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KNOWLEDGE MANAGEMENT

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This publication implements Air Force Policy Directive (AFPD) 33-3, Information Management; defines Knowledge Management (KM) and provides objectives for all organizations to effectively and efficiently accomplish the lifecycle of information; supports mission and business processes; establishes roles and responsibilities to carry out those objectives; defines the specific function and duties of the 3D0X1 (Knowledge Management) Air Force Specialty Code (AFSC); determines how each AF organization will be provided KM support; and provides essential KM resources to assist with improving the information lifecycle.

This instruction applies to all Air Force personnel to include active duty, guard, and reserve military, civilian, foreign nationals employed by the Department of the Air Force and Air Force contractor personnel. Contractors who perform KM functions, as defined in this instruction, must fully comply with the duties for their assigned role. Performance work statements for contracts awarded to perform any of the KM roles in this instruction will reflect this requirement. This AFI may be supplemented at any level, but all supplements that directly implement this publication must be routed to SAF/A6S Policy and Strategy Division for coordination prior to certification and approval. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the field through the appropriate functional chain of command. The authorities to waive wing/unit level requirements in this publication are identified with a Tier (“T-0, T-1, T-2, T-3”) number following the compliance statement. See AFI 33-360, *Publications and Forms Management*, Table 1.1 for a description of the authorities associated with the Tier numbers. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority, or alternately, to the Publication OPR for non-tiered compliance items. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with (IAW) Air Force Manual (AFMAN) 33-363,

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Chapter 1

OVERVIEW

1.1. Introduction. Timely, accurate, and relevant information is imperative for planning and conducting air, space, and cyberspace operations within the Air Force. A lack of decision-ready, actionable knowledge degrades our ability to conduct and support operations with the certainty required to support national military objectives. Turning raw data into information that enables the creation and transfer of knowledge requires an approach of careful collaboration, analysis, deliberation, and judgment. Knowledge Management (KM) supports this approach by using a combination of technology, processes and people to achieve mission superiority.

1.2. Terminology.

1.2.1. Knowledge is information being placed in context (human transformation) based on facts and an ascribed meaning (human experience, etc.) Air Force members transfer this knowledge, which is collected from subject matter experts (SME), to others by documenting best practices to create enduring explicit knowledge. AFPD 33-3 defines knowledge as - information from multiple domains that has been synthesized, through inference or deduction, into meaning or understanding. It comes in two forms: explicit and tacit.

1.2.1.1. Explicit knowledge consists of written or otherwise documented knowledge in media that can be organized or stored, whether in digital form or other. It is definite, openly stated, and often objective. Explicit knowledge lends itself to rules, limits, and precise meanings. It is easily collected, stored, and disseminated using information systems. Examples of explicit knowledge include field manuals, unit operating procedures, operation orders, and technical specifications. During operations, this knowledge is created and applied to support understanding and decision-making.

1.2.1.2. Tacit knowledge is comprehension gained through study, experience, and practice. Air Force members transfer this transient knowledge to others by documenting best practices and create enduring explicit knowledge. KM involves the capturing, organizing, and storing of knowledge and experiences of individual workers and groups within an organization and making this information available to others within the organization.

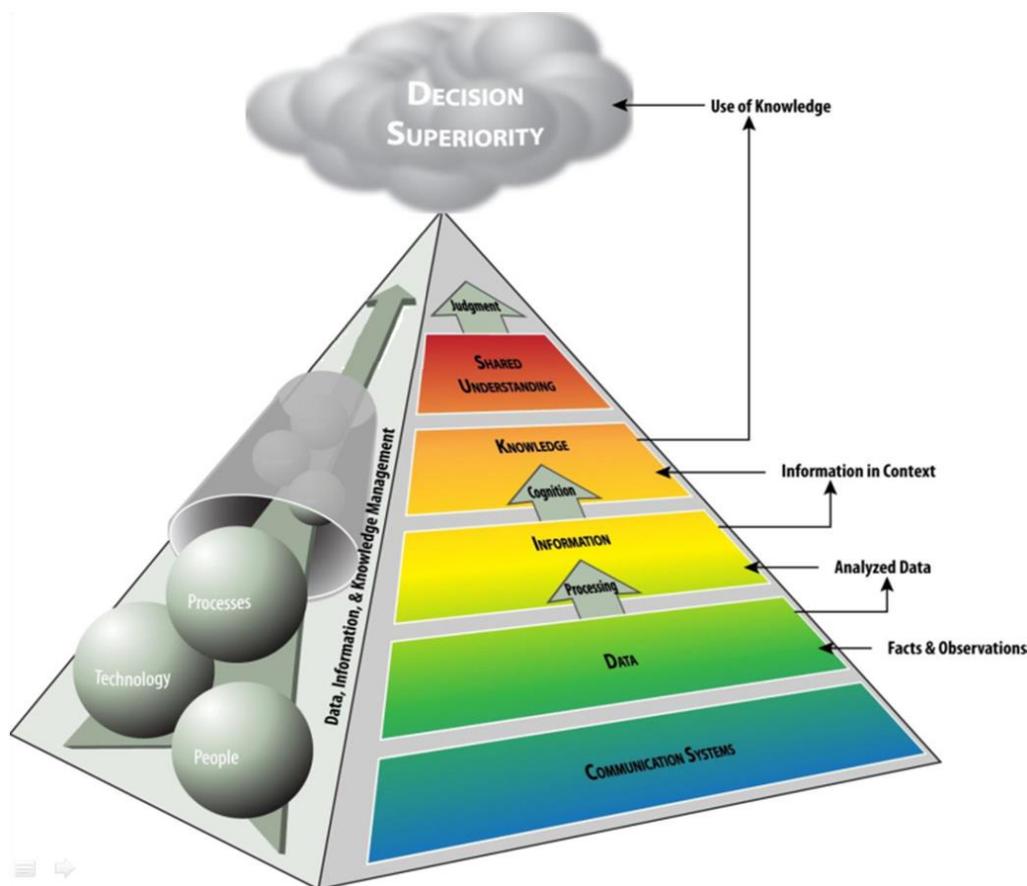
1.2.2. KM is defined as the integration of people and processes, enabled by technology, to facilitate the exchange of operationally relevant information and expertise to increase organizational performance. This involves creating, organizing, applying, and transferring knowledge to facilitate situational understanding and decision-making, which enables decision superiority.

1.2.2.1. KM relies on solid information management. Information Management (IM) is the science of using procedures and information systems to collect, process, encode with metadata, store, retrieve, display, disseminate, and protect knowledge products, data, and information. Through effective IM, KM ensures all mission processes have access to relevant cross-functional information in a collaborative, timely, and contextual manner. Figure 1.1 provides the context for understanding KM. Data are the elements that may be combined into information. Information is the message that resolves uncertainty for the

receiver. Knowledge results from information being placed in context (human transformation) based on facts and an ascribed meaning (i.e., human experience).

1.2.2.2. KM also uses workflow reviews and assessments to reveal best practices and opportunities for improvement. This leads to the development of new or revised processes which, in turn, optimize workflow and create scalable efficiencies. Information from enterprise systems are integrated with opinions, analysis, and predictions from subject matter experts (SME) through collaboration to provide actionable knowledge to improve operating efficiency and optimize mission effectiveness. Some examples of the KM products include courses of action (COA), force movement and sustainment plans, search and rescue plans, and decision-aiding presentations.

Figure 1.1. KM Context Model.



1.3. Capabilities.

1.3.1. KM provides warfighters with the capability to rapidly access and exploit authoritative, accurate, and relevant information to plan COAs and execute missions. This specifically includes virtual collaboration, tailored information presentation, integrated data and information, locating and accessing relevant information, sharing information and knowledge, managing information, and intelligence information architecture. This enables sharing of information and knowledge among communities of interest (COI), communities of practice (COP) and coalition partners in a common, collaborative information environment,

supporting network services, improved search engine technologies, and integration of knowledge managers and training.

1.3.2. By leveraging Enterprise Information Services (EIS) across the Air Force, KM ensures consistent, effective enterprise software Airmen leverage through their desktop computers as well as laptops and other mobile devices. Access to repositories of information and knowledge must be contextual and transparent, enabling discoverability through improved search engine technology. This enables Airmen at all levels to be immediately effective at their new duty locations, including forward deployed units.

1.4. Technology. KM represents a significant shift from closed-system solutions to one of information and knowledge sharing and collaboration. This reduces data redundancy and enhances information discovery efforts through metadata, role-based security, and effective taxonomies. Sharing information with broader audiences also promotes the availability of data, information, and knowledge through established and developed COIs and COPs on knowledge portals and other collaborative tools. These technologies also provide access to authoritative knowledge to shorten decision cycles and to create higher levels of understanding. KM effects, capabilities, and standards are further defined in Chapter 2.

1.5. Processes. Technology is only as effective as the business rules which govern its processes. Outdated methodologies must evolve to leverage the capabilities of emerging technology. Information procedures must emphasize objectives and results and be as stringent as those governing information systems. Clear, codified processes allow for large-scale data compatibility and promote standardization, reducing the need to re-learn new procedures when moving between organizations.

1.6. People.

1.6.1. KM is a capability available to every functional community, to every user; therefore, the Air Force must have a trained group of KM professionals to interface between the technology and the customer organization. The Knowledge Manager (AFSC 3D0X1) is the Air Force's KM professional. This career field is specifically trained to serve as the link between what is possible and what actually happens at the organizational level. KM professionals must be trained in the tools, but must also adapt them to meet the requirements of each functional community. In addition to technical training, they must have appropriate business training to improve processes and solve problems. KM professionals must particularly excel in connecting functional communities to one another, as well as sharing the best practices and tools across the board. This enables reuse of both data and processes, greatly reducing inefficiencies across the service.

1.6.2. To achieve the organizational objectives, KM professionals facilitate the use of EIS capabilities to all Airmen. At base level, this is achieved through a team of trained KM professionals which specialize in teaching, implementing and facilitating these concepts to supported organizations. Chapter 4 describes the Knowledge Management Center (KMC), which is assigned to the host base Communications Squadron and serves as the base-level KM focal point. This team has a wide array of tools and services available to organizations and specializes in working as a mobile team with each unit to improve the effectiveness and efficiency of their information assets. Their focus will be to empower units to perform the steps of the information lifecycle (create/collect, process, disseminate, use, store, dispose) in a way that ensures data is reusable, shared, protected, consistent and compliant.

1.6.3. In addition to base-level, KM professionals must also be employed at higher echelons to solve larger, more strategic problems; this includes MAJCOMs, HAF, COCOMs and other Joint Communities, even with coalition partners. While the need for these capabilities may be identified as base-level, the solutions will require the procurement and development of processes and technologies at higher levels to ensure long-term viability and growth.

1.6.4. Ultimately, KM is achieved only when all Airmen participate. Since knowledge primarily exists in the minds of Airmen, it is difficult to identify and share. Therefore, a key objective of KM is to find ways to transfer, share, and codify as much tacit knowledge as possible so others may benefit, now and in the future. Organizational members will be trained on the tools and procedures to ensure they can participate in the process, but must have buy-in and be willing to share their wisdom and experience. Ultimately, KM capabilities are based on a common information environment across the Air Force, supported by people and processes, that enables the sharing, discovery, fusing, and correlating of data and information to facilitate the creation and exploitation of knowledge needed to effectively plan and execute the mission.

Chapter 2

KNOWLEDGE MANAGEMENT EFFECTS, CAPABILITIES, AND STANDARDS

2.1. Effects. KM specifically seeks to achieve the following effects:

2.1.1. Decision Superiority. Provides decision-makers with a competitive advantage, enabled by an ongoing situational awareness. This allows commanders and their forces to make better-informed decisions and implement them faster than their adversaries can react. It also enables them to re-plan and redirect operations, as needed. It reduces operational risk and enhances mission operations effectiveness by better understanding the right balance of force to employ.

2.1.2. Information Superiority. The degree of dominance in the information domain that allows friendly forces the ability to collect, control, exploit, and defend information while denying this ability to opposing forces.

2.1.3. Improved Individual and Shared Awareness of the Operational Environment. Allows Air Force, Joint, and Coalition information exchange and enables coordinated operations across all spectrums.

2.1.4. Constantly Evolving Team-Based Learning. Transforms the Air Force into a learning organization using continuous innovation to steadily feed new information, ideas, and concepts into an expanding base of tacit and explicit knowledge. Individuals, teams, and organizations gain increased knowledge, skills, and shared abilities, facilitating earlier employment of these attributes to support the expanding set of expeditionary missions.

2.1.5. Optimized Knowledge Processes. The integration of knowledge principles in work environments assists Airmen with optimizing their mapped processes through various knowledge management methodologies and techniques. Continuous process improvement and innovation techniques for information and knowledge sharing, such as Air Force Smart Operations for the 21st Century (AFSO 21) and DoD Continuous Process Improvement (CPI)/Lean Six Sigma (LSS), aid in optimizing knowledge processes throughout the Air Force and develop a means to share best practices. This provides Airmen with the ability to easily identify, modify, or eliminate ineffective processes and propagate/standardize efficient ones.

2.1.6. Seamless Access and Unified Communications. Provide organizations access to relevant information anywhere and anytime regardless of hardware or software platforms utilized. This is more than information access, as it strives to reduce the burden of information overload as well.

2.1.7. Knowledge Assessment and Prioritization. Evaluate classification, sensitivity, mission criticality, and required levels of access for incoming data, information and knowledge to ensure compliance with required management, handling, and security standards and practices (see paragraph 2.3).

2.2. Capabilities. Through effective network services and a common collaborative information exchange, KM affords a specific set of capabilities. Success in KM is measured by the degree in which these capabilities are available and leveraged within an organization.

2.2.1. Virtual Collaboration. KM provides meaningful situational awareness to all leadership levels through the ability to globally monitor, display, store, distribute, access and share information and knowledge, such as within a CoP, CoI, or other exchange platforms. Collaboration enables coordination of different ideas from numerous people to generate a wide variety of tacit knowledge. Real-time collaboration brings human interactive activities together to increase synergistic solutions and understanding. It also increases participation of the right people and organizations while reducing resources needed to bring them together physically.

2.2.2. Tailored Information Presentation. KM connects Airmen to authoritative, accurate, and relevant information by using an Airman's role-based attributes provided and tracked automatically by EIS. This presents it in a descriptive manner that indicates contextual manner relative to the Airman's attributes. This enables significant force-readiness improvements and contributes to effects-based operations.

2.2.3. Integrated Data and Information. The information environment supports the integration of relevant information from multiple sources and produces improved situational awareness for Airmen based on their role-based attributes and responsibilities. This integrated data and information is then used to support COAs for timely, adaptive actions, which meet a goal or set of goals. Through the combined use of people, processes and technology, Airmen are provided with pertinent, clear, timely, and accurate information and knowledge distributed to the point and time of need.

2.2.4. Locate, Assess, and Refine Information. Airmen can locate required information, extract it, determine its veracity and relevancy, and manipulate it to further support mission goals. This includes discovery capabilities, smart pull/proactive push capabilities, and the use of intelligent agents, which are autonomous entities that learn or use knowledge to observe and act upon an environment and direct its activity towards achieving goals. Credential and role-based access attributes are utilized to determine user's access to data, information, and knowledge, as well as their role in the process. This also includes the ability to determine the authority of information and information services by identifying the source, currency, and conditions of use.

2.2.5. Identify, Store, Share and Exchange Information and Knowledge. Airmen can identify, store, share and exchange information and knowledge for collaboration and situational awareness. They are able to do this with other Air Force members, as well as joint and coalition partners, as required. Data is appropriately identified and labeled, placed in a database or other data/information repository, and made available to those who need it (post/publish/advertise), and protected from unauthorized use or disclosure. This information and knowledge can then be shared using knowledge portals and common operating pictures. Airmen can assign attributes to information and knowledge that enables discovery by others, increasing information and knowledge sharing processes and dissemination of information and knowledge to broader communities.

2.2.6. Manage Information from Creation to Final Disposition. Airmen have the ability to store and manage all types of information and knowledge from creation to final disposition. This includes all actions necessary to store and maintain structured and unstructured information. Critical to this concept is the capability to identify and re-use authoritative information from multiple functional areas to eliminate redundant and potentially conflicting

information. An integrated enterprise-wide metadata repository and services are essential to effective information discovery and accessibility.

2.2.7. Information Architecture. An established information architecture is essential to establish standardized criteria, processes, and procedures to store and share data, information, and knowledge, including cross-security domain solutions that connect Air Force capabilities with different environments and functional areas.

2.3. Standards. Effective KM relies on adherence to specific IM standards and practices. Some standards apply across the entire government, while others define how we configure our internal information-exchange environment. Several known standards which apply to Air Force information environments are listed below:

2.3.1. Open Data (Executive Order of May 9, 2013, Making Open and Machine Readable the New Default for Government Information). This presidential order sets forth the principles that effective information management at each stage of the information's lifecycle is required to promote interoperability and openness. In addition, it mandates that all government agencies manage information as an asset throughout its lifecycle to promote openness and interoperability, and properly safeguard systems and information. This order states that managing government information as an asset will increase operational efficiencies, reduce costs, improve services, support mission needs, safeguard personal information, and increase public access to valuable government information.

2.3.2. National Information Exchange Model (NIEM)TM. NIEMTM is a community-driven, government-wide, standards-based approach to exchanging information. It connects communities of people who share a common need to exchange information in order to advance their mission, and includes a data model, governance, training, tools, technical support services, and an active community that assists users in adopting a standards-based approach to exchanging data. On 28 March 2013, the DoD CIO announced that the DoD will adopt NIEMTM as the best suited option for standards-based data exchanges.

2.3.3. DoD Directive 8000.01 (Management of the Department of Defense Information Enterprise). This directive ensures information policy and functional requirements are reflected in architectures and plans across the DoD enterprise and Component levels as a means to ensure information sharing, visibility, assurance, and interoperability.

2.3.3.1. DoD Instruction 8320.02 (Sharing Data, Information, and Information Technology (IT) Services in the Department of Defense). This publication provides specific policy that mandates all data, information and IT services be made visible, accessible, understandable, trusted, and interoperable throughout their lifecycles for all authorized users. This enables the access, security, and standardization necessary to achieve KM capabilities.

2.3.4. DoD Instruction 8500.01 (Cybersecurity). This instruction establishes the positions of DoD principal authorizing official (PAO) and the DoD Senior Information Security Officer (SISO), continues the DoD Information Security Risk Management Committee (DoD ISRMC), and adopts the term "cybersecurity" as it is defined in National Security Presidential Directive-54/Homeland Security Presidential Directive-23 to be used throughout DoD instead of the term "information assurance (IA)."

2.3.5. Active Directory Naming Conventions (TO 00-33D-2001). This technical manual was developed in response to Joint Task Force-Global Network Operations (JTF-GNO)

Warning Order (WARNORD) 06-07 and defines standards for E-mail account naming conventions, which is essential to enable KM capabilities for collaboration and discoverability. Now that the AF primarily works from one E-mail exchange system, it is imperative that these standards are followed to allow users to quickly find other users and organizations in the global address listing. These standards apply to organizational and individual E-mail accounts, as well as distribution lists.

Chapter 3

KNOWLEDGE MANAGEMENT ROLES AND RESPONSIBILITIES

3.1. The Office of the Secretary of the Air Force Chief Information Officer (CIO) and Chief, Information Dominance. SAF/CIO A6 will be responsible for the AF KM program. Specific responsibilities include the following:

3.1.1. Establish and oversee an AF-wide KM governance structure and processes; KM policies and processes will be:

3.1.1.1. Developed and published in a timely manner to ensure they are responsive to warfighter needs.

3.1.1.2. Applicable to technology AF personnel use in wartime and peacetime across the Total Force (Active, Air Force Reserves, and Air National Guard). This may also apply to other military services and coalition partners as applicable.

3.1.2. Act as the HQ USAF advocate in the Program Objective Memorandum (POM) process to ensure funding for systems supporting KM and other resources meets operational requirements, particularly both at homestation and while deployed.

3.1.3. Manage professional development and utilization of the Knowledge Management workforce.

3.1.4. Establish KM training for all AF personnel to effectively and efficiently manage information in support of mission and business processes.

3.2. Air Force Space Command (AFSPC). AFSPC will serve as the Air Force lead command for AF KM, to include EIS technologies.

3.2.1. Apply IT to AF KM mission and business processes, leading development, implementation, and enforcement of systems architectures supporting KM.

3.2.2. Streamline and keep pace with technological changes to support the information lifecycle.

3.2.3. Standardize enterprise level tool suites for the licensing, management and sustainment of information workflow, task management, records management, and dashboard services.

3.2.4. Ensure Air Force-wide deployment of EIS capabilities approved by the SECAF and CSAF to include deployments of Task Management and Records Management capabilities.

3.2.5. Ensure Air Force KM mission and business processes are compliant with all applicable cybersecurity directives and instructions.

3.2.6. Serve as the overall EIS lead for funding advocacy and establishment of a formal EIS Program of Record (PoR).

3.2.7. Implement knowledge operations initiatives and pilots in order to develop the broader Air Force knowledge sharing culture, empowered by technology.

3.2.8. Serve as the organizational echelon between SAF/CIO A6 and base-level Knowledge Management Centers (KMC).

- 3.2.9. Oversee and manage the Air Force Knowledge Management Working Group (AFKMWG), including coordination and meetings; serve as site owner for the AFKMWG SharePoint site.
- 3.2.10. Monitor base-level KMC activities and promote information sharing and coordination between KMC organizations.
- 3.2.11. Disseminate information related to KM and EIS technologies to base-level KMCs.
- 3.2.12. Collect and forward training requirements, KM-related best practices, requested policy changes, and other pertinent information to SAF/CIO A6.
- 3.2.13. Responsible for KM strategy, concept, requirements documentation, and the EIS PoR.
- 3.2.14. Ensure records management procedures are implemented and sustained for all enterprise storage services.
- 3.2.15. Ensure technology solutions meet requirements to support eDiscovery capabilities according to DoD 5015.02-STD, Electronic Records Management Software Applications Design Criteria Standard.
- 3.2.16. Implement policy, advocate for resources, and organize, train, and equip cyberspace forces to identify, locate, protect, and produce electronically-stored information in response to litigation requirements.
- 3.2.17. Cooperate with Air Force Legal Operations Agency directing actions to locate and preserve electronic records as well as non-record electronically stored information which become subject to a litigation hold.

3.3. Air Force Knowledge Management Working Group (AFKMWG). The AFKMWG is a council of senior KM professionals who are responsible for managing the Air Force KM community. The AFKMWG will:

- 3.3.1. Comprise of one MSgt (or civilian equivalent) from each MAJCOM, including Air National Guard and AF Reserves, who serve 1-year terms from 1 October to 30 September each year. Typically, this member is appointed by the 3D0XX Functional Manager. AFSPC CYSS is a permanent member of the AFKMWG and will manage the turnover/replacement process.
- 3.3.2. Represent the KMCs, requirements, and interests of their MAJCOM on all KM-related matters.
- 3.3.3. Meet at least monthly (typically via collaboration website) to review the Air Force KM program, training, and other milestones.
- 3.3.4. Maintain the AFKMWG SharePoint site and actively promote peer-level communication between base-level KMCs; monitor and use official 3D0X1 social networking sites to reply to questions and concerns; disseminate news and information to actively engage communication throughout the KM community.
- 3.3.5. Collect and forward training requirements, KM-related best practices, requested policy changes, and other pertinent information to AFSPC CYSS.

3.3.6. Distribute news, information, best practices, and potential solutions to their command's KMCs as applicable.

3.4. Commanders and Directors. In support of the AF KM program, commanders and directors at all levels will:

3.4.1. Be responsible for their organization's information and knowledge assets; this includes ensuring the lifecycle of information within their organization are kept in accordance with prescribed directives. **(T-1)**

3.4.2. Promote KM principles within their organization by ensuring processes follow the KM capabilities outlined in this directive as well as established best practices. **(T-2)**

3.4.3. Work closely with their supporting KMC to evaluate and improve organizational KM standards and processes. This relationship is crucial to ensure active KM integration, education, and compliance becomes commonplace across the organization. **(T-2)**

3.5. Knowledge Management Centers (KMC). KMC roles and responsibilities are outlined in Chapter 4, Knowledge Management Center (KMC).

3.6. All AF Employees. Every AF employee (to include military, civilians and, where applicable, contractors) is a member of the AF KM team and integral to the success of the KM program. All members will:

3.6.1. Establish, maintain, and improve AF-wide collaboration to foster an organizational culture of knowledge and information sharing. **(T-2)**

3.6.2. Seek to improve process efficiency and effectiveness through the use of information sharing, KM practices, and enterprise service tools. **(T-1)**

3.6.3. Assist commanders, directors, and organizations with capturing, organizing, storing, and sharing information and knowledge throughout and external to their organization. **(T-1)**

3.6.4. Correctly label, tag, store, and archive information in accordance with applicable security and classification policies. **(T-2)**

3.6.5. Comply with all legal requirements related to records identification, retention, and disposition rules. **(T-0)**

Chapter 4

THE KNOWLEDGE MANAGEMENT CENTER (KMC)

4.1. Overview. The Knowledge Management Center (KMC) is the primary base-level vehicle for the AF to achieve effects and capabilities as defined in Chapter 2. The KMC serves as the link between enterprise services and functional organizations which use them and will be comprised of members of the 3D0X1, Knowledge Management AFSC working primarily from the Base Communications Squadron (or equivalent supporting organization.) **(T-1)**. Operational units such as Air and Space Operations Centers may also employ 3D0X1 personnel to achieve KM effects. The KMC represents a highly-trained team ready to assist organizations with managing their information assets, solve technical and/or process problems, build relevant solutions, and collaborate with other organizations. As technologies and processes continue to change, the KMC will help organizations leverage the changes to produce effective and efficient outcomes.

4.2. KMC Roles and Capabilities. The KMC provides support to their community in two ways: sustained and mobile roles. The sustained roles are those which they accomplish for all organizations at any time, typically upon request. The mobile roles describe a type of consultancy where the KMC works one-on-one with individual organizations to refine and improve the knowledge lifecycle within that organization. Typically this is done annually or upon request, whichever is sooner. **(T-3)**. However, the frequency and extent for these capabilities are directly linked to available manpower and technology. Specific capabilities associated with each role are described below:

4.2.1. Sustained (Persistent) Capabilities.

4.2.1.1. Focal Point for EIS and Collaborative Technologies. For any supported unit, the KMC will be the point of contact for EIS, AF Portal, and commercial collaborative products that are not tied to a specific functional community. **(T-2)**. Using these technologies, the KMC can provide workflows, forms, or specialized dashboard-like applications to either collect or present information. They will also provide training, either periodically or by request, on all EIS and collaborative technologies.

4.2.1.2. Information Access Program Support. The KMC will assist organizations with complying with mandatory by-law and CIO responsibilities related to information management. **(T-0)**. These include Records Management, Privacy Act, Freedom of Information Act (FOIA), Civil Liberties and Electronic and Information Technology Accessible to Individuals with Disabilities, Section 508. Base-level managers for these programs, such as the Base Records Manager, are considered members of the KMC team. While the KMC is primarily focused on the effective and efficient use of information, complying with legal requirements is paramount and must be incorporated into all of the KMC roles and responsibilities. Specific responsibilities associated with these programs can be found in their respective publications, listed in Attachment 1.

4.2.1.3. Cross-Functional Data Sharing and Support. Today, many functional communities collect information they need, even though other functional communities already have this information. The KMC can help by connecting those with the demand to the source. These information sharing agreements will be treated the same way as

other agreements, and the KMC will track these sharing relationships. **(T-2)**. This will provide visibility and show who can access information. In addition, the KMC will manage all public electronic storage locations (e.g., shared drives and content sites) and will have the appropriate level of permissions and access to accomplish this task. This will ensure files are placed in the right location, named and tagged appropriately, made available to the right audience, and removed/archived appropriately.

4.2.1.4. Search Support. The KMC will assist customers with finding relevant mission information, even those managed by higher HQ, other MAJCOMs/Agencies, and joint environment by referring them to the appropriate resources. **(T-1)**. The objective is to provide organizations with helpful links, instructions for how to tag/search for information, and custom interfaces that easily connect them to sources of information permanently. Specific requirements for search support include those in response to a FOIA request, eDiscovery, or Litigation Hold requests.

4.2.1.5. Incident Response. If an organization has discovered that FOUO, Privacy Act, PII, or other sensitive information has been sent or made available to those without proper access and the need to know, the KMC will assist in resolving the situation. **(T-1)**. Although some of the work may be done by other agencies (i.e., network operations to purge information systems), the KMC will also assist with connecting organizations to appropriate agencies when a violation has occurred, equipment has been lost, or classified information has been compromised.

4.2.1.6. Establish/Enforce Policies for Naming/Storing/Sharing. The KMC will ensure organizations comply with standards for naming accounts, E-mail addresses, global address entries, organizational accounts, distribution lists, individual files, permission groups, and similar entities. **(T-3)**. This will ensure organizations can find what they need quickly and reduce the vulnerabilities from ad hoc sharing/permissions requests.

4.2.1.7. Data Archiving. With the appropriate level of permissions and access, the KMC will assist with cleaning out shared drives and hard drives containing numerous files. **(T-3)**. This activity often involves building a new structure with a new security schema and migrating relevant files to this structure. The remaining files are backed-up “off line” in case anything was overlooked. The KMC will perform this activity and serve as the focal point for retrieving archived files.

4.2.2. Mobile (Consultant) Capabilities.

4.2.2.1. Analyze Data/Information Needs and Improve Workflows. When partnering with organizations, the KMC will research the primary mission and deliverables of each organization, seeking to understand what they do, what they need, and what they produce. **(T-3)**. Using standard unit-type templates, they develop a KM plan which clearly shows what this unit requires and what it generates, information-wise. The KMC will coordinate or develop solutions to resolve problems and overcome obstacles, enhancing the organization’s ability to obtain or produce relevant information. The organization’s internal and external information sharing will be mapped and streamlined.

4.2.2.2. Configure Content Management Sites and Solutions. The mobile team will analyze existing content management sites (Microsoft SharePoint, AF Portal, etc.) and recommend improvements to the use of these sites, tightening up security and ensuring

the end result is intuitive and sustainable. **(T-3)**. If specific products are needed, such as dashboards or other technical solutions, this team will build those for the organization.

4.2.2.3. Employ Core EIS Programs. As the KMC performs an analysis of an organization's information needs, they will have access to applications which can be employed to solve specific problems. **(T-3)**. Many of these involve technical solutions (such as Web Part) which are built using Microsoft SharePoint to accomplish specific tasks. While some are developed already, others will be developed as required and subsequently shared with other KMCs AF-wide for reuse. This catalog of web solutions will grow over time.

4.2.2.4. Organize and Secure Data Storage at All Levels. One of the most useful capabilities provided by the KMC is helping organizations gain control of their stockpiles of digital data. This is especially helpful during an initial visit, since data is typically stored in a wide variety of storage mediums: shared drives, internal/external hard drives, unused content sites, etc. The KMC will provide the organization with a plan of "what-goes-where" and build initial sites/frameworks as needed. **(T-3)**. They can even work with units to move all the existing content into these newer, organized, and secure locations. The objective of this activity is archiving the old files, placing the relevant files where they can be found/used by those who need them, securing them using an approved security schema, and training the organization on the new structure so it becomes the new standard.

4.2.2.5. Ensure Compliance with Laws, Regulations, and Policies. When working directly with each organization, the KMC will ensure the organization meets their legal obligations with regard to securing, protecting, sharing, and disposing of sensitive data (including personal information). **(T-0)**. The KMC is trained on these standards and will ensure the organization is in adherence. This includes activities such as training members on their legal rights when collecting Privacy Act information, retaining specific records in accordance with National Archive and Records Administration (NARA) standards, or properly making information available to external organizations.

4.2.2.6. Provide Cross-Functional Access to Information/Best Practices. The KMC will research and discover any dependencies the organization has on other units to provide information. **(T-3)**. They will coordinate with other organizations/individuals to build a sharing agreement or otherwise resolve obstacles to allow access to those who need information. Likewise, as these relationships and solutions are identified, they will share these with other KMCs AF-wide; this will help build a repository of solutions and agreements specific for each unit type (i.e., LRS, AOC, MXG), enabling other KMCs to discover and put to use for their supported organizations.

4.2.2.7. Apply Continuous Process Improvement (CPI) Principles. The KMC will have foundational training in CPI methodologies, such as AFSO 21 and DoD CPI/Lean Six Sigma (LSS). **(T-3)**. When the KMC works with organizations, they will leverage these principles to create efficient solutions. In addition, they will host or coordinate formal process improvement events to solve complex KM problems.

4.2.2.8. Educate and Train Users on EIS and Collaborative Technologies. While the KMC hosts training courses as part of their sustained role, they should also hold specific training sessions while operating as a mobile team to train members of the target

organization on specific tools, structures, solutions, and sharing relationships employed for their unit. **(T-3)**

4.2.2.9. Build Unit Knowledge Management Plan. As the KMC conducts mission analysis, resolves problems, ensures compliance, and offers solutions, they will document this into a KM Plan specific to that organization. **(T-3)** The KM Plan includes:

4.2.2.9.1. Internal Information Storage and Sharing. This instructs unit members where to keep information and provides information on access and security.

4.2.2.9.2. External Information Storage and Sharing. This shows the relationships to other organizations and lists specific access to external informational resources.

4.2.2.9.3. List of Information Storage Sites. This list indicates the locations for organizational information (local, EIS, Portal, etc.) and provides the purpose and other relevant information for each.

4.2.2.9.4. List of Official Records. This list indicates the records schedules in use by the organization, as well as additional information such as location(s) and disposition instructions.

4.2.2.9.5. Useful Links. This list includes helpful sites and unit-specific templates.

4.2.2.10. Leadership Interaction and Comprehensive Outbriefs. During the KMC mobile visit with an organization, they will (at the visited unit's discretion) brief unit leadership daily on progress and findings. **(T-3)**. At the conclusion of the visit, they will hold a comprehensive outbrief to distribute the KM Plan and go over all the findings, changes, and way-ahead for the unit to work with their Knowledge Management solutions. The KM plan will be built upon the first visit to the organization and revised during subsequent visits. It will be posted on the KM SharePoint site for other KMCs (and units) to see what is being captured for similar organizations.

4.3. Support for Tenant Organizations. The KMC is a base-level office and typically supports every organization on their installation. However, some tenant units may be very large (e.g., tenant wing) or have a unique missions (e.g. COCOMs, AOCs etc.) and would therefore have their own internal KMC. No single rule of thumb will fit every situation, so host communications squadrons and tenant units must work together to determine applicable support arrangements. In any case, every AF organization should be able to identify their supporting KMC.

4.4. Support for Geographically Separated Units (GSUs) and Mission Separated Units (MSUs). GSUs and MSUs typically receive KM support from their parent organization or from their host base communications squadron. GSUs and MSUs do not require a 3D0X1 directly assigned to provide KM assistance, training, and support, as these services can typically be provided from host or parent organizations.

4.5. KMC Organization Structure.

4.5.1. Organizational Alignment. The KMC is typically assigned within a Communications Squadron as the SCOK branch. The KMC may be led by and composed of any combination of military and civilian personnel. Where military roles are identified below, civilian equivalents may also be used.

4.5.2. Manpower Strength. The number of personnel assigned to a KMC is typically linked to the number and size of organizations supported. Since the 3D0X1 AFSC does not yet have a manpower standard to determine the appropriate size of the KMC, each base will have varying numbers of personnel assigned. It is imperative that commanders and other leaders evaluate and prioritize the capabilities listed in this chapter to ensure an appropriate focus of existing manpower. As duties and processes become more standardized, this will lend itself toward a comprehensive manpower standard.

4.5.3. Enlisted Tier Roles. Each enlisted tier (SNCO, NCO, Junior Enlisted Airman) has distinct roles within the KMC, commensurate with AFI 36-2618, *The Enlisted Force Structure*. Where military roles are called out below civilian equivalents may also be used.

4.5.3.1. Senior NCOs (SNCO). Each base-level KMC should be led by a MSgt or possibly SMSgt in cases of very large bases. This SNCO will be in charge of both the sustained and mobile capabilities of the KMC. This individual will lead mobile visits and work directly with organizational leadership to ensure the strategic application of KM activities and technologies to meet objectives and solve complex mission problems. They operate in the “strategic application” stage in professional KM development, since the focus is on big-picture approach to organizational knowledge assets and meeting strategic objectives.

4.5.3.2. NCOs. KMCs may have one or more NCOs assigned who lead small groups in meeting specific objectives. NCOs have a mastery of technical tools and capabilities; they understand how and when to apply them to meet requirements. They operate in the “analyze and apply” stage of professional KM development, since the focus is on researching and understanding both vague and specific KM requirements, and bringing forth specific solutions to meet those requirements.

4.5.3.3. Junior Enlisted Airmen. KMCs will typically have several Junior Enlisted Airmen assigned who perform the bulk of the technical work in support of KM capabilities. They are capable of using technical tools to build specific solutions, ensure policy compliance, and other related tasks. They operate in the “tools and rules” stage of professional KM development, since the focus is on understanding the specific technical capabilities as well as the policies which govern the information lifecycle.

4.6. Military AFSC 3D0X1. The KMC is comprised of AFSC 3D0X1; for military members, their career path belongs to a larger group of career fields comprising the 3D0XX Cyber Operation AFS family. In this AFS, members merge at the SMSgt level into a single AFSC (3D090). This is appropriate since KM capabilities are inextricably linked to underlying networking technologies, cyberspace security, and technical programming capabilities. Members of AFSC 3D0X1 partake in applicable common core cyberspace training in addition to their AFSC-specific training. This includes IT Fundamentals during initial skills training (3-level), Cyberspace Common Core Career Development Courses (CDCs) (5-level), Cyberspace Advancement Course (7-level) and Cyberspace Superintendent Course (9-level). Every military 3D0X1 must be familiar with broad-scale cyberspace issues and capabilities, and seek out training and development opportunities to enhance their role in the cyberspace workforce.

Chapter 5

KNOWLEDGE MANAGEMENT IN SUPPORT OF CONTINGENCY OPERATIONS

5.1. General. At no point in time is reliable, decision ready information more critical than during contingency operations (combat, humanitarian assistance, disaster relief, etc.). Decision-quality information enhances the speed and effectiveness of command; it wins wars and saves lives. Information, like any other weapon or tool of warfare, can be used to control forces and deliver precise effects. Command and control of information supports the commander in three main areas: achieving situational awareness/understanding, making decisions, and communicating execution information to implement those decisions. In that context, everyone has an inherent responsibility to acquire, assess, reason, question, correlate, and disseminate quality information to other users, and to maintain and protect it throughout its lifecycle.

5.2. Operational Knowledge Management. In the contingency environments, Knowledge Managers are responsible for providing the same capabilities and effects outlined in this instruction, with particular emphasis on institutionalizing the processes pivotal to information sharing and synchronization.

5.2.1. Goal. The goal of Operational KM is to provide relevant, precise, accurate, timely, usable, and complete information that supports the commander in obtaining situational awareness and an understanding that allows him or her to make timely and effective decisions faster than the adversary can react, or in a non-combat situation, at a tempo that allows the force to shape the situation or react to changes and accomplish the mission.

5.2.2. Organization. The Component Numbered Air Force (C-NAF) organization is responsible for establishing an effective KM structure and flow strategy throughout the air and space component. This strategy is designed to meet the entire C-NAF and subordinate organizations' needs for seamless, relevant, and timely information, while optimizing the use of information infrastructure resources. Depending on the composition of forces in the deployed environment, KM professionals may or may not be organized as their home-station KMC; however, the tools, capabilities, processes, and objectives are essentially the same, regardless of environment.

5.3. Command and Control (C2) Enterprise. The C2 Enterprise consists of people, organizations, processes, procedures, information, communications, facilities, and systems that are used to plan, direct, coordinate, and control forces and operations. It includes the infrastructure and life-cycle activities for C2 systems, components, and supporting systems; intellectual and technical competencies; and cultural mindset that ensure the effective and efficient employment of net-enabled, integrated, reliable, and enduring AF C2 forces, both in garrison and expeditionary.

5.4. Expeditionary KM Support. AF KM professionals will typically deploy in support of AF owned/operated bases, and establish and support a KMC similar to home station. Small AF units sitting on joint or combined bases will get their KM support from their parent unit if their parent unit is AF (similar to the GSU support model). If this is not feasible or appropriate, then the organization with Administrative Control or ADCON will define KM structure and support. In a Joint environment, KM support will be dictated in appropriate policy. For example, Joint Publication 3-33, Joint Task Force Headquarters, requires the use of knowledge sharing

specialists to collect, process, and share information, creating an environment of shared understanding. Air Force KM professionals will be expected and must be prepared to support these types of environments.

Chapter 6

KNOWLEDGE MANAGEMENT TRAINING AND OTHER RESOURCES

6.1. General. Although the need for KM is constant, the technologies and processes involved frequently change and evolve. Consequently, KM training is absolutely vital to producing effective results. This is particularly compounded by the required combination of technical and people skills needed to execute KM objectives. KM professionals must continuously develop both aspects, by working with both IT and people, to become successful.

6.2. Career Field Training. In addition to the initial skills course (technical school) and CDCs, KM professionals must also use the 3D0X1 Career Field Education and Training Plan (CFETP) to assess the required task knowledge and performance requirements needed to attain each required skill level. Supervisors and trainers must remain actively involved with documenting training and keeping KM professionals on a continuous learning and development path.

6.3. 5-Level and 7-Skill Level Training Tracks. In addition to CDCs and CFETP tasks, every 3D0X1 must complete a series of online training courses to attain their 5- and 7-skill levels. The 5-Level tracks will operate in the "tools and rules" stage of KM professional development and focus on understanding the specific technical capabilities as well as the policies which govern the information lifecycle. The 7-Level tracks will operate in the "analyze and apply" stage of KM professional development and focus on the mastery of the technical tools and capabilities, and understand how and when to apply them to meet requirements. These training tracks are located in the AF e-Learning website, under the Cyber Support Training area. **(T-2)**

6.4. Optional Training. In addition to AF-provided training, KM professionals should seek out additional opportunities to sharpen their technical skills or refine their problem-solving capabilities. Some examples of non-AF training include the Navy's Afloat Knowledge Management Course, the Army's Knowledge Management Qualification Course, Defense Connect Online (DCO) KM courses, Federal Virtual Training Environment (FedVTE) KM courses, AFSO 21, DoD CPI/LSS and commercial KM certifications.

6.5. User Training. KM professionals will work with lead command (AFSPC) and base/unit commanders to identify, fund, and use training resources (e.g., contractor support to KMC training capabilities and access to vender-based or web-based training courses or trainers). **(T-3)**

6.6. KM Collaboration. The KM Community of Interest (CoI) is most effective when it works together, shares ideas and solutions, and approaches problems as one AF team. KM communities must collaborate to move the community forward and provide a sense of unity to the AF KM effort. AFSPC CYSS and AFKMWG will host a SharePoint site and other resources to support the AF KM community; however, this type of collaboration should also occur between host and tenant units, and between KM professionals and their supported customers. **(T-3)**

WILLIAM J. BENDER, Lt Gen, USAF
Chief of Information Dominance and
Chief Information Officer

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

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Prescribed Forms

There are no prescribed forms.

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*

Abbreviations and Acronyms

ADCON—Administrative Control

AFDD—Air Force Doctrine Document

AFFOR—Air Force Forces

AFI—Air Force Instruction

AFKMWG—Air Force Knowledge Management Working Group

AFS—Air Force Specialty

AFSC—Air Force Specialty Code

AFSO 21—Air Force Smart Operations for the 21st Century

AFSPC—Air Force Space Command

AFPD—Air Force Policy Directive

AOC—Air Operations Center

C2—Command and Control

C-NAF—Component Numbered Air Force

CDC—Career Development Course

CFETP—Career Field Education and Training Plan
CIO—Chief Information Officer
COA—Course of Action
COCOM—Combatant Command
COI—Community of Interest
COP—Community of Practice
COP—Common Operational Picture
DoD ISRMC—Department of Defense Information Security Risk Management Committee
EIS—Enterprise Information Services
FedVTE—Federal Virtual Training Environment
FDO—Foreign Disclosure Officer
FOIA—Freedom of Information Act
GSU—Geographically-Separated Unit
IM—Information Management
IT—Information Technology
KM—Knowledge Management
KMB—Knowledge Management Board
KMC—Knowledge Management Center
MAJCOM—Major Command
NARA—National Archives and Records Administration
NIEM—National Information Exchange Model™
PAO—Principal Authorizing Official
PII—Personally-Identifiable Information
POM—Program Objective Memorandum
POR—Program of Record
SISO—Senior Information Security Officer
SME—Subject Matter Expert
TMT—Task Management Tool
TO—Technical Order
TTP—Tactics, Techniques, and Procedures

Terms

Air Force Knowledge Management Working Group (AFKMWG)—A council of senior Knowledge Management professionals, each appointed to represent his/her MAJCOM's KM program. The AFKMWG maintains the Air Force's KM community site and promotes peer-level communication between the KMCs. They collect and upchannel training requirements, as well as policy changes, from their command. They distribute news, information, good ideas, and potential solutions as they arise. They are the voice of the Air Force KM community.

AFSO 21—Principles and tools designed to enable Airmen to change the day-to-day operating style to integrate continuous process improvement into the full spectrum of Air Force operations.

Breach—A loss of control, compromise, unauthorized disclosure, unauthorized acquisition, unauthorized access, or any similar term referring to situations where persons other than authorized users and for an other than authorized purpose have access or potential access to PII, whether physical or electronic.

Civil Liberties—Fundamental rights and freedoms protected by the Constitution of the United States.

Collaboration—The interaction among people at two or more locations who are developing knowledge for the same purpose. It may occur face to face in a small group or online using collaborative environments. Collaboration is an excellent means of transferring both tacit and explicit knowledge.

Community of Interest (CoI)—A gathering of people assembled around a topic of common interest. Its members take part in the community to exchange information, to obtain answers to personal questions or problems, and to improve their understanding of a subject.

Community of Practice (CoP)—A group of people who share a craft and/or a profession; typically created with the goal of gaining knowledge related to a specific field. It is through the process of sharing information and experiences with the group that the members learn from each other, and have an opportunity to develop themselves personally and professionally.

Data Asset—Representation of facts, concepts, or instructions in a formalized manner suitable for communication, interpretation, or processing by humans or by automatic means. Any representations such as characters or analog quantities to which meaning is or might be assigned.

Enterprise Information Services (EIS)—A combination of enterprise information technologies and services which provide knowledge management capabilities, such as information discovery, collaboration, tailored presentation, and contextual application.

For Official Use Only (FOUO)—A designation that is applied to unclassified information that may be exempt from mandatory release to the public under the Freedom of Information Act (FOIA).

Information—Facts, data, or instructions in any medium or form. Also the meaning that a human assigns to data by means of the known conventions used in their representation.

Information Access Program—Any official initiative that manages Air Force compliance with various laws and regulations influencing enhanced access to the knowledge stored in AF information technology systems.

Information Lifecycle—The stages through which information passes, typically characterized as creation or collection, processing, dissemination, use, storage, and disposition.

Information Management—The function of managing an organization's information resources by the handling of knowledge acquired by one or many different individuals and organizations in a way that optimizes access by all who have a share in that knowledge or a right to that knowledge.

Knowledge—information being placed in context (human transformation) based on facts and an ascribed meaning (human experience, etc.)

Knowledge (Explicit)—written or otherwise documented knowledge in media that can be organized or stored, whether in digital form or other.

Knowledge (Tacit)—comprehension gained through study, experience, and practice.

Knowledge Management—the integration of people and processes, enabled by technology, to facilitate the exchange of operationally relevant information and expertise to increase organizational performance.

Knowledge Management Center—the primary base-level vehicle for the AF to achieve KM objectives by serving as the deliberate link between enterprise information technologies and the mission organizations which use them.

Metadata—Information describing the characteristics of data; data or information about data; descriptive information about an organization's data, data activities, systems, and holdings.

Situational Awareness—Immediate knowledge of the conditions of the operation, constrained geographically and in time.

Situational Understanding—The product of applying analysis and judgment to relevant information to determine the relationships among the mission variables to facilitate decision making.

Workflow—Tasks, procedural steps, organizations or people, required input and output information, and tools needed for each step in a business process.