Financial Management</li> </ul>	<ul style="list-style-type: none"> <li>• Management</li> <li>• Financial Management</li> </ul>	<ul style="list-style-type: none"> <li>• Leadership &amp; Management</li> <li>• Expertise &amp; Personal Competence</li> </ul>	SMEs noted redundancy in definitions.
<ul style="list-style-type: none"> <li>• Bodily Kinesthetic</li> <li>• Other Physical Talent Domain KSBs</li> </ul>	<ul style="list-style-type: none"> <li>• Psychomotor Ability</li> <li>• Physical Talents</li> </ul>	<ul style="list-style-type: none"> <li>• Physical (All)</li> </ul>	SMEs noted redundancy in definitions. Consolidate due to overlap with other Physical KSBs.

**Table B2**

*Content Sub-themes from SME Panel*

Clarify (Talent) Definitions	KSB or Talent – Content Refinement	Talent	Talent Domain	Summarized SME Feedback
	Systems Thinking (Talent)	Systems Thinking	Cognitive	Proposed new definition: “Understands relationships between his/her organization and environment and uses information to envision and pursue a desired future state” or “The use of a set of cognitive processes to synthesize an integrated perspective, envisioning and pursuing a desired future state.”
Clarify (KSB) Definitions	KSB or Talent – Content Refinement	Talent	Talent Domain	Summarized SME Feedback
	Artistic Interests	Interests	Disposition	Use O*NET definition: “Artistic occupations frequently involve working with forms, designs and patterns. They often require self-expression and the work can be done without following a clear set of rules.”
	Awareness of Cognitive Biases	Meta-cognition	Cognitive	Recommend using User Description for both technical and user definitions.
	Consensus Building	Leadership	Leadership & Management	Change User Description to “Uses meaningful communication to facilitate generation of possible acceptable solution.”
	Conventional Interests	Interests	Disposition	Use O*NET definition: “Conventional occupations frequently involve following set procedures and routines. These occupations can include working with data and details more than with ideas. Usually there is a clear line of authority to follow.”
	Enterprising Interests	Interests	Disposition	Use O*NET definition: “Enterprising occupations frequently involve starting up and carrying out projects. These occupations can involve leading people and making many decisions. Sometimes they require risk taking and often deal with business.”
	Interest in Leadership	Interests	Disposition	Recommend using O*NET definition; however, <i>Interest in Leadership</i> is not in the O*NET taxonomy of interests.
	Investigative Interests	Interests	Disposition	Use O*NET definition: “Investigative occupations frequently involve working with ideas, and require an extensive amount of thinking. These occupations can involve searching for facts and figuring out problems mentally.”
	Realistic Interests	Interests	Disposition	Use O*NET definition: “Realistic occupations frequently involve work activities that include practical, hands-on problems and solutions. They often deal with plants, animals, and real-world materials like wood, tools, and machinery. Many of the occupations require working outside, and do not involve a lot of paperwork or working closely with others.”
	Focus	Attention Control	Cognitive	Use “concentration” rather than “Mentally processes multiple sources of information/data” for technical definition.
	Interdisciplinary	Multi-Domain Collaboration	Expertise & Personal Competence	Discrepancy between technical definition and user description – “Awareness” versus “synthesizes and applies.” Proposed revised User Description: “Awareness that there are multiple perspectives to a given situation/problem, based on one’s professional background. Combines knowledge from different types of sources.” Rationale: To clarify the multiple perspectives being considered are coming from different professions, and that they are able to combine knowledge of perspectives.

Differentiate Labels	KSB or Talent – Content Refinement	Talent	Talent Domain	Summarized SME Feedback
	Situational Awareness	Situational Awareness	Cognitive	Confusing for KSB and Talent to share label as term is defined differently at each level.
	Systems Thinking	Systems Thinking	Cognitive	Confusing for KSB and Talent to share label as term is defined differently at each level.
	Stress Tolerance	Stress Tolerance	Disposition	Confusing for KSB and Talent to share label as term is defined differently at each level.
Elaborate	KSB or Talent – Content Refinement	Talent	Talent Domain	Summarized SME Feedback
	Active Learning	Reasoning	Cognitive	Use APA definition: “learning through performance of behavior or acting out an idea OR the active seeking out of new information; active learners set goals, strategies, recognize when they understand, and work with others to further learning.”
	Cognitive Flexibility	Creativity	Cognitive	Part of cognitive flexibility is being able to switch between mental processes/tasks and implement different behavioral responses (e.g., disengaging from one task and switching to another and successfully adapting behavior to new task), which is not addressed in definitions.
	Data Science	Technology Fluency	Expertise & Personal Competence	Confer with domain experts. Potential definition: “Uses programming and statistical knowledge to collect, analyze, and interpret data to support military operations.”
	Discipline	Conscientiousness	Disposition	Discrepancy between technical definition and user description. Technical definition uses “obedience to lawful orders”, which is not reflected in user description. User description mentions “self-control in tempting situations”, which is not reflected in technical definition. Should be more domain-general rather than use Army-specific language.
	Inspirational Leader	Leadership	Leadership & Management	Recommend add “Shares vision and ...” to beginning of definition to include transformational leadership theory component.
	Interdisciplinary	Multi-Domain Collaboration	Expertise & Personal Competence	See <i>Interdisciplinary</i> note under Clarify (KSB) Definitions.
	Introspective	Conscientiousness	Disposition	Technical definition refers to “self-awareness”, which is a different construct than <i>Introspective</i> .
	JIM Perspective*	Multi-Domain Collaboration	Expertise & Personal Competence	User description needs “collaboration” component reflected in technical definition.
	Mentoring	Training and Developing Others	Leadership & Management	Revise User Description to “Provides developmental advice and support to subordinates, subordinate leaders, or others of lesser experience.”
	Selflessness	Agreeableness	Disposition	<i>Selflessness</i> more accurately defined as “puts needs of others before one's own.”
	Spatial Visualization	Spatial Ability	Cognitive	Definition addresses physical world, but should include abstract space (needed when building advanced algorithms, etc. in n-dimensional space).
	Spatially Intelligent	Spatial Ability	Cognitive	See feedback for <i>Spatial Visualization</i> above. Revising definition to include “multi-dimensional” may make it more abstract and suggests no-physical dimensions.

	Unstructured Problem Solving	Problem Solving	Cognitive	Add “ability to recognize when standard approaches will not solve and problem and requires new approaches” to both technical definition and user description.
	Working with the Public	Multi-Domain Collaboration	Expertise & Personal Competence	Revise definitions as characteristic of the person, not job task - e.g., “ability to work with (non-government) civilians or civilian organizations.”
	Systems Thinking	Systems Thinking	Cognitive	Both technical definition and user description seem incomplete. Recommend using “A cognitive approach that applies a holistic perspective to identify and understand interrelationships and emergent properties among elements.”
	Tactful	Social Skills	Interpersonal	Either add new KSB or add “builds rapport” to definition (“engages people in pleasant, respectful social interaction; initiates and sustains conversation with new people”).
	Written Communication			KSB should include adapting communication to different situations, as <i>Oral Communication Skill</i> does.
Frame Definition	KSB or Talent – Content Refinement	Talent	Talent Domain	Summarized SME Feedback
	Empathy	Empathy	Disposition	Revise scientific definition to remove Soldier-specific language to be domain general: “. . .to care for and take care of others.”
	Hostility to Authority	Emotional Stability	Disposition	Revise KSB framing to be positive attribute <i>Respectful of Authority</i> or <i>Authority Acceptance</i> with definition: “Accepts legitimate authority; readily accepts and complies with rules and directives from legitimate authority.”
	Knowledge of System Inter-Relations	Tactical/ Technical Competence	Expertise & Personal Competence	Revise for clarity: “Understands how own unit operations relates to operations of other units and larger operational goals.”
	Machiavellianism	Emotional Stability	Disposition	Revise KSB framing to be positive attribute or remove altogether.
	Prudent Risk-Taker	Conscientiousness	Disposition	Remove organizational-specific language (i.e., “maintains focus on safety”). KSB may be better fit under Openness to Experience Talent (e.g., adaptability, willingness to try new things).
	Coordination	Teamwork	Interpersonal	Current definition is broad, revise to be more specific. Alternatively, consolidate KSB with <i>Cooperation</i> .
	Enthusiasm	Extraversion	Disposition	<i>Enthusiasm</i> refers to excitement, enjoyment, interest, and passion for a concept or activity, Revise definition removing “enjoys company of others” and making more domain general.
Rename KSB	KSB or Talent – Content Refinement	Talent	Talent Domain	Summarized SME Feedback
	Cooperation/ Teamwork	Teamwork	Interpersonal	Simplify label as <i>Cooperation</i> .
	Detail-Focused & Precise	Conscientiousness	Disposition	Simplify label as <i>Detail-focused</i> .
	Locus of Control	Motives	Disposition	Specify label as <i>Internal Locus of Control</i> .
	Maintains Relevant Geopolitical Awareness	Cultural Awareness	Interpersonal	Revise KSB label to <i>Regional Expertise</i> to be consistent with AR 350-1.
	Attention Seeking	Extraversion	Disposition	Remove KSB or revise label (e.g., <i>Talkative</i> ) and definition to remove negative aspects (i.e., “boastful”).

	Attentiveness	Attention Control	Cognitive	Revise KSB label to <i>Shifting Attention</i> OR <i>Prioritizing Attention</i> . Rationale: <i>Attentiveness</i> and <i>Focus</i> are similar, but the primary difference in definition is attentiveness refers to being able to shift attention as appropriate.
	Basic Mathematics	Math & Science	Expertise & Personal Competence	Consider hierarchical labels for mathematical KSB labels.
	Basic Mechanical Knowledge	Mechanical & Electrical	Expertise & Personal Competence	Recommend restructuring Mechanical Knowledge KSBs with Basic, Intermediate, and Advanced framework.
	Creative Problem Solving & Innovation	Creativity	Cognitive	Revise definition and label to reflect <i>Creative Problem Solving</i> .
	Cultural Awareness	Cultural Awareness	Interpersonal	Revise either Talent or KSB label to <i>Cultural Capability</i> or <i>Cross-Cultural Competence</i> to be consistent with AR 350-1.
	Fosters Teamwork, Cohesion, Cooperation, Loyalty and Esprit de Corps	Teamwork	Interpersonal	Recommend renaming KSB <i>Fosters Teamwork</i> and defining it with the User description and adding: “cohesion, cooperation, loyalty, and Esprit de Corps.”
	Mathematical Reasoning	Math & Science	Expertise & Personal Competence	See recommendation for <i>Basic Mathematics</i> .
	Mathematics Knowledge	Math & Science	Expertise & Personal Competence	See recommendation for <i>Basic Mathematics</i> .
	Mechanical Comprehension	Mechanical & Electrical	Expertise & Personal Competence	See recommendation for <i>Basic Mechanical Knowledge</i> .
	Mechanically Savvy	Mechanical & Electrical	Expertise & Personal Competence	See recommendation for <i>Basic Mechanical Knowledge</i> .
	Occupation-Specific Knowledge and Skill	Tactical/ Technical Competence	Expertise & Personal Competence	Recommendation to combine <i>MOS/Branch-Specific Knowledge and Skill</i> and <i>Functional Area/Occupation-Specific Knowledge and Skill</i> was implemented prior to thematic analysis.
	Realistic Interests	Interests	Disposition	Revise to better reflect definition.
	Spatially Intelligent	Spatial Ability	Cognitive	For consistency with other Spatial talent KSBs, rename <i>Spatial Intelligence</i> .
	Tolerance	Openness to Experience	Disposition	Rename as <i>Tolerance for Diversity or Differences</i> to reflect technical definition and user description.
Shape Definition	KSB or Talent – Content Refinement	Talent	Talent Domain	Summarized SME Feedback
	Affiliation	Agreeableness	Disposition	Remove “Not shy and reserved.” <i>Affiliation</i> refers to belongingness and connection, which should be added to definitions.
	Assessing and Mitigating Harm	Reasoning	Cognitive	Remove “takes steps to minimize the risk of harm,” as this is an action rather than reasoning.  <b>*feedback does not address ‘mitigating’ component, and focuses on cognitive component only.</b>
	Attention Seeking	Agreeableness	Disposition	See recommendations for KSB under Rename KSB.
	Autonomy	Motives	Disposition	Technical definition states “Confident in own abilities” and user description states “Depends upon own abilities,” which do not align. Recommend using “depends” as “confidence in one’s abilities” is more in line with Self-efficacy and Self-confidence.

Dependability	Conscientiousness	Disposition	Revise “does not shy away from responsibility” with positively worded phrasing “accepts responsibility.”
Encourages Subordinates	Leadership	Leadership & Management	Minor typo in user description. Add comma after “responsibility.”
Enthusiasm	Extraversion	Disposition	See recommendation for <i>Enthusiasm</i> under “Frame Definition.”
Humility	Agreeableness	Disposition	Revise definition to remove mention of <i>Honesty</i> , as it is a separate construct. <i>Humility</i> also defined as a sense of one's shortcomings and a willingness to learn. Revise definition to be what <i>Humility</i> is, rather than what it is not - omit or reword second portion to “comfortable with others being the center of attention.”
Initiative	Extraversion	Disposition	Remove from definition: “relies on own abilities to overcome obstacles.”
Intellectual Efficiency	Openness to Experience	Disposition	Note: high academic achievement does not necessarily mean processing information quickly. Remove “processes information quickly” from technical definition. Revise “described by others as knowledgeable, astute, and intellectual” to be “described by others as knowledgeable, intellectual, or academically oriented.”
Negotiation	Social Skills	Interpersonal	Maintain consistency in verb form by revising to: “Communicates, bargains, persuades, or compromises as appropriate in order to reach a mutually agreeable solution to a point of conflict between two or more parties.”
Orderliness	Conscientiousness	Disposition	Revise definition to be “Organizes tasks and activities; maintains neat and clean surroundings.”
Response Orientation	Perceptual Speed and Accuracy	Cognitive	Remove “Capacity to choose” and start definition with “Chooses quickly...” to maintain consistency in wording.
Science Methods	Math & Science	Expertise & Personal Competence	Capitalize Methods in label, minor typo (completed).
Self-Efficacy	Motives	Disposition	Self-efficacy was not commented on, rather it was referenced in <i>Autonomy</i> KSB.
Sound Judgement	Decision Making	Cognitive	Revise technical definition to remove “Capacity to assess” and start with “Assesses” to maintain consistency in wording.
Tolerance	Openness to Experience	Disposition	See comment for <i>Tolerance</i> in “Rename KSB” section.
Artistic Interests	Interests	Disposition	Recommend using O*NET definition - see feedback in “Clarify (KSB) Definition” section.
Cross-Culturally Fluent	Cultural Awareness	Interpersonal	Overlap with other KSBs, if maintaining this KSB, could remove “Aware of” to further differentiate from <i>Cultural Awareness</i> and revise this KSB to refer to operating in different cultures.
Empathy	Empathy	Disposition	See comment for <i>Empathy</i> in “Frame Definition” section.
Even-Tempered	Emotional Stability	Disposition	Either combine <i>Emotional Control</i> and <i>Even-Tempered</i> , or replace “does not often” with “Rarely.”
Innovative	Openness to Experience	Disposition	Three SMEs indicated overlap between this KSB and <i>Creative Problem Solving and Innovation</i> and <i>Curiosity</i> . Either combine or potentially remove “Inquisitive” from definition to alleviate overlap with <i>Curiosity</i> .

Multi-Tasking	General Cognitive Ability	Cognitive	SMEs noted overlap with <i>Focus</i> . Revise to differentiate definitions further.
Situational Awareness	Situational Awareness	Cognitive	Proposed new definition: “Perceives what is happening in the immediate environment and links it to current and near-term objectives.” Core to situational awareness is 1) perception of immediate environment and 2) linking it to current/near-term goals and objectives. Being rarely surprised depends just as much on the environment as the person, and implies prediction beyond simply situational awareness.

Note: *JIIM Perspective* has been shortened from *Joint, Interagency, Intergovernmental, and Multinational (JIIM) Perspective*.



## Appendix C

### Complete Recommendations for Refinements to the ATAF

**Table C1**

#### *Content Recommendations*

Clarify (Talent) Definitions	KSB or Talent – Content Refinement	Talent	Talent Domain	Summarized SME Feedback	Recommendation Decision
	Systems Thinking (Talent)	Systems Thinking	Cognitive	Proposed new definition: “Understands relationships between his/her organization and environment and uses information to envision and pursue a desired future state” <b>or</b> “The use of a set of cognitive processes to synthesize an integrated perspective, envisioning and pursuing a desired future state.”	Recommended revised talent definition: “Considers the activity and changes of interconnected system elements. Anticipates the effects of actions on the system to promote or prevent a particular outcome from occurring.”
Clarify (KSB) Definitions	KSB or Talent – Content Refinement	Talent	Talent Domain	Summarized SME Feedback	Recommendation Decision
	Artistic Interests	Interests	Disposition	Use O*NET definition: “Artistic occupations frequently involve working with forms, designs and patterns. They often require self-expression and the work can be done without following a clear set of rules.”	No recommended changes.
	Awareness of Cognitive Biases	Meta-cognition	Cognitive	Recommend using User Description for both technical and user definitions	Recommended revised definition (apply to both technical definition and user description):  “Recognizes how one's own thoughts, experiences, and habits of thinking impact decision making.”
	Consensus Building	Leadership	Leadership & Management	Change User Description to “Uses meaningful communication to facilitate generation of possible acceptable solution.”	Recommended revised definition (apply to both technical definition and user description):  “Facilitates general agreement among group members through using effective communication and collaborative exchange.”
	Conventional Interests	Interests	Disposition	Use O*NET definition: “Conventional occupations frequently involve following set procedures and routines. These occupations can include working with data and details more than with ideas. Usually there is a clear line of authority to follow.”	No recommended changes.

	Enterprising Interests	Interests	Disposition	Use O*NET definition: "Enterprising occupations frequently involve starting up and carrying out projects. These occupations can involve leading people and making many decisions. Sometimes they require risk taking and often deal with business."	No recommended changes.
	Interest in Leadership	Interests	Disposition	SME recommended using O*NET definition of construct.	No recommended changes. <i>Interest in Leadership</i> is not in the O*NET taxonomy of interests.
	Investigative Interests	Interests	Disposition	Use O*NET definition: "Investigative occupations frequently involve working with ideas, and require an extensive amount of thinking. These occupations can involve searching for facts and figuring out problems mentally."	No recommended changes.
	Realistic Interests	Interests	Disposition	Use O*NET definition: "Realistic occupations frequently involve work activities that include practical, hands-on problems and solutions. They often deal with plants, animals, and real-world materials like wood, tools, and machinery. Many of the occupations require working outside, and do not involve a lot of paperwork or working closely with others."	No recommended changes.
	Focus	Attention Control	Cognitive	Use "concentration" rather than "Mentally processes multiple sources of information/data" for technical definition.	Recommendation: Apply user definition to technical definition in addition to user definition.
	Interdisciplinary	Multi-Domain Collaboration	Expertise & Personal Competence	Discrepancy between technical definition and user description - "Awareness" versus "synthesizes and applies". Proposed revised User Description: "Awareness that there are multiple perspectives to a given situation/problem, based on one's professional background. Combines knowledge from different types of sources." Rationale: To clarify the multiple perspectives being considered are coming from different professions, and that they are able to combine knowledge of perspectives.	Recommended revised definition (apply to both technical definition and user description):  "Synthesizes and applies knowledge from multiple disciplines or sources into a coherent overarching perspective. Collaborates with others who possess significant expertise very different from one's own."
Differentiate Labels	KSB or Talent – Content Refinement	Talent	Talent Domain	Summarized SME Feedback	Recommendation Decision

	Situational Awareness	Situational Awareness	Cognitive	Confusing for KSB and Talent to share label as term is defined differently at each level.	Recommended revised definition (apply to both technical definition and user description):  “Perceives what is happening in the immediate environment and links it to current and near-term objectives.”
	Systems Thinking	Systems Thinking	Cognitive	Confusing for KSB and Talent to share label as term is defined differently at each level.	Recommended revised definition (apply to both technical definition and user description):  “Considers the factors of a situation or a solution of interrelated parts with inputs, processes, outputs and feedback.”
	Stress Tolerance	Stress Tolerance	Disposition	Confusing for KSB and Talent to share label as term is defined differently at each level.	Use Talent definition for Talent and both KSB technical definition and user description:  “Capacity to withstand pressures and strains, and maintains composure under pressure.”
Elaborate	KSB or Talent – Content Refinement	Talent	Talent Domain	Summarized SME Feedback	Recommendation Decision
	Active Learning	Reasoning	Cognitive	Use APA definition: learning through performance of behavior or acting out an idea OR the active seeking out of new information; active learners set goals, strategies, recognize when they understand, and work with others to further learning	Recommended revised definition (apply to both technical definition and user description):  “Actively seeks out new information and learning experiences. Uses new information to set goals, select strategies, and to further learning.”
	Cognitive Flexibility	Creativity	Cognitive	Part of cognitive flexibility is being able to switch between mental processes/tasks and implement different behavioral responses (e.g., disengaging from one task and switching to another and successfully adapting behavior to new task), which is not addressed in definitions	APA dictionary states: the capacity for objective appraisal and appropriately flexible action. Cognitive flexibility also implies adaptability and fair-mindedness.  Recommended revised definition (apply to both technical definition and user description):  “Considers new plans or ideas, is able to switch between tasks, and is open to different ways of doing things.”
	Data Science	Technology Fluency	Expertise & Personal Competence	Confer with domain experts. Potential definition: “Uses programming and statistical knowledge to collect, analyze, and interpret data to support military operations.”	Recommended revised definition (apply to both technical definition and user description):  “Uses programming and statistical knowledge to collect, analyze, and interpret data in

				order to derive data-driven insights to support military operations.”
Discipline	Conscientiousness	Disposition	Discrepancy between technical definition and user description. Technical definition uses "obedience to lawful orders", which is not reflected in user description. User description mentions "self-control in tempting situations", which is not reflected in technical definition. Should be more domain-general rather than use Army-specific language.	Recommended revised definition (apply to both technical definition and user description):  “Demonstrates self-control and resists impulses and desires in order to achieve long term goals.”
Inspirational Leader	Leadership	Leadership & Management	Recommend add “Shares vision and ...” to beginning of definition to include transformational leadership theory component.	Recommended revised definition (apply to both technical definition and user description) to include sharing vision:  “Shares vision with followers and motivates teams to work harmoniously and productively towards a common goal.”
Inter-disciplinary	Multi-Domain Collaboration	Expertise & Personal Competence	See <i>Interdisciplinary</i> note under “Clarify (KSB) Definitions” section.	See <i>Interdisciplinary</i> note under “Clarify (KSB) Definitions” section.
Introspective	Conscientiousness	Disposition	Technical definition refers to “self-awareness”, which is a different construct than Introspective	Recommended revised definition (apply to both technical definition and user description):  “Contemplative and reflective by nature.”
JiIM Perspective*	Multi-Domain Collaboration	Expertise & Personal Competence	User description needs “collaboration” component added to align with technical definition	Recommended revised definition (apply to both technical definition and user description):  “Understands the perspectives of entities across multiple domains to collaborate towards accomplishing a common mission.”
Mentoring	Training and Developing Others	Leadership & Management	Revise User Description to “Provides developmental advice and support to subordinates, subordinate leaders, or others of lesser experience.”	Recommended revised definition (apply to both technical definition and user description):  “Provides developmental and career-related support to subordinates, leaders, or peers.”
Selflessness	Agreeableness	Disposition	Selflessness more accurately defined as “puts needs of others before one's own.”	Recommended revised definition (apply to both technical definition and user description):  “Generous with one’s time and resources and puts others’ needs above one’s own.”

Spatial Visualization	Spatial Ability	Cognitive	Definition addresses physical world, but should include abstract space (needed when building advanced algorithms, etc. in n-dimensional space).	Physical and abstract domains are be implied by current definition.  No changes recommended.
Spatially Intelligent	Spatial Ability	Cognitive	See feedback for Spatial Visualization above. Revising definition to include “multi-dimensional” may make it more abstract and suggests no-physical dimensions.	Physical and abstract domains are be implied by current definition.  No changes recommended.
Unstructured Problem Solving	Problem Solving	Cognitive	Add “ability to recognize when standard approaches will not solve and problem and requires new approaches” to both technical definition and user description	Recommended revised definition (apply to both technical definition and user description):  “Identifies ill-defined and ambiguous problems, evaluates relevance and reliability of information, and generates alternative and flexible solutions.”
Working with the Public	Multi-Domain Collaboration	Expertise & Personal Competence	Revise definitions as characteristic of the person, not job task - e.g., “ability to work with (non-government) civilians or civilian organizations.”	Recommended revised definition (apply to both technical definition and user description):  “Understands differences between public and government communication strategies and methods while working with (non-government) civilians or civilian organizations.”
Systems Thinking	Systems Thinking	Cognitive	Both technical definition and user description seem incomplete. Recommend using “A cognitive approach that applies a holistic perspective to identify and understand interrelationships and emergent properties among elements.	See notes for <i>Systems Thinking</i> under “Clarify Talent Domain” section.
Tactful	Social Skills	Interpersonal	Either add new KSB or add “builds rapport” to definition (“engages people in pleasant, respectful social interaction; initiates and sustains conversation with new people”).	Recommended revised definition (apply to both technical definition and user description):  “Understands the character and motivation of others as well as how to act diplomatically and inoffensively. Modifies personal behavior accordingly to develop and maintain respectful exchange with others.”
Written Communication	Written Communication	Communication	KSB should include adapting communication to different situations, as Oral Communication Skill does.	Recommended revised definition (apply to both technical definition and user description):  “Communicates written information and ideas to others in a clear, accurate, concise, grammatically correct, and

					well-organized manner. Adapts written communication products to different situations and audiences as appropriate.”
Frame Definition	KSB or Talent – Content Refinement	Talent	Talent Domain	Summarized SME Feedback	Recommendation Decision
	Empathy	Empathy	Disposition	Revise scientific definition to remove Soldier-specific language to be domain general: “. . .to care for and take care of others.”	Recommended revised definition (apply to both technical definition and user description):  “Understands other peoples' feelings and emotions and sees things from another person’s point of view.”
	Hostility to Authority	Emotional Stability	Disposition	Revise KSB framing to be positive attribute <i>Respectful of Authority</i> or <i>Authority Acceptance</i> with definition: “Accepts legitimate authority; readily accepts and complies with rules and directives from legitimate authority.”	Recommend deletion of this KSB due to negative wording and limited use as an attribute requirement for positions.
	Knowledge of System Inter-Relations	Tactical/ Technical Competence	Expertise & Personal Competence	Revise for clarity: “Understands how own unit operations relates to operations of other units and larger operational goals.”	Recommended Label modification for clarity: <i>Systems Knowledge</i>  Recommended revised definition (apply to both technical definition and user description):  “Understands how own unit operations relates to operations of other units and larger operational goals.”
	Machiavellianism	Emotional Stability	Disposition	Revise KSB framing to be positive attribute or remove altogether.	Recommend retirement of this KSB due to negative wording and limited use as an attribute requirement for positions.
	Prudent Risk-Taker	Conscientiousness	Disposition	Remove organizational-specific language (i.e., “maintains focus on safety”). KSB may better fit under Openness to Experience Talent (e.g., adaptability, willingness to try new things)	We conducted an exploratory factor analysis to determine whether <i>Prudent Risk-Taker</i> loaded on Openness to Experience, Motives, or Conscientiousness Talents. The EFA in the officer sample showed that three factors were extracted, in which all 21 items loaded .50 or higher on Factor 1. However, Motives KSBs also showed small to moderate secondary loadings on Factor 3 and small to moderate negative loadings on Factor 2.  In contrast, all Conscientiousness KSBs showed small to moderate positive loadings on Factor 2. Openness to Experience KSBs showed small negative loadings on Factor 2 and 3.

					<p>We recommend leaving <i>Prudent Risk Taker</i> in Conscientiousness Talent as it may reflect deliberation, carefulness, and planning aspects of Conscientiousness.</p> <p>Recommended revised definition (apply to both technical definition and user description):</p> <p>“Acts boldly yet maintains appropriate focus on safety.”</p>
	Coordination	Teamwork	Interpersonal	<p>Current definition is broad, revise to be more specific. Alternatively, consolidate KSB with <i>Cooperation</i>.</p>	<p>Recommended revised definition (apply to both technical definition and user description):</p> <p>“Adjusts the sequence and timing of one's actions in order to synchronize their actions with others.”</p>
	Enthusiasm	Extraversion	Disposition	<p><i>Enthusiasm</i> refers to excitement, enjoyment, interest, and passion for a concept or activity, Revise definition removing “enjoys company of others” and making more domain general</p>	<p>Recommended revised definition (apply to both technical definition and user description):</p> <p>“Experiences excitement or passion throughout their activities and interactions.”</p>
Rename KSB	KSB or Talent – Content Refinement	Talent	Talent Domain	Summarized SME Feedback	Recommendation Decision
	Cooperation/ Teamwork	Teamwork	Interpersonal	Simplify label as <i>Cooperation</i> .	Recommend KSB label change to <i>Collaboration</i> .
	Detail-Focused & Precise	Conscientiousness	Disposition	Simplify label as <i>Detail-focused</i> .	Recommend KSB label change to <i>Detail-focused</i> .
	Locus of Control	Motives	Disposition	Specify label as <i>Internal Locus of Control</i> .	Recommend KSB label change to <i>Internal Locus of Control</i>
	Maintains Relevant Geopolitical Awareness	Cultural Awareness	Interpersonal	Revise KSB label to <i>Regional Expertise</i> to be consistent with AR 350-1.	No recommended changes.
	Attention Seeking	Extraversion	Disposition	Remove KSB or revise label (e.g., <i>Talkative</i> ) and definition to remove negative aspects (i.e., ‘boastful’).	Recommend maintaining current KSB label and definition as attention seeking in-and-of-itself is not necessarily or uniformly negative—in some situations or contexts, it may be socially acceptable or event adaptive.
	Attentiveness	Attention Control	Cognitive	Revise KSB label to <i>Shifting Attention</i> OR <i>Prioritizing Attention</i> . Rationale: Attentiveness & Focus are similar, but the primary difference in definition is attentiveness refers to being able to shift attention as appropriate.	No recommended changes given that the current definition reflects the APA definition “the state of being alert and actively paying attention.; quality of actively attending to the needs of others.”
	Basic Mathematics	Math & Science	Expertise & Personal Competence	Consider hierarchical labels for mathematical KSB labels.	No recommended changes.

Basic Mechanical Knowledge	Mechanical & Electrical	Expertise & Personal Competence	Recommend restructuring Mechanical Knowledge KSBs with Basic, Intermediate, and Advanced framework.	<p>Recommend consolidation of <i>Basic Mechanical Knowledge</i>, <i>Mechanical Comprehension</i>, and <i>Mechanically Savvy</i>. See Table 20 in Main Report (p. 28).</p> <p>Revised and consolidated KSB label: <i>Mechanical Comprehension</i>.</p> <p>Recommended consolidated KSB definition: “Possesses knowledge of mathematical concepts and methods and can apply mathematical knowledge to solve problems.”</p>
Creative Problem Solving & Innovation	Creativity	Cognitive	Revise definition and label to reflect <i>Creative Problem Solving</i>	<p>Separate Creative Problem Solving from Innovation. Use current definitions for <i>Creative Problem Solving</i> KSB. Use following definition for <i>Innovation</i>:</p> <p>“Applies and executes new or creative ideas to create value for organization or solve organizational challenges.”</p>
Cultural Awareness	Cultural Awareness	Interpersonal	Revise either Talent or KSB label to <i>Cultural Capability</i> or <i>Cross-Cultural Competence</i> to be consistent with AR 350-1	<p>Recommend KSB label change to be <i>Cross-Cultural Competence</i>. See Table 20 in Main Report (p. 28).</p> <p>Recommended definition: “Understanding, acceptance, and ability to operate across different cultural settings, modifying one’s style and behavior appropriately.”</p>
Fosters Teamwork, Cohesion, Cooperation, Loyalty and Esprit de Corps	Teamwork	Interpersonal	Recommend renaming KSB <i>Fosters Teamwork</i> and defining it with the User description and adding: “cohesion, cooperation, loyalty, and Esprit de Corps”	<p>Recommend relabeling KSB to be <i>Fosters Teamwork</i> with definition:</p> <p>“Encourages people to work together effectively. Promotes teamwork and team achievement through building a sense of trust, Cohesion, Cooperation, Loyalty, and Esprit de Corps.”</p>
Mathematical Reasoning	Math & Science	Expertise & Personal Competence	See recommendation for <i>Basic Mathematics</i>	<p>Recommend consolidation of <i>Mathematical Reasoning</i> and <i>Mathematics Knowledge</i>. See Table 20 in Main Report (p. 28).</p> <p>Revised and consolidated KSB label: <i>Mathematical Reasoning</i></p> <p>Revised and consolidated KSB definition: “Possesses knowledge of mathematical concepts and methods and can apply mathematical knowledge to solve problems.”</p>



Mathematics Knowledge	Math & Science	Expertise & Personal Competence	See recommendation for <i>Basic Mathematics</i>	<p>Recommend consolidation of <i>Mathematical Reasoning</i> and <i>Mathematics Knowledge</i>. See Table 20 in Main Report (p. 28).</p> <p>Revised and consolidated KSB label: <i>Mathematical Reasoning</i></p> <p>Revised and consolidated KSB definition: “Possesses knowledge of mathematical concepts and methods and can apply mathematical knowledge to solve problems.”</p>
Mechanical Comprehension	Mechanical & Electrical	Expertise & Personal Competence	See recommendation for <i>Basic Mechanical Knowledge</i>	<p>Recommend consolidation of <i>Mechanical Comprehension</i>, <i>Mechanically Savvy</i>, and <i>Basic Mechanical Knowledge</i>. See Table 20 in Main Report (p. 28).</p> <p>Revised and consolidated KSB label: <i>Mechanical Comprehension</i>.</p> <p>Revised and consolidated definition: “Comprehends principles of machinery, equipment, or technology operation and repair. Uses technology effectively and is able to diagnose and correct problems with technology or machines.”</p>
Mechanically Savvy	Mechanical & Electrical	Expertise & Personal Competence	See recommendation for <i>Basic Mechanical Knowledge</i>	<p>Recommend consolidation of <i>Mechanical Comprehension</i>, <i>Mechanically Savvy</i>, and <i>Basic Mechanical Knowledge</i>. See Table 20 in Main Report (p. 28).</p> <p>Revised and consolidated KSB label: <i>Mechanical Comprehension</i>.</p> <p>Revised and consolidated definition: “Comprehends principles of machinery, equipment, or technology operation and repair. Uses technology effectively and is able to diagnose and correct problems with technology or machines.”</p>
Occupation-Specific Knowledge and Skill	Tactical/ Technical Competence	Expertise & Personal Competence	Recommendation to combine <i>MOS/Branch-Specific Knowledge and Skill</i> and <i>Functional Area/Occupation-Specific Knowledge and Skill</i> was implemented prior to thematic analysis.	Recommendation implemented in previous review cycle.
Realistic Interests	Interests	Disposition	Revise to better reflect definition.	No recommended changes.

	Spatially Intelligent	Spatial Ability	Cognitive	For consistency with other Spatial talent KSBs, rename <i>Spatial Intelligence</i> .	Relabel as <i>Spatial Intelligence</i>
	Tolerance	Openness to Experience	Disposition	Rename as <i>Tolerance for Diversity or Differences</i> to reflect technical definition and user description.	No recommended changes
Shape Definition	KSB or Talent – Content Refinement	Talent	Talent Domain	Summarized SME Feedback	Recommendation Decision
	Affiliation	Agreeableness	Disposition	Remove "Not shy and reserved." <i>Affiliation</i> refers to belongingness and connection, which should be added to definitions	Recommended revised definition (apply to both technical definition and user description):  "Engages socially to pursue belongingness, connection, and bonding with others."
	Assessing and Mitigating Harm	Reasoning	Cognitive	Remove "takes steps to minimize the risk of harm," as this is an action rather than reasoning.	No recommended changes. SME feedback focuses on cognitive component, but does not address "mitigating" component.
	Attention Seeking	Agreeableness	Disposition	See recommendations for KSB under Rename KSB	See recommendation for KSB label.
	Autonomy	Motives	Disposition	Technical definition states "Confident in own abilities" and user description states "Depends upon own abilities", which do not align. Recommend using "depends" as "confidence in one's abilities" is more in line with Self-efficacy and Self-confidence.	Recommended revised definition (apply to both technical definition and user description):  "Prefers to be self-sufficient, independent, and working alone. Depends upon own abilities."
	Dependability	Conscientiousness	Disposition	Revise "does not shy away from responsibility" with positively worded phrasing "accepts responsibility."	Recommended revised definition (apply to both technical definition and user description):  "Trustworthy, reliable, planful, and accountable. Accepts responsibility. Makes effort to keep promises."
	Enthusiasm	Extraversion	Disposition	See recommendation for <i>Enthusiasm</i> under "Frame Definition" Section.	See recommended revised definition in "Frame Definition" section. Recommended revised definition (apply to both technical definition and user description):  "Experiences excitement or passion throughout their activities and interactions."
	Humility	Agreeableness	Disposition	Revise definition to remove mention of <i>Honesty</i> , as it is a separate construct. <i>Humility</i> also defined as a sense of one's shortcomings and a willingness to learn. Revise definition to be what <i>Humility</i> is, rather than what it is not - omit or reword second portion to "comfortable with others"	Recommended revised definition (apply to both technical definition and user description):  "Honest, sincere, and modest; lets others take the spotlight and gives others credit when it is due. Admits mistakes or shortcomings."

			being the center of attention.”	
Initiative	Extraversion	Disposition	Remove from definition: "relies on own abilities to overcome obstacles."	Recommended revised definition (apply to both technical definition and user description):  “Proactive and willing to take independent action to achieve a goal.”
Intellectual Efficiency	Openness to Experience	Disposition	Note: high academic achievement does not necessarily mean processing information quickly. Remove “processes information quickly” from technical definition. Revise "described by others as knowledgeable, astute, and intellectual" to be “described by others as knowledgeable, intellectual, or academically oriented.”	Recommended revised definition (apply to both technical definition and user description):  “Described by others as knowledgeable, intellectual, or academically oriented. Demonstrates optimal use of mental resources to reach learning or problem-solving goals.”
Negotiation	Social Skills	Interpersonal	Maintain consistency in verb form by revising to: “Communicates, bargains, persuades, or compromises as appropriate in order to reach a mutually agreeable solution to a point of conflict between two or more parties.”	Recommended revised definition (apply to both technical definition and user description):  “Communicates, bargains, persuades, or compromises as appropriate in order to reach a mutually agreeable solution to a point of conflict between two or more parties.”
Orderliness	Conscientiousness	Disposition	Revise definition to be “Organizes tasks and activities; maintains neat and clean surroundings.”	Recommended revised definition (apply to both technical definition and user description):  “Organizes tasks and activities; maintains neat and clean surroundings.”
Response Orientation	Perceptual Speed and Accuracy	Cognitive	Remove “Capacity to choose” and start definition with “Chooses quickly...” to maintain consistency in wording.	Recommended revised technical definition:  “Chooses quickly between two or more movements in response to two or more different signals (lights, sounds, pictures). It includes the speed with which the correct response is started with the hand, foot, or other body part.”
Science Methods	Math & Science	Expertise & Personal Competence	Capitalize “Methods” in KSB label, minor typo (completed)	Completed edits.
Self-Efficacy	Motives	Disposition	<i>Self-efficacy</i> was not commented on, rather it was referenced in <i>Autonomy</i> KSB.	No recommended change as this KSB was referenced in relation to <i>Autonomy</i> KSB.

Sound Judgement	Decision Making	Cognitive	Revise technical definition to remove “Capacity to assess” and start with “Assesses” to maintain consistency in wording.	Recommended revised technical definition:  “Assesses situations shrewdly and draw sound conclusions. Tendency to form sound opinions, make sensible decisions and reliable guesses. Assesses strengths and weaknesses of subordinates, peers, and enemy to create appropriate solutions and action.”
Tolerance	Openness to Experience	Disposition	See comment for <i>Tolerance</i> in “Rename KSB” section.	No recommended changes.
Artistic Interests	Interests	Disposition	Recommend using O*NET definition - see feedback in “Clarify (KSB) Definition” section.	No recommended changes.
Cross-Culturally Fluent	Cultural Awareness	Interpersonal	Overlap with other KSBs, if maintaining this KSB, could remove “Aware of” to further differentiate from <i>Cultural Awareness</i> and revise this KSB to refer to operating in different cultures.	Recommend consolidation of <i>Cross-Culturally Fluent</i> , <i>Cultural Awareness</i> , and <i>Cultural/Interpersonal Adaptability</i> . See Table 20 in Main Report (p. 28).  Revised and consolidated KSB Label: <i>Cross-cultural Competence</i>  Revised and consolidated definition: Understanding, acceptance, and ability to operate across different cultural settings, modifying one’s style and behavior appropriately.
Empathy	Empathy	Disposition	See comment for <i>Empathy</i> in “Frame Definition” section.	See recommendation for <i>Empathy</i> under “Frame Definition” section.
Even-Tempered	Emotional Stability	Disposition	Either combine <i>Emotional Control</i> and <i>Even-Tempered</i> or replace “does not often” with “Rarely.”	Recommend consolidation of <i>Even-Tempered</i> and <i>Emotional Control</i> as <i>Even-Tempered</i> . See Table 20 in Main Report (p. 28).  Revised and consolidated KSB Label: <i>Emotional Control</i>  Recommended consolidated definition: “Acts rationally and maintains composure; displays a calm, even and stable mood.”
Innovative	Openness to Experience	Disposition	Three SMEs indicated overlap between this KSB and <i>Creative Problem Solving and Innovation and Curiosity</i> . Either combine or potentially remove “Inquisitive” from definition to alleviate overlap with <i>Curiosity</i> .	No recommended changes.
Multi-Tasking	General Cognitive Ability	Cognitive	SMEs noted overlap with <i>Focus</i> . Revise to differentiate definitions further.	No recommended changes.

Situational Awareness	Situational Awareness	Cognitive	<p>Proposed new definition: "Perceives what is happening in the immediate environment and links it to current and near-term objectives." Core to situational awareness is 1) perception of immediate environment and 2) linking it to current/near-term goals and objectives. Being rarely surprised depends just as much on the environment as the person, and implies prediction beyond simply situational awareness.</p>	<p>See recommendation under "Differentiate Labels" section. Recommended revised definition:</p> <p>"Perceives what is happening in the immediate environment and links it to current and near-term objectives."</p>
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Table C2

*Structural Recommendations*

Theme	KSB receiving feedback	Talent	Talent Domain	Summary of SME Feedback	Recommendation
<b>Re-organize (Talent) sub-theme</b>	Problem Solver	Problem Solving	Cognitive	<i>Problem Solver</i> appeared to reflect a Talent level description rather than a KSB and that it appeared to be redundant with the overall Problem Solving Talent definition. SMEs further noted that the <i>Problem Solver</i> KSB appeared to overlap with other KSBs within the Problem Solving Talent (i.e., <i>Structured Problem Solving</i> , <i>Unstructured Problem Solving</i> , and <i>Troubleshooting</i> ). SMEs suggested that the <i>Problem Solver</i> KSB be consolidated with either the Talent or the other Problem Solving KSBs.	No recommended changes.
<b>Re-organize (KSB) sub-theme</b>	Knowledge of Processes and Procedures	Tactical/ Technical Competence	Expertise & Personal Competence	One SME indicated that <i>Knowledge of Processes and Procedures</i> from the Tactical/Technical Competence Talent did not belong in that Talent, though no suggestion was provided for a suitable alternative.	No recommended changes.
<b>Re-organize (KSB) sub-theme</b>	Health and Fitness Orientation	General Fitness	Physical	One SME indicated that <i>Health and Fitness Orientation</i> from the General Fitness Talent belonged in the Interests Talent.	No recommended changes.
<b>Retire KSB</b>	Problem Solver	General Communication	Communication	Half of the SMEs recognized significant overlap in KSB label and definition between <i>Communicator</i> and most other KSBs within the Communication Talent Domain.	No recommended changes.
<b>Separate KSB</b>	Creative Problem Solving and Innovation	Creativity	Cognitive	One SME recommended separating <i>Creative Problem Solving</i> from <i>Innovation</i> as these are separate processes in the scientific literature.	Separate Creative Problem Solving from Innovation. Use current definitions for Creative Problem Solving. Use following definition for Innovation:  “Applies and executes new or creative ideas to create value for organization or solve organizational challenges.”
Add KSB	KSB receiving feedback	Talent	Talent Domain	Summary of SME Feedback	Recommendation
Proposed KSB: Public Speaking	Communication Ability	General Communication	Communication	Public speaking is not clearly part of any Communication Talents or KSBs. Recommend adding as new KSB or reference in an existing KSB definition.	Do not implement

Proposed KSB: Virtualized and Containerized Platforms	Database Programming & Engineering	IT Programs & Systems	Expertise & Personal Competence	A SME indicated this was not clearly part of any existing KSB. Proposed definition: "Understands and is comfortable with using Virtual Machines and Containers to maintain and deliver IT-related projects."	Not recommended. Suggested KSB and definition would be more appropriate as a branch-specific Tier 4 attribute (which was not approved by Army senior leadership).
Proposed KSB: Electromagnetic Spectrum (EMS)	Basic Electronics Knowledge	Mechanical & Electrical	Expertise & Personal Competence	A SME indicated this was not clearly part of any existing KSB. Proposed definition: "Is aware of the Electromagnetic Spectrum (EMS), how civilian and military equipment shares the EMS, and aware that EMS radiation is an important element to the protection and fires warfighting functions"	Not recommended. Suggested KSB and definition would be more appropriate as a branch-specific Tier 4 attribute (which was not approved by Army senior leadership).
Proposed KSB: Builds Rapport	Interpersonal Relationship Building	Social Skills	Interpersonal	One SME recommended addition as a Social Skill rather than Communication. Noted this could be included in Interpersonal Relationship Building, but building rapport does not imply long-term relationship building. Proposed new KSB definition: "Engages people in pleasant, respectful social interaction; initiates and sustains conversation with new people."	Not recommended. Suggested KSB addition is already contained in <i>Interpersonal Relationship Building</i> description.
Proposed KSB: Flexibility	Reaction Time	Psychomotor Ability	Physical	One SME noted that the only physical ability not clearly addressed in framework is flexibility (Hogan, 1991, Structure of physical performance in occupational tasks).	Recommend addition of new KSB.

**Table C3**

*Structural Recommendations - Consolidation KSB sub-theme*

KSBs Clusters suggested by SMEs for Consolidation	Talent	Talent Domain	Recommendation
<ul style="list-style-type: none"> <li>Focus</li> <li>Multi-Tasking</li> </ul>	<ul style="list-style-type: none"> <li>Attention Control (Both)</li> </ul>	<ul style="list-style-type: none"> <li>Cognitive (Both)</li> </ul>	No recommended changes.
<ul style="list-style-type: none"> <li>Attentiveness</li> <li>Focus</li> </ul>	<ul style="list-style-type: none"> <li>Attention Control (Both)</li> </ul>	<ul style="list-style-type: none"> <li>Cognitive (Both)</li> </ul>	No recommended changes.
<ul style="list-style-type: none"> <li>Mental Agility</li> <li>Cognitive Flexibility</li> </ul>	<ul style="list-style-type: none"> <li>Decision Making</li> <li>Creativity</li> </ul>	<ul style="list-style-type: none"> <li>Cognitive (Both)</li> </ul>	No recommended changes.
<ul style="list-style-type: none"> <li>Processes Information &amp; Data</li> <li>Analyze Data or Information</li> <li>Analyzes and Organizes Information to Create Knowledge</li> </ul>	<ul style="list-style-type: none"> <li>General Cognitive Ability</li> <li>Reasoning</li> <li>Meta-Cognition</li> </ul>	<ul style="list-style-type: none"> <li>Cognitive (All)</li> </ul>	No recommended changes.
<ul style="list-style-type: none"> <li>Analyzes and Organizes Information to Create Knowledge</li> <li>Reflective Thinking</li> </ul>	<ul style="list-style-type: none"> <li>General Cognitive Ability</li> <li>Meta-Cognition</li> </ul>	<ul style="list-style-type: none"> <li>Cognitive (Both)</li> </ul>	No recommended changes.
<ul style="list-style-type: none"> <li>Problem Solver</li> <li>Structured Problem Solving</li> <li>Unstructured Problem Solving</li> <li>Troubleshooting</li> </ul>	<ul style="list-style-type: none"> <li>Problem Solver (All)</li> </ul>	<ul style="list-style-type: none"> <li>Cognitive (All)</li> </ul>	No recommended changes.
<ul style="list-style-type: none"> <li>Analytical Thinking</li> <li>Critical Thinking</li> </ul>	<ul style="list-style-type: none"> <li>Reasoning (Both)</li> </ul>	<ul style="list-style-type: none"> <li>Cognitive (Both)</li> </ul>	No recommended changes.
<ul style="list-style-type: none"> <li>Quantitative Reasoning</li> <li>Mathematical Reasoning</li> </ul>	<ul style="list-style-type: none"> <li>Reasoning</li> <li>Math &amp; Science</li> </ul>	<ul style="list-style-type: none"> <li>Cognitive</li> <li>Expertise &amp; Personal Competence</li> </ul>	No recommended changes.
<ul style="list-style-type: none"> <li>Communication Ability</li> <li>Communicator</li> <li>Oral Comm. Skill</li> <li>Oral and Nonverbal Comprehension</li> <li>Written Communication</li> </ul>	<ul style="list-style-type: none"> <li>General Comm.</li> <li>General Comm.</li> <li>Oral Comm.</li> <li>Oral Comm.</li> <li>Written Comm.</li> </ul>	<ul style="list-style-type: none"> <li>Communication (All)</li> </ul>	<p>Based on SME feedback and subsequent correlation analysis – recommend consolidation of <i>Communication Ability</i> and <i>Communicator</i>. No recommended changes for other KSBs in this cluster.</p> <p><b>Revised Consolidated KSB Label:</b> <i>Communication Ability</i></p> <p><b>Revised Consolidated KSB Definition:</b> Precise, efficient, and compelling in both written and spoken word.</p>
<ul style="list-style-type: none"> <li>Adjustment</li> <li>Emotional Control</li> <li>Even-tempered</li> <li>Stress Tolerance</li> </ul>	<ul style="list-style-type: none"> <li>Emotional Stability</li> <li>Emotional Stability</li> <li>Emotional Stability</li> <li>Stress Tolerance</li> </ul>	<ul style="list-style-type: none"> <li>Disposition (All)</li> </ul>	<p>Based on SME feedback and subsequent correlation analysis – recommend consolidation of <i>Emotional Control</i> and <i>Even-tempered</i>. No recommended changes to <i>Adjustment</i> or <i>Stress Tolerance</i>.</p> <p><b>Revised Consolidated KSB Label:</b> <i>Even-Tempered</i></p> <p><b>Revised Consolidated KSB Definition:</b> Acts rationally and maintains composure; displays a calm, even and stable mood.</p>
<ul style="list-style-type: none"> <li>Sociability</li> <li>Social Interests</li> </ul>	<ul style="list-style-type: none"> <li>Extraversion</li> <li>Interests</li> </ul>	<ul style="list-style-type: none"> <li>Disposition</li> <li>Disposition</li> </ul>	No recommended changes.
<ul style="list-style-type: none"> <li>Army Values</li> <li>Fosters Teamwork</li> <li>Sustains a Climate of Trust</li> </ul>	<ul style="list-style-type: none"> <li>Military-Specific</li> <li>Sustains Climate &amp; Morale</li> </ul>	<ul style="list-style-type: none"> <li>Disposition</li> <li>Leadership &amp; Management</li> </ul>	No recommended changes.
<ul style="list-style-type: none"> <li>Innovative</li> <li>Creative Problem Solving and Innovation</li> </ul>	<ul style="list-style-type: none"> <li>Openness to Experience</li> <li>Creativity</li> </ul>	<ul style="list-style-type: none"> <li>Disposition</li> <li>Cognitive</li> </ul>	No recommended changes.



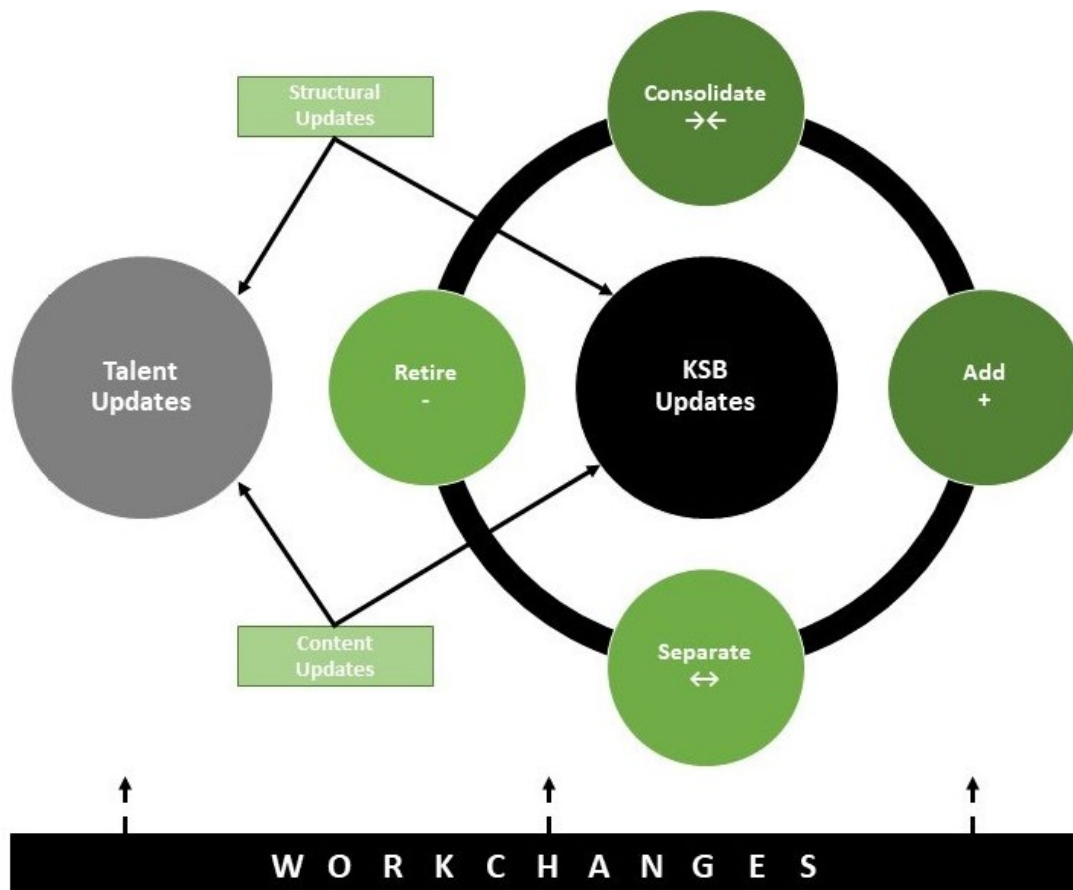
<ul style="list-style-type: none"> <li>• Innovating Technology</li> <li>• Technologically Adept</li> </ul>	<ul style="list-style-type: none"> <li>• Technology Fluency (Both)</li> </ul>	<ul style="list-style-type: none"> <li>• Expertise &amp; Personal Competence (Both)</li> </ul>	No recommended changes.
<ul style="list-style-type: none"> <li>• Basic Mathematics</li> <li>• Advanced Mathematics</li> <li>• Mathematical Reasoning</li> <li>• Mathematics Knowledge</li> </ul>	<ul style="list-style-type: none"> <li>• Math &amp; Science (All)</li> </ul>	<ul style="list-style-type: none"> <li>• Expertise &amp; Personal Competence (All)</li> </ul>	<p>Based on SME feedback and subsequent correlation analysis – recommend consolidation of <i>Mathematical Reasoning</i> and <i>Mathematics Knowledge</i>. No recommended change to <i>Basic Mathematics</i> or <i>Advanced Mathematics</i>.</p> <p><b>Revised Consolidated KSB Label:</b> <i>Mathematical Reasoning</i></p> <p><b>Revised Consolidated KSB Definition:</b> Possesses knowledge of mathematical concepts and methods and can apply mathematical knowledge to solve problems.</p>
<ul style="list-style-type: none"> <li>• Basic Mechanical Knowledge</li> <li>• Mechanical Comprehension</li> <li>• Mechanically Savvy</li> </ul>	<ul style="list-style-type: none"> <li>• Mechanical &amp; Electrical</li> </ul>	<ul style="list-style-type: none"> <li>• Expertise &amp; Personal Competence</li> </ul>	<p>Based on SME feedback and subsequent correlation analysis – recommend consolidation of all three KSBs in this cluster.</p> <p><b>Revised Consolidated KSB Label:</b> <i>Mechanical Comprehension</i></p> <p><b>Revised Consolidated KSB Definition:</b> Comprehends principles of machinery, equipment, or technology operation and repair. Uses technology effectively and is able to diagnose and correct problems with technology or machines.</p>
<ul style="list-style-type: none"> <li>• Occupation-Specific Knowledge and Skill</li> <li>• Specialized Expertise</li> </ul>	<ul style="list-style-type: none"> <li>• Tactical/ Technical Competence (Both)</li> </ul>	<ul style="list-style-type: none"> <li>• Expertise &amp; Personal Competence (Both)</li> </ul>	No recommended changes.
<ul style="list-style-type: none"> <li>• Cross-Culturally Fluent</li> <li>• Cultural Awareness</li> <li>• Cultural/Interpersonal Adaptability</li> </ul>	<ul style="list-style-type: none"> <li>• Cultural Awareness (All)</li> </ul>	<ul style="list-style-type: none"> <li>• Interpersonal (All)</li> </ul>	<p>Based on SME feedback and subsequent correlation analysis – recommend consolidation of all three KSBs in this cluster.</p> <p><b>Revised Consolidated KSB Label:</b> <i>Cross-Cultural Competence</i></p> <p><b>Revised Consolidated KSB Definition:</b> Understanding, acceptance, and ability to operate across different cultural settings, modifying one's style and behavior appropriately.</p>
<ul style="list-style-type: none"> <li>• Tactful</li> <li>• Adaptability</li> <li>• Empathy</li> <li>• Perspective Taking</li> </ul>	<ul style="list-style-type: none"> <li>• Social Skills</li> <li>• Openness to Experience</li> <li>• Empathy</li> <li>• Social Skills</li> </ul>	<ul style="list-style-type: none"> <li>• Interpersonal</li> <li>• Disposition</li> <li>• Disposition</li> <li>• Interpersonal</li> </ul>	No recommended changes based on theoretical review and quantitative analysis of relationship between constructs.
<ul style="list-style-type: none"> <li>• Resource Management</li> <li>• Financial Management</li> </ul>	<ul style="list-style-type: none"> <li>• Management</li> <li>• Financial Management</li> </ul>	<ul style="list-style-type: none"> <li>• Leadership &amp; Management</li> <li>• Expertise &amp; Personal Competence</li> </ul>	No recommended changes.
<ul style="list-style-type: none"> <li>• Bodily Kinesthetic</li> <li>• Other Physical Talent Domain KSBs</li> </ul>	<ul style="list-style-type: none"> <li>• Psychomotor Ability</li> <li>• Physical Talents</li> </ul>	<ul style="list-style-type: none"> <li>• Physical (All)</li> </ul>	Based on SME feedback and subsequent correlation analysis – recommend retirement of <i>Bodily Kinesthetic</i> as it overlaps with each other KSB in the Psychomotor Ability Talent.

## Appendix D

### ATAF Updates: Guidance and Recommendations

Below, we provide sets of questions outlining important points of consideration that should be taken into account when making decisions on implementing structural or content revisions to the ATAF. Specifically, we recommend Army organizations responsible for updating the ATAF to develop and document responses to the relevant list of questions (i.e., structural updates in the form of retiring, adding, separating, or consolidating KSBs, or content updates for KSBs and Talents).

Figure 5 (see figure below) from the main body of the report “Army Talent Attribute Framework – FY24 Annual Update Using a Mixed Methods Research Design” (p. 37) can be used to consider revisions to the ATAF.



## Structural Updates: Guidance and Recommendations

### Instructions:

- When planning revisions to the ATAF, identify whether a proposed change to a Talent or KSB is Structural or Content-oriented in nature. See Table 1 on page 5 in Main Report.
- Once the proposed change type has been identified, reference the appropriate set of Consideration Questions listed in the respective revision type below.
- Each Consideration Question should be answered *individually* and be fully described within the ‘Justification or Explanation’ space provided (use additional pages as necessary).
- A panel of SMEs should then review and discuss the proposed change and associated justification or explanation. Once the SME panel reaches consensus on whether the proposed change is necessary, a KSB label and definition can be developed and agreed upon.

### Addition Considerations

General Questions	Check (Y/N)	Justification or Explanation
<ul style="list-style-type: none"> <li>• Have you considered which Talent Domain and Talent this KSB would fall under?</li> <li>• Would adding this KSB address a gap within this Talent Domain or Talent?</li> <li>• Would adding this KSB provide value above-and-beyond what is already in the ATAF?</li> </ul>		*if selecting yes for each consideration question, it may be appropriate to proceed with Addition.
<b>KSB Validity Questions</b> <ul style="list-style-type: none"> <li>• Does this KSB relate to those already present in the ATAF?</li> <li>• Does the KSB definition show any overlap with other KSBs from the ATAF?</li> <li>• Would this attribute predict an outcome of interest to the Army (e.g., job performance)?</li> <li>• Would this KSB be uniformly important across branches/FAs/MOSs?</li> </ul>		
<b>KSB Reliability &amp; Measurement Questions</b> <ul style="list-style-type: none"> <li>• Is the KSB capable of being realistically, accurately, and reliably measured?</li> <li>• Is there a strong chance this KSB might become more important over time?</li> <li>• Are there strategic, forward-looking implications for this KSB? For instance, should this KSB be added to keep up with changes in technology or the operating environment?</li> </ul>		

## Retirement Considerations

General Questions	Check (Y/N)	Justification
<ul style="list-style-type: none"> <li>Is the KSB no longer operationally or strategically important to the Army?</li> </ul>		*if selecting yes for each consideration question, it may be appropriate to proceed with Retirement
<b>KSB Validity Questions</b> <ul style="list-style-type: none"> <li>Does this attribute fail to predict outcomes of interest to the Army (e.g., job performance)?</li> <li>Is this KSB important to only a select group of branches/FAs/MOSs?</li> <li>Is the KSB no longer relevant as a position requirement? For instance, would we expect current or near-future technology changes to impact the KSB's relevance?</li> <li>Does the KSB fail to "stand on its own" as a unique, useful attribute compared with other KSBs?</li> <li>Does the KSB mostly capture information beyond the individual in question (e.g., the unit or team)?</li> <li>Does the KSB fail to contribute anything of value above and beyond other KSBs?</li> <li>Would the KSB and its definition fail a sensitivity review for protected classes (Title VII)?</li> </ul>		
<b>KSB Reliability &amp; Measurement Questions</b> <ul style="list-style-type: none"> <li>Is the KSB incapable of being realistically, accurately, and reliably measured?</li> <li>Will the KSB cease to be useful in the future? For instance, is it only temporarily useful in the present or near term?</li> </ul>		

## Consolidation Considerations

General Questions	Check (Y/N)	Justification
<ul style="list-style-type: none"> <li>Does this KSB duplicate another KSB, either conceptually or empirically?</li> <li>Could this KSB represent a "special case" of another KSB, or be more directly represented by another KSB?</li> <li>Does this KSB represent a necessary feature or identifying characteristic of another KSB?</li> </ul>		*if selecting yes for each consideration question, it may be appropriate to proceed with Consolidation.
<b>KSB Validity Questions</b> <ul style="list-style-type: none"> <li>Is the KSB deficient, or imperfect, on its own?</li> </ul>		

<ul style="list-style-type: none"> <li>• If this KSB were to be consolidated with another, would the resulting KSB be a better representation than each KSB on their own?</li> <li>• Are the KSBs "different sides of the same coin," or "polar opposites" of one another?</li> <li>• Do the KSBs share identical patterns of relationships with other KSBs or outcomes?</li> </ul>		
<b>KSB Reliability &amp; Measurement Questions</b> <ul style="list-style-type: none"> <li>• Do the KSBs share the same definition or content, but otherwise differ in terms of their referent or target? (e.g., managing personal budgets vs. managing team resources)?</li> <li>• Are <i>both</i> the definitions and measures of the KSBs redundant or too similar to one another?</li> </ul>		

## Separation Considerations

General Questions	Check (Y/N)	Justification
<ul style="list-style-type: none"> <li>• Are the KSBs distinct from one another KSB, either conceptually or empirically?</li> <li>• Can a logical or persuasive case be made for distinction between the two KSBs?</li> <li>• Is it practically meaningful to separate the KSB into two?</li> <li>• Is it incoherent, inconsistent, or unrealistic to consider the two KSBs as the same?</li> </ul>		*if selecting yes for each consideration question, it may be appropriate to proceed with Separation.
<b>KSB Validity Questions</b> <ul style="list-style-type: none"> <li>• Do the KSBs share a potentially causal relationship, where one leads to changes in the other?</li> <li>• Would the KSBs be observed under different conditions, contexts, or circumstances?</li> <li>• Do any differences between the KSBs outweigh (in importance) any of the similarities between them?</li> <li>• Do the KSBs exhibit different patterns of relationships with other KSBs or outcomes?</li> </ul>		
<b>KSB Reliability &amp; Measurement Questions</b> <ul style="list-style-type: none"> <li>• Are both the definitions and measures of the KSBs unique or too different from one another?</li> </ul>		

## Content Updates: Guidance and Recommendations

General Questions	Check (Y/N)	Justification
<ul style="list-style-type: none"><li>• Does the definition not quite align with the KSB it is intended to capture?</li><li>• Does the KSB definition need any critical or qualifying information?</li><li>• Does the KSB definition contain too much unnecessary or irrelevant description?</li><li>• Does the KSB definition need to be simplified or tailored to stakeholders?</li><li>• Would changing the KSB's label better represent the attribute described in the definition?</li></ul>		*if selecting yes for each consideration question, it may be appropriate to proceed with Content Update.