

**BY ORDER OF THE
SECRETARY OF THE AIR FORCE**

AIR FORCE HANDBOOK 14-133

27 SEPTEMBER 2017



Intelligence

INTELLIGENCE ANALYSIS

ACCESSIBILITY: Publications and forms are available on the e-Publishing website at www.e-Publishing.af.mil for downloading or ordering.

RELEASABILITY: There are no releasability restrictions on this publication.

OPR: AF/A2OA

Certified by: AF/A2O
(Brig Gen Aaron M. Prupas)

Pages: 104

This Air Force Handbook (AFH) is the reference guide for conducting intelligence analysis as prescribed by Air Force Policy Directive (AFPD) 14-1, *Intelligence, Surveillance, and Reconnaissance (ISR) Planning, Resources and Operations* and supports the operational requirements and processes outlined under Air Force Instruction (AFI) 14-133, *Intelligence Analysis* and AFI 14-134, *Intelligence Analysis Production and Requirements Management*. This publication provides the definitions, guidelines, procedures and tools for intelligence analysis operations. It has application and use for Regular Component, Air Force Reserve (AFR), Air National Guard (ANG), and Department of the Air Force (AF) Civilians, except where noted otherwise. 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, *Management of Records*, and disposed of IAW the Air Force Records Disposition Schedule (RDS) in the Air Force Records Information Management System (AFRIMS). 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. This publication may be supplemented at any level, but all direct supplements are routed to the OPR of this publication for coordination prior to certification and approval. Major Commands (MAJCOMs) need to provide a copy to the OPR upon publication. The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the AF.

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Chapter 1

OVERVIEW

1.1. Purpose.

1.1.1. The responsibilities of the intelligence analyst have never been more important. The increasingly complex global environment demands analyst Airmen be steeped in tradecraft fundamentals, conversant on the Intelligence Community (IC) and other service capabilities, and prepared to tailor their analysis skills to the operational challenge at hand. The purpose of this non-directive publication is to help guide every analyst Airman in answering this call. It provides reference and instructional material for the analyst Airman working in the air, space, and/or cyber domains—whether junior or seasoned; officer, enlisted, or civilian; regular AF, reserve or guard; and serving AF, joint, national, or combined missions. The content of this publication is intentionally broad in nature, ranging from foundational doctrine and tactics, techniques, and procedures (TTPs) to analysis applications and lessons learned.

1.1.2. The long-term intent for this publication is to have it reside as a series of interactive and up-to-date web pages online, with links to IC and AF directives, templates, checklists, and other references. The online version will serve as a useful tool for the analyst Airman to quickly link to their specific analysis topic of interest. Upon publication of this handbook, the AF intends to initiate steps to transition this document to an online, interactive version.

1.1.3. The publication is organized with foundational information in six main chapters followed by useful lists, lessons learned, criteria, forms, guides, and an annotated bibliography in the attachments to aid analyst Airmen in their day-to-day missions. This document also includes links to appropriate websites with additional support material.

1.2. Intelligence Analysis. Intelligence analysis is a cognitive capability—both art and science—applying tools, judgments, processes, and tradecraft to data and information to create and deliver new intelligence, insights, and knowledge, with the goal of providing decision advantage to commanders, decision makers, and intelligence customers. Analysis is foundational to ISR, a key capability of ISR, a core competency in ISR, and integral to Global Integrated ISR (GIISR).

1.2.1. **Intelligence as a Foundation.** Analysis is a significant capability that extends across all AF ISR Enterprise activities in support of the full range of military operations and assigned national security missions. According to AF/A2's vision for the future of AF Intelligence, *AF ISR 2023: Delivering Decision Advantage*, a “fundamental job of AF ISR Airmen is to analyze, inform, and provide commanders at every level with the knowledge they need to prevent surprise, make decisions, command forces, and employ weapons.” AF intelligence analysis provides unique capabilities to focus on and address AF mission requirements. These same unique capabilities, coupled with an Airman's distinctive air/space/cyber perspective, serve to complement and fully integrate with analysis that supports broader defense and national mission requirements.

1.2.2. **Intelligence Analysis as a Capability.** Analysis is one of four enduring AF ISR capabilities, the other three being Collection Operations, Targeting, and Operations

Integration. **Note:** Refer to the *AF Future Operating Concept: A View of the AF in 2035*. The AF delivers intelligence analysis capability to meet Combatant Command (CCMD) and service needs. As with any other capability area, intelligence analysis is supported by the full range of Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities, and Policy (DOTMLPF-P).

1.2.2.1. Doctrine. Doctrinal considerations include analysis fundamental principles; analysis policy and procedures; common lexicon and terminology; recognized TTPs; and shared best practices and lessons learned.

1.2.2.2. Organization. AF ISR organizations range from the tactical to the strategic level, operating in a layered, distributed, and mutually supporting construct. AF initiatives to develop the intelligence analysis capability additionally impact the presentation of analyst Airmen to joint organizations such as combatant commands, joint task forces, and national analysis entities.

1.2.2.3. Training. Considerations include initial, mission, and continuation training; AF Specialty Code (AFSC) entry-, intermediate-, and advanced-level courses; and associated certification.

1.2.2.4. Materiel. Materiel concerns involve tools, technologies, systems, and architectures necessary to equip, operate, maintain, and support analysis activities.

1.2.2.5. Leadership and Education. The attention and priority of leadership is essential to growing the analysis capability. Additionally, undergraduate- and graduate-level education opportunities inside and outside of the AF play a major role.

1.2.2.6. Personnel. Planning and resourcing for qualified personnel are required to effectively conduct analysis missions.

1.2.2.7. Facilities. Cleared and adequately equipped buildings and other structures are required to conduct analysis.

1.2.2.8. Policy. Codified direction and guidance with clearly defined roles, responsibilities, processes, and terminology are fundamental to unity of effort across the AF ISR enterprise.

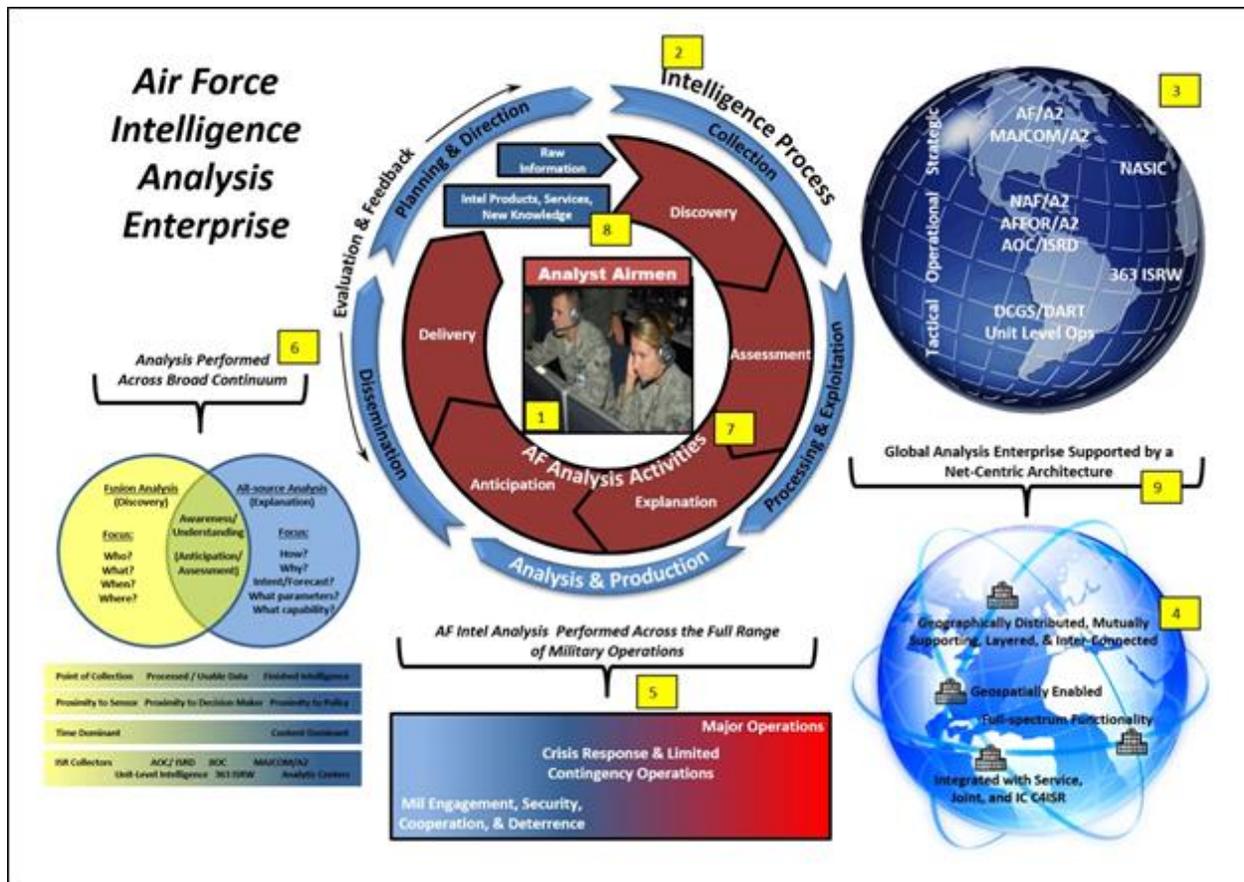
1.2.3. Intelligence Analysis as a Core Competency. ISR core competencies are the primary knowledge, skills, abilities, and behaviors required to perform AF ISR missions and ultimately enable decision advantage. The AF strives to collectively maintain sufficient expertise in its competencies. Because analysis is critical to and a driving factor in the other three enduring capabilities, all AF ISR professionals train in, maintain, and exercise, at a minimum, basic analytical capabilities and critical thinking skills wherever they are assigned. Additional information on this subject can be found in Career Field Education and Training Plan (CFETP) 14NX, Parts I and II, *AFSC 14NX Intelligence Officer Career Field Education and Training Plan* and CFETP 1N0X1, Parts I and II, *AFSC 1N0X1 All Source Intelligence Analyst Career Field Education and Training Plan*.

1.2.4. Intelligence Analysis and Global Integrated ISR (GIISR). As of 2017, GIISR is one of the AF's five enduring core missions as identified in strategic guidance, including the *AF Future Operating Concept* and the *USAF Strategic Master Plan*. A key strategic AF vector is to maintain a robust and flexible GIISR capability, supported by big data analytics. AF

strategic guidance highlights the need for the service to deepen its assessment of potential adversaries, professionalize ISR analysis, and restore analytic competencies. In turn, AF ISR vision and strategic planning establish analysis as one of five priorities for ISR and tie the AF’s mandate to deliver decision advantage to its ability to provide world-class, multi- and all-source intelligence across all domains. Accurate, timely, relevant intelligence analysis is not only integral to operations, but in many ways drives military operational decisions.

1.3. Operational Viewpoint-1 (OV-1). Figure 1.1, *AF Intelligence Analysis OV-1*, offers a high-level depiction of AF intelligence analysis. The OV-1 describes analysis operations, capabilities, and activities within the greater AF ISR Enterprise and explains how analysis supports GIISR operations. Together, analyst Airmen and the AF Intelligence Analysis Enterprise (AFIAE) ensure mission success and decision advantage now and into the future. Subsequent chapters of this publication explain in more detail the various elements of the OV-1.

Figure 1.1. AF Intelligence Analysis OV-1.



1.3.1. As indicated by Item 1 in Figure 1.1, at the heart of AF intelligence analysis is the cadre of officer, enlisted, and civilian ISR professionals who are trained in intelligence analysis and production. These analyst Airmen apply critical thinking and advanced analytical skills to turn information and raw data into timely, actionable, and relevant intelligence products and services, leading to improved knowledge.

1.3.2. Analyst Airmen perform their missions within the framework of the overall joint intelligence process of Planning and Direction, Collection, Processing and Exploitation,

Analysis and Production, Dissemination and Integration, and Evaluation and Feedback (PCPAD), as Item 2 of Figure 1.1 illustrates.

1.3.3. Item 3 in Figure 1.1 indicates that AF intelligence analysis is nested within the larger AF ISR Enterprise, a Total Force construct extending from squadron to headquarters level and ranging from tactical to strategic focus.

1.3.4. As depicted in Item 4 of Figure 1.1, analyst Airmen and the AF ISR Enterprise are mutually supporting; unified in policy, authorities, tenets, and strategy; and skilled in employing tools that enable AF, joint, and IC operations.

1.3.5. Analyst Airmen are trained in the art and science of analytical tradecraft and apply common tenets and standards across the full range of military operations, from major theater warfare to humanitarian assistance and disaster relief, as depicted in Item 5 of Figure 1.1.

1.3.6. To support these operations, analyst Airmen engage in various types of analysis, ranging from fusion analysis to all-source analysis (ASA), as shown in Item 6 of Figure 1.1. Fusion analysis entails quickly melding new information with already established baseline knowledge to meet specific operational needs. Comprehensive ASA is often less time sensitive and more focused on studying and understanding long-term trends and maintaining a depth of knowledge on a given subject. Each organization within the AF ISR Enterprise conducts analysis across this continuum - at varying levels based on key intelligence questions and customer requirements - to fill a gap in knowledge, or a need to improve understanding of the threat environment and/or adversary capabilities.

1.3.7. Common analysis activities performed across the AF ISR enterprise include Discovery, Assessment, Explanation, Anticipation, and Delivery, which operate in parallel with the PCPAD process, as depicted in Item 7 of Figure 1.1. Analyst Airmen identify relevant information in support of ongoing operations and requirements, classify and categorize information, and create estimates of capabilities and impacts.

1.3.8. As Item 8 of Figure 1.1 indicates, the derived knowledge is used to create descriptions in greater context to provide indications and warning regarding a specific problem set. Intelligence products and services are developed, tailored, and presented according to key intelligence questions or customer requirements.

1.3.9. As shown in Item 9 of Figure 1.1, the AF intelligence analysis concept and the AF ISR Enterprise are interconnected by both a net-centric architecture and analytic toolsets that ensure critical interface among AF operational elements, Joint, and IC analysts, thereby ensuring access to all relevant data in a geographically-enabled and integrated manner.

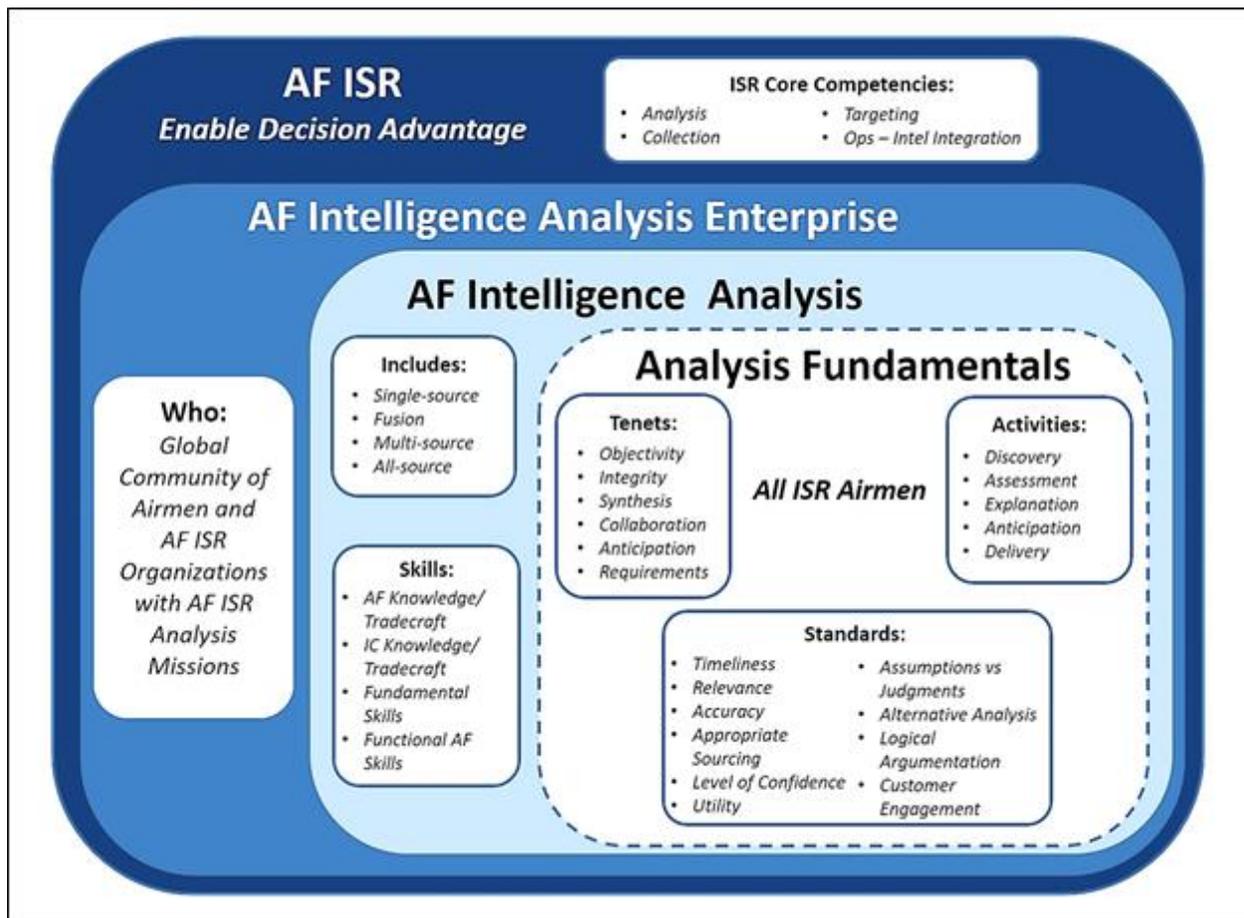
Chapter 2

AF INTELLIGENCE ANALYSIS ENTERPRISE

2.1. Analyst Airmen. An analyst Airman is an AF ISR professional who is skilled and qualified in tradecraft to perform the core competency of intelligence analysis across the air, space, or cyberspace domains. Certification criteria and programs vary based on unit and mission requirements. Analyst Airmen are bound by the professional standards for analysis established by the IC, and supplemented by AF standards and mission qualifications of the assigned ISR unit. Whether ISR professionals are analyst Airmen depends more on what they do than where they sit.

2.2. AF Intelligence Analysis Enterprise (AFIAE) . The enterprise is defined as the global community of analyst Airmen and the AF ISR organizations that employ the core competency of intelligence analysis. Figure 2.1, *AFIAE*, depicts how the AFIAE, intelligence analysis, and analysis fundamentals fit within the larger AF ISR Enterprise. Refer to **Chapter 4** for a detailed explanation of analysis fundamentals. Although not shown in Figure 2.1, the AF ISR Enterprise resides within the IC Enterprise. As a member of the IC, the AF contributes to IC analysis and production and also receives analysis and production support from other IC organizations.

Figure 2.1. AFIAE.



2.3. Analysis Spectrum . Analyst Airmen employ fundamental tenets, standards, and activities to perform analysis across a broad continuum for mission accomplishment. On one end of the analysis continuum are fusion and single-source analysis, with emphasis on timeliness over completeness. On the other end of the spectrum is comprehensive ASA, with less emphasis on rapidity, and greater emphasis on analytic content, depth, trends, technical, and other subject-matter expertise. This spectrum is depicted in Figure 2.2, *AF Spectrum of Intelligence Analysis*.

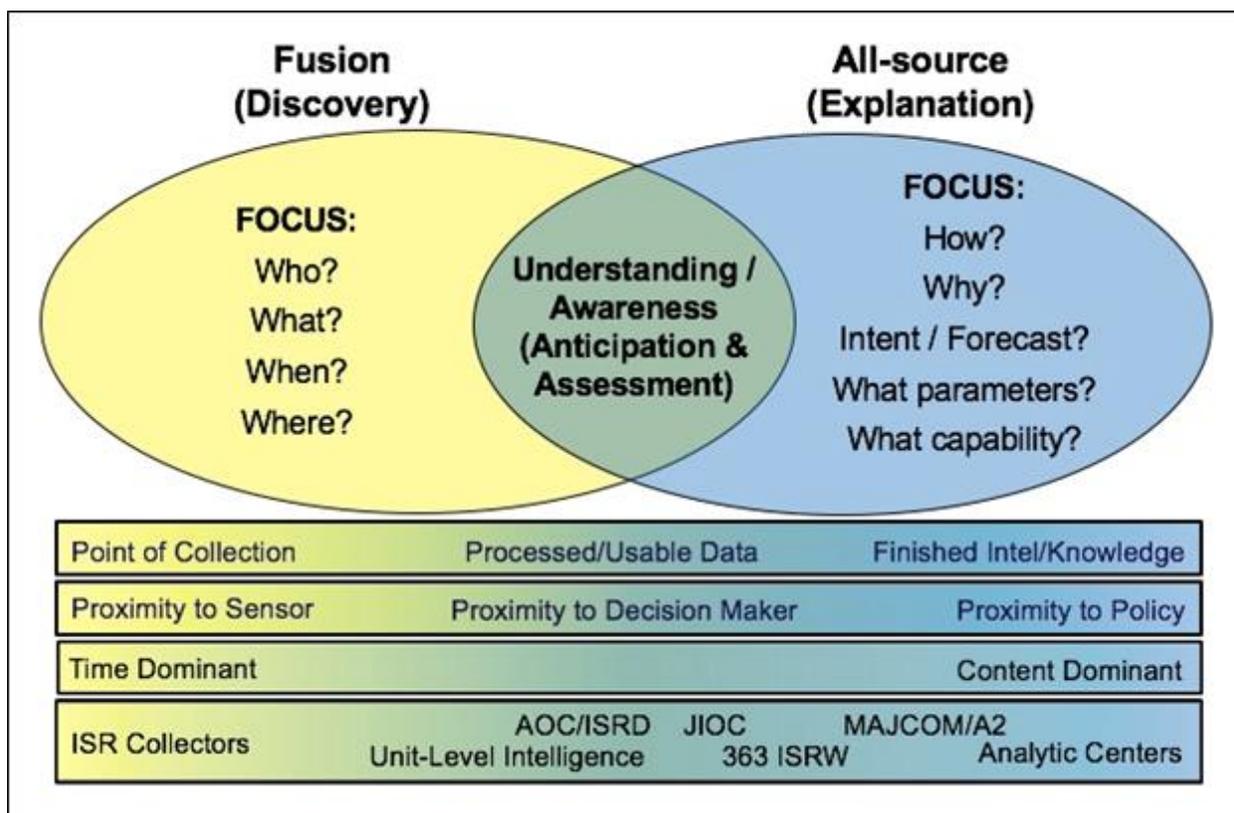
2.3.1. Single-Source Analysis (also called Exploitation). Intelligence analysis that employs a single source or expertise in a functional area to characterize events, people, or things. Such analysis is limited to describing, rather than evaluating, the topic of a particular analysis due to restrictions inherent in single-source intelligence collection, precluding the ability to provide fully contextualized intelligence assessments.

2.3.2. Fusion Analysis. Analysis in a time-sensitive environment in close proximity to the point of collection that entails quickly melding new information with baseline knowledge to meet a specific operational need. **Note:** Proximity does not refer to physical or geographic location but rather functional proximity to the collection step in the intelligence process (for example, a Distributed Common Ground System (DCGS) Analysis and Reporting Team (DART) at Beale AFB may conduct fusion analysis of an operational area on the opposite side of the globe). Emphasis is on the process of managing information and on timeliness over completeness. Fusion analysis generally has three components: 1) it usually includes more than one source; 2) it is time critical; and 3) it is performed to meet a commander's requirements or specific operational need.

2.3.3. Multi-Source Analysis (also called Multi-Intelligence (INT) Analysis). Intelligence analysis that makes use of more than one source when access to additional potential sources is limited by reasons of timeliness, system access, location, or security levels.

2.3.4. All-Source Analysis (ASA). Intelligence analysis that employs all available sources of data and information to enable the creation of new intelligence and knowledge.

Figure 2.2. AF Spectrum of Intelligence Analysis.



2.3.5. At the far left of the graphic, intelligence analysis units, such as AF DARTs, provide near-real-time (NRT), multi-source fusion analysis closest to the point of collection to improve collection, perform dynamic targeting, and support tactical warfighters. Moving to the right across the spectrum, the Air Operations Centers' (AOCs) ISR Divisions (ISRD), Joint Intelligence Operations Centers (JIOCs), and IC organizations provide multi-source and ASA with fewer time constraints and in close proximity to strategic-level commanders and decision-makers to facilitate battlespace awareness, operations planning and sustainment, and policy decisions. Since the late 1990s, changes in technology, operational needs, and CCMD requirements have blurred the once distinct lines of this analysis spectrum. Today AFIAE organizations have evolved to delivery across the spectrum – rather than delivering within any single niche.

2.4. Characteristics of the AF Intelligence Analysis Enterprise (AFIAE).

2.4.1. Layered. Intelligence analysis capabilities reside at multiple levels of command—unit, (squadron, group, wing), Numbered AF (NAF), MAJCOM, and AF-level. Additional levels, including joint and Department of Defense (DoD), exist beyond the AF. Table 2.1, *Layers of Analysis*, identifies the various layers of analysis organizations along with their general analytical focus, typical customers, and timeliness, as modern processes and technologies enable organizations to extend their focus and timelines outside traditional norms. While representative, this table is not a complete listing of all AF analysis organizations.

Table 2.1. Layers of Analysis.

Organization	Focus	Customer	Timeline
CSA (DIA, NSA, NGA, NRO)	Strategic	National leadership, DoD, IC	Days/Months; Mission dependent RT/NRT
CCMD JIOC/JTF	Strategic/Operational	CCMD, Joint forces	Days/Months
Service Intelligence Center (NASIC)	Strategic/Operational/ Tactical	National leadership, CCMD, JTF, DoD, IC, AF all levels, acquisition community	Hours/Days/Months
MAJCOM/A2	Strategic/Operational	MAJCOM staff and supported units	Days/Months
Acquisition Centers	Strategic/Operational	AF/IC leadership, MAJCOMs, acquisition program/project mgrs	Days/Months
NAF/A2, AFFOR/A2, AOC ISR Division	Operational/Tactical	CCMD, JTF/Joint forces, AF NAF and below units	Hours/Days
ISRW	Operational/Tactical	NAF and below units	Hours/Days/Months
DCGS	Operational/Tactical	CFACC, JTF, DoD, IC, AF units	RT/NRT to 72 Hours
Unit Level Intel & RPA SOC	Tactical	AF and other service units	RT/NRT to 72 Hours
AF: Air Force A2: Director of Intelligence AFFOR: Air Force Forces AOC: Air Operations Center CCMD: Combatant Command CFACC: Combined Forces Air Component Commander CSA: Combat Support Agency DCGS: Distributed Command Ground System DIA: Defense Intelligence Agency DoD: Department of Defense IC: Intelligence Community ISR: Intelligence, Surveillance & Reconnaissance ISRW: ISR Wing JIOC: Joint Intelligence Operations Center JTF: Joint Task Force MAJCOM: Major Command Mgrs: Managers NAF: Numbered Air Force NASIC: National Air and Space Intelligence Center NGA: National Geospatial-Intelligence Agency NRO: National Reconnaissance Agency NRT: Near-real-time NSA: National Security Agency RPA: Remotely Piloted Aircraft RT: Real-time SOC: Squadron Operations Center			

2.4.1.1. Starting at the bottom of Table 2.1, unit-level intelligence organizations focus on tactical analysis needs (e.g., location, movement, and readiness of enemy forces) for their tactical-level customers in the AF and other services. Unit-level intelligence organizations typically operate under short timelines from real-time or NRT to several days out.

2.4.1.2. DCGS units are tactically and operationally focused. Within each DCGS unit, the DART conducts analysis for their respective CFACC as well as other IC and DoD customers. DARTs operate in a time sensitive environment but can support the customer up to the operational level of ISR planning. Their main emphasis is fusion analysis.

2.4.1.3. ISR wings provide both operational and tactical level intelligence analysis, with timelines ranging from hours to months. In particular, the 363 ISR Wing (ISRW) is dedicated to providing all-source analysis and targeting intelligence to NAFs and below across the entire AF.

2.4.1.4. NAF/A2s, AF Forces (AFFOR)/A2, and AOC ISRDs are operationally and tactically focused in support of their associated CCMD, their joint task force (JTF), and/or their units. Their typical timelines are hours to days.

2.4.1.5. Intelligence offices within Acquisition Centers, such as the Space and Missile Systems Center (SMC), AF Life Cycle Management Center (AFLCMC) and AF Research Laboratory (AFRL), provide both strategic and operational intelligence for acquisition program managers, project managers, MAJCOMs, and AF/IC leadership, with timelines that range from days to months.

2.4.1.6. MAJCOM/A2s provide strategic and operational analyses for their MAJCOM staff and supported units, usually ranging from days to months. The Air Mobility Command (AMC)/A2 is unique in that its Air Intelligence Squadron (AIS) and the 204th Intelligence Squadron (ANG) provide direct analytic support to 18 AF and subordinate units in the conduct of their rapid global mobility missions. Additionally, U.S. Air Forces in Europe & Air Forces Africa (USAFE-AFAFRICA) and Pacific Air Forces (PACAF) are unique as Component MAJCOMs (C-MAJCOMs) in that they have the responsibility of analytically representing the Joint Force Air Component Commander to the Joint Force Commander.

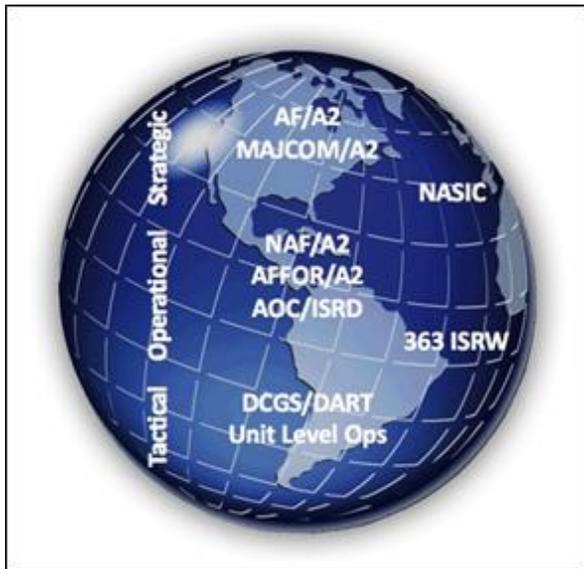
2.4.1.7. The National Air and Space Intelligence Center (NASIC) conducts strategic, operational, and tactical analysis for a broad range of customers in the AF, DoD, and IC as well as and including national leadership and the acquisition community. Their timelines extend from short-term to long-term, depending on the customer's needs. Whereas the 363 ISRW is the primary AF organization that conducts tactical intelligence analysis, NASIC is the primary AF organization focused on strategic intelligence. Both the 363 ISRW and NASIC provide significant analysis at the operational level, as well. Further, while other AF layers conduct analysis as part of their mission, analysis is a primary mission of the 363 ISRW and NASIC.

2.4.1.8. Joint intelligence organizations at CCMDs and JTFs conduct strategic and operational analysis in support of their respective regional and functional commands. The timelines of their analysis range from days to months.

2.4.1.9. Combat Support Agencies (CSAs) focus primarily on strategic analysis for national leadership, DoD, and the IC. Although they usually operate on timelines ranging from days to months, they also provide real-time and near-real-time analysis as requirements dictate.

2.4.2. Distributed and Mutually Supporting. In addition to being layered, analysis responsibilities are distributed across geographic regions and functional areas in the AF (see Figure 2.3, *Layered, Distributed, and Mutually Supporting Nature of AFIAE*). Analysis organizations in every layer and every region/function are interconnected and have access to each other. Organizations collaborate and share expertise to ensure the most accurate, timely analysis is provided to answer intelligence requirements. The mutually supporting nature of the AFIAE includes enterprise partners, such as the AF Office of Special Investigations (AFOSI).

Figure 2.3. Layered, Distributed, and Mutually Supporting Nature of AFIAE.



Chapter 3

THE NATIONAL INTELLIGENCE ANALYSIS COMMUNITY AND THE AIR FORCE

3.1. The Intelligence Community. The IC is a coalition of 17 agencies and organizations, including the Office of the Director of National Intelligence (ODNI), within the Executive Branch that work both independently and collaboratively to gather and analyze the intelligence necessary to conduct foreign relations and national security activities. See Attachment 6, Table A6.1, *Members of the IC*, for a complete list of IC organizations.

3.1.1. The Director of National Intelligence (DNI) has overall responsibility for intelligence support to the President and the day-to-day management of the IC. AF analysis falls under the governance and direction of the DNI. The AF is an active participant in governance and oversight forums and follows the analytical priorities, standards, processes, and procedures established by the IC. The DNI issues guidance for analysis and production through IC Directives (ICDs), IC Standards (ICs), DNI memorandums, and other directive documents. The IC documents that most often impact AF analysis are identified in Attachment 6, Table A6.2, *Common IC and DoD Analysis References*.

3.1.2. DoD Intelligence.

3.1.2.1. The Secretary of Defense (SecDef) is responsible for the DoD portion of the IC. The Under Secretary of Defense for Intelligence (USD(I)) serves as the senior defense intelligence, counterintelligence, and security official below the SecDef and Deputy SecDef. For defense intelligence analysis the USD(I):

3.1.2.1.1. Provides oversight and direction for analysis capabilities to ensure effective support to the DoD mission.

3.1.2.1.2. Ensures analysis is aligned with IC and DoD analytical concepts, methodologies, and priorities.

3.1.2.1.3. Establishes DoD all-source analysis policy and oversees the implementation of DoD all-source analysis plans, programs, and performance.

3.1.2.1.4. Provides strategic guidance to the Defense Intelligence All-Source Analysis Enterprise (DIAAE), the collective set of all DoD organizations that execute all-source analysis activities in production of defense intelligence.

3.1.2.1.5. Develops and maintains the consolidated set of Defense Intelligence priorities that guides DIAAE analysis and reflects the intelligence needs of all Defense Intelligence consumers.

3.1.2.1.6. Establishes the DIAAE Board of Governors (BOG), a body of representatives from the DIAAE organizations that provides a forum for addressing issues, improving transparency, implementing strategies, and making resource recommendations across the DIAAE.

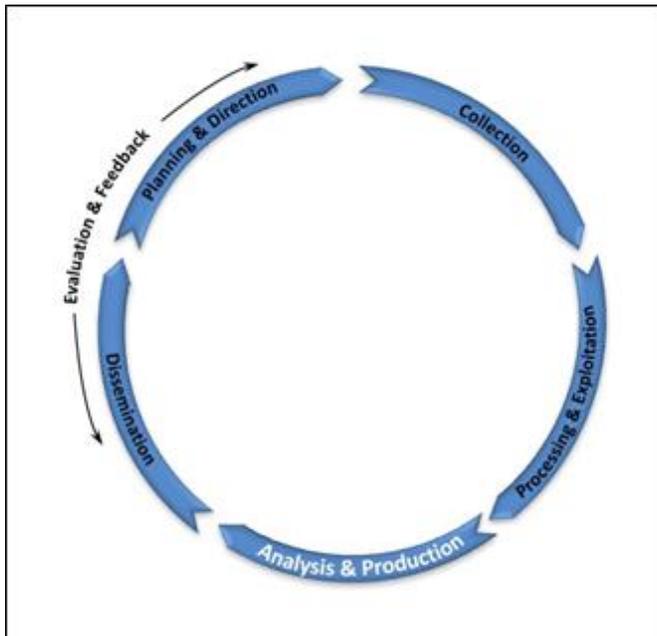
3.1.2.2. The AF participates in the DIAAE BOG and other DoD analysis forums and adheres to DoD analysis-related policies. Within the DoD, the agency with the largest responsibility for promulgating ASA guidance is the Defense Intelligence Agency (DIA).

DIA governs ASA responsibilities, policies, priorities, and relationships across the DoD IAW DoD Instruction (DoDI) 3115.17 and as the DoD Functional Manager for ASA. Additionally, DIA manages the Defense Intelligence Analysis Program (DIAP), with the primary goal of maximizing enterprise efficiencies through clearly defined ASA and production responsibilities among DIA, CCMDs, and service intelligence centers.

3.1.2.3. In addition to ASA and production conducted within the DIAP, the AF conducts single-source analysis, e.g., signals intelligence, human intelligence, geospatial intelligence, etc., that is additionally governed by directives established by respective lead DoD agencies. AF production that supports these single-source disciplines adheres to AF guidance as well as standards set forth by the respective DoD lead agencies. Further, the DoD has established overarching policy related to acquisition intelligence, to which the AF adheres. If a conflict arises between the AF and IC agency guidance, IC guidance takes precedence. See Attachment 6, Table A6.2, *Common IC and DoD Analysis References*, for a list of common DoD analysis-related documents.

3.1.3. Military Services. Each military service has a senior intelligence officer (SIO) that oversees intelligence policy, planning, programming, and activities on behalf of the service chief. The AF SIO is the Deputy Chief of Staff (DCS) for ISR, also known as the AF/A2. Each service is authorized one service intelligence center, also called an intelligence analysis center. The AF's service intelligence center is NASIC. The AF has assigned the Air Combat Command (ACC) as its lead MAJCOM for the GIISR capability, which includes intelligence analysis. Similarly, other military services have assigned significant analysis responsibilities to various organizations. All services routinely reach out to each other for service-unique expertise and collaboration in addressing analysis requirements. Refer to Attachment 6, Table A6, *Major Intelligence Analysis Entities of the Military Services*, and Table A6.4, *Common Analysis Organizations*, for a breakdown of the major intelligence analysis entities in each military service and a list of service and other government agencies organized according to the primary analysis they conduct.

3.2. Intelligence Analysis and the Joint Intelligence Process. As highlighted in Joint Publication (JP) 2-0, *Joint Intelligence*, the intelligence process is comprised of six interrelated categories, collectively referred to as PCPAD. Refer to Figure 3.1, *Joint Intelligence Process*, for a graphic depiction of the PCPAD cycle. The PCPAD process is universally recognized throughout the IC and linked to the DoD Joint Capability Area (JCA) of Battlespace Awareness. JCAs provide a common framework for defining needs, analyzing operational gaps, and conducting planning and, by extension, programming for DoD capabilities.

Figure 3.1. Joint Intelligence Process.

3.2.1. Planning and Direction is dependent on the ability to synchronize and integrate the activities of collection, processing, exploitation, analysis and dissemination resources to meet Battlespace Awareness information requirements. Planning and direction activities include, but are not limited to: the identification and prioritization of intelligence requirements; the development of concepts of intelligence operations and architectures required to support the commander's mission; tasking subordinate intelligence elements for the collection of information or the production of finished intelligence; submitting requests for additional capabilities to higher headquarters; and submitting requests for collection, exploitation, or all-source production support to external, supporting intelligence entities. Planning and direction occurs continuously and allows for the prioritization of intelligence support across all ongoing operations and simultaneous planning efforts.

3.2.2. Collection is the ability to gather data and obtain required information to satisfy requirements. Collection is managed by collection managers, whose duties include identifying the most appropriate available assets and then tasking those assets to conduct collection missions. Collection managers also develop and coordinate sensor employment guidance, exercise authoritative control of specific collection operations, revise collection activities as required, monitor the overall satisfaction of requirements, and assess the effectiveness of the collection plan to satisfy the original and evolving intelligence need.

3.2.3. Processing and Exploitation involves the transformation of collected information into formats suitable for further analysis and/or action by man or machine. During processing and exploitation, raw collected data are converted into forms that can be readily used by commanders, decision-makers at all levels, intelligence analysts, and other consumers. Processing and exploitation includes first-phase imagery exploitation, data conversion and correlation, document and media translation, and signal decryption, as well as reporting the results of these actions to analysis and production elements.

3.2.4. Analysis and Production involves the integration, evaluation, and interpretation of information obtained from available sources to develop intelligence and forecast the future state to enable situational awareness and provide new knowledge/actionable information. The AF has identified five activities that occur within this category of the PCPAD process: Discovery, Assessment, Explanation, Anticipation, and Delivery. See [Chapter 4](#) for a description of each, along with an explanation of how it relates to broader AF ISR activities, and the tenets and standards to which analyst Airmen adhere in order to carry out these five analysis activities.

3.2.5. Dissemination and Integration focuses on the ability to present, distribute, or make available to military and national decision-makers the intelligence, information and environmental content and products that enable understanding of the operational/physical environment. Personal, networked, and database data transfers are all means of dissemination. The diversity of dissemination paths requires a high degree of communications and system interoperability among joint and multinational forces, component commands, DoD organizations, and the interagency community.

3.2.6. Evaluation and Feedback occur continuously throughout the intelligence process. It requires a collaborative dialogue among intelligence planners, collection managers, collectors, analysts, intelligence systems architects, and customers. The intent of evaluation and feedback is to identify potential problems as early as possible to minimize information gaps and mitigate capability shortfalls.

3.2.7. Although “analysis” is specifically identified in the Analysis and Production category of PCPAD, most intelligence analysts agree that analysis takes place in all categories of the joint intelligence process.

3.3. IC Funding. The National Intelligence Program (NIP), administered by the DNI, provides guidance and funding for a broad range of ISR activities within the IC. NIP is divided into sub-programs, including the General Defense Intelligence Program (GDIP) for ASA and other specific intelligence activities, the Consolidated Cryptologic Program (CCP) for signals intelligence activities, and the National Geospatial-Intelligence Program (NGP) for geospatial intelligence activities. Some AF intelligence organizations receive funding through these NIP sources for certain single-source and ASA missions and are required to adhere to the analysis and production guidelines and standards associated with the funding. However, the majority of AF analysis activities, particularly at and below wing level, are funded through the Military Intelligence Program (MIP) for mission execution. For details, refer to ICD 104, *National Intelligence Program (NIP) Budget Formulation and Justification, Execution, and Performance Evaluation* and DoDD 5205.12, *Military Intelligence Program (MIP)*.

3.4. Quality Analysis Programs . The IC and AF offer a variety of analyst enrichment opportunities to broaden and deepen an analyst's experience and expertise. Some examples include the AF Quality of Analysis Program, DNI Quality of Analysis Program, National Intelligence University, DIA's Intelligence Community Advanced Analytical Program, and the AF Institute of Technology.

3.5. AF National Tactical Integration (AF NTI) . The AF NTI program integrates U.S. Signals Intelligence (SIGINT) System resources with theater air and space components to ensure seamless support. The AF NTI team shifts the focus of national SIGINT performance from discovering and reporting data to collaboratively generating actionable intelligence for the Joint

Force Air Component Commander. The AF NTI team capitalizes on data acquisition capabilities, existing databases and datalinks of multiple national SIGINT sources, and access to AF analysts in the AOC, National Cryptologic Centers, and AF intelligence production organizations (e.g., NASIC). While the program remains predominately SIGINT focused, the AF NTI enterprise also has the ability to leverage all AF ISR capabilities. **Note:** Refer to AF ISR Agency Instruction (AFISRAI) 14-153 Volume 3, 480 ISRW Supplement, *Air Force Distributed Common Ground System (AF DCGS) Operations Procedures*.

Chapter 4

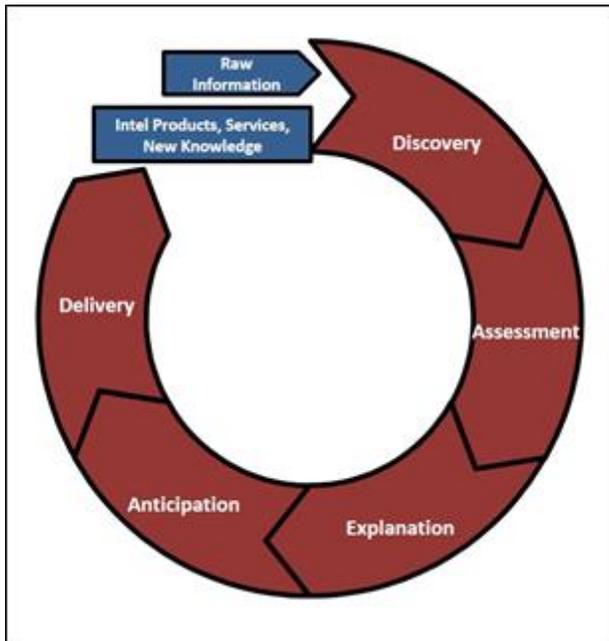
ANALYSIS FUNDAMENTALS—ACTIVITIES, TENETS, & STANDARDS

4.1. AF ISR Capabilities . The AF *GIISR Core Function Concept* highlights five enduring core capabilities (refer to Figure 4.1, *Enduring GIISR Capabilities*) that directly support the JCA of Battlespace Awareness. As previously mentioned, this JCA delineation is key for defining analysis-specific needs, analyzing gaps, and for planning and programming against AF analytic requirements. Similar to the joint PCPAD intelligence process discussed in [Chapter 3](#), analysis is an essential and integral component of each of the five enduring GIISR capabilities.

Figure 4.1. Enduring GIISR Capabilities.



4.2. AF Intelligence Analysis Activities . As depicted in Figure 4.2, *AF Intelligence Analysis Activities*, analyst Airmen commonly perform five activities in support of the GIISR enduring capabilities mentioned above.

Figure 4.2. AF Intelligence Analysis Activities.

4.2.1. Discovery is the ability to research, select, manipulate, and correlate data from multiple sources to identify information relevant to ongoing operations and requirements. Discovery is about researching, better organizing, and using the data we already possess; it is also about finding previously hidden patterns and anomalies.

4.2.2. Assessment is the ability to provide focused examination of data and information about an object or an event, to classify and categorize it, and to assess its reliability and credibility in order to create estimates of capabilities and impacts. Assessment is how intelligence determines what our consumers ought to be concerned with.

4.2.3. Explanation is the ability to examine events and derive knowledge and insight from the interrelated data in order to create descriptions and propose significance in greater context. Explanation is how intelligence provides consumers with narrative stories, relates events to broader situations, and identifies the core of “what is going on.”

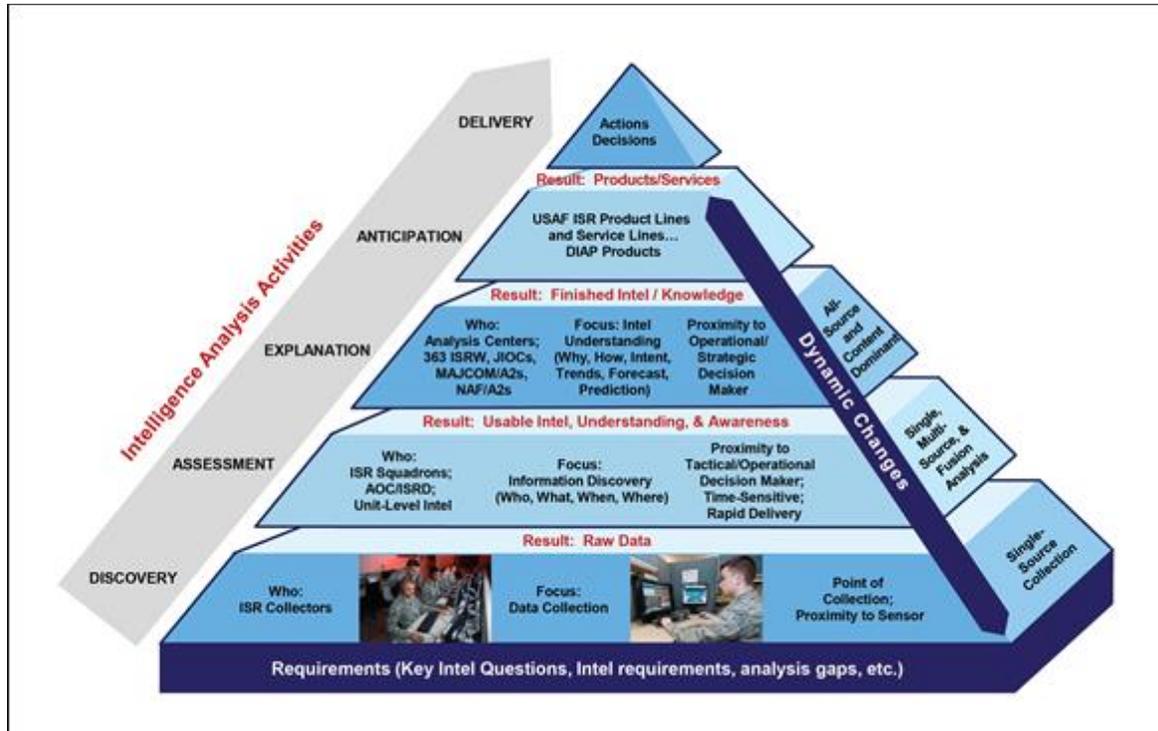
4.2.4. Anticipation is the ability to warn and describe future states of the environment based on the manipulation and synthesis of past and present data. Anticipation includes near-term warning and longer-term forecasting to alert and prepare decision makers for events that could be relevant to their responsibilities.

4.2.5. Delivery is the ability to develop, tailor, and present intelligence products and services according to customer requirements and preferences. Delivery is about classic intelligence products—from tactical reports to in-depth intelligence estimates—and a myriad of intelligence services, ranging from interactive displays and operational pictures, to multimedia crew threat briefings and tablet-embedded, dynamic intelligence assessments, enabling real-time analyst response to requests for information. Delivery is often referred to as production and/or dissemination.

4.2.6. As Figure 4.3, *AF Intelligence Analysis Continuum*, depicts, analysis activities take place across a continuum within the AF, starting with the development of requirements;

progressing through data collection, information discovery, and intelligence understanding; and culminating in services and products that impact commanders' decisions and military actions.

Figure 4.3. AF Intelligence Analysis Continuum.



4.3. AF Intelligence Analysis Tenets. AF tenets of analysis derive from and support IC, joint intelligence, and broader ISR principles, while simultaneously emphasizing analysis attributes of particular interest and priority within the AF. These are the overarching principles held to be true and in common by AF ISR professionals. Collectively, these six tenets cover the most important beliefs about AF intelligence analysis. According to AFI 14-133, while effort should be taken to apply all of these tenets, situations may dictate not all of them being used. The following descriptions are excerpts from AFI 14-133.

4.3.1. Objectivity. Analysis should be based on fact and be clear and truthful about what is *known versus what is judged*. It should *not be distorted by emotion or personal or organizational bias* and shall *be independent of command or political considerations*. Further, it should clearly delineate underlying intelligence, assumptions, and judgments. Analysts should address alternative perspectives and contrary information and avoid being unduly constrained by previous judgments.

4.3.2. Integrity. While closely linked to objectivity, integrity involves a broader focus on all activities, standards, and processes associated with AF intelligence analysis. Integrity calls for *complete honesty* and *reliability in analysis* combined with firm adherence to a code of *professional ethics* and *tradecraft standards* such as *accuracy*, *timeliness*, and *customer responsiveness*. Integrity includes explaining changes in previous analytic judgments, as well as addressing significant differences in judgment among various U.S. analytic elements.

As stated in JP 2-0, integrity is “the cardinal element in intelligence analysis and reporting, and the foundation on which credibility with the intelligence consumer is built.”

4.3.3. Synthesis. AF intelligence analysis requires analysts to *use all available sources of information to maximize completeness*. Analysts should also identify information gaps and, where they exist, they should coordinate with collectors to develop access and collection strategies. Synthesis requires well-honed tradecraft skills, including critical thinking, alternative analysis, and the ability to take the perspective of the adversary. Compatible, service-oriented information technology architectures and tools are also key to facilitating synthesis.

4.3.4. Collaboration. Analysts must *actively solicit opinions and assessments from other analysts and seek to share ideas*. Data, information, and intelligence must be broadly accessed and shared. *Collaboration* should take place internally within the AFIAE, across the IC, and with allies, academia, and other entities outside the IC, when feasible. *Effective collaboration facilitates maximum synthesis*.

4.3.5. Anticipation. Analysis is far more than trend assessment; its true *value resides in warning* and forecasting to be relevant to *decision making, warfighting, operations, and acquisition*. Because *information gaps routinely limit our ability to predict with complete accuracy*, it is incumbent on analysts to effectively apply tradecraft standards such as alternative analysis, levels of confidence, assumptions vs. judgments, and appropriate sourcing. Intelligence warning and forecasting are not exact; however, analysts should utilize the most recent data/information for all warning or forecast-related analysis.

4.3.6. Requirements. The AF intelligence analysis mission is motivated by *continuous engagement with customers* to comprehend dynamic needs. Customer requirements can be solicited from a variety of sources such as: understanding their operations; holding working groups or technical exchanges with them; anticipating and listening to their questions; responding to feedback; and addressing documented need statements and derivative data needs. Effectively meeting analysis mission requirements demands an effective balance of customer familiarity, interpreted needs, collaboration, and analytical judgment.

4.4. AF Standards of Intelligence Analysis . The AF has established ten standards by which it measures and assesses analytic excellence and readiness. AF tradecraft standards align with IC standards; however, the AF incorporates two additional attributes: timeliness and customer engagement. AF standards also are in parallel with joint intelligence and GIISR guidance. These standards are used by the AF ISR Enterprise to conduct analysis operations and are integrated into AF Inspection System criteria. Attachment 4 contains a sample methodology and form to evaluate these standards. The following descriptions are excerpts from AFI 14-133. Refer to the AFI for additional details.

4.4.1. Timeliness. Analysis *must be timely* to impact planning, mission objectives, operations and otherwise aid in commanders' decisions. The aim is to deliver information and knowledge at the earliest time and place to enable customers to effectively make decisions and take action.

4.4.2. Appropriate Sourcing. Analysis *cites all sources used*, when feasible, and includes an *objective assessment of the quality, credibility, and reliability of the underlying sources*.

4.4.3. Accuracy. Analysis will *make the most accurate judgments and assessments possible*, based on the intelligence available and in light of known information gaps. A retrospective assessment of the accuracy of a judgment will help identify biases and other potential tradecraft errors for correction in future analysis.

4.4.4. Level of Confidence. To help qualify accuracy and to present analysis in a uniform and consistent manner across the AF, analysts will *indicate the degree of confidence/certainty* associated with analytic judgments and conclusions to the best of their ability, given currently available intelligence. AFI 14-133, Table 3.1, *Confidence Levels in Analytic Judgment*, provides guidance for analysts to use in assigning levels of confidence/certainty.

4.4.5. Assumptions vs. Judgments. Analysis *clearly distinguishes among underlying intelligence, analyst assumptions, and analyst judgments*.

4.4.6. Alternative Analysis. Analysis will *incorporate plausible alternative assessments, judgments, or hypotheses, particularly when major judgments contend with significant uncertainties, complexity, or a lack of available intelligence*, or when low probability events could produce high impact results. Whenever possible, analysis should be vetted through at least one other intelligence professional to minimize individual analyst bias.

4.4.7. Relevance. *Analysis is key to decision making*, warfighting, and acquisition efforts. Analysts should make every effort to ensure products and services fulfill the customer's intent and request, while also ensuring products and services are available to others for use beyond the original intent.

4.4.8. Logical Argumentation. Analysis will employ coherent and logical reasoning techniques, be supported by all key relevant information, and be internally consistent.

4.4.9. Utility. AF analytic products and services will *use formats* (written, verbal, visual, etc.) *that best enable understanding by the customer*. Intelligence analysis will be disseminated at the lowest classification and widest releasability levels without jeopardizing its usefulness to the customer.

4.4.10. Customer Engagement. Analysis should fully address customer requirements within time constraints and in a manner most useful. Analyst Airmen will be responsive to customer feedback. While challenging to evaluate, this tradecraft standard is foundational to AF intelligence analysis.

4.5. Beyond the Checklist . The list of analysis activities, tenets, and standards lend themselves to a checklist mentality. This is especially true with the standards, that are the criteria by which the AF evaluates analytical readiness. However, it is vital to remember that intelligence analysis is *not just a science but also an art*. Following good tradecraft practices aids in developing a sound analytic process and foundation. However, the analyst cannot become paralyzed in making an assessment if all the tradecraft pieces do not fully align. Mistakes will be made – have been made – but we cannot fail to provide decision makers with our best assessment based on what information we had at the time. The analyst Airman learns the fundamentals but then spends many hours of intense effort honing and refining application of the fundamentals in the determined pursuit of excellence. Analysts need to express interest in the analysis activities and be eager to revisit any or all of them for the sake of providing more accurate, mission-relevant analysis for each customer requirement. Analysts need to embrace the

tenets and standards such that they become an intuitive and natural part of all analytical activities. Analysts, supervisors, and commanders also need to hold each other accountable to the tenets and standards.

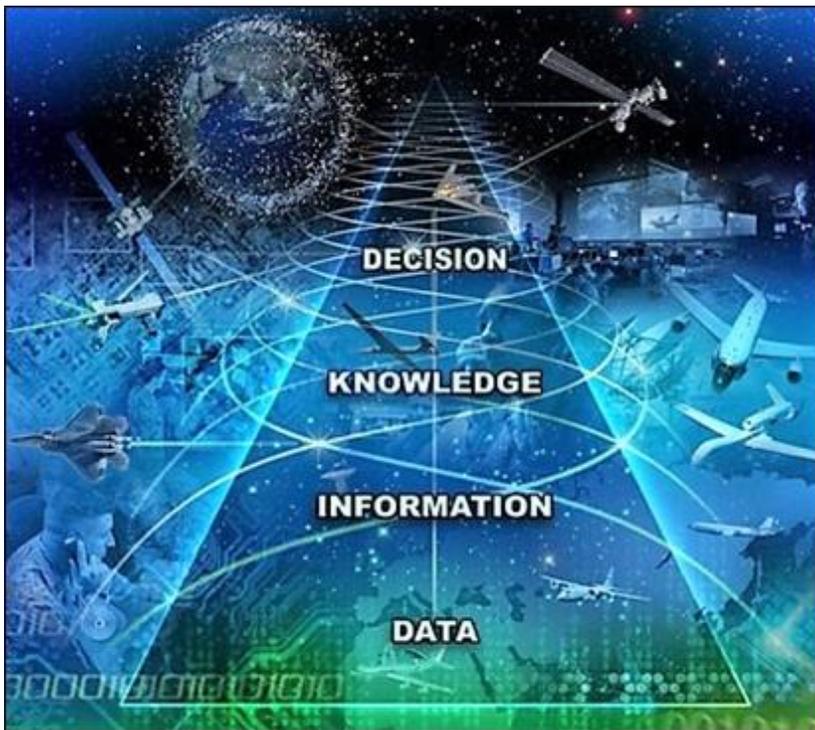
4.6. AF Analytic Ombuds . The AF Analytic Ombuds is the AF representative that responds to concerns raised by intelligence analysts about adherence to AF analysis tenets, standards, and production guidelines. The Ombuds addresses such concerns as lack of objectivity, bias, politicization, or other issues in applying analysis tenets and standards. The AF/A2 appoints the AF Analytic Ombuds in accordance with DNI guidance. In addition, NASIC and each MAJCOM/A2 designate an individual or office to serve as their organization's Analytic Ombuds IAW AFI 14-133.

Chapter 5

ANALYSIS SKILLS AND TRADECRAFT

5.1. Overview. Intelligence analysis is what transforms data into the information and knowledge necessary for warfighters and decision makers to decide and act (refer to Figure 5.1, *Transforming Data to Decisions*). While technology can assist and enable these transformations of data, without human cognition (people “in-the-loop”) it is doomed to fail. There are things technology alone is not capable of. The things technology can do depend upon human analysts creating and updating the analytic models, databases, and displays that can be automated or made more efficient. The most basic and necessary unit in intelligence analysis is the analyst. **Note:** Attachment 7 identifies some online resources that contain additional information on analysis skills and tradecraft topics covered in this chapter.

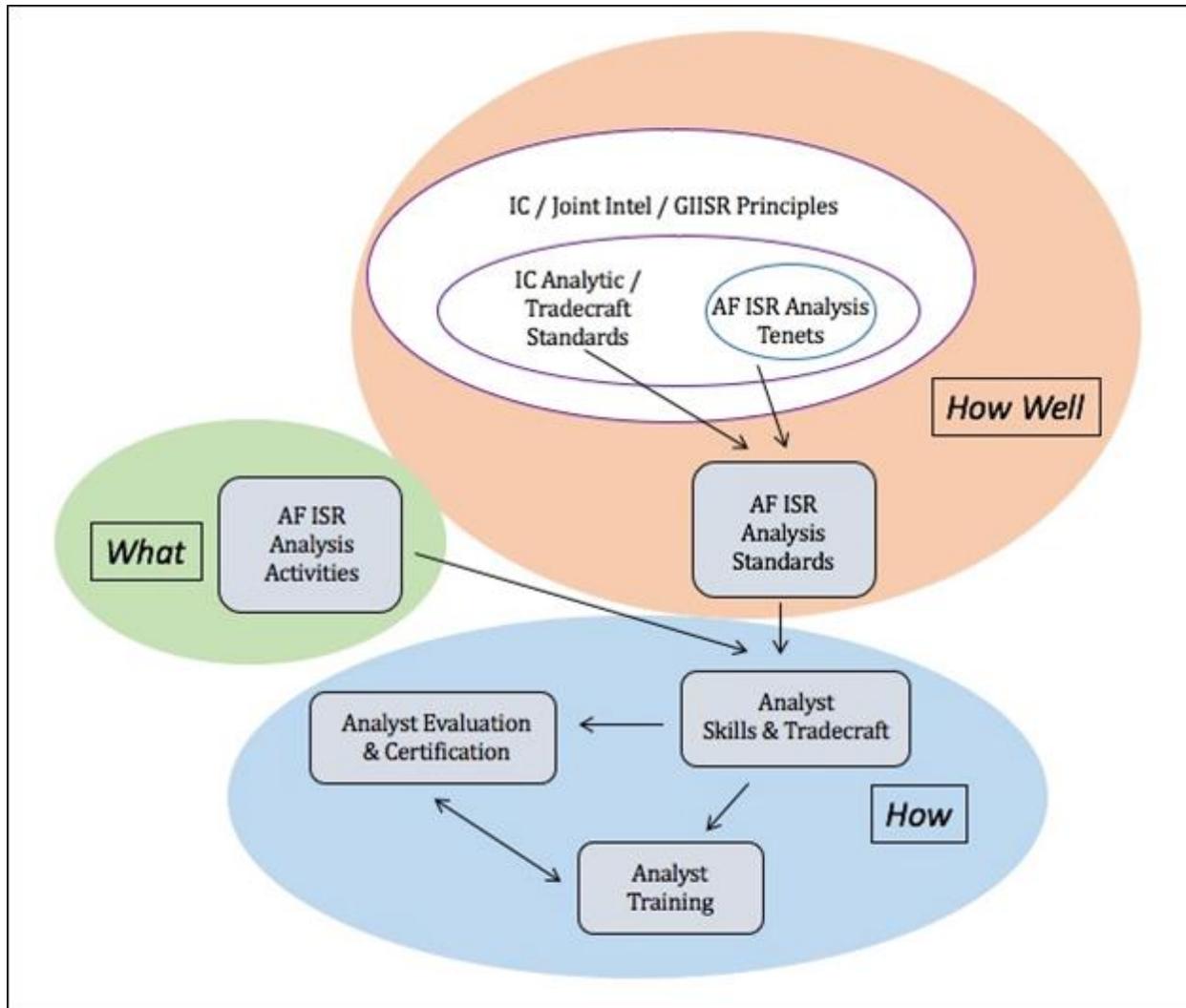
Figure 5.1. Transforming Data to Decisions.



5.1.1. Definitions and Relationships. An analysis skill is a specific ability or collection of capabilities required to competently conduct analysis that is acquired through training and/or experience. Analysis tradecraft is an established or prescribed analysis technique, practice, or systematic process. The relationship and role of intelligence analysis skills and tradecraft is illustrated in Figure 5.2, *Relationship and Role of Intelligence Analysis Skills and Tradecraft*. Whereas the five AF intelligence analysis activities (discovery, assessment, explanation, anticipation, and delivery) comprise “what” analyst Airmen do and analysis tenets/standards establish how well analysis is done, analysis skills and tradecraft are the “how” of analysis. Analysis activities, tenets, and standards drive the skills and tradecraft for which analyst Airmen need to be trained. In turn, analysis skills and tradecraft determine training, evaluation, and certification requirements. Analyst skills and tradecraft highlighted

in this publication are time-tested, repeatable, and proven effective for structured AF intelligence analysis.

Figure 5.2. Relationship and Role of Intelligence Analysis Skills and Tradecraft.



5.1.2. Analysis Transformation.

5.1.2.1. In 2004, Congress passed the Intelligence Reform and Terrorism Prevention Act (IRTPA) in response to several commissions and hearings in the aftermath of 9/11. That act is known for establishing the ODNI; however, the act also set forth a number of tasks and objectives for the DNI to accomplish to improve intelligence and prevent or mitigate the failures that led to 9/11. It is worth highlighting that a majority of those tasks and objectives relate to the conduct of intelligence analysis: Congress directed that U.S. intelligence analysis needed to be professionalized, have set standards, and address many shortcomings in skills and tradecraft through increased guidance and training. Thomas Fingar, the first Deputy DNI for Analysis, later reflected that up until IRTPA and the subsequent transformation of analysis in the IC, analysis had largely been a craft in the IC: skills learned only on-the-job, under the tutelage of ‘journeymen’ and ‘masters,’

where the language and processes used could differ from shop to shop, region to region, and advancement was informally recognized and locally derived. **Note:** For more information on this topic, see Thomas Fingar, *Reducing Uncertainty: Intelligence Analysis and National Security*.

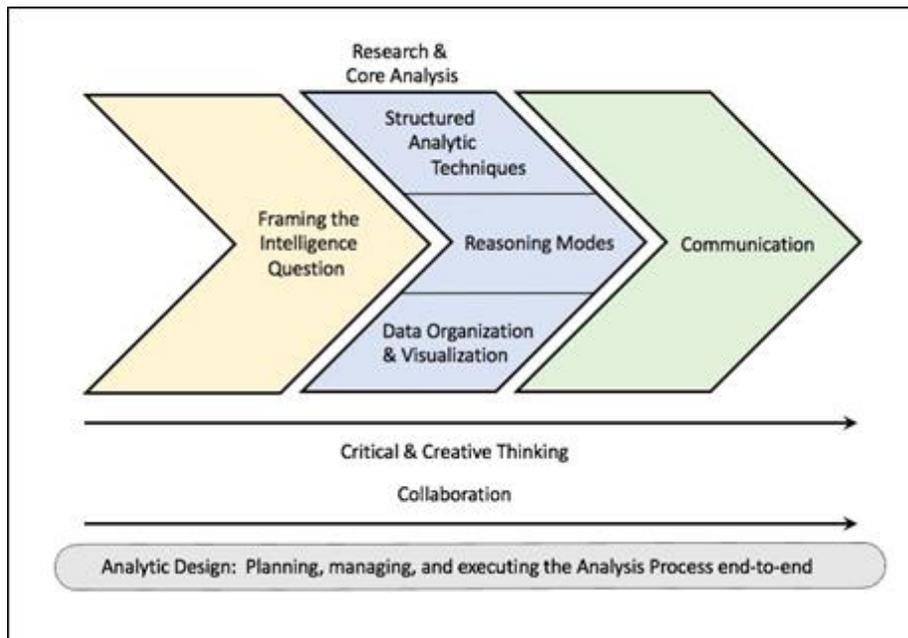
5.1.2.2. This is not to say that some agencies or elements in the IC did not have more established vocabulary and tradecraft, and even so-called training and intelligence colleges, such as the CIA and DIA. However, this kind of professional approach was not widespread, and where it was present, organizations were not sharing standards or efforts. IC standards began to promulgate through DNI-approved ICDs and other policy, while shared training and vocabulary were established through collaboration, development, and sharing of IC analysis training. As these directives, policy, and training matured, efforts began to focus on defining the fundamentals of intelligence analysis as a means to true certification of all analysts in the IC. Today, these analytic standards are not only reflected in ICDs, but are standards for AF compliance, as highlighted by AFI 14-133 and associated unit Management Internal Control Toolset (MICT) Self-Assessment Communicators (SACs).

5.1.3. Analysis Certification Programs.

5.1.3.1. All-Source Analysis (ASA) Certification Program. The ASA Certification Program is a USD(I)-approved and DIA-led analysis qualification program for the DoD. The program assesses a candidate's knowledge and performance of ASA skills. The program is in the nascent stages. Initial qualification is focused on the fundamentals of intelligence analysis and open to all military and civilian intelligence analysts. The intent is for the program to expand to follow-on or higher levels of qualification. The AF ISR Force Management Division (AF/A2FD) is the AF OPR for the ASA Certification Program.

5.1.3.2. Other Certification Programs. The IC has also established certification programs for various fields of single-source analysis and activities closely linked with ASA. As one example, the Geospatial Intelligence (GEOINT) Certification Program is part of a broader USD(I) initiative to further professionalize the DoD intelligence workforce. The program applies to all cleared DoD civilian, military, and contractor practitioners in GEOINT-related work roles. Another example is the DoD Collection Management Certification Program, which ensures that collection managers possess the knowledge and skills associated with the competencies necessary to successfully carry out DoD collection management functional tasks.

5.2. Skills and Tradecraft Fundamentals. While analysis skills and tradecraft are taught in varying forms and emphasis across the IC and in AF entry and advanced training for core AF intelligence AFSCs (14N, 1NX, 9SX, 1A8X, and 0132), all AF intelligence analysts require competency in these areas. Figure 5.3, *Fundamental Skills and Tradecraft of the Analysis Process*, portrays the fundamental skills and tradecraft associated with the analysis process. Although the figure suggests an alignment, the order in which the analyst Airman applies the skills and tradecraft techniques varies depending on the requirement and is not as important as ensuring all skills and tradecraft are considered. This section will describe each of these areas.

Figure 5.3. Fundamental Skills and Tradecraft of the Analysis Process.

5.2.1. Critical and Creative Thinking.

5.2.1.1. Critical thinking is considered to be a foundational AF analysis skill. AFI 14-133 defines it as the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from or generated through observation, experience, reflection, reasoning, or communication, as a guide to belief and action. The concept of critical thinking and its associated improvements to coherent cognition arose from the philosophy departments of schools and universities in the mid-1990s. Many observers feel it was because managers and leaders across the private, commercial, and government worlds began demanding people who could “think better and deeper.” **Note:** See Peter A. Facione, *Critical Thinking: What It is and Why it Counts*, p. 3. Critical thinking may be better understood by contrasting it with “normal” thinking. In everyday thinking, people often find themselves with a central thought but are distracted by other thoughts or topics as they occur either physically or mentally. They strive to get to a destination, but may wander and stall before reaching it, with little recognition of where they have been. In contrast, with critical thinking, conscious effort occurs to focus on a particular thought and additionally be “critical” (the origin of the phrase) or reflective and purposeful, using more rigorous reasoning. Reflective reasoning—thinking about how we think, or metacognition—is the key difference between normal and critical thinking.

5.2.1.2. The need for critical thinking in analysis is often paired with another adjective: “creative.” Creativity has always been difficult to define, but in the context of intelligence analysis, the 9/11 Commission report abounds with calls for U.S. analysts to have more imagination: to be able to link disparate happenings and facts, to see a “bigger picture,” to envision alternatives which are not spelled out. In rigorous thinking, creativity is often associated with “abductive” reasoning: the process of generating a novel hypothesis to explain given evidence that does not readily suggest a familiar

explanation. **Note:** See section 5.2.4 for additional information on reasoning. Creativity “characterizes the analyst’s ability to come to a conclusion spontaneously, often without a sense of having consciously taken definable steps to get there. While the abduction process may not be easily defined or taught, it may be encouraged by providing analysts with a wide array of research material and experiences, and by supporting the expenditure of time and energy on creative thinking.” **Note:** See Lisa Krizan, *Intelligence Essentials for Everyone*, pp. 31-32, and LCDR William G. Schmidlin, *Zen and the Art of Intelligence Analysis*.

5.2.1.3. Both critical and creative thinking are supported in intelligence analysis by the application of methods known as Structured Analytic Techniques (SATs) and an understanding of analytic reasoning and the role of biases, addressed below.

5.2.2. Framing the Intelligence Question. A well-framed intelligence question is the most important factor in assuring the overall quality of intelligence analysis, helping analysts to anticipate emerging trends and developments and focus efforts on addressing issues most relevant to consumers of intelligence. The question drives information discovery, the selection of analytic approaches and methods, and ultimately the analytic message conveyed to intelligence consumers. Successfully framing the intelligence question consists of clearly articulating the key intelligence issues and deconstructing the question to identify the primary factors to be considered in answering the question. A well-framed question also requires the analyst to have an adequate understanding of air/space/cyber power and the missions the analyst directly supports. Framing the question includes identifying intelligence gaps, understanding the information base, and knowing how to drive collection.

5.2.2.1. Intelligence Gaps. An intelligence gap is information that is needed to appropriately conduct intelligence analysis and help answer an intelligence question but is absent from reporting—what we know we don’t know. Identifying gaps helps focus the research and collection required to close the gaps. Moreover, awareness of intelligence gaps aids analysts in properly conveying the resulting level of confidence associated with analytic judgments.

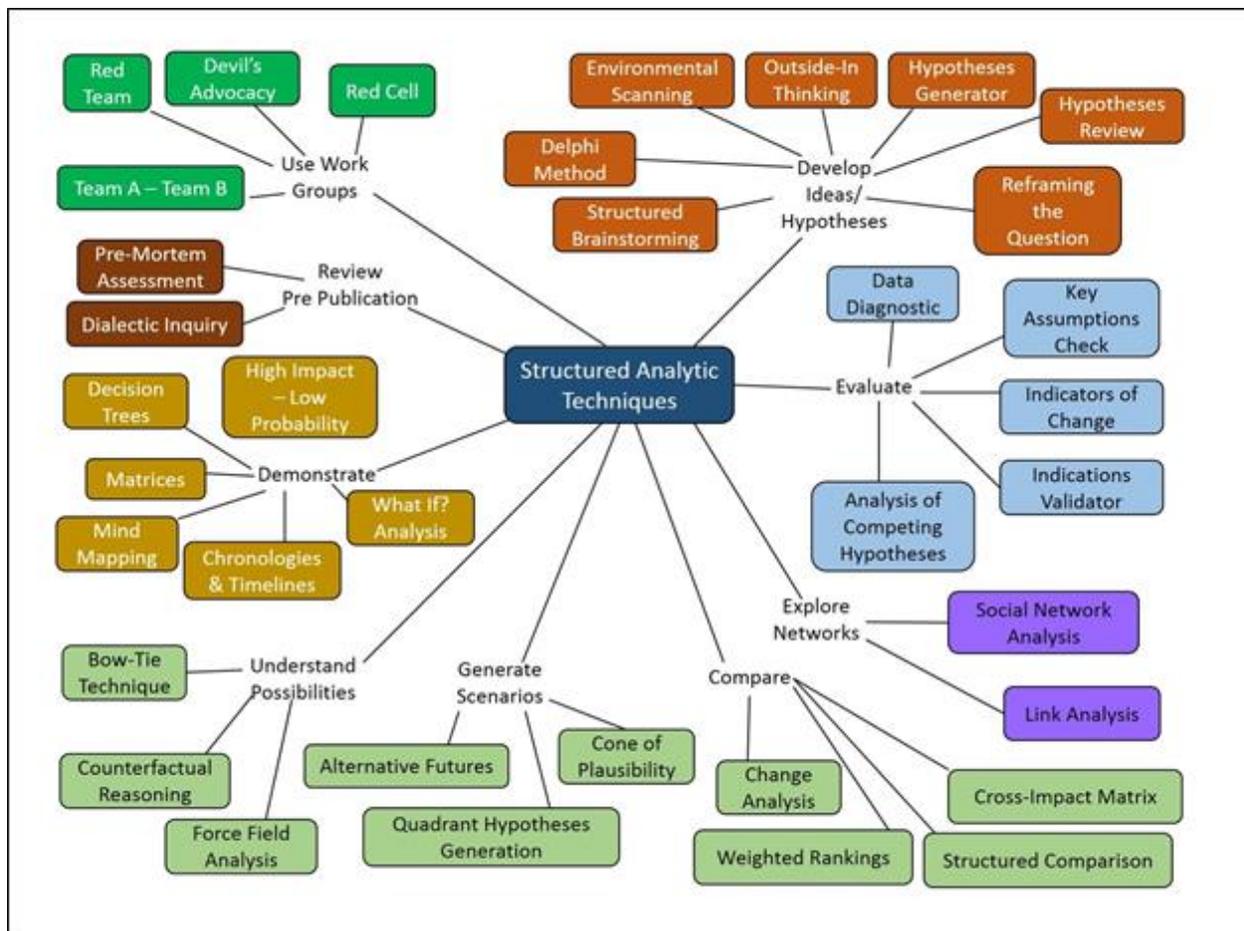
5.2.2.2. Understanding the Information Base. To effectively marshal information needed to answer intelligence questions, analysts require a solid understanding of the available information base. They need to identify what data and information is required, establish whether it is available, and determine where it can be found. In addition, they know the strengths and weaknesses of potential sources of information, are able to assess the quality of that information, in part by knowing where it comes from and how it was processed and disseminated, and understand the role analysis plays in transforming this data and information into knowledge that provides value to intelligence consumers.

5.2.2.3. Driving Collection. Analyst Airmen need to understand how information is collected and processed in the AF and more broadly in the IC to identify which sources of information are most useful in answering their intelligence questions, to assess quality and credibility, and to task collectors to collect information to fill intelligence gaps.

5.2.3. Structured Analytic Techniques (SATs). After properly framing the intelligence question, the analyst dives into the heart of the analysis process. There are several critical skills associated with this core research and analysis phase of the process, one being the application of SATs.

5.2.3.1. In *Structured Analytic Techniques For Intelligence Analysis*, Richards J. Heuer, Jr. and Randolph H. Pherson describe structured analysis as “a step-by-step process that externalizes an individual analyst’s thinking in a manner that makes it readily apparent to others, thereby enabling it to be shared, built on, and critiqued by others. When combined with the intuitive judgment of subject matter experts, such a structured and transparent process can significantly reduce the risk of analytic error.” **Note:** See Richards J. Heuer, Jr. and Randolph H. Pherson, *Structured Analytic Techniques For Intelligence Analysis*, p. xvi. SATs rose to prominence in intelligence analysis as part of a broad effort to transform the tradecraft following 9/11. Most SATs are not unique to intelligence analysis, but have been developed in other fields that utilize analysis. Many of these techniques, shown in Figure 5.4, SATs, broadly fall under the field of operations research, management tools, and general decision-making aids.

Figure 5.4. SATs.



5.2.3.2. Why are SATs important? Their application helps the analyst take a systematic approach to problem solving, mitigate bias and error, and enhance analytic credibility. SATs are useful by both individuals and teams in breaking down problems or “decomposition,” generating ideas or “brainstorming,” testing ideas or reviewing alternatives, and checking solutions or assessments. Structured techniques offer an effective means of applying scientific methodologies to the operational art of analysis.

Advanced analytic courses, such as the AF Critical Thinking and Structured Analysis Course (CTSAC), offer focused training on SATs. Attachment 5 contains a tradecraft guide that details some of the key SATs commonly used by analyst Airmen.

5.2.4. Analytic Reasoning and Bias.

5.2.4.1. The heart of the definition for critical thinking is purposeful, reflective reasoning. Logical reasoning is defined as the process of establishing a justified belief by using premises (rules), evidence (facts), and argument (relationships). Three types of basic reasoning include:

5.2.4.1.1. Deductive reasoning—Sometimes called deductive logic, deduction is reasoning in which a conclusion is a logical consequence of the premise. A deduction moves from general rules and some evidence to particular cases.

5.2.4.1.2. Inductive reasoning—The intellectual process of drawing generalizations on the basis of observations or other evidence. Induction takes place when one learns from experience.

5.2.4.1.3. Abductive reasoning—The process of generating a novel hypothesis to explain given evidence that does not readily suggest a familiar explanation. Abductive reasoning starts from a set of accepted facts and creatively proposes their best explanation.

5.2.4.2. More recently, social scientists have helped to expand the horizons and suggest there are analytical *modes* of reasoning, most of which are familiar in description yet have significant research behind them. Reasoning is the process of forming conclusions, judgments, facts, opinions, or inferences. Reasoning assists in forming arguments based upon evidence about observed activities. It is the job of an analyst Airmen to make sense of a complicated mass of information—to understand and explain the current situation, to reconstruct the past that led to it, and to use it as the basis of predictions for the future. **Note:** See Barbara Spellman, “Individual Reasoning” in *Intelligence Analysis: Behavioral and Social Scientific Foundations*, p. 117. As human beings with developed intellects, we generally may be said to have six modes of reasoning:

5.2.4.2.1. Status Quo—Making immediate judgments and inferences.

5.2.4.2.2. Authoritative—Drawing inferences from expert testimony or strong belief.

5.2.4.2.3. Comparative—Drawing conclusions from examples, cases, or analogies.

5.2.4.2.4. Empirical—Drawing conclusions from personal interaction with real evidence.

5.2.4.2.5. Scientific—Drawing casual inferences using facts, premises, and logic.

5.2.4.2.6. Market—Drawing conclusions from a structured consensus of persons.

5.2.4.3. We use many of these modes of reasoning every day, and there are analytical equivalents used in the process and mission of intelligence. However, bias remains one of the most common detractors in applying the modes of reasoning. Cognitive biases are mental errors caused by our simplified information processing strategies. When people reason, they employ various simplifying strategies and rules of thumb to ease the burden of mentally processing information to make judgments and decisions. “I always get

enchiladas at Mexican restaurants; the interstate is always faster; or I always get my news from an online news source.” These simple rules of thumb may be acceptable for surviving the daily grind, but not for performing intelligence analysis. Analysts have to remain detached from normal survival biases and start fresh with each new problem.

5.2.4.4. Common types of cognitive biases include:

5.2.4.4.1. Bandwagon Effect—Tendency to believe something because many others believe it.

5.2.4.4.2. Clustering Illusion—Tendency to overvalue small runs, streaks, or clusters in large sets of data.

5.2.4.4.3. Confirmation Bias—Tendency to overvalue data supporting initial assumptions or expectations, and undervalue that which contradict.

5.2.4.4.4. Framing Effect—Tendency to draw different conclusions from the same data if it is presented differently.

5.2.4.4.5. Illusory Correlation—Belief that two events are related when they might not be.

5.2.4.4.6. Insensitivity to Sample Size—Tendency to underestimate the variation in data from small samples.

5.2.4.4.7. Mirror Imaging— Assumption that others see events and react to them just as we do.

5.2.5. Data Organization, Visualization, and Analytic Modeling.

5.2.5.1. As analyst Airmen begin to acquire information related to their intelligence question, either as part of a focused research effort or routine monitoring within their areas of responsibility, they need to employ a systematic approach to triaging and organizing information to identify trends, patterns, and relationships relevant to their intelligence question. The use of visualization techniques can assist analysts in deriving meaning from large volumes of fragmented information.

5.2.5.2. Visualization and analytic modeling are companion concepts to SATs. Effective visualization helps the analyst Airman analyze and reason about data and evidence. Analytic models can often help capture and expose knowledge, focus collection on the right needs, and apply analytics to the right questions. Visualization and analytic modeling apply to both the analytic process itself, and the delivery of information to consumers. Their importance was a key factor in establishing the analytic tradecraft standards of “effective visual information” by the IC and “utility” by the AF.

5.2.5.3. Like analysis, visualization and analytic modeling are both art and science. The advent of big data and data analytics has begun to emphasize the science and created the field known as data science. Data scientists find, interpret, and merge rich data sources; ensure consistency of data sets; create visualizations to aid in understanding data; build mathematical models using the data; and present and communicate data insights and findings to specialists, scientists and non-technical audiences.

5.2.6. Communication. Effective communication is essential to the craft of intelligence and even the best intelligence analysis falls short if communicated poorly. Consumers often

judge the validity of analysis by the quality of how it is communicated. The importance of communication is underscored by ICDs 203, 206, and 208 and AFI 14-133, which prescribe standards and principles for dissemination and require annual assessments for compliance. Analysts use multiple vehicles and formats to communicate their assessments to consumers.

5.2.6.1. Analytic Writing. Well-written products share a common set of attributes. First and foremost, good intelligence writing is analytic. That means, it does not simply report events; it explains the significance of those events and much more. Intelligence assessments are structured so that busy consumers can quickly grasp the main message and underlying reasoning, and be clear, precise, and convincing. In particular, analysts minimize the chance for misinterpretation of the findings, the certainty behind them, or how they were arrived at. Even the best analysis, if presented poorly, could cause the customer to question its credibility.

5.2.6.2. Visuals. Whereas data visualization during core research and analysis helps the analyst to “discover” the story, visualization for presentation helps “tell” the story. Visual presentation uses graphics—from charts and graphs to maps and complex tables, and both hardcopy and digital—to make relationships between data more easily understood.

5.2.6.3. Briefings. Briefings are a key mechanism for communicating analytic judgments to customers and can foster two-way communications to ensure that customer intelligence questions are addressed. Effective briefings consist of a well-organized, clear message relevant to the target audience; appropriate, tailored visual aids to reinforce the message; and a presentational style that keeps the audience focused on the message. Briefing is a skill that is honed through practice.

5.2.6.4. Multimedia Products. Significant innovations in multimedia tools have emerged that make possible sophisticated products that go beyond static graphical presentations. Multimedia products are generally either interactive or use full-motion video or animated web graphics to display content. Some techniques are particularly useful for depicting changes in data over time or comparing complex or multivariate data by allowing users to choose which variable they want to see. Despite these different ways to communicate analysis, the fundamentals remain the same: analysts need to present their analysis with clarity and sound logic.

5.2.7. Collaboration.

5.2.7.1. Similar to critical and creative thinking, collaboration is a skill that extends across the entire analysis process. Effective intelligence analysis depends on strong interpersonal relationships among analysts within and across intelligence agencies and the way the analysts relate to collectors, customers, and other experts within and outside the IC. Analysts are expected to collaborate and team to tackle complex intelligence questions, coordinate analytic products, and engage in regular discussions with colleagues that explore and challenge analytic judgements and prevailing assumptions. As one of the six AF intelligence analysis tenets, collaboration is considered a fundamental attribute and priority in AF analysis. Further, collaboration is the catalyst to every IC member’s responsibility to “provide, discover, and request” as mandated in ICD 501.

5.2.7.2. An important aspect of collaboration and teaming is analytic outreach, which ICD 501 defines as the open, overt, and deliberate act of an IC analyst engaging with an individual outside the IC to explore ideas and alternate perspectives, gain new insights, generate new knowledge, or obtain new information. Outside experts include those in academics, business, non-governmental organizations, scientists, and others. Various methods of analytic outreach include conferences, seminars, exchanges, sabbaticals, and the building of trusted professional relationships.

5.2.7.3. Skills required for effective collaboration include employing tools to facilitate scheduling, access to data, and the sharing of analysis; effective team management practices; social networking techniques; constructive criticism—both giving and receiving; and interpersonal skills. Analysts need to also be aware of and take measures to avoid impediments to teaming, especially the “What’s in it for me?” mindset. A study of the collaboration environment in the IC in 2007 identified six imperatives to help overcome such mindsets: mission criticality, mutual benefit, mutual trust, common understanding through common lexicon and transparent rules of the road, access and agility to identify collaborators and form collaborative communities, and incentives. **Note:** Derived from Integrated Concepts Development Office, *Achieving a Robust Collaborative Environment*.

5.2.8. Analytic Design. Analytic design is the activity of planning, managing, and executing the analysis process end-to-end—from the development of the right intelligence question, research, and core analysis to the crafting of an assessment that captures and communicates analytic insight for customers. Although analytic design is described last in this chapter’s list of skills and tradecraft, it takes place up-front and then continues throughout the analysis process. In analytic design, the analyst outlines the plan for framing the question, applying SATs, reasoning and mitigating biases, organizing and visualizing data, communicating the analysis, collaborating with all applicable entities, and employing critical and creative thinking skills. Then, as the plan is put into action, the analyst revisits and revises the plan, as needed, to comprehensively address the requirement. More information on this subject is available at the following site: *ICAT-G/Products Analytic Design Portal*, Joint Worldwide Intelligence Communications System (JWICS) Caution-url: https://intellipedia.intelink.ic.gov/wiki/Portal:IC_Analytic_Tradecraft_Gateway/Analytic_Design.

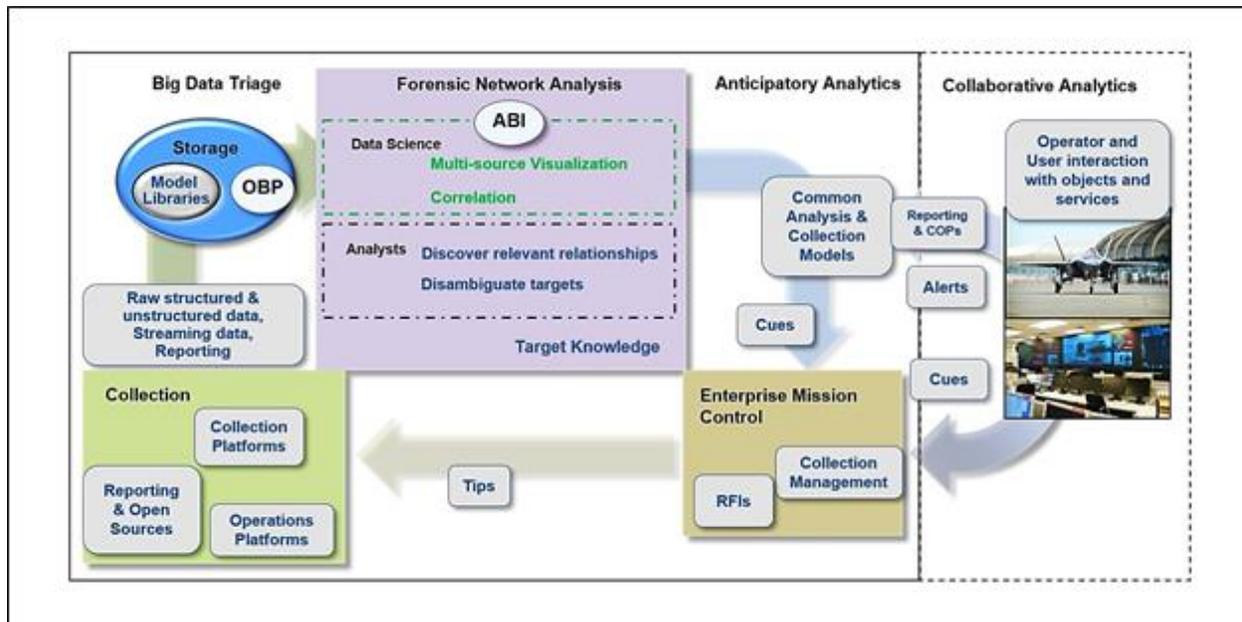
5.3. Key Analysis Concepts.

5.3.1. Big Data, Data Analytics and Data Science.

5.3.1.1. According to the *AF Future Operating Concept: A View of the AF in 2035*, the term big data describes large volumes of high-velocity, complex, variable data that require advanced techniques and technologies to enable the capture, conditioning, reliability, storage, distribution, management, and analysis of the information. The significance of big data extends beyond the sheer volume, complexity, and diversity of data; it is profoundly changing the way we think about data and creates new knowledge and information. **Note:** Paul B. Symon and Arzan Tarapore, "Defense Intelligence Analysis in the Age of Big Data," *Joint Forces Quarterly*, p. 4. Big data is driving us from a perspective of “causation” to one of “correlation.” Rather than the traditional perspective of analyzing discrete amounts of data to understand the past cause and effect

(the why) and use that as a predictor of future behavior, data analytics enables analysts to harness the massive amounts of data available to draw correlations and use patterns of life (the what) as a predictor of future behavior, even if we do not understand “the why.” **Note:** Kenneth Neil Cukier and Viktor Mayer-Schoenberger, "The Rise of Big Data: How It's Changing the Way We Think about the World," *Foreign Affairs*. Figure 5.5, *Data Analytics Framework*, depicts a general framework for data analytics.

Figure 5.5. Data Analytics Framework.



5.3.1.2. Data Science is at the heart of adapting the AF ISR Enterprise to the evolving big data environment. It can generally be described as the practice of exploiting and deriving valuable insights from data. This involves extracting knowledge from data sets that may be small, large, structured, multi-modal, multi-lingual, semi-structured or unstructured. Since data science is an inherently technical and specialized field, it is best performed by individuals trained and qualified in the complex and specialized nature of the work. As the DCS for ISR White Paper, *Data Science and the USAF ISR Enterprise* conveys, rather than train analyst Airmen to be data scientists, the AF approach is to develop a force of ISR professionals, operators, and knowledge managers that understand and leverage the capabilities that data scientists bring to the fight. Figure 5.5 highlights the role of data science relative to analysts in the process of data analytics.

5.3.1.3. The implications of big data, data analytics, and data science for intelligence analysis cannot be overstated. In recognition of this, the IC has embarked on a number of analytic modernization initiatives to exploit emergent big data capabilities, improve intelligence integration, and accelerate intelligence decision cycles. Two major initiatives are object-based production (OBP) and activity-based intelligence (ABI).

5.3.2. Object-Based Production (OBP).

5.3.2.1. Traditionally, analysts spend a great deal of time and effort assembling, collating, and parsing diverse data sources that pertain to a given intelligence problem.

As Figure 5.5 illustrates, OBP is a framework for organizing and sharing information. It is defined as the act of organizing intelligence around objects of interest—not by collection or data type—which allows users to aggregate intelligence information from across multiple intelligence domains and associate it with particular objects of interest. All intelligence that relates to something that physically exists in the real world is assembled and made centrally available as an object that all collectors, producers, and consumers can access. Objects include physical things (e.g., ships, buildings, vehicles, persons, and political boundaries), as well as abstract things (e.g., events and issues). The intent of OBP is to provide a consolidated perspective about the behavior of objects and their interaction with one another.

5.3.2.2. Traditionally, the output of each intelligence discipline is assembled by an analyst in order to understand the who/what/where/when of the object. The OBP alternative enables analysis to be directly attached to the object in question to allow delivery of complete find, fix, and track information direct to operational users. Thus, intelligence analysis is not stove-piped or the end result of a linear process. Instead, in this synthetic model, known information is dynamically assembled within the intelligence process. Automatic exploitation systems and manual intelligence analysis work in tandem to dynamically populate a shared community of objects that all analysts have access to. The result is that analysts can better understand intelligence activity by more clearly identifying and managing intelligence gaps and spending less time assembling information.

5.3.3. Activity-Based Intelligence (ABI).

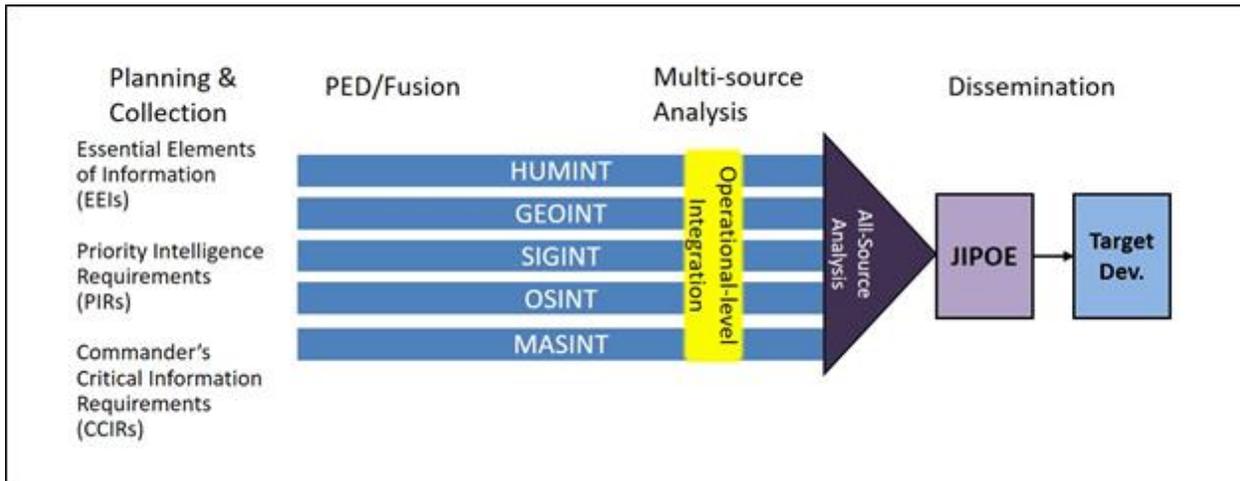
5.3.3.1. ABI emerged from the experiences of analysts working dynamic targets and analytic problems. It centers on the discovery and association of unknown activities. DIA, the National Geospatial-Intelligence Agency (NGA), and the National Security Agency (NSA) describe ABI as an analytic method applied to structured data from all sources, to discover objects (e.g., high-value target location), relationships (e.g., supplier/consumer), or behaviors (e.g., pattern of life) by resolving significant activity.

5.3.3.2. NGA has delineated four ABI tenants that apply to a variety of missions and problem-sets: 1) geo-reference to discover; 2) integration before exploitation; 3) data neutrality; and 4) sequence neutrality. As geo-referenced activity becomes the starting point of discovery, that allows for the rapid integration of multi-INT data and allows for analysis without data-source or sequence biases presented by the traditional linear collection process. Successful ABI analysis relies heavily on geo-referenced data that did not lend itself to an immediate application when it was collected, but eventually enhanced the larger context or provided more accurate characterization and understanding of data collected at a later date.

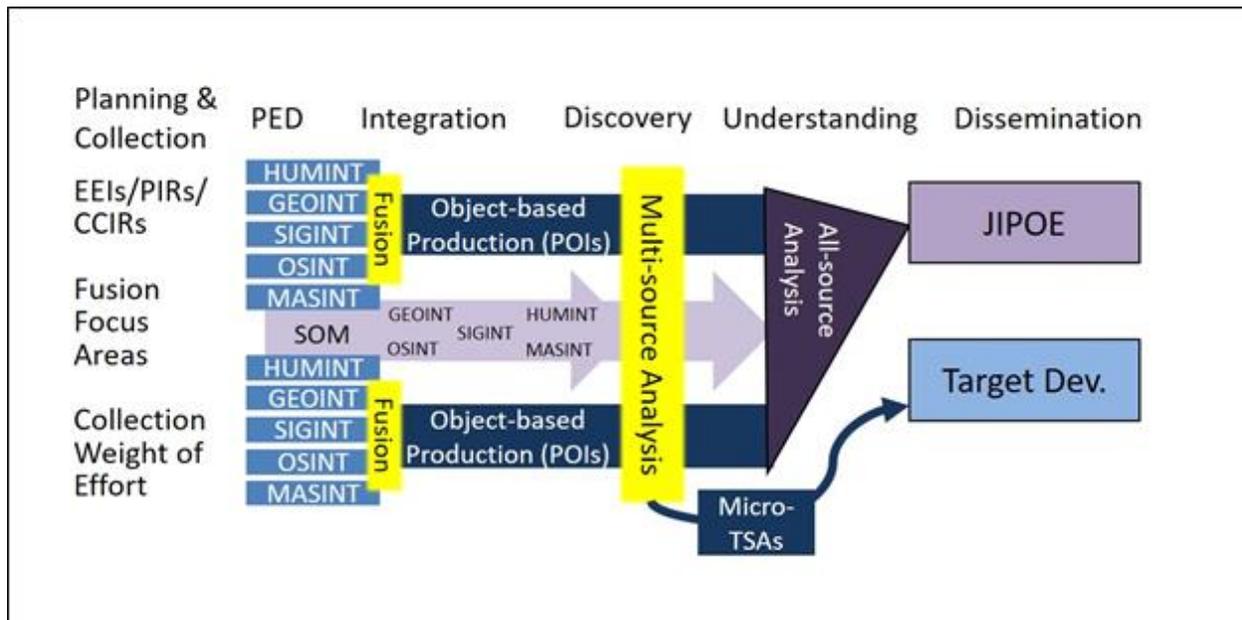
5.3.3.3. As ABI and OBP have grown to become IC-wide methodologies, NGA has advocated and developed a concept called Structured Observation Management (SOM). SOM is the practice and method of organizing and sharing multi-sensor data that is not focused on objects (e.g., activities or events), in order for the resulting data to be consistent with, and in support of, both ABI and OBP processes. It can be thought of as a 'bridge' between the new analytic processes of OBP and ABI.

5.3.3.4. AF ISR analysts need to innovate to implement ABI in our mission sets. One such effort is Scoped Activity-based Intelligence for Nodal Targeting (SAINT), an ACC-developed capability that operationalizes ABI, predominantly in support of deliberate targeting. SAINT's strength lies in the rapid fusion of data and information to create multi-source intelligence as early in the intelligence cycle as possible, and close to the point of collection in order to enable collection refinement. Figure 5.6, *Traditional Model for Target Discovery*, depicts the traditional model of a linear production chain that combines to contribute to content-dominant analysis, a time-consuming approach to Joint Intelligence Preparation of the Operational Environment (JIPOE) and ultimately target development. In contrast, Figure 5.7, *ABI/OBP Integrated Model for Target Discovery*, highlights the SAINT construct, in which OBP enables fusion analysis and micro-target system analyses (TSAs) in a time-dominant environment. This model makes possible a symbiotic analysis/collections relationship to support strategic, operational, and tactical objectives simultaneously.

Figure 5.6. Traditional Model for Target Discovery.



Note: Source is Michael Kreuzer and Denis Dallaire, *Targeting the Islamic State: Activity-based Intelligence Empowering Air Force Targeting*.

Figure 5.7. ABI/OBP Integrated Model for Target Discovery.

Note: Source is Michael Kreuzer and Denis Dallaire, *Targeting the Islamic State: Activity-based Intelligence Empowering Air Force Targeting*.

5.4. Additional Tradecraft Resources.

5.4.1. IC Analytic Tradecraft Gateway (ICAT-G). The ICAT-G serves as a repository for the ICs collective knowledge of the analytic process, methods and techniques, and best practices. It is a useful, comprehensive reference aid for analysts and a valuable resource for analytic training. It is located on JWICS at Caution-url: <https://intellipedia/intelink.ic.gov/wiki/ICAT-G>.

5.4.2. Online Critical Thinking and Analysis Environment (OCTANE). OCTANE is a 25 AF online initiative for analysts to find mentors and exchange information through an analyst mentor network, practice tradecraft, compete with peers through IntelTrivia, and download free applications and games for use on mobile devices. The OCTANE site is on the Nonsecure Internet Protocol Router Network (NIPRNet) at <https://www.25afoctane.com>.

5.4.3. Center for Marine Expeditionary Intelligence Knowledge (CMEIK). The CMEIK is dedicated to advancing analytic tradecraft across the Marine Corps intelligence enterprise. The CMEIK offers courses, tradecraft notes, and video podcasts on a variety of analysis topics that are applicable to all military services. Several examples include a writing guide, SAT pocket guide, intelligence preparation of the battlespace template, and a collaboration page. CMEIK information is available on the SECRET Internet Protocol Router Network (SIPRNet) at Caution-url: www.mcia.usmc.smil.mil/cmeik.

Chapter 6

REQUIREMENTS AND PRODUCTION

6.1. Intelligence Requirements and Analytic Focus.

6.1.1. Questions, Requirements, and Customers.

6.1.1.1. Intelligence analysis and production are driven by leading questions or requirements for intelligence to fill a gap in knowledge or understanding of the environment, adversary capabilities, centers of gravity, or intentions. Questions may be more formal, such as Key Intelligence Questions (KIQs) from AF and IC Programs of Analysis (PoAs), or more informal, such as those that stem from direct, near-term support to operations. All questions are based on an intelligence organization's relationship with its customer and an understanding of customer needs.

6.1.1.2. Intelligence analysis and production are also driven by priorities at all levels of command, from the President of the United States down to the tactical level of operations. At the national- and IC-level, this primarily manifests itself in the National Intelligence Priorities Framework (NIPF).

6.1.2. National Intelligence Priorities Framework (NIPF). Published annually and reviewed quarterly, the NIPF is the primary mechanism to establish, manage, and communicate national intelligence priorities. Guidance from the President and National Security Advisor determines overall priorities. Secretaries and cabinet-level heads of departments and agencies provide formal input to NIPF development. The DNI is responsible for developing and managing the NIPF. All IC activities, including those of the AF, adhere to the NIPF priorities. **Note:** See ICD 204, *National Intelligence Priorities Framework*, for NIPF policy and responsibilities.

6.1.3. Programs of Analysis (PoAs).

6.1.3.1. Per DNI direction, each IC member publishes an annual PoA to provide comprehensive analysis and production focus for their organization. Collectively, the IC PoAs offer a framework for collaboration with customers, stakeholders, and IC partners. The DNI has directed each IC organization to annually publish a PoA to provide comprehensive intelligence analysis and production focus for their organization.

6.1.3.2. The AF ISR PoA (AFISRPoA) is organized into broad, overarching analytic categories, each with multiple KIQs that represent the most pressing analysis required in each category. AF analysis organizations use these categories and KIQs to guide their analytic focus.

6.1.3.3. All PoAs are to reference NIPF priorities when possible. Additionally, a new DoD Integrated Defense Intelligence Priorities (IDIP) process is being implemented to identify and describe intelligence priorities for the diverse set of DoD customers: policy, operations, and acquisition. The IDIP is the DoD intelligence inject into the NIPF and provides an additional layer of data with traceability to analytic stakeholders. Analysts reference both the NIPF and IDIP for understanding of analysis and production priorities, and reference these priorities, when feasible, in development of respective AF intelligence products and services. Additionally, the IDIP can be used by analysts to help

frame internal resource and planning discussions across the Planning, Programming, Budgeting, and Execution (PPBE) cycle.

6.1.3.4. AFI 14-134 directs development of the AFISRPOA and sub-echelon PoAs for NASIC, and the 363 ISRW via 25 AF and ACC. The intent is for every major AF ISR production element to eventually develop its own PoA to focus on analysis priorities and production. The desired end-state resulting from the AFISRPOA and subordinate level PoAs would be a more unified AF ISR analysis and production enterprise.

6.1.3.5. JWICS Intellipedia lists and provides access to all AF and IC PoAs. A listing of associated AF ISR and IC PoAs resides on JWICS Intellipedia at Caution-url: https://intellipedia.intelink.ic.gov/wiki/Programs_of_Analysis. Analysts reference and leverage KIQs that are specific to their analysis mission area, enabling them to work toward common AF and IC goals, improve efficiency through elimination of redundant analytic efforts, and expand their collaboration both within and outside the AF.

6.1.4. Across the AF, DoD, and IC, various terms are used when referring to an intelligence question and/or requirement, including request for information (RFI), request for support (RFS), intelligence need, intelligence requirement, KIQ, and production requirement (PR). Henceforth, this publication will use RFI to refer to all types of intelligence questions and/or requirements. RFIs range from informal to formal and from verbal to formally documented requests. They originate from an intelligence customer (also called an intelligence consumer), which includes but is not limited to, operational units, acquisition organizations, national policy makers, other intelligence elements throughout the AF, DoD, and IC, and counterintelligence units, such as AFOSI. While RFIs may be explicitly stated, analysts anticipate and help shape RFIs, based on known mission needs and a thorough understanding of operations. Supervisors help ensure their analysts are able to engage with the customer, as needed.

6.1.5. Requirements deemed most important to mission accomplishment are identified as priority intelligence requirements (PIRs). By definition, these are the critical requirements that must be satisfied for a commander and staff to understand an adversary and the operational environment in order to successfully plan and conduct a mission. PIRs are general statements of intelligence need, such as, “What is the operational status of the adversary’s integrated air defense system?” or “What terrorist groups are active within the area of interest?” PIRs provide the framework for prioritization of all GIISR operations within a CCMD. PIRs, combined with a commander’s friendly force information requirements (FFIRs), constitute the commander’s critical information requirements (CCIRs).

6.1.6. PIRs drive the development of detailed essential elements of information (EEIs). EEIs further define the commander’s PIRs by outlining specific information requirements, such as, “What is the current location of the adversary SA-20 battalion?” The designation of PIRs and EEIs help ensure efforts are focused on critical information needed to support warfighters.

6.1.7. Priority requirements in acquisition intelligence are identified as critical intelligence parameters (CIPs). A CIP is a factor that defines the threshold at which the performance of a foreign system/capability would likely degrade or nullify the effectiveness of an acquisition program or details of a developmental U.S. system, the disclosure of which could allow an

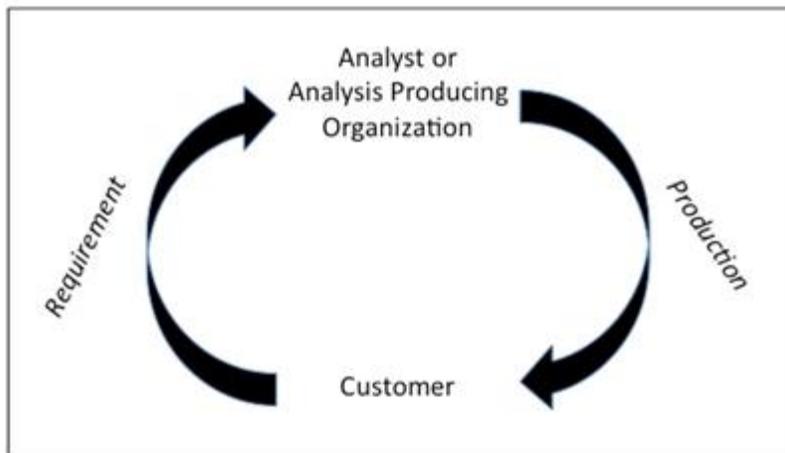
adversary to effect countermeasures to degrade mission effectiveness of the system, if it were to be fielded. CIPs are a key concept for an operational MAJCOM's requirements process/documents, as well as for an acquisition program. They are essentially a PIR for new capabilities going through the requirements and acquisition systems.

6.2. Intelligence Production .

6.2.1. Intelligence production is the development, tailoring, and presentation of intelligence knowledge via products and/or services that meet or address customer requirements. Production is an all-encompassing term that ranges from formal, published products on one end of the spectrum (e.g., a formal intelligence summary) to informal, impromptu updates on the other end (e.g., a location update on a tactical threat as a pilot steps to the aircraft). In some cases, analysts tailor existing intelligence to answer customer requirements. In other cases, analysts perform analysis on existing data, information, and intelligence to create new intelligence and knowledge. Still, in other cases analysts request collection of new data to consider in their analysis.

6.2.2. Ultimately, production culminates in at least one intelligence output for a customer, bringing the cycle full-circle, as depicted in Figure 6.1, *Requirement–Production Cycle*. An output may be an intelligence product or an intelligence service.

Figure 6.1. Requirement–Production Cycle.



6.2.3. An intelligence product is defined as tangible information in written, visual, digital, and/or verbal form that: 1) conveys information of intelligence value (e.g., written assessment, threat map, targeting materials, database, etc.); or 2) facilitates the accomplishment of an intelligence mission (e.g., assessment checklists, training folders, etc.). This definition is sufficiently broad to capture products that both directly and indirectly contribute to mission accomplishment, including those associated with intelligence analysis. The IC has established certain standards that products should meet. See Attachment 4 for a sample methodology and form to evaluate product standards.

6.2.4. An intelligence service is defined as assistance provided to another entity during the performance of ISR support, including: 1) the actual action of delivering or conveying intelligence to a user (e.g., presenting a briefing, tipping and cuing, collaboration, threat modeling, etc.); and 2) the process of enabling an ISR mission (e.g., exercise planning, skill

knowledge training, security clearance indoctrination, etc.). Some intelligence services result in additional intelligence products. Similar to intelligence products, this definition includes services associated with all categories of ISR mission accomplishment, one being intelligence analysis.

6.2.5. AF products and services are grouped into 14 product lines and 14 service lines. See Attachment 2 for descriptions of each product and service line.

6.3. Request for Information (RFI) and Analysis/Production Process . AFI 14-134 establishes and details the AF RFI and analysis/production process. Figure 6.2, *RFI and Analysis/Production Process*, illustrates the basic RFI flow that occurs at each organizational level. Figure 6.3, *RFI and Analysis/Production Process across the AFIAE*, depicts the flow across the whole analysis enterprise. The RFI and analysis/production process operationalizes the layered, distributed, mutually supporting AFIAE. It is the construct through which AF intelligence entities address customer requirements, share analytic findings, tap into analysis expertise across the IC, and collaborate on production. It is the mechanism that enables the AFIAE to achieve decision advantage. Refer to AFI 14-134, [Chapter 3](#) for specifics on the RFI process, categorization, tracking, and timelines.

Figure 6.2. RFI and Analysis/Production Process.

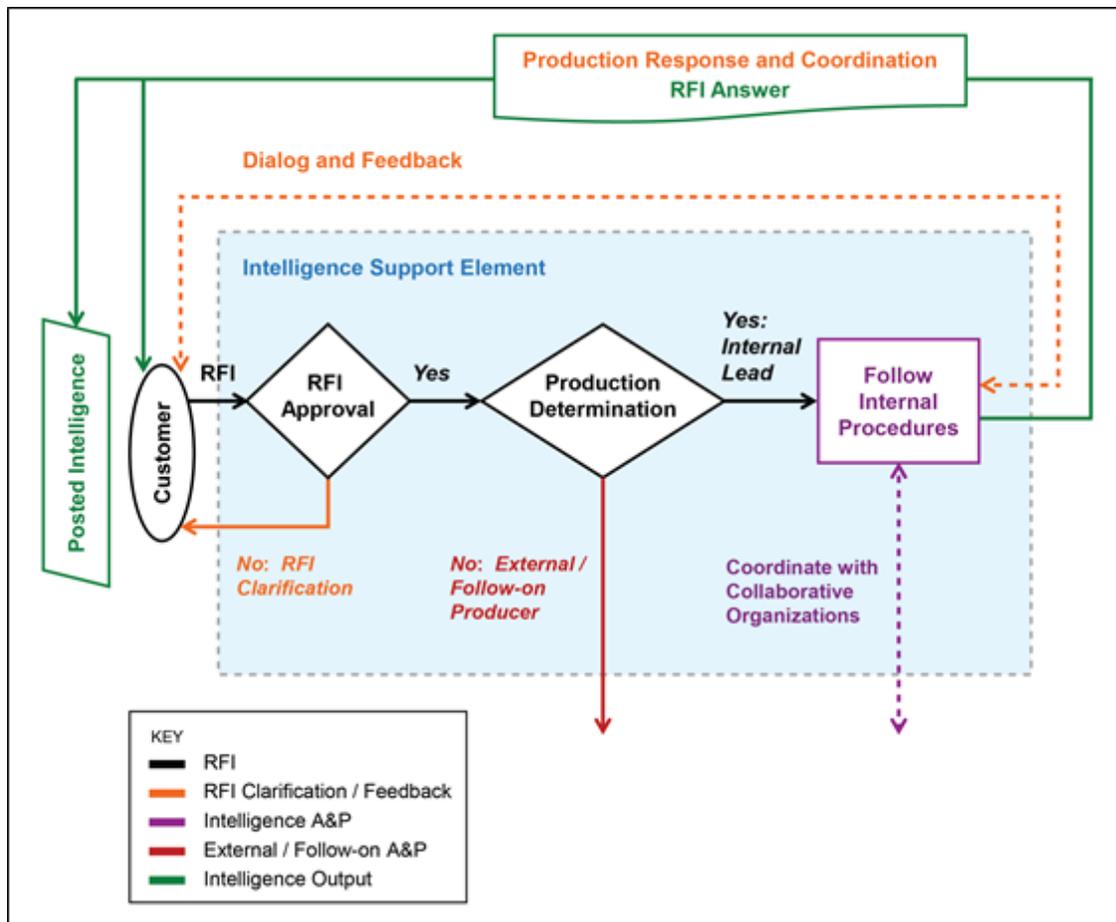
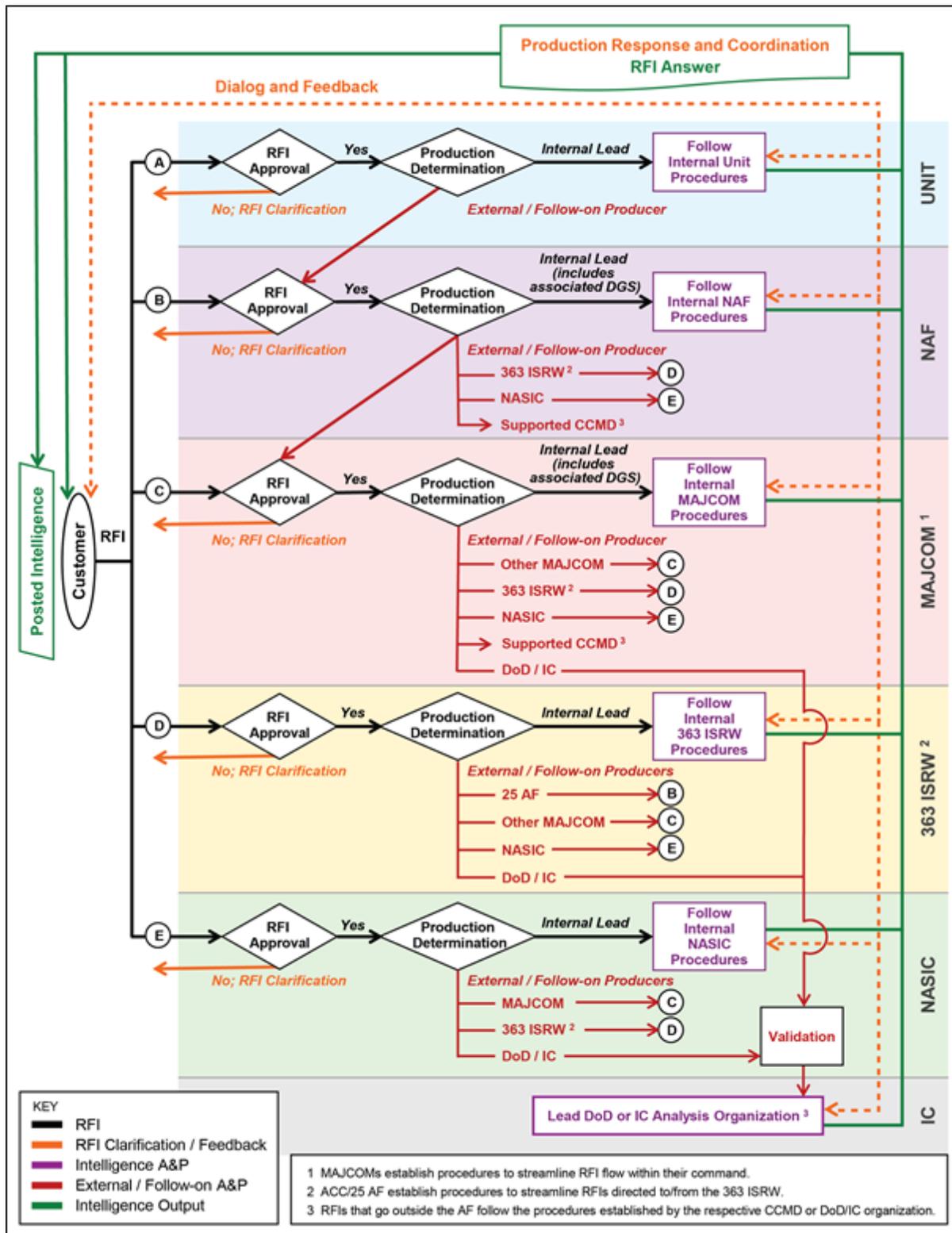


Figure 6.3. RFI and Analysis/Production Process across the AFIAE.



6.4. Acquisition Intelligence Production. Intelligence analysis and production are integral to the entire life cycle process of requirements definition, acquisition, and sustainment of weapon

systems. Acquisition customers require the production of specific threat assessments and potentially unique forms of data to support research, development, test and fielding of warfighting capabilities. Acquisition intelligence analysts support acquisition programs and initiatives by helping to identify and document intelligence dependencies (such as Intelligence Mission Data [IMD], modeling and simulation, etc.) that provide critical input to intelligence production efforts and the development of product/service requirements. As part of threat support to acquisition, NASIC and other service intelligence centers continually monitor and produce intelligence on adversary capabilities deemed critical to operational success for the developing capability. In partnership, acquisition intelligence specialists, operational command intelligence planners, and service intelligence center analysts provide direct support to acquisition decision processes, as defined in the *DIAP Users Guide* and DoD directives and instructions. These documents provide additional guidance for specific requirements and resourcing activities.

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Abbreviations and Acronyms

A/DNI—Assistant Director of National Intelligence

A&P—Analysis and Production

A2—Director of Intelligence

A2/AD—Anti-Access/Area Denial

ABI—Activity-Based Intelligence

ACC—Air Combat Command

ACIC—Army Counterintelligence Center

ACWG—Analysis Capability Working Group
AF—Air Force
AF NTI—Air Force National Tactical Integration
AFCO-CFA—Air Force Cryptologic Office Advanced Analysis & Training Branch
AFFOR—Air Force Forces
AFH—Air Force Handbook
AFI—Air Force Instruction
AFIAE—Air Force Intelligence Analysis Enterprise
AFISRAI—Air Force Intelligence, Surveillance, and Reconnaissance Agency Instruction
AFISRPoA—Air Force Intelligence, Surveillance, and Reconnaissance Program of Analysis
AFLCMC—Air Force Life Cycle Management Center
AFLLP—Air Force Lessons Learned Program
AFMAN—Air Force Manual
AFOSI—Air Force Office of Special Investigations
AFPD—Air Force Policy Directive
AFR—Air Force Reserve
AFRIMS—Air Force Records Information Management System
AFRL—Air Force Research Laboratory
AFSC—Air Force Specialty Code
AGILE—Advanced Global Intelligence Learning Environment
AIS—Air Intelligence Squadron
AMC—Air Mobility Command
AN—Anticipation
ANG—Air National Guard
AOC—Air Operations Center
AOR—Area of Responsibility
AS—Assessment
ASA—All-Source Analysis
BDA—Battle Damage Assessment
BOG—Board of Governors
Btn—Battalion
C-MAJCOM—Component MAJCOM

CAIAC—Civil Aviation Intelligence Analysis Center
CCIR—Commander’s Critical Information Requirement
CCMD—Combatant Command
CCP—Consolidated Cryptologic Program
CFACC—Combined Forces Air Component Commander
CFETP—Career Field Education and Training Plan
CFLI—Core Function Lead Integrator
CGCIS—Coast Guard Counterintelligence Service
CGIS—Coast Guard Investigation Service
CIA—Central Intelligence Agency
CID—Criminal Investigation Command
CIP—Critical Intelligence Parameter
CMEIK—Center for Marine Expeditionary Intelligence Knowledge
CSA—Combat Support Agency
CTSAC—Critical Thinking and Structured Analysis Course
CY—Calender Year
CYBERCOM—Cyber Command
DART—Distributed Common Ground System Analysis and Reporting Team
DCGS—Distributed Common Ground System
DCS—Deputy Chief of Staff
DDII—Deputy Director of National Intelligence for Intelligence Integration
DE—Delivery
DEA—Drug Enforcement Agency
DHS—Department of Homeland Security
DI—Discovery
DIA—Defense Intelligence Agency
DIAAE—Defense Intelligence All-Source Analysis Enterprise
DIAD—DIA Directive
DIAI—DIA Instruction
DIAP—Defense Intelligence Analysis Program
DIRINT—Director of Intelligence
DNI—Director of National Intelligence

DoD—Department of Defense

DoDD—Department of Defense Directive

DoDI—Department of Defense Instruction

DoDM—Department of Defense Manual

DOE—Department of Energy

DOS—Department of State

DOTMLPF-P—Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities, and Policy

EEl—Essential Element of Information

EVE—Evaluation of Evidence

EX—Explanation

FAC—Framework for Analytic Cognition

FBI—Federal Bureau of Investigation

FFIR—Friendly Force Information Requirements

GDIP—General Defense Intelligence Program

GEOINT—Geospatial Intelligence

GIISR—Global Integrated Intelligence, Surveillance, and Reconnaissance

HPW—Human Performance Wing

HUMINT—Human Intelligence

IAW—In Accordance With

IC—Intelligence Community

ICAT-G—Intelligence Community Analytic Tradecraft Gateway

ICC—Intelligence Coordination Center

ICD—Intelligence Community Directive

ICS—Intelligence Community Standard

ID—Identification

IDIP—Integrated Defense Intelligence Priorities

IMD—Intelligence Mission Data

INSCOM—Intelligence and Security Command

INT—Intelligence

IRTPA—Intelligence Reform and Terrorism Prevention Act

ISR—Intelligence, Surveillance, and Reconnaissance

ISRD—Intelligence, Surveillance, and Reconnaissance Division

ISRW—Intelligence, Surveillance, and Reconnaissance Wing
ISSO—Intelligence Systems Support Office
JCA—Joint Capability Area
JCS—Joint Chiefs of Staff
JIDA—Joint Improvised-Threat Defeat Agency
JIOC—Joint Intelligence Operations Center
JIPOE—Joint Intelligence Preparation of the Operational Environment
JLLIS—Joint Lessons Learned Information System
JLLP—Joint Lessons Learned Program
JP—Joint Publication
JTF—Joint Task Force
JWICS—Joint Worldwide Intelligence Communications System
KIQ—Key Intelligence Question
LL—Lessons Learned
MAJCOM—Major Command
MASINT—Measurement and Signature Intelligence
MCIA—Marine Corps Intelligence Activity
Mgrs—Managers
MICF LANT—Maritime Intelligence Fusion Center Atlantic
MICF PAC—Maritime Intelligence Fusion Center Pacific
MICT—Management Internal Control Toolset
MIP—Military Intelligence Program
MOM—Motive, Opportunity and Means
MOSES—Manipulability of Sources
MQT—Mission Qualification Training
MSIC—Missile and Space Intelligence Center
NAF—Numbered Air Force
NAI2O—National Aviation Intelligence Integration Office
NASIC—National Air and Space Intelligence Center
NCIS—Naval Criminal Investigative Service
NCTC—National Counterterrorism Center
NGA—National Geospatial-Intelligence Agency

NGIC—National Ground Intelligence Center

NGP—National Geospatial-Intelligence Program

NIP—National Intelligence Program

NIPF—National Intelligence Priorities Framework

NIPRNet—Nonsecure Internet Protocol Router Network

NOFORN—Not Releaseable to Foreign Nationals

NRO—National Reconnaissance Office

NRT—Near-real-time

NSA—National Security Agency

NSC—National Security Council

NTI—National Tactical Integration

OBP—Object-Based Production

OCTANE—Online Critical Thinking and Analysis Environment

ODNI—Office of the Director of National Intelligence

ONI—Office of Naval Intelligence

OPR—Office of Primary Responsibility

OSINT—Open-Source Intelligence

OV-1—Operational Viewpoint-1

PACAF—Pacific Air Forces

PCPAD—Planning and Direction, Collection, Processing and Exploitation, Analysis and Production, Dissemination and Integration, Evaluation and Feedback

PED—Processing, Exploitation, and Dissemination

PIR—Priority Intelligence Requirement

PoA—Program of Analysis

POP—Past Opposition Practices

PPBE—Planning, Programming, Budgeting, and Execution

PR—Production Requirement

RDS—Records Disposition Schedule

RDT&E—Research, Development, Test, and Evaluation

RFI—Request for Information

RFS—Request for Support

RPA—Remotely Piloted Aircraft

RT—Real-time

SAC—Self-Assessment Communicator
SAINT—Scoped Activity-based Intelligence for Nodal Targeting
SAT—Structured Analytic Technique
SecDef—Secretary of Defense
SIGINT—Signals Intelligence
SIO—Senior Intelligence Officer
SIPRNet—SECRET Internet Protocol Router Network
SMC—Space and Missile Systems Center
SOC—Squadron Operations Center
SOM—Structured Observation Management
TRANSCOM—Transportation Command
TS/SCI—TOP SECRET/Sensitive Compartmented Information
TSA—Target System Analysis
TTPs—Tactics, Techniques, and Procedures
USA—U.S. Army
USAF—U.S. Air Force
USAFE-AFAFRICA—U.S. Air Forces in Europe & Air Forces Africa
USCG—U.S. Coast Guard
USD(I)—Under Secretary of Defense for Intelligence
USMC—U.S. Marine Corps
USN—U.S. Navy

Terms

Abductive Reasoning—The process of generating a novel hypothesis to explain given evidence that does not readily suggest a familiar explanation. Abductive reasoning starts from a set of accepted facts and creatively proposes their best explanation.

AF Intelligence Analysis Enterprise (AFIAE)—The global community of analyst Airmen and the AF ISR organizations that employ the core competency of intelligence analysis.

All-Source Analysis—Intelligence analysis that employs all available sources of data and information to enable the creation of new intelligence and knowledge.

Analysis Center—An organization with a predominant mission of all-source analysis. Analysis centers provide timely, accurate, and relevant intelligence analysis to support national and defense policymakers, warfighters, and the acquisition community.

Analysis Skill—A specific ability or collection of capabilities required to competently conduct analysis that is acquired through training and/or experience.

Analysis Tradecraft—An established or prescribed analysis technique, practice, or systematic process.

Analyst Airman—An AF ISR professional who is skilled and certified in tradecraft to perform the core competency of intelligence analysis.

Analytic Ombuds—Representative that is responsible for addressing organizational concerns regarding lack of objectivity, bias, politicization, or other concerns in the application of analysis and production standards.

Analytic Production Steward—Senior AF official designated to represent the analysis and production activities that their respective element is authorized to conduct, and to make determinations regarding the dissemination to or retrieval by authorized personnel of analysis produced by that activity.

Best Practice—A method or technique that has consistently shown results superior to those achieved with other means.

Big Data—A concept used to describe the explosion of available data as a result of the information environment.

Counterintelligence—Information gathered and activities conducted to identify, deceive, exploit, disrupt, or protect against espionage, other intelligence activities, sabotage, or assassinations conducted for or on behalf of foreign powers, organizations, or persons or their agents, or international terrorist organizations or activities.

Counterintelligence Analysis—The process of examining and evaluating information to determine the nature, function, interrelationships, personalities, and intent regarding the intelligence capabilities of a Foreign Intelligence Entity.

Covered Analytic Product—A subset of disseminated analytic products or services that is officially designated by the respective IC element as falling under the authority of ICD 206.

Critical Intelligence Parameter—A factor which clearly defines the threshold at which the performance of a foreign system/capability will likely compromise the program / mission effectiveness of the U.S. system.

Critical Thinking—The intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated through observation, experience, reflection, reasoning, or communication, as a guide to belief and action.

Deductive Reasoning—Reasoning where a conclusion is a logical consequence of the premise. A deduction moves from general rules and some evidence to particular cases.

Defense Intelligence All-Source Analysis Enterprise (DIAAE)—The collective set of all DoD organizations that execute all-source analysis activities in production of defense intelligence.

Defense Intelligence All-Source Analysis Enterprise Board of Governors (DIAAE BOG)—A body comprised of representatives of the organizations of the DIAAE that provides a forum for issue identification and resolution; improving transparency and synchronization across the DIAAE; implementing DIAAE strategies and processes; providing support to the DoD Functional Manager for All-Source Analysis; and making resource recommendations based on changes to priorities and emerging requirements.

Essential Element of Information (EEI)—A specific information requirement that supports a more general Priority Intelligence Requirement (PIR).

Fusion Analysis (also called Time-Dominant Fusion)—Analysis in a time-sensitive environment in close proximity to the point of collection that entails quickly melding new information with baseline knowledge to meet a specific operational need. Emphasis is on the process of managing information and on timeliness over completeness.

Inductive Reasoning—The intellectual process of drawing generalizations on the basis of observations or other evidence. Induction takes place when one learns from experience.

Intelligence Analysis—A cognitive activity—both art and science—applying tools, processes, tradecraft, methods, and judgements to data and information to create and deliver new intelligence, insights, and knowledge, with the goal of providing a decision advantage to commanders and decision makers.

Intelligence Customer (also called Intelligence Consumer)—A requestor or user of intelligence, including an operational unit, an acquisition organization, a national policy maker, or an intelligence organization.

Intelligence Production—The development, tailoring, and presentation of intelligence knowledge via products and/or services that address customer requirements.

Intelligence Requirement—(also called Request for Information, Production Requirement, Request for Support, or Key Intelligence Question)—A need for intelligence to fill a gap in knowledge or understanding of the environment, adversary capabilities, centers of gravity, or intentions.

Intelligence Support Element—An AF intelligence organization at any echelon whose focus is on providing intelligence for AF planning, operation, or decisions.

ISR Activity—A task undertaken by a member of the ISR community that is associated with the accomplishment of an intelligence mission. An ISR Activity could result in one or more intelligence outputs. ISR Activities do not include tasks carried out by ISR personnel that are unrelated to a specific intelligence mission, such as security force augmentation, honor guard duty, professional military education, or physical training.

ISR Output—The result of an ISR Activity. An output is categorized as either an ISR product or an ISR service. Single or multiple outputs may derive from one activity, or one output could be derived from multiple Activities. All outputs relate directly or indirectly to the accomplishment of an intelligence mission.

ISR Product—A specific type of output from an ISR activity that consists of tangible information in written, visual, digital, and/or verbal form that conveys information of intelligence value (e.g., written assessment, threat map, and targeting materials) or facilitates the accomplishment of an intelligence mission (e.g., ISR program element code build, self-assessment checklist, or training folder).

ISR Service—A type of output from an ISR Activity. Assistance provided to another entity during the performance of an ISR mission: (1) the actual action of delivering or conveying intelligence to a user (e.g., presenting a briefing, tipping and cuing, collaboration, or threat modeling), or (2) the process of enabling an ISR mission (e.g., exercise planning, skill

knowledge training, or security clearance indoctrination). Some ISR Services result in additional ISR Products.

Key Intelligence Question—A strategic, high-level question that states the primary unknown, or information need, about an intelligence issue or problem, which subsequently drives intelligence analysis and/or production within an organization.

Lead/Designated Producer—The primary analysis and production organization responsible for integrating collaborative analysis with its own to provide a comprehensive and accurate intelligence product or service to a customer.

Lesson Learned—An observation that, when validated and resolved, results in an improvement in military operations or activities at the strategic, operational, or tactical level and in long-term, internalized change to an individual or an organization.

Multi-Source Analysis (also called Multi—INT Analysis)—Intelligence analysis that makes use of more than one source when access to additional potential sources is limited by reasons of timeliness, system access, location, or security levels.

Priority Intelligence Requirement (PIR)—A critical requirement that a commander and staff need to understand the adversary or operational environment to conduct the mission. A PIR is typically comprised of multiple, specific Essential Elements of Information (EEIs).

Production Response—An agreement between a lead/designated producer and a customer for the production of intelligence, containing sufficient detail to permit customer acceptance, rejection, or modification of the proposed intelligence output.

Service Intelligence Center—The analysis center designated for each military service. The AF has designated NASIC as the service intelligence center for the AF.

Single-Source Analysis (also called Exploitation)—Intelligence analysis that employs a single source or expertise in a functional area to characterize events, people, or things. Such analysis is limited to describing, rather than evaluating, the topic of a particular analysis due to restrictions inherent in single-source intelligence collection, precluding the ability to provide fully contextualized intelligence assessments.

Attachment 2

PRODUCT AND SERVICE LINES

A2.1. As Table A2.1, *Product and Service Line Categories*, illustrates, AF products and services are grouped into 14 product lines and 14 service lines, which can be further classified into four general categories: awareness; mission-specific; representation; and enabling. Sections A2.2 and A2.3 describe each product and service line.

Table A2.1. Product and Service Line Categories.

Category	Product Lines	Service Lines
Awareness	Intelligence Assessment Threat Study Intelligence Summary Intelligence Report Intelligence Alert	Analysis Situational Awareness Collaboration Intelligence Supportability Analysis
Mission Specific	Mission Document Targeting Document Requirement	Mission Operations Targeting Mission Readiness Operational Mission Training Requirements Management
Representation	Database Briefing Display Model	
Enabling	Policy, Plan or Program Mission Support Document	ISR Professional Training Policy, Planning, and Programming Force Management ISR Systems Security

Notes:

1. Some Product and Service Lines have similar labels. A good rule of thumb in distinguishing between them is that a Product Line is focused on a tangible output while a Service Line is focused on the action, process or function that results in the Product Line.
2. Product Lines include sanitized and releasable versions of products.
3. The scope, focus, and window of analysis decrease from Assessments to Alerts.
4. The Enabling category includes those products and services that indirectly contribute to substantive intelligence but, in and of themselves, do not have a primary purpose of

substantive intelligence.

A2.2. ISR Product Lines.

A2.2.1. **Intelligence Assessment** –Strategic, longer-term, analytical publication; focused on future capabilities and intentions; usually broad in military and/or political scope.

A2.2.2. **Threat Study** –Longer-term analysis that is more narrowly scoped than an assessment; usually focused on a threat system or category of threat systems; generally strategic or operational in scope.

A2.2.3. **Intelligence Summary** –Roll-up historical analysis of multiple events or missions; shorter timeframe than an assessment or a study (e.g., daily or weekly summary).

A2.2.4. **Intelligence Report** –Analysis from a single event or mission; includes results from a single-source intelligence collection; often associated with mission results; generally tactical or operational in scope.

A2.2.5. **Intelligence Alert** –High priority intelligence update with potential urgency and/or mission impact; usually focused on a singular threat or data point.

A2.2.6. **Database** –Systematically arranged collection of data, structured for convenient access and manipulation, generally in a computer.

A2.2.7. **Policy, Plan or Program** –Official ISR policy; guidance; plans; TTPs; research, development, test, and evaluation (RDT&E) efforts; agreements; and resourcing data, to include PPBE-related documentation.

A2.2.8. **Mission Document** –Text-based materials associated with conducting an ISR-specific mission or other air/space/cyber operational mission; does not include target materials.

A2.2.9. **Targeting Document** –Text-based analysis, reports, lists, or publications associated with targeting, weaponeering, or battle damage assessment (BDA); includes hard copy and soft copy formats; does not include target briefings or stand-alone target graphics.

A2.2.10. **Requirement** –A need for intelligence information, such as a request for information, a collection need, and essential mission information.

A2.2.11. **Mission Support Document** –Text-based materials that assist in the accomplishment of some enabling activities, such as training, exercises, conferences, security, and continuity.

A2.2.12. **Briefing** –Graphic-based presentation that is usually delivered verbally. Often times, a briefing is developed to visually summarize and verbally present the results of a text-based product (e.g., assessment, study, target document or mission support document). The most common form of a briefing is a Microsoft PowerPoint presentation.

A2.2.13. **Display** –Visual representation of analysis. Formats include maps, charts, videos, graphics, and diagrams. Displays are often incorporated into briefings or text-based products.

A2.2.14. **Model** –Physical representation of a threat or threat system or artificial representation of how a threat system will perform in actual operations.

A2.3. ISR Service Lines.

A2.3.1. **Analysis** –Services associated with the evaluation, interpretation, and often times integration of intelligence from available data sources and types. Includes the conduct of single-source, multi-source, and all-source analysis.

A2.3.2. **Mission Operations** –Services associated with the conduct of air/space/cyber operational missions, including ISR collection and processing, exploitation, and dissemination (PED) missions.

A2.3.3. **Situational Awareness** –Services provided to assist leadership and operators, including other ISR professionals, in comprehensively understanding the threat environment in which they are focused.

A2.3.4. **Intelligence Supportability Analysis** –The process by which intelligence, acquisition, and operations analysts identify, document and plan for requirements, needs, and supporting intelligence infrastructure necessary to successfully acquire and employ AF capabilities.

A2.3.5. **Targeting** –Services associated with the development of target materials, weaponeering, and BDA.

A2.3.6. **Mission Readiness** –Services that support the preparedness or capability of ISR or operational units to carry out their assigned missions.

A2.3.7. **ISR Professional Training** –Services involving the training and education of ISR personnel in ISR-related skills and tradecraft. Includes Mission Qualification Training (MQT) of ISR personnel.

A2.3.8. **Operational Mission Training** –Services associated with *threat-related* training of operational mission crews. Includes threat training for ISR personnel assigned to operational crews, such as cyber defense mission crews.

A2.3.9. **Requirements Management** –Services focused on managing ISR capability needs, requests for intelligence, and requests for assistance, forces, resources, or essential mission information.

A2.3.10. **Policy, Planning, and Programming** –Services involving the development of ISR policy, guidance, plans, TTPs, RDT&E efforts, agreements, and resource management, to include PPBE support.

A2.3.11. **Force Management** –Services associated with governing or guiding ISR manpower and personnel.

A2.3.12. **ISR Systems** –Services involving the establishment, accreditation, maintenance, and employment standards of ISR information technology systems.

A2.3.13. **Security** –Services associated with the protection, sanitization, and disclosure of classified information and with the establishment/maintenance of classified facilities.

A2.3.14. **Collaboration** –Services that explicitly facilitate the sharing of information both within and outside of the ISR community. While all Services involve “sharing information” to a certain extent, the Services in this Service Line are functions whose primary purpose is to share or exchange information.

Attachment 3

COMMON ANALYSIS LESSONS

A3.1. Table A3.1, *Common Analysis Lessons*, captures some of the general considerations broadly accepted across the AF ISR Enterprise and proven effective in improving analysis capabilities throughout time. Key sources for the lessons in this table include subject matter experts with extensive operational and tactical experience, various AF/A2 reviews of intelligence analysis, and a study by RAND Corporation. The table is organized by chapters in this handbook. The identification (ID) column refers to the AFH chapter associated with each lesson along with a unique alpha designator. To the right of the lessons are five columns that correspond to the five analysis activities: Discovery (DI), Assessment (AS), Explanation (EX), Anticipation (AN), and Delivery (DE). Those five columns indicate the primary (large, bold, upper-case X), secondary (standard, upper-case X), and tertiary (lower-case x) analysis activities associated with each lesson.

Table A3.1. Common Analysis Lessons.

ID	LESSON	ANALYSIS ACTIVITIES				
		DI	AS	EX	AN	DE
Chp 2	AF Intelligence Analysis Enterprise (AFIAE)					
2A	Increase your knowledge of different analytic and PED organizations to best understand AF ISR capabilities, enhance your network, and improve your tradecraft.	X	x	x		
2B	Be knowledgeable of air/space/cyber power strategy and theater objectives to help your assessment of developments.		X			
2C	Understand the larger context of the theater, problem set, or operation in which you are focused—applies to all analysts.	X				
2D	Check with area of responsibility (AOR) analysts to help collaborate your assessment of activities in that theater.		X			
2E	Coordinate with theater-specific and 363 ISRW targeteers for full understanding of your target and assessments.		X			
2F	Become familiar with different theaters to widen your expertise.			X		
2G	Continually balance timely notification to decision makers in support of operations against more in-depth and deliberate analysis/assessments.				X	
Chp 3	IC and other Military Service Capabilities	DI	AS	EX	AN	DE
3A	Gain Joint experience at a regional JIOC for improved & integrated analysis.			X	X	
3B	Seek out assignments in or deployments to an operational AOR to deepen and broaden your analysis expertise.			X	X	

3C	Be aware of U.S. military and theater capabilities and those of coalitions to enhance your analysis.			X		
3D	Prepare for future operations in a communications-contested environment; use/build resident capabilities prior to any deployment or operation.	x	x	x	X	x
3E	Enhance your Open-Source Intelligence (OSINT) expertise and understanding of IC-wide OSINT capabilities and organizations to leverage during crisis operations and to enhance your analytic prowess.	X				
3F	Improve your network with special operations ISR personnel for enhanced interface in-theater.		X	x	X	
Chp 5	Analysis Skills and Tradecraft	DI	AS	EX	AN	DE
5A	Leverage IC and joint programs that train, develop, and/or equip analysts to properly use tradecraft and provide better analysis.	x	x	X	X	x
5B	Participate in AF and Joint exercises to help sharpen analytic and joint awareness skills prior to an operational deployment.		x	X	X	
5C	Expand expertise and analytic skills beyond traditional warfare constructs to also be familiar with irregular warfare and non-traditional enemies.	X	x	x		
5D	Develop a network for improved collaboration/Red Teaming in different theaters.		x	X	X	
5E	Leverage theater and target-specific linguists as a good source to Red Team analysis, especially given adversary insights.		x	X	X	
5F	Leverage expertise and skills from multiple disciplines including scientists, engineers, space and cyber professionals, meteorologists, and the medical community for effective intelligence analysis.	x	x	X	X	
5G	Understand knowledge management, data science, and big data analytic concepts and principles for improved data aggregation.			X	X	
5H	Don't become influenced/infatuated with a particular sensor or source; cross-reference/check with multiple sources.	X				
Chp 6	Analysis Requirements and Production	DI	AS	EX	AN	DE
6A	Educate customers on AF ISR capabilities so they can help provide the best analysis possible to meet existing requirements.					X
6B	Understand what products are currently available and who is already working on/analyzing similar requirements to ensure unity of purpose and avoid duplication of effort.	X				
6C	Understand basic acquisition-/IMD-related intelligence requirements to help better align assessments in support		X			

	of respective customers.					
6D	Prepare now for the operations and warfare of tomorrow; expect contingency operations to occur in your area of analytic expertise and pre-plan against your analytic target with pre-positioned RFIs, target identification, etc.	x			X	
6E	Coordinate/interface often with resident collection managers on assessments and proposed collection strategies.	x	X		X	
6F	Enhance your ability to assess risks associated with commander estimates and plans (e.g., operational plans, contingency plans, etc.) for improved utility and interface with traditional operations.		X			
6G	Always consider the commander's intent, end state, definition of success, and the potential adversary centers of gravity when performing analysis.			x	X	
6H	Develop the analysis/assessment then take a final "step back" to review again from a strategic mindset and perspective.		x	X		
6I	Strive to produce assessments that are releasable and only make products/services "Not Releasable to Foreign Nationals (NOFORN)" or caveated when required.					X

Notes:

1. The list is not intended to be comprehensive or all inclusive, nor is it intended to serve as a checklist that analyst Airmen are expected to meet. The aim is for analyst Airmen and analysis organizations across the AF to refine and expand the list over time.
2. Key sources for the lessons learned in this table include subject matter experts, various AF/A2 reviews of intelligence analysis, and a study by RAND Corporation: Brien Alkire, et al., *Leveraging the Past to Prepare for the Future of Air Force Intelligence Analysis*, RR-1330-AF.

A3.2. Some of the intelligence analysis lessons in Table A3.1 have been formally documented in some form or fashion via the AF Lessons Learned (LL) Program (AFLLP). The AFLLP exists to enhance readiness and improve combat capability by capitalizing on the experiences of Airmen and organizations. A lesson learned is an observation that, when validated and resolved, results in an improvement in military operations or activities at the strategic, operational, or tactical level and in long-term, internalized change to an individual or an organization. The AFLLP is part of the larger Joint Lessons Learned Program (JLLP). The Joint LL Information System (JLLIS) is used to track and disseminate LLs throughout the AF, DoD, and IC. JLLIS allows AF personnel to search, submit, and manage all AF Observations, Lessons Identified, After Action Reports, LLs, and other information up to TOP SECRET/Sensitive Compartmented Information (TS/SCI). The JLLIS database is located at SIPRNet Caution-url: <https://www.jllis.smil.mil>. All analyst Airmen are encouraged to register in JLLIS and enter observations that contain potential lessons into JLLIS for coordination through the AFLLP and/or inform their local chain of command as appropriate.

A3.3. In addition, several MAJCOMs actively acquire lessons learned or best practices. For example, HQ ACC/A2OO (Weapons and Tactics) has established a program to capture lessons learned, TTPs, and experience from ISR professionals returning from deployments.

Attachment 4

SAMPLE STANDARDS EVALUATION METHODOLOGY

A4.1. IAW AFI 14-133, MAJCOM/A2s and the NASIC/CC are responsible for developing a means to annually measure and assess AF intelligence analysis standards via SACs for reporting in the MICT. In addition, the DNI requires the AF to annually evaluate specified “covered products” for compliance with IC standards. Table A4.1, *IC Product Evaluation Criteria and Rating Scales*, delineates IC analytic tradecraft standards for use in assessment and “covered product” evaluations. The JWICS Advanced Global Intelligence Learning Environment (AGILE) offers computer-based training on how to conduct product evaluations. It is important to note that while AF tradecraft standards align with IC standards, the AF evaluates two additional standards: timeliness and customer engagement. Table A4.2, *Sample Tradecraft Criteria for Timeliness*, and Table A4.3, *Sample Tradecraft Criteria for Customer Engagement*, offer considerations for self-assessment on these two additional AF standards.

Table A4.1. IC Product Evaluation Criteria and Rating Scales.

Reviewer		Objective	1.	Yes	2.	No
Date of Review		Independent of political consideration	<input type="checkbox"/> Yes		<input type="checkbox"/> No	
Product Name		Timely	<input type="checkbox"/> Yes		<input type="checkbox"/> No	
Product ID Number		Based on all available sources of intelligence	<input type="checkbox"/> Yes		<input type="checkbox"/> No	
1. Properly describes quality and credibility of underlying sources, data, and methodologies						
<input type="checkbox"/> Poor (0)	<input type="checkbox"/> Fair (1)	<input type="checkbox"/> Good (2)	<input type="checkbox"/> Excellent (3)			
<input type="checkbox"/> Largely lacks sourcing or describes reporting base, data, or methodologies only vaguely; OR <input type="checkbox"/> Misidentifies or misrepresents cited reporting, data, or methodologies.	<input type="checkbox"/> Contains basic, generic descriptions of cited reporting, data, or methodologies; BUT <input type="checkbox"/> Provides little detail on factors that may affect the quality and credibility of underlying sources, data, or methodologies.	<input type="checkbox"/> Contains at least basic, generic descriptions of cited reporting, data, or methodologies; AND <input type="checkbox"/> Provides considerable detail on factors that may affect the quality and credibility of underlying sources, data, or methodologies.	<input type="checkbox"/> Satisfies “good” criteria; AND 1. Identifies which sources are most important to major analytic judgments; OR <input type="checkbox"/> Provides additional detail about sources, data, or methodologies that provides insight into their contribution to the analysis.			
Comment:						
2. Properly expresses and explains uncertainties associated with major analytic judgments						
<input type="checkbox"/> Poor (0)	<input type="checkbox"/> Fair (1)	<input type="checkbox"/> Good (2)	<input type="checkbox"/> Excellent (3)			
<input type="checkbox"/> Does not indicate levels of uncertainty associated with major analytic judgments; OR <input type="checkbox"/> Indicates levels of uncertainty associated with major analytic judgments that are inconsistent with the basis ascribed to them.	<input type="checkbox"/> Indicates levels of uncertainty associated with major analytic judgments; BUT <input type="checkbox"/> Does not explain their basis (e.g., by reference to strengths and weaknesses of the information base, contrary reporting, assumptions, or the nature of the judgment).	<input type="checkbox"/> Indicates levels of uncertainty associated with major analytic judgments; AND <input type="checkbox"/> Explains their basis (e.g., by reference to strengths and weaknesses of the information base, contrary reporting, assumptions, or the nature of the judgment).	<input type="checkbox"/> Satisfies “good” criteria; AND 1. Provides especially thorough discussion of nature and sources of uncertainties affecting major analytic judgments; OR <input type="checkbox"/> Identifies indicators that, if detected, would alter levels of uncertainty associated with major analytic judgments.			
Comment:						
3. Properly distinguishes between underlying intelligence information and analysts’ assumptions and judgments						
<input type="checkbox"/> Poor (0)	<input type="checkbox"/> Fair (1)	<input type="checkbox"/> Good (2)	<input type="checkbox"/> Excellent (3)			

<input type="checkbox"/> Does not distinguish among statements that convey underlying information, assumptions, and judgments.	<input type="checkbox"/> Sometimes distinguishes among statements that convey underlying information, assumptions, and judgments; OR <input type="checkbox"/> Does not explicitly state assumptions that serve as linchpins of an argument or bridge key information gaps.	<input type="checkbox"/> Consistently distinguishes among statements that convey underlying information, assumptions, and judgments; AND <input type="checkbox"/> Explicitly states assumptions that serve as linchpins of an argument or bridge key information gaps.	<input type="checkbox"/> Satisfies “good” criteria; AND 1. Identifies indicators that, if detected, could validate or refute judgments or assumptions; OR <input type="checkbox"/> Explains the implications for judgments if assumptions are incorrect.
Comment:			
4. Incorporates alternative analysis			
<input type="checkbox"/> Poor (0)	<input type="checkbox"/> Fair (1)	<input type="checkbox"/> Good (2)	<input type="checkbox"/> Excellent (3)
<input type="checkbox"/> Does not present alternatives when uncertainties, complexity, or low probability / high impact situations warrant their inclusion.	<input type="checkbox"/> Presents alternatives when uncertainties, complexity, or low probability / high impact situations warrant their inclusion; BUT <input type="checkbox"/> Does not explain the evidence and reasoning that underpin them or discuss their likelihood or implications related to U.S. interests.	<input type="checkbox"/> Presents alternatives when uncertainties, complexity, or low probability / high impact situations warrant their inclusion; AND <input type="checkbox"/> Explains the evidence and reasoning that underpin them; AND <input type="checkbox"/> (c) Discusses their likelihood or implications related to U.S. interests.	<input type="checkbox"/> Satisfies “good” criteria; AND <input type="checkbox"/> Identifies indicators that, if detected, would affect the likelihood of any identified alternatives.
Comment:			
5. Demonstrates customer relevance and addresses implications			
<input type="checkbox"/> Poor (0)	<input type="checkbox"/> Fair (1)	<input type="checkbox"/> Good (2)	<input type="checkbox"/> Excellent (3)
<input type="checkbox"/> Provides little or no information or analysis beyond what is generally known; OR <input type="checkbox"/> Does not respond adequately to a specific tasking.	<input type="checkbox"/> Provides useful information and analysis but does not address implications; OR <input type="checkbox"/> Does not address an important issue or question raised by the analysis; OR <input type="checkbox"/> Satisfies a specific tasking only partially.	<input type="checkbox"/> Provides useful information and analysis and addresses near-term, direct, or first-order implications; AND <input type="checkbox"/> Adds value by addressing at least one of the following: trends or prospects, appropriate context, insight gained from synthesizing a large volume of information, warning of threats to U.S. interests, or factors affecting opportunities for U.S. actions (without prescribing U.S. policy); OR <input type="checkbox"/> Satisfies a specific tasking fully.	<input type="checkbox"/> Satisfies “good” criteria; AND <input type="checkbox"/> Assesses longer-term, indirect, or second-order implications; OR <input type="checkbox"/> Provides exceptionally expert analysis (e.g., by drawing on multiple disciplines or presenting illuminating comparisons); OR <input type="checkbox"/> Warns of threats in detail (e.g., by discussing specific indicators, likelihood, or imminence); OR <input type="checkbox"/> Analyzes in detail factors affecting opportunities for U.S. action (e.g., by discussing risks, benefits, or possible reactions to potential U.S. actions).
Comment:			
6. Uses clear and logical argumentation			
<input type="checkbox"/> Poor (0)	<input type="checkbox"/> Fair (1)	<input type="checkbox"/> Good (2)	<input type="checkbox"/> Excellent (3)
<input type="checkbox"/> Lacks a main analytic message; OR <input type="checkbox"/> Does not support analytic judgments with relevant evidence or undermines them by using flawed logic; OR	<input type="checkbox"/> Presents a main analytic message; BUT <input type="checkbox"/> Does not combine evidence, context, and assumptions effectively to support analytic judgments or uses weak logic; OR	<input type="checkbox"/> Presents a prominent and clear main analytic message; AND <input type="checkbox"/> Presents clear reasoning with no flaws in logic and effectively combines evidence, context, and	<input type="checkbox"/> Satisfies “good” criteria; AND <input type="checkbox"/> Addresses any inconsistent or contrary information in a way that reconciles it with analytic judgments; OR <input type="checkbox"/> Demonstrates notable skill or sophistication in combining evidence, context, and assumptions convincingly to

<input type="checkbox"/> Often uses unclear language or uses a structure that is not easily understood.	<input type="checkbox"/> Sometimes uses unclear language or a structure that at times is not easily understood.	assumptions to support analytic judgments; AND <input type="checkbox"/> Uses clear language and a structure that displays a logical flow appropriate for the argument being presented.	support analytic judgments.		
Comment:					
7. Explains change to or consistency of analytic judgments					
<input type="checkbox"/> Poor (0)	<input type="checkbox"/> Fair (1)	<input type="checkbox"/> Good (2)	<input type="checkbox"/> Excellent (3)		
<input type="checkbox"/> Does not note or explain that a major analytic judgment differs from previous production.	<input type="checkbox"/> Does not note that a major analytic judgment is consistent with previous production; OR <input type="checkbox"/> Notes how a major analytic judgment compares with previous production but does not explain how new information or reasoning supports changing or maintaining an existing analytic line.	<input type="checkbox"/> Notes how a major analytic judgment compares with previous production and explains how new information or reasoning supports changing or maintaining an existing analytic line.	<input type="checkbox"/> Satisfies "good" criteria; AND <input type="checkbox"/> Highlights and explains how a major analytic judgment compares with judgments on the topic held within the U.S. intelligence community, not just within the same analytic element.		
Comment:					
8. Makes accurate judgments and assessments			Harvest Date:		
Phase 1			Phase 2: Often accuracy cannot be evaluated until a later date. Establish a "harvest" date to revisit the assessment to evaluate Phase 2.		
<input type="checkbox"/> Unclear	<input type="checkbox"/> Conditioned	<input type="checkbox"/> Unconditioned	<input type="checkbox"/> Accurate	<input type="checkbox"/> No Accurate	<input type="checkbox"/> Indeterminate
<input type="checkbox"/> Judgment or assessment is not expressed clearly.	<input type="checkbox"/> Judgment or assessment is expressed clearly and is conditioned (e.g., by an "if/then" statement).	<input type="checkbox"/> Judgment or assessment is expressed clearly and is not conditioned (e.g., by an "if/then" statement).	<input type="checkbox"/> Judgment or assessment is found to be accurate.	<input type="checkbox"/> Judgment or assessment is found to be not accurate.	Accuracy could not be determined for any of several reasons: <input type="checkbox"/> Nature of judgment or assessment prevented assessment of accuracy. <input type="checkbox"/> Data needed to assess accuracy were not found. <input type="checkbox"/> Irreconcilable views among evaluators prevented agreement on a final assessment of accuracy.
Comment:					
9. Incorporates effective visual information where appropriate					
<input type="checkbox"/> Poor (0)	<input type="checkbox"/> Fair (1)	<input type="checkbox"/> Good (2)	<input type="checkbox"/> Excellent (3)		
<input type="checkbox"/> Does not use visual information when its use would have substantially complemented or enhanced an analytic product; OR <input type="checkbox"/> Presents visual information that is inconsistent with or not pertinent to the text of an analytic product, or that confuses or detracts from an analytic product's presentation.	<input type="checkbox"/> Presents visual information that is pertinent to an analytic product; BUT <input type="checkbox"/> Does little to clarify (illustrate, summarize, or provide greater detail), complement, or augment data or analytic points in an effective manner that enhances customer understanding of a product's analysis.	<input type="checkbox"/> Presents visual information that is pertinent to an analytic product; AND <input type="checkbox"/> Clarifies (illustrates, summarizes, or provides greater detail), complements, or augments data or analytic points in an effective manner that enhances customer understanding of a product's analysis.	<input type="checkbox"/> Satisfies "good" criteria; AND <input type="checkbox"/> Takes particularly effective advantage of visual presentational methods to convey data or analytic points in a way that enhances a product's value by making complex issues more understandable, adding insight or perspective, increasing knowledge retention, or highlighting trends, drivers, or indicators.		
Comment:					

General Comments:
<i>If an evaluator determines that a standard is not applicable, it should be noted, with a justification, in the comment box.</i>

Table A4.2. Sample Tradecraft Criteria for Timeliness.

1. Poor (0)	2. Fair (1)	3. Good (2)	4. Excellent (3)
5. ISR element fails to provide analysis products and services in sufficient time to impact planning, operations, and decision-making	6. ISR element timeliness in providing analysis products and services marginally impacts planning, operations and decision-making	7. ISR element provides analysis products and services in sufficient time to impact planning, operations, and decision-making	8. ISR element provides analysis products and services at the earliest time and place to enable decision advantage and create significant mission and capability opportunities
Comment:			
Note: AF intelligence analysis is timely to impact planning, mission objectives, operations and to otherwise aid in commanders' decisions. Analysts are responsible for engaging with customers and end-users of intelligence to understand what they need and when they need it in order to deliver information and knowledge at the earliest time and place to enable customers to effectively make decisions and take action. Timeliness is about ensuring awareness, creating opportunities, and enabling warfighting decision advantage.			

Table A4.3. Sample Tradecraft Criteria for Customer Engagement.

1. Poor (0)	2. Fair (1)	3. Good (2)	4. Excellent (3)
1. ISR element has limited engagement with the customer to understand their requirements or seek feedback on product/service timeliness or utility	2. ISR element requests and responds to customer feedback for some, but not all, products and services	3. ISR element requests and responds to customer feedback for all products and services	4. ISR element satisfies "good" criteria; AND 5. Regularly engages with the customer to anticipate their requirements by understanding their operations, listening to their questions and concerns, and identifying intelligence needs to support documented capabilities and concepts; AND 6. Has a formal engagement program established
Comment:			
Note: Analysis fully address customers' requirements within the time constraints and in a manner most useful. Analyst Airmen are responsive to customer feedback. While challenging to evaluate, this tradecraft standard is foundational to AF intelligence analysis.			

Attachment 5

AF ISR SAT TRADECRAFT GUIDE

A5.1. The following 19 figures are excerpts from an AF tradecraft guide on SATs, developed by AFCO-CFA. The figures offer insight into some, but not all, of the key SATs used in intelligence analysis to help improve tradecraft standardization across the AFIAE.

Figure A5.1. Imagination Techniques and Indicators.

IMAGINATION TECHNIQUES AND INDICATORS		
Core Techniques	Description	When to Use
Structured Brainstorming	A group process for generating new ideas and concepts	Used to stimulate new thinking and generate a range of hypotheses about an issue
Red Team	A function executed by trained, educated, and practiced team members that provide an independent capability to fully explore alternatives from the perspectives of partners, adversaries, and others	Used to fully explore alternatives in plans, operations, concepts, organizations and capabilities in the context of the operational environment
Alternative Futures Analysis	Tool to help analysts explore multiple ways a situation can develop when there is high complexity and uncertainty	Mostly used when a situation is viewed as too complex or the outcomes are too uncertain to trust a single outcome assessment
Outside-In Thinking	Analytical tool used to identify the full range of basic forces, factors and trends that would indirectly shape an issue	Used to identify all the critical, external factors that could influence how a situation will develop

Figure A5.2. Structured Brainstorming.

STRUCTURED BRAINSTORMING

A technique for stimulating new thinking. It can be applied to virtually all of the other structured analytic techniques and allows the analyst to see a wider range of factors that might bear on the topic.

Brainstorming Ground Rules

1. Never criticize an analyst's ideas
2. Allow sufficient time to brainstorm
3. Involve at least one "outsider" in the process

Divergent Thinking Phase

1. "Post-It" note exercise

Convergent Thinking Phase

1. Arrange notes by commonalities to form clusters
2. Some notes may be moved or copied as cluster form
3. Select a word or phrase that characterizes each cluster
4. Identify any notes that do not fit with others and consider them useless noise or the beginning of an idea that deserves further attention (wild cards)
5. Select one or two areas that deserve the most attention
6. Set priorities based on consensus and decide on the next steps for analysis

Figure A5.3. Red Team Analysis.

RED TEAM ANALYSIS

Function executed by trained, educated, and practiced team members to provide commanders an independent capability to fully explore alternatives in plans, operations, concepts, organizations, and capabilities in the context of the operational environment and from the perspectives of partners, adversaries, and others.

Red Team Techniques

1. Team puts themselves into the adversary's circumstance and reacts as the adversary would
2. Assessments are not coordinated with anyone outside the team
3. Develop set of "first person" questions
4. Draft policy papers in which the group makes decisions, proposes recommendations, or develops courses of action
5. Present analysis in the first-person format
6. Avoid use of caveats or qualifications
7. Focus on a prediction based on the adversary's world
8. Do not plot out all possible courses of action

Figure A5.4. Alternative Futures Analysis.

ALTERNATIVE FUTURES ANALYSIS

An imaginative technique that systematically explores multiple scenarios. This technique can be used when a situation's uncertainty and complexity require consideration of more than one outcome.

Six-Step Process

1. Develop a focused issue and intelligence question
2. Identify drivers, forces, factors, and variables that can affect the issue
3. Select the two most critical and uncertain drivers
4. Establish plausible endpoints for each driver
5. Form a futures matrix by crossing the two axes. The resulting quadrants are the basis for alternative future scenarios
6. Build narratives that describe these futures and how they might come to be (Signposts or Indicators can then be developed)

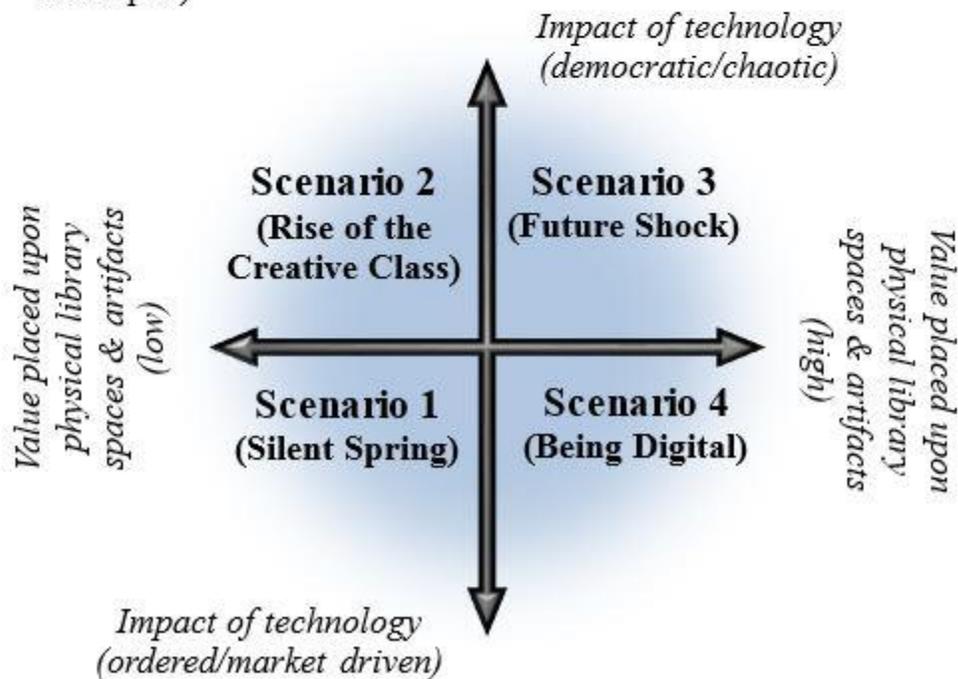


Figure A5.5. Outside-in Thinking.

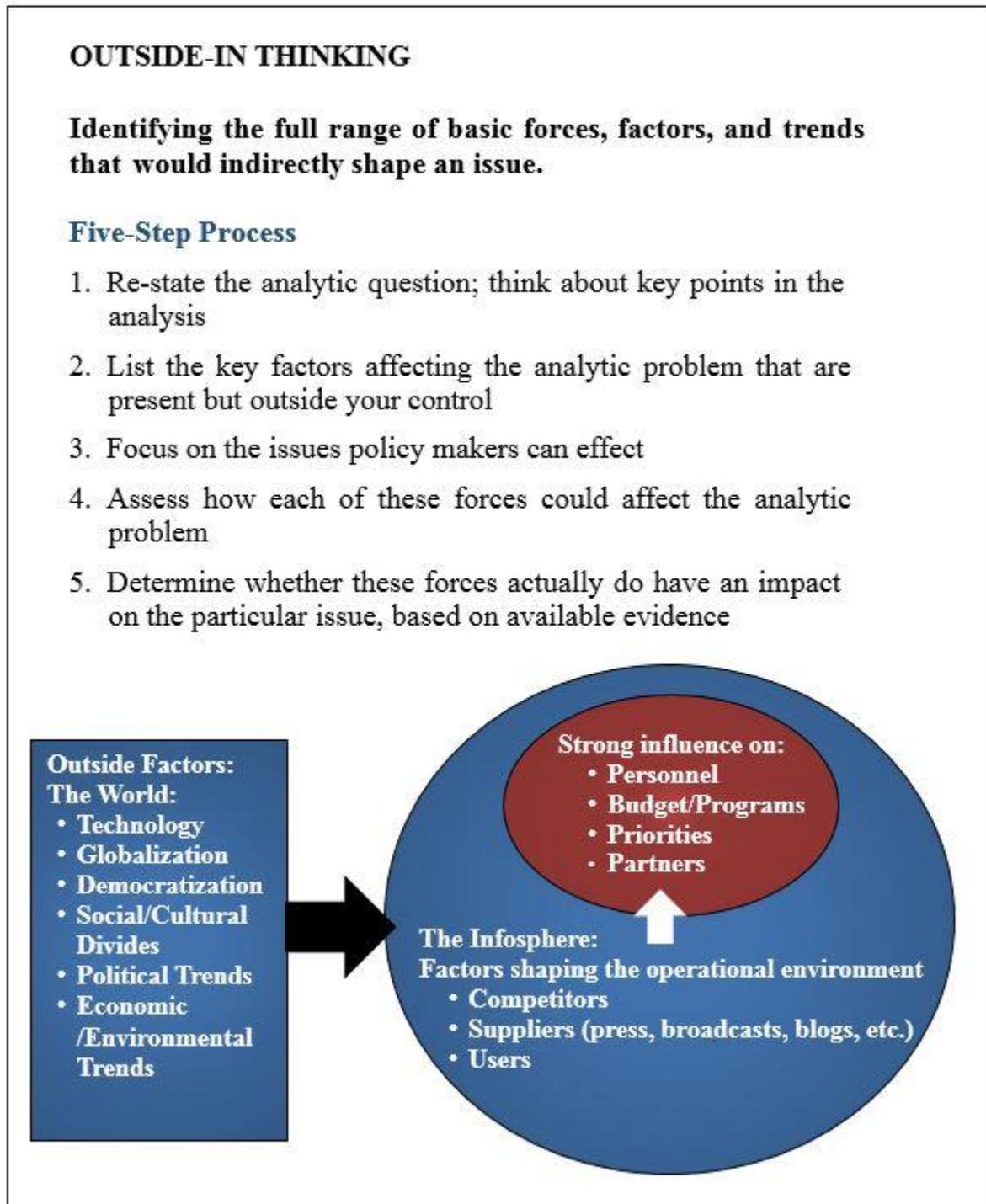


Figure A5.6. Diagnostic Techniques.

DIAGNOSTIC TECHNIQUES		
Core Techniques	Description	When to Use
Key Assumptions Check	List and review the key working assumptions on which fundamental judgments rest	Most useful at the beginning of an analytic project
Quality of Information Check	Evaluate completeness and soundness of available information sources	Use to establish confidence level in analytic judgments, & ensure judgments are anchored to strong, relevant sources
Indicators or Signposts of Change	Reviewing observable events and trends to determine if a postulated situation is developing	Used to instill analytic rigor into the analytic process enhancing the credibility of analytic judgments
Deception Detection	Systematic use of checklists to determine when deception may be present and how to avoid being deceived	Used to counter adversary attempts of misinformation, concealment, and misdirection
Analysis of Competing Hypotheses	A systematic and logical approach to generate and evaluate all plausible hypotheses to solve a given problem	Any analysis where there are alternative explanations for what has happened, is happening, or is likely to happen

Figure A5.7. Key Assumptions Check.

KEY ASSUMPTIONS CHECK

A diagnostic technique that identifies hypotheses analysts have accepted to be true and that form the basis of the assumption

Four-Step Process

1. Review the analytic line on the issue; write it down for all to see and defend it orally
2. Articulate all the premises, both stated and unstated in finished intelligence, that are accepted as true for this analytic line to be valid
3. Challenge each assumption, asking why it must be true and whether it remains valid under all conditions
4. Refine the list of key assumptions to contain only those that must be true to sustain your analytic line; consider under what conditions, or in the face of what information, these assumptions might not hold

Questions to Ask

How much confidence exists that this assumption is correct?

What explains the degree of confidence in the assumption?

What circumstances or information might undermine this assumption?

Is a key assumption more likely a key uncertainty or key factor?

Could the assumption have been true in the past but be less so now?

If the assumption proves wrong, would it significantly alter the analytic line? If so, how?

Has this process identified new factors that need further analysis?

Figure A5.8. Quality of Information Check.

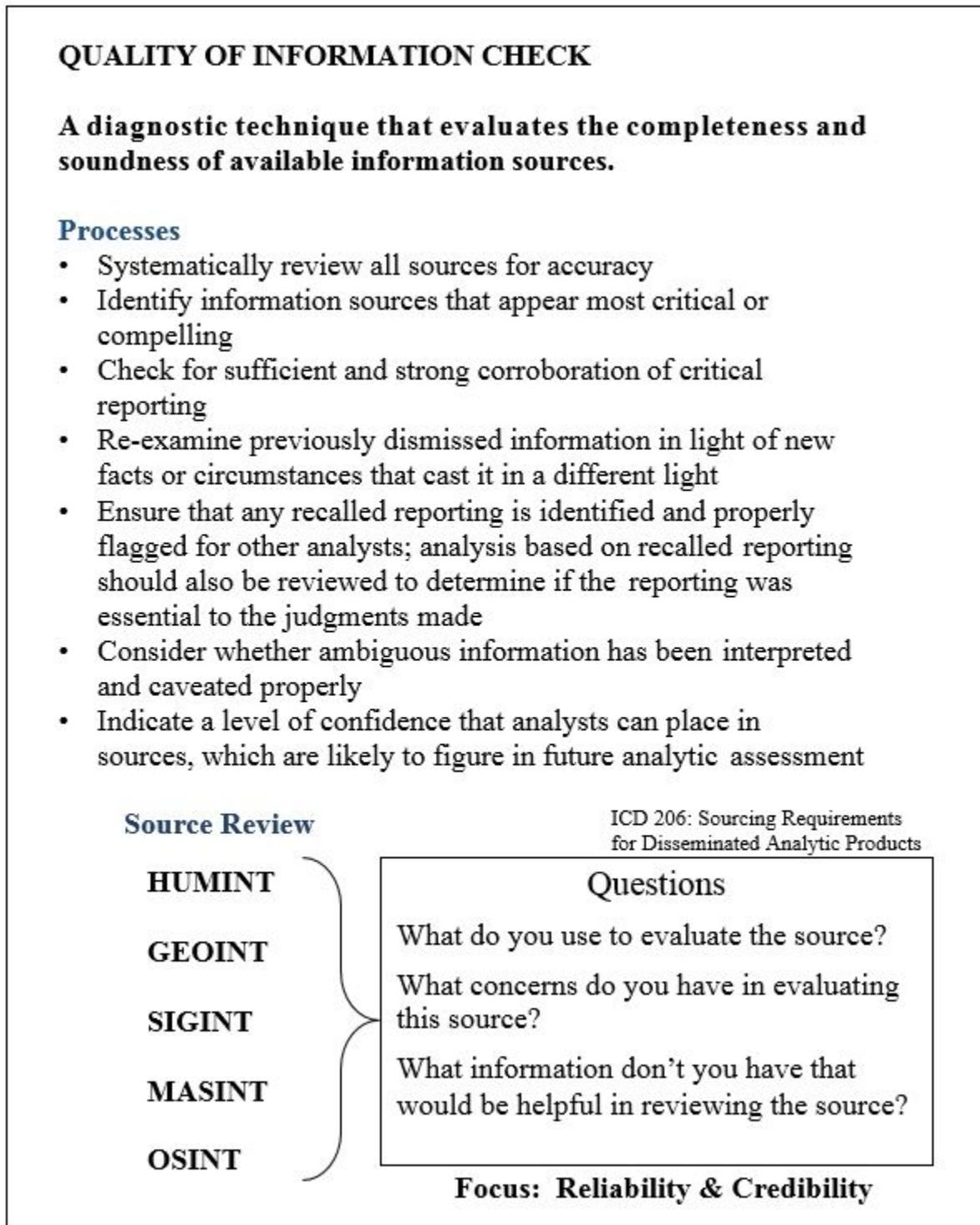


Figure A5.9. Indicators or Signposts of Change.

INDICATORS OR SIGNPOSTS OF CHANGE

Also called **Signpost Analysis**, this technique involves periodically reviewing a list of observable events or trends to track events, monitor targets, spot emerging trends, and warn of unanticipated change.

Indicator Technique Recommendations	
Analytic Environment	Indicator Technique
<p>Non-Controversial</p> <ul style="list-style-type: none"> • The issue is non-controversial within the IC or the policy community • Analysts and/or policymakers are uncertain about how the situation will actually evolve 	<ul style="list-style-type: none"> • Simple lists of observables • Two contrasting lists of indicators (that would suggest a leader is growing stronger and a second list that he is growing weaker)
<p>Somewhat Controversial</p> <ul style="list-style-type: none"> • Some analysts or agencies have preferred positions or established equities to protect • The outcome has major policy or resource implications 	<ul style="list-style-type: none"> • Use simple scales • Provide definitions for each indicator • Portray the information graphically • Revisit on periodic basis
<p>Highly Controversial</p> <ul style="list-style-type: none"> • Analysts hold strong, contrary views • Major institutional equities are at stake within the IC • The issue is highly charged within the policy community 	<ul style="list-style-type: none"> • Provide a level of confidence for each rating • Provide a narrative description of what one would expect to observe at each level on a rating scale • List the sources of info and how important each was in establishing the rating

Figure A5.10. Deception Detection.

DECEPTION DETECTION

Diagnostic technique where analysts systematically use checklists to determine when deception actually may be present and how to avoid being deceived.

Does a foreign actor have the Motive, Opportunity and Means (MOM) to deceive?

1. Motive (What are the deceiver's goals?)
2. Channels (What means are available?)
3. Risks (What are the risks of discovery?)
4. Costs (Can deception be accomplished?)
5. Feedback (Can the deceiver monitor its use?)

Would this potential deception be consistent with Past Opposition Pactices (POP)?

1. Does the deceiver have a history of deception?
2. Does this deception fit past patterns?

Is there cause for concern regarding the Manipulability of Sources (MOSES)?

1. Is the source reliable?
2. Does the source have access?
3. How good are the source's *bona fides*?
4. Is the source vulnerable to control or manipulation by the target?

What can be learned from the Evaluation of Evidence (EVE)?

1. How accurate is the source's reporting?
2. Is the whole chain of evidence available?
3. Does critical evidence check out?
4. Does evidence from one source conflict with others?
 5. Do other sources of information provide corroborating evidence?
6. Is the absence of evidence unusual?

Figure A5.11. Analysis of Competing Hypotheses.

ANALYSIS OF COMPETING HYPOTHESES

Provides a systematic and logical approach to generate and evaluate plausible hypotheses to solve a given problem.

Eight-Step Process

1. Generate hypotheses
2. Gather and list evidence
3. Prepare the evidence and hypothesis matrix
4. Refine the matrix
5. Draw tentative conclusions
6. Perform sensitivity analysis
7. Report conclusions
8. Identify milestones

	Cred	Rel	H 1	H 2	H 3
Score			2	4	3
Evidence 1	H	H	C	C	C
Evidence 2	M	M	I	C	C
Evidence 3	M	M	C	C	I
Evidence 4	H	H	I	C	I
Evidence 5	M	M	I	I	C

H – High
 M – Medium
 L – Low

C – Consistent / Supports
 I – Inconsistent / Does Not Support
 N/A – Not Applicable

Figure A5.12. Focus Techniques.

FOCUS TECHNIQUES		
Core Techniques	Description	When to Use
Issue Development	Used to ensure the central issues and alternative explanations of an issue or problem are identified within the scope and focus of the problem statement to aid in gathering the best answer	Used anytime analysts begin to assess a new issue or problem or begin a new research endeavor to mitigate bias toward the issue
Question Refinement	A simple technique to ensure analysts are answering the right question when responding to an intelligence requirement	Used when a consumer's intelligence requirement is not completely clear or when research begins to lead to ambiguity and confusion

Figure A5.13. Issue Development.

ISSUE DEVELOPMENT

A divergent technique that opens the mind of the analyst to substantive alternatives. Restating a problem opens it up and reveals important perspectives and issues otherwise overlooked.

Start with the initial poorly defined/stated issue

1. Paraphrase: Redefine the issue without losing the original meaning
2. 180 Degrees: Turn the issue on its head. Is the issue the one asked or the opposite of it?
3. Broaden the Focus: Instead of focusing on only one piece of the puzzle, step back and look at several pieces together
4. Narrow the Focus: Can the issue be broken down further? Take the question and ask about the components that make up the problem
5. Redirect the Focus: What outside forces impinge on this issue? Is deception involved?
6. Ask Why: Question the initial issue or question. Develop a new question based on the answer. Then question the second question and develop a new question based on that answer. Repeat this process until you believe the real problem emerges. This process is particularly effective in generating possible alternatives

End with a final refined issue

Figure A5.14. Question Refinement.

QUESTION REFINEMENT

A simple analytical technique used to ensure analysts are answering the right question when responding to a customer's intelligence requirement.

7-Step Process

- 1. New Development** - Describe a change to the operating environment or security interests that result in a requirement for intelligence analysis and production.
- 2. Raw Question(s)** - In response to the New Development, the immediate questions that come to mind, or that would come to mind for your customer. In relation to an event of interest, the raw questions could be, "Who did it and why?" or "What caused it?"
- 3. Key Issue** - A key issue area normally includes an issue area and a geographic area. Issue areas are substantive categories of policy, strategy, or war fighting function. Key issue areas for a military operation can often be found in campaign descriptions of the lines of effort.
- 4. National Interests** - The big picture must be considered thoughtfully when refining the intelligence requirement. Analysts should be able to tie assessments to U.S. security interests in general.
- 5. Specific Customer Concerns** - This section of the refinery is often used to determine what questions are relevant and required to fulfill the intelligence question versus those specific requirements that might be better answered separately.
- 6. Time Frame** - Answering your intelligence requirement should be targeted at a particular time, normally in the future (ex: "in the next 6 months," or "before 1 May 201X").
- 7. Refined Question** - The refined intelligence question should be open-ended, requiring more than a yes or no answer, and should meet a specific customer's intelligence needs.

Figure A5.15. Contrarian Techniques.

CONTRARIAN TECHNIQUES		
Core Techniques	Description	When to Use
Devil's Advocacy	Technique used to challenge a single, strongly held view or consensus by building the best possible case for an alternative explanation	Used when analysts need to provide further confidence that the current analytic line will hold up to close scrutiny
High Impact / Low Probability	Highlights a seemingly unlikely event that would have major policy consequences if it were to happen	Used when analysts believe an event is unlikely but have not given much thought to the consequences of its occurrence
What If? Analysis	A technique which assumes an event has occurred with potential (negative or positive) impact and explains how it might come about	Used to challenge a strong mindset that an event will not happen or be confidently justified
Team A / Team B Analysis	Separates teams to contrast two or more strongly held views or competing hypotheses	Used when there are two or more equally strong mind-sets held on an issue that need to be clarified (Devil's Advocacy challenges a single dominant mindset)

Contrarian: opposition or rejection of popular opinion

Figure A5.16. Devil's Advocacy.

DEVIL'S ADVOCACY

A contrarian technique for challenging a single, strongly held view or consensus by building the best-possible case for an alternative explanation.

Explicitly challenges key assumptions to see if they will not hold up under some circumstances.

Methodology

1. Outline the mainline judgment and key assumptions and characterize the evidence supporting the current analytic view
2. Select one or more assumptions—stated or not—that appear the most susceptible to challenge
3. Review the information used to determine whether any is of questionable validity, whether deception is possibly indicated, or whether major gaps exist
4. Highlight the evidence that could support an alternative hypothesis or contradicts the current thinking
5. Present to the group the findings that demonstrate there are flawed assumptions, poor quality evidence, or possible deception at work
6. Consider drafting a separate contrarian paper that lays out the arguments from a different analytic conclusion if the review uncovers major analytic flaws
7. Be sure that any products generated clearly lay out the conventional wisdom and are identified as an explicitly “Devil’s Advocate” project; otherwise the reader can become confused as to the current official view on the issue

Figure A5.17. High Impact / Low Probability.

HIGH IMPACT / LOW PROBABILITY

A technique used to highlight a seemingly unlikely event that would have major policy consequences if it happened.

If there is a strongly-held view that an event is unlikely, then postulating precisely the opposite should not be difficult.

Perform the following steps to determine the effects of High Impact/Low Probability events:

1. Define the high-impact outcome clearly. This process is what will justify examining what most analysts believe to be a very unlikely development
2. Devise one or more plausible explanations for or “pathways” to the low probability outcome. This should be as precise as possible, as it can help identify possible indicators for later monitoring
3. Insert possible triggers or changes in momentum if appropriate. These can be natural disasters, sudden health problems of key leaders, or new economic or political shocks that might have occurred historically or in other parts of the world
4. Brainstorm with analysts having a broad set of experiences to aid the development of plausible but unpredictable triggers of sudden change
5. Identify for each pathway a set of indicators or “observables” that would help you anticipate that events were beginning to play out this way
6. Identify factors that would deflect a bad outcome or encourage a positive outcome

Figure A5.18. “What If” Analysis.

“WHAT IF” ANALYSIS

That “What If?” Analysis is the technique which assumes an event has occurred with potential (negative or positive) impact and explains how it might come about.

Method

1. Assume the event has happened
2. Select some triggering events that permitted the scenario to unfold to help make the “what if” more plausible; for example, analysts might postulate the death of a leader, a natural disaster, or some economic event that would start a chain of other events
3. Develop a chain of argumentation based as much on logic as evidence to explain how this outcome could have come about
4. “Think backwards” from the event in concrete ways—that is, specifying what must actually occur at each stage of the scenario is often very useful
5. Identify one or more plausible pathways or scenarios to the unlikely event; very often more than one will appear possible
6. Generate a list of indicators or “observables” for each scenario that would help to detect the beginnings of the event
7. Consider the scope of the positive and negative consequences of each scenario and their relative impacts
8. Monitor the indicators developed on a periodic basis

Figure A5.19. Team A / Team B.**TEAM A / TEAM B**

Used when there may be competing and possibly equally strong mind sets held on an analytical issue; this approach helps opposing groups see the merit in each other's perspective.

Two Phases**1)Analysis Phase**

1. Identify the two or more competing hypotheses or points of view
2. Form teams or designate individuals to develop the best case for each hypothesis
3. Review all pertinent information that supports their respective position
4. Identify missing information that would strengthen their hypotheses
5. Structure each argument, presenting key assumptions, key pieces of evidence, and careful articulation of the logic behind the argument

2)Debate Phase

1. Set aside time for an oral presentation of the alternative team findings; this can be an informal brainstorming session or a more formal debate
2. Have an independent jury of peers to listen to the oral presentation and be prepared to question the teams regarding their assumptions, evidence, or logic
3. Allow each team to present its case, challenge the other team's arguments, and rebut the opponent's critique of its case
4. Let the jury consider the strength of each presentation and recommend possible next steps for further research and collection efforts

Attachment 6

IC, DOD, AND MILITARY SERVICE REFERENCES

A6.1. The IC. As shown in Table A6.1, *Members of the IC*, the IC is a coalition of 17 agencies and organizations, including the ODNI, within the Executive Branch that work both independently and collaboratively to gather and analyze the intelligence necessary to conduct foreign relations and national security activities.

Table A6.1. Members of the IC.

Office of the Director of National Intelligence (ODNI)	
U.S. Air Force (USAF) Intelligence	Department of the Treasury
U.S. Army (USA) Intelligence	Drug Enforcement Agency (DEA)
Central Intelligence Agency (CIA)	Federal Bureau of Investigation (FBI)
U.S. Coast Guard (USCG) Intelligence	U.S. Marine Corps (USMC) Intelligence
Defense Intelligence Agency (DIA)	National Geospatial-Intelligence Agency (NGA)
Department of Energy (DOE)	National Reconnaissance Office (NRO)
Department of Homeland Security (DHS)	National Security Agency (NSA)
Department of State (DOS)	U.S. Navy (USN) Intelligence

A6.2. IC and DoD Reference Documents. Table A6.2, *Common IC and DoD Analysis References*, lists various IC and DoD publications that most often impact AF analysis.

Table A6.2. Common IC and DoD Analysis References.

IC
<p>DNI <i>Principles of Intelligence Transparency for the Intelligence Community</i></p> <p>ICD 191, <i>Duty to Warn</i></p> <p>ICD 203, <i>Analytic Standards</i></p> <p>ICD 204, <i>National Intelligence Priorities Framework</i></p> <p>ICD 205, <i>Analytic Outreach</i></p> <p>ICD 206, <i>Sourcing Requirements for Disseminated Analytic Products</i></p> <p>ICD 208, <i>Maximizing the Utility of Analytic Products</i></p> <p>ICD 209, <i>Tearline Production and Dissemination</i></p>
DoD
<p>DoDI 3115.17, <i>Management and Oversight of DoD All-Source Analysis</i></p> <p>DIA Directive (DIAD) 5000.200, <i>Intelligence Threat Support for Major Defense Acquisition</i></p>

<p><i>Programs</i></p> <p>DIA Instruction (DIAI) 5000.002, <i>Intelligence Threat Support for Major Defense Acquisition Programs</i></p> <p>DIAP Users Guide</p> <p>DoD Directive (DoDD) 5000.01, <i>The Defense Acquisition System</i></p> <p>DoDD 5105.21, <i>Defense Intelligence Agency</i></p> <p>DoDD 5250.01, <i>Management of Intelligence Mission Data (IMD) in DoD Acquisition</i></p> <p>DoDI 5000.02, <i>Operation of the Defense Acquisition System</i></p>
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A6.3. Military Services. As depicted in Table A6.3, *Major Intelligence Analysis Entities of the Military Services*, each military service has a SIO that oversees intelligence policy, planning, programming, and activities on behalf of the service chief. The AF SIO is the DCS for ISR, also known as the AF/A2. Each service is authorized one service intelligence center, also called an intelligence analysis center. The AF’s service intelligence center is NASIC. The AF has assigned the ACC as its lead MAJCOM for the GIISR capability, which includes intelligence analysis. Similarly, other military services have assigned significant analysis responsibilities to various organizations. All services routinely reach out to each other for service-unique expertise and collaboration in addressing analysis requirements.

Table A6.3. Major Intelligence Analysis Entities of the Military Services.

	USAF	USA	USN	USMC	USCG
Service Senior Intelligence Officer (SIO)	Deputy Chief of Staff for ISR (USAF/A2)	Deputy Chief of Staff for Intelligence (USA/G2)	Director of Naval Intelligence (USN/N2/6)	Director of Intelligence (USMC/DIRINT)	Assistant Commandant for Intelligence (USCG/CG-2)
Service Intelligence Center	National Air and Space Intelligence Center (NASIC)	National Ground Intelligence Center (NGIC)	Office of Naval Intelligence (ONI)	Marine Corps Intelligence Activity (MCIA)	Intelligence Coordination Center (ICC)
Lead Command	Air Combat Command (ACC) 1. Core Function Lead Integrator (CFLI) for Global Integrated ISR (GIISR) 2. Chair, Analysis Capability Working Group (ACWG)	Intelligence and Security Command (INSCOM)	N/A	N/A	N/A
Other Major Analysis Organizations	1. Intelligence Systems Support Office (ISSO) 2. 363 ISRW 1. Civil Aviation Intelligence Analysis Center (CAIAC)		<ul style="list-style-type: none"> • Nimitz Operational Intelligence Center • Farragut Technical Analysis Center • Kennedy Irregular Warfare Center Hopper 		<ul style="list-style-type: none"> • Maritime Intelligence Fusion Center Atlantic (MICF LANT) • Maritime Intelligence Fusion Center Pacific (MICF PAC) Coast Guard Investigative Service (CGIS)

			Information Services Center		
Counter-Intelligence Organizations	AF Office of Special Investigations (AFOSI)	Army Counterintelligence Center (ACIC)	Naval Criminal Investigative Service (NCIS)	2nd Intelligence Battalion	Coast Guard Counterintelligence Service (CGCIS)
Notes:					
1. The USA service intelligence center (NGIC) falls under INSCOM. The service intelligence center in each of the other military services falls under the service SIO.					
2. The AF assigns a CFLI to each of its major capabilities. The ACC Commander is the GIISR CFLI, which includes intelligence analysis. The ACC staff coordinates closely with intelligence analysis stakeholders across the AFIAE to develop, program, and advocate for intelligence analysis capabilities and requirements.					
3. The ACWG serves as a cross-MAJCOM entity of analysis stakeholders responsible for supporting the development and advancement of air, space, and cyberspace intelligence analytical capabilities within the AF ISR Enterprise and across the full range of military operations. The ACWG provides a means to coordinate, assess, and synchronize AF intelligence analysis policies, tradecraft, education, training, and tools, as well as to recommend materiel and non-materiel solutions through established AF processes and offices.					

A6.4. Common Analysis Organizations. Table A6.4, *Intelligence Analysis Organizations by Mission Type*, identifies IC, DoD, military service, and other government agencies organized according to the primary analysis they conduct. The table is not meant to be exhaustive; rather it provides a sampling of missions and the key analysis organizations that support them.

Table A6.4. Intelligence Analysis Organizations by Mission Type.

Air / Integrated Air Defense Systems	Short Range Missiles	Med / Long Range Missiles	Ground
NASIC	MSIC	NASIC	NGIC
Maritime	Space	Cyber	Counter-IED
ONI MCIA	NASIC NRO 14 AF	CYBERCOM NSA NASIC 24 AF 25 AF AFOSI	JIDA
Counter-terrorism	Counter-intelligence	Threat Finance	Criminal
NCTC DHS FBI CIA CGIS	AFOSI CIA FBI ACIC NCIS 2d Intelligence Btn CGCIS	Treasury FBI	AFOSI FBI NCIS CID CGIS
Rotary Wing	Unmanned Systems	Surface-to-Air Missiles	Electronic Warfare Systems
NGIC	NASIC NGIC ONI	MSIC	NASIC NGIC ONI
Rapid Air Mobility	Global Commons		
AMC AIS	CAIAC		

	NAI2O TRANSCOM JIOC AMC AIS MIFC LANT MIFC PAC		
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Notes:

1. As the DoD functional manager for analysis, DIA provides overarching all-source analysis and/or guidance for all mission types listed.
2. The Missile and Space Intelligence Center (MSIC) is an equivalent organization to the service intelligence centers. Additionally, MSIC provides support to space analysis.
3. CYBERCOM—Cyber Command; JIDA—Joint Improvised-Threat Defeat Agency; NCTC—National Counterterrorism Center; CGIS—Coast Guard Investigation Service; Btn—Battalion; CID—Criminal Investigation Command; NAI2O—National Aviation Intelligence Integration Office; TRANSCOM—Transportation Command

Attachment 7

ONLINE RESOURCES FOR ANALYSIS SKILLS AND TRADECRAFT.

Table A7.1, *Online Resources for Skills and Tradecraft*, identifies resources that contain additional background, information, and guidance on analysis skills and tradecraft topics discussed in Chapter 5. The list reflects some of the common resources as of 2017 and is not meant to be exhaustive nor all-inclusive.

Table A7.1. Online Resources for Skills and Tradecraft.

Analysis Certification
<i>ASA Certification</i> site, JWICS Caution-url: https://intelshare.intelink.ic.gov/sites/asacertification
<i>Universal GEOINT Certification Program</i> site, https://usgif.org/certification
Critical Thinking and Reasoning
<i>AFCO-CFA</i> Intellipedia Page, https://intellipedia.intelink.gov/wiki/Air_Force_Cryptologic_Office_(AFCO)/CFA_Advanced_Analysis_and_Training
Foundation for Critical Thinking, <i>The Critical Thinking Community</i> , http://www.criticalthinking.org
Grimes, Geoffrey, <i>Scholasticism, Rationalism, and Empiricism: Epistemology and Three Western Systems of Reasoning</i> , http://www.distancelearningassociates.org/eng2327/BC-ReasoningSystems.htm
SATs
<i>AFCO-CFA</i> Intellipedia Page, https://intellipedia.intelink.gov/wiki/Air_Force_Cryptologic_Office_(AFCO)/CFA_Advanced_Analysis_and_Training
CIA, <i>A Tradecraft Primer: Structured Analytic Techniques for Improving Intelligence Analysis</i> , March 2009, https://www.cia.gov/library/center-for-the-study-of-intelligence/csi-publications/books-and-monographs/Tradecraft%20Primer-apr09.pdf
DCS for ISR White Paper, <i>Data Science and the USAF ISR Enterprise</i> , February 2016, http://www.defenseinnovationmarketplace.mil/resources/Data_Science_and_the_USAF_ISR_Enterprise%20_White_Paper.PDF
<i>ICAT-G/Research Portal</i> , JWICS Caution-url: https://intellipedia.intelink.ic.gov/wiki/Portal:IC_Analytic_Tradecraft_Gateway
Lengler, Ralph, and Martin J. Eppler, <i>A Periodic Table of Visualization Methods</i> ,

http://www.visual-literacy.org/periodic_table/periodic_table.html
Collaboration and Communication
<i>AFCO-CFA</i> Intellipedia Page, https://intellipedia.intelink.gov/wiki/Air_Force_Cryptologic_Office_(AFCO)/CFA_Advanced_Analysis_and_Training
DIA-01-1309-510, <i>DIA Style Manual for Intelligence Production 2017</i> , JWICS Caution-url: https://intelshare.intelink.ic.gov/sites/ddii/mid/AIS/default.aspx
<i>ICAT-G/Research Portal</i> , JWICS Caution-url: https://intellipedia.intelink.ic.gov/wiki/Portal:IC_Analytic_Tradecraft_Gateway
OPB and ABI
ODNI Systems & Resource Analyses, <i>ABI Way Ahead</i> , JWICS Caution-url: https://intelshare.intelink.ic.gov/sites/sramis/abi/default.aspx
<i>Quellfire Documentation</i> , JWICS Caution-url: https://intelshare.intelink.ic.gov/sites/quellfire/SitePages/ProgramDocumentation.aspx

Attachment 8

ANNOTATED BIBLIOGRAPHY

This attachment contains IC and academic resources for analyst Airmen to reference to improve their analysis aptitude. The list reflects some of the common references as of 2017 and is not meant to be exhaustive nor all-inclusive.

A8.1. Analysis Skills, Tradecraft, and Processes in the IC. The following texts focus specifically on IC analysis.

711th Human Performance Wing (HPW), *The Framework for Analytic Cognition (FAC)*, AFRL, Wright-Patterson Air Force Base, Ohio, April 2014

This report serves as a guide to conducting intelligence analysis thoroughly while remaining sufficiently pliable to adapt to unstructured issues. It focuses on describing methods to foster analyst understanding of human-shaped capabilities and intentions for application in intelligence missions.

CIA, *A Tradecraft Primer: Structured Analytic Techniques for Improving Intelligence Analysis*, March 2009, <https://www.cia.gov/library/center-for-the-study-of-intelligence/csi-publications/books-and-monographs/Tradecraft%20Primer-apr09.pdf>

This guide highlights several structured analytic techniques to outline and assist analysts to think about and work difficult problems associated with intelligence analysis. The primer identifies several hurdles to this process such as biases, expectations, and mental models. Ultimately, the guide aims to inform intelligence analysts about their thinking processes to increase their self-awareness and efficacy in making judgments.

Clark, Robert M., *Intelligence Analysis: A Target-Centric Approach*, 4th edition, CQ Press, 2012

This book urges analysts to focus on the intelligence problem at hand to drive insight. It provides a thorough overview of how the intelligence analysis process works with ample examples. The book also identifies areas where intelligence analysis could/should work better.

Clark, Robert M., *The Technical Collection of Intelligence*, CQ Press, 2010

This book examines the technical means by which advanced countries collect intelligence information (acoustic, infrared, etc.). The author describes the collection, processing, and exploitation phases of intelligence technical collection in an understandable language.

Defense Intelligence Reference Document DIA-01-1003-001A, *Tradecraft Primer: Basic Structured Analytic Techniques*, 4th edition, 3 March 2011

This DIA handbook provides an outline of analytic methods to help intelligence analysts improve their critical thinking skills, producing more thorough, less biased judgments. The techniques provided in this text also function to build a common lexicon in the IC, fostering consistent understanding and thereby efficiency and accuracy.

Folker, Robert D. Jr., *Intelligence Analysis in Theater Joint Intelligence Centers: An Experiment in Applying Structured Methods*, Occasional Paper #7, Joint Military Intelligence College, 2000

This summary of a master's thesis compares the results of those who used a specific structured analytic technique with those who did not in preparing intelligence estimates.

Fingar, Thomas, *Reducing Uncertainty: Intelligence Analysis and National Security*, Stanford Security Studies, 2011

The goal of this book is to inform readers from outside the IC what analysts in the IC do and how they do it. The book explains the pressures IC analysts are under (political etc.), why they often focus on worst-case scenarios, and the value of National Intelligence Estimates.

Fischhoff, Baruch, and Cherie Chauvin, *Intelligence Analysis: Behavioral and Social Scientific Foundations*, National Academies Press, 2011

This book focuses on the human aspect of the IC and how to improve judgments made by both individual analysts and groups of analysts. The book provides an overarching perspective on the issues and processes that contribute to tough decision and judgment making.

George, Roger Z., and James B. Bruce, ed., *Analyzing Intelligence: Origins, Obstacles and Innovation*, Washington D.C.: Georgetown University Press, 2008

This book provides a post-9/11 assessment of the state of intelligence analysis. The text offers insights into the obstacles for intelligence analysis, providing a plan to improve analytical methods, training, and approach. The book highlights adapted tradecraft, predictive analysis, and collaboration as areas needing improvement.

Grabo, Cynthia, *Anticipating Surprise: Analysis for Strategic Warning*, University Press of America, 2002

This book, originally designed as a CIA analyst training guide, outlines the steps in the anticipatory analysis process, including discussing guidance for assessing the meaning of pieces of intelligence. In the wake of post-9/11 IC critiques, the author provides suggestions on how to improve and clarify warnings to decision makers.

Hackman, Richard J., *Collaborative Intelligence: Using Teams to Solve Hard Problems*, San Francisco: Berrett-Koehler Publishers Inc., 2011

The book highlights the increased need and prevalence for interdisciplinary collaboration in intelligence analysis and identifies that most teams in the field often break down or prove ineffective. The author outlines six conditions leaders can employ to encourage the development, efficacy, and maintenance of teams working on intelligence analysis tasks.

Hall, Wayne Michael, and Gary Citrenbaum, *Intelligence Analysis: How to Think in Complex Environments*, Santa Barbara, California: Praeger Security International, 2010

This book discusses the various types of advanced analysis—including anticipatory, semiotics, and link analysis—while laying out the steps of analytical problem solving: decomposition, critical thinking, analysis, recomposition, and synthesis. The book also discusses the systems of thought and how those impact an individual's analytical process and decision/judgment.

Heuer, Richards J., Jr., *The Psychology of Intelligence Analysis*, Washington, D.C.: Central Intelligence Agency, Center for the Study of Intelligence, 1999

This collection of CIA articles spanning 1978-1986 reviews timeless concepts of cognitive psychology concerning how individuals gather and process information to shape their judgments.

Heuer, Richards J., Jr. and Randolph H. Pherson, *Structured Analytic Techniques For Intelligence Analysis*, Washington, D.C.: CQ Press, 2014

This text identifies best practices in structured analysis to inform analysts within the intelligence field and across other disciplines.

Kent, Sherman, *Strategic Intelligence for American World Policy*, Princeton University Press, 2015

This book was originally written and published in 1966 by Sherman Kent, who pioneered many of the methods of intelligence analysis. The book analyzes the varied aspects of what is known as "high-level foreign positive intelligence." Kent asserts that very little of it involves cloaks and

daggers. All of it is important to national survival, and should be understood by the citizens of a democracy.

Kerbel, Josh, and Anthony Olcott, *Synthesizing with Clients, Not Analyzing for Customers*, Studies in Intelligence, Vol. 54, No. 4. December 2010, <https://www.cia.gov/library/center-for-the-study-of-intelligence/csi-publications/csi-studies/studies/vol.-54-no.-4/synthesizing-with-clients-not-analyzing-for.html>

This article discusses the challenges, purpose, and shortcomings of the separation between analysts and the policy/decision makers they inform. One purpose is to avoid politicization of analysis and mitigate confirmation biases, but the separation can also lead to unanswered questions from decision-makers or ignored reports created by the analysts but not read.

Lowenthal, Mark M., *Intelligence: From Secrets to Policy*, 6th edition, CQ Press, 2014

This text provides an introduction to the field of intelligence, from both the analyst and policymaker perspectives. This book covers all phases and domains of intelligence analysis, providing current event examples and trends to watch.

Moore, David T., *Critical Thinking and Intelligence Analysis*, 2nd edition, Books Express Publishing, 2010

This book, sponsored by the National Defense Intelligence College, establishes how critical thinking fits into intelligence analysis. The author offers input on how to teach critical thinking to analysts with the goal of integrating into the intelligence analysis process.

Moore, David T., *Sensemaking: A Structure for an Intelligence Revolution*, 2nd edition, CreateSpace Independent Publishing Platform, 2013

The goal of this book is to identify where and how to improve the IC and its processes. The text identifies problem areas, including discussions of ‘wicked problems,’ complexity theory, and macro-vs-micro cognition. It also proposes possible solutions.

Symon, Paul B., and Arzan Tarapore, “Defense Intelligence Analysis in the Age of Big Data,” *Joint Forces Quarterly*, Vol 79, 4th Quarter 2015

This article discusses the emerging challenge of big data analytics for military intelligence communities. The article highlights that, although big data generates knowledge creation, additional tools and methods are needed to absorb, process, and analyze the vast onslaught of information.

White, Jeffrey, *Shakespeare for Analysts: Literature and Intelligence*, CreateSpace Independent Publishing Platform, 2013

This paper, originally sponsored by the Joint Military Intelligence College in 2003, advocates inclusion of Shakespeare in intelligence analysts’ bookshelves. The author asserts that since analysts are concerned with human personalities within political and military leadership, analysts should use Shakespeare’s work as insight into how people are motivated and pursue power.

Zegart, Amy B., *Flawed by Design: The Evolution of the CIA, JCS, and NSC*, Stanford University Press, 2000

Using an institutionalist approach, the author asserts that the CIA, Joint Chiefs of Staff (JCS), and National Security Council (NSC) are hindered from operating effectively by design.

Frequent elections, the prominence of elected officials controlling these organizations, and Congressional checks foster competitive, rival organizations fighting amongst themselves to protect their own intelligence assets.

A8.2. Analysis Skills, Tradecraft, and Processes in General . Whereas section A8.1 identifies sources that specifically address IC skills, tradecraft, and processes, the following

sources apply to the discipline of analysis writ large. While the following were written with a broader academia focus, they are also relevant to IC analysis.

Bothamley, Jennifer, *Dictionary of Theories*, Barnes & Noble, 2004

This book is a composite reference that alphabetically arranges theories, laws, hypotheses, etc. from across many disciplines. It serves as a thorough annotated bibliography of well-known theories, and includes short descriptions and comments on the validity of each entry.

Cukier, Kenneth Neil, and Viktor Mayer-Schoenberger, “The Rise of Big Data: How It’s Changing the Way We Think,” *Foreign Affairs*, May - June 2013,

<https://www.foreignaffairs.com/articles/2013-04-03/rise-big-data>

This article discusses the concept of big data, describing the vast and increasing amount of information that can be harnessed, processed and used to support trends and inform new knowledge. The article also cautions that big data should be used to inform but not explain everything.

Dewey, John, *How We Think*, Boston, Massachusetts: D.C. Heath and Co. Publishers, 1910

This book offers an early overview of the importance of self-awareness in thought. The author calls for a focus in “mental training” and “training of thought” to increase one’s deliberateness when thinking, solving, and assessing problems.

Elder, Linda, and Richard Paul, *The Thinker’s Guide to Analytic Thinking*, 2nd edition, Dillon Beach: Foundation for Critical Thinking Press, 2007

This guide describes the structures and importance of analytic thinking. The authors discuss how we reach our conclusions and judgements—viewing an idea through our biases, point of view, experiences, and assumptions. The book provides a framework for understanding how we think and how that impacts decisions.

Facione, Peter, *Critical Thinking: What It Is and Why It Counts*, Milbrae, California: Measured Reasons and the California Academic Press, 2013

This essay familiarizes readers with the key skills and habits associated with critical thinking and why practicing critical thinking is useful in their personal and social decision-making. The article identifies several of the heuristic strategies individuals are naturally inclined towards and the pros/cons and biases associated therein.

Facione, Peter, and Carol Ann Glittens, *Think Critically*, 3rd edition, Prentice Hall, Pearson Education Inc., 2015

This text introduces and practically describes critical thinking as important for making big decisions in the real-world.

Foundation for Critical Thinking, *The Critical Thinking Community*,

<http://www.criticalthinking.org>

This website is sponsored by the Foundation for Critical Thinking, a non-profit organization that seeks to promote essential change in education and society through the cultivation of fair-minded critical thinking—thinking which embodies intellectual empathy, humility, perseverance integrity, and responsibility.

Gilovich, Thomas, *How We Know What Isn’t So: The Fallibility of Human Reason in Everyday Life*, The Free Press, 1991

This book addresses the question: When can we trust what we believe, and when are these beliefs suspect? Thomas Gilovich offers a wise and readable guide to the fallacy of the obvious in everyday life. Illustrating his points with vivid examples, he documents the cognitive and social processes that distort our thoughts, beliefs, judgements, and decisions, inevitably altering our impression of reality.

Grimes, Geoffrey, *Scholasticism, Rationalism, and Empiricism: Epistemology and Three Western Systems of Reasoning*, <http://www.distancelearningassociates.org/eng2327/BC-ReasoningSystems.htm>

This website discusses the basic concepts of what the author describes as three core systems of reasoning: scholasticism, rationalism, and empiricism. The author asserts all those raised in Western cultures can be binned into one of these three categories.

Jones, Morgan D., *The Thinker's Toolkit: 14 Powerful Techniques for Problem Solving*, Crown Business, 1998

This handbook provides fourteen tools to help individuals break down problems, enabling more efficient and informed decisions.

Kahneman, Daniel, *Thinking, Fast and Slow*, New York: Farrar, Straus and Giroux, 2011
In this book author Daniel Kahneman describes the two systems of thinking: the intuitive (fast System 1) and the logical (thorough System 2). The text describes the identifiers of each system and how it impacts our decisions. The author provides methods to identify and prevent mental shortcuts that can cause judgement errors.

Kahneman, Daniel, Andrew Rosenfield, Linnea Gandhi, and Tom Blaser, *Noise: How to Overcome the High, Hidden Cost of Inconsistent Decision Making*, Harvard Business Review, 2016

This article explains the difference between the concepts of "noise" and bias and provides a prescription of how leaders can test the level of "noise" in their organizations. Further, it describes steps to mitigate noise and promote analytical consistency.

Kahneman, Daniel, Paul Slovic, and Amos Tversky, *Judgement under uncertainty: Heuristics and biases*, Cambridge University Press, 1982

This book describes the various judgment heuristics and biases. The text discusses how those biases can impact decision-making and judgments and suggests methods for identifying and overcoming these biases.

Kaplan, Abraham, *The Conduct of Inquiry: Methodology for Behavioral Science*, Transaction Publishers, 1998

In this book the author discusses the various behavioral science disciplines and the methodologies and shortcomings of each. It provides a constructive assessment of the various standards and strategies of social research methods to guide behavioral scientists' research.

Kosko, Bart, *Fuzzy Thinking: The New Science of Fuzzy Logic*, Hyperion, 1993

This book discusses the concept of fuzzy thinking/fuzzy logic, the principle that nothing is absolute. The author challenges the typical Western thinking that there is black and white—right and wrong, asserting that there are lots of shades of gray, with many perspectives.

Krizan, Lisa, *Intelligence Essentials for Everyone*, Joint Military Intelligence College, June 1999

This paper provides guidance for the implementation of sound intelligence within and outside government infrastructure. The author describes the methods to employ to reach empirically-supported decisions with fewer flaws.

Laney, Douglas, et al., *How Data Scientist Skills and Qualifications Differ from those of BI Analysts and Statisticians*, 21 October 2015

This article helps readers understand the distinction between the new data scientist career and associated skill-set and the legacy career of statisticians. Additionally, the authors describe why a statistician is not adequate for data science problems.

Lengler, Ralph, and Martin J. Eppler, *A Periodic Table of Visualization Methods*, http://www.visual-literacy.org/periodic_table/periodic_table.html

This online learning tool informs users on the ability to generate, understand, and apply visualizations. The site employs a didactic approach using problem-based learning techniques to foster understanding of visualization methods.

Linden, Alexander, et al., *Organizational Principles for Placing Advanced Analytics and Data Science Teams*, 4 September 2013

With the onslaught of big data driving the need for teams of advanced analysts and data scientists in organizations of various disciplines, this article discusses where to best place these teams organizationally and the pros and cons of various locations.

Livio, Mario, *The Equation that Couldn't be Solved: How Mathematical Genius Discovered the Language of Symmetry*, Simon & Schuster, 2006

This book attempts to explain mathematical symmetry through a “quantic” equation to non-mathematically inclined readers. The text discusses how the idea of group theory arose.

Mackay, Charles, *Extraordinary Popular Delusions and the Madness of Crowds*, CreateSpace Independent Publishing Platform, 2013

This book studies the psychology of crowds and mass mania with historical examples such as the witch hunts. The text offers explanation as to why reasonable, intelligent individuals take on opinions in a crowd environment that they otherwise would not.

Margolis, Howard, *Patterns, Thinking, and Cognition: A Theory of Judgement*, Chicago, Illinois: University of Chicago Press, 1987

This book discusses how pattern recognition impacts thinking and judgment. The author discusses identification of patterns, sub-patterns and when anomalies are actually part of the pattern.

Mlodinow, Leonard, *The Drunkard's Walk: How Randomness Rules Our Lives*, Vintage, 2009

This book discusses how much of our lives are lived and guided by randomness. He introduces the concept of chaos theory, and reveals psychological illusions guiding “chance.” The text presents several tools to help readers make more informed decisions in their everyday lives.

Pirsig, Robert M., *Zen and the Art of Motorcycle Maintenance*, Bantam, 1975

In this book the author combines philosophy with the practical, real-world processes of motorcycle mechanics. Despite the title, this book prompts the reader to deep-think about critical thinking methods and more complex philosophical dilemmas, such as good-vs-evil.

Surowiecki, James, *The Wisdom of Crowds*, Anchor Books, 2008

This book asserts that crowd-sourcing perspectives, or incorporating a range of diverse perspectives, improves problem-solving. The author identifies four necessary conditions that, when met, produce crowds that are smarter together than any one individual.

Tetlock, Philip E., and Dan Gardner, *Superforecasting: The Art and Science of Prediction*, 1st edition, 2015

In this work, Philip Tetlock and coauthor Dan Gardner offer a masterwork on prediction, drawing on decades of research and the results of a massive, government-funded forecasting tournament. Superforecasting offers the first demonstrably effective way to improve our ability to predict the future.

Tufte, Edward R., *The Visual Display of Quantitative Information*, 2nd edition, Cheshire, Connecticut: Graphics Press, 2001

This text covers the theory and practice used in the design and use of statistical graphics, charts and tables. It outlines the benefits and potential misrepresentation of empirical visualization methods.

A8.3. Studies and White Papers on Analysis. *Air Force Intelligence Analysis Roles and Responsibilities Review for 2016*, September 2016

This report is a primary deliverable for the AF Analysis Plan of Action and Milestones. The report details the results of an AF-wide review of roles and responsibilities for analysis and production.

Alkire, Brien, Abbie Tingstad, Dale Benedetti, Amado Cordova, Irina Danescu, Lt Col William Fry, Brig Gen (ret.) D. Scott George, Lawrence M. Hanser, Lance Menthe, Erik Nemeth, David Ochmanek, Julia Pollak, Jessie L. Riposo, Lt Timothy Smith, Alexander Stephenson, *Leveraging the Past to Prepare for the Future of Air Force Intelligence Analysis*, Santa Monica, California: RAND Corporation, RR-1330-AF, 2016, http://www.rand.org/pubs/research_reports/RR1330.html

This RAND report looks to the past for lessons to help inform recommendations in addressing future challenges for the AFIAE. The report identifies challenges regarding future operational pace, contextual and deep knowledge, the integration and understanding of space and cyber missions, and the growing volume of data to be analyzed.

Chang, Welton, Eva Chen, Barbara Mellers, and Philip Tetlock, "Developing Expert Political Judgment: The Impact of Training and Practice on Judgmental Accuracy in Geopolitical Forecasting Tournaments," *Judgment and Decision Making* 11, no. 5 (2016): 509-26

This essay tests the power of a cognitive-debiasing training module to improve probability judgments in a four-year series of geopolitical forecasting tournaments sponsored by the U.S. Intelligence Community.

Committee on Improving the Effectiveness and Efficiency of U.S. Air Force Pre-Acquisition Development Planning et al., *Development Planning: A Strategic Approach to Future Air Force Capabilities*, National Academies Press, 2015

This book provides recommendations, informed by development planning efforts of the past, for leaders to think strategically into upcoming decades concerning where the AF may have capability gaps.

Committee on U.S. Air Force Strategic Deterrence Military Capabilities in the 21st Security Environment et al., *U.S. Air Force Strategic Deterrence Analytic Capabilities: An Assessment of Tools, Methods, and Approaches for the 21st Century Security Environment*, National Academies Press, 2015

This book describes the analytic skills required in successful nuclear deterrence. The text also discusses how nuclear deterrence works through assurance and posture, how it can fail, and how to mitigate the risk of deterrence failure.

DCS for ISR White Paper, *Data Science and the USAF ISR Enterprise*, February 2016, http://www.defenseinnovationmarketplace.mil/resources/Data_Science_and_the_USAF_ISR_Enterprise%20_White_Paper.PDF

This paper explores the impact of big data, the transformation of IC information technology, and how each will drive the necessity for an AF ISR strategic approach to data science.

DCS for ISR White Paper, *Five Examples of Big Data Analytics and the Future of ISR*, November 2014

This paper describes the concept of big data and how it relates to ISR now and in the future through five examples. The paper asserts that big data is the new norm and intelligence professionals must adapt the way they employ data analytics to harness the depth of information now available.

DCS for ISR White Paper, *Revolutionizing AF Intelligence Analysis*, January 2014,
http://www.defenseinnovationmarketplace.mil/resources/20140211_IntelligenceAnalysisWhitePaper_PA.pdf

This paper seeks to explain the increasing priority of analysis by identifying motivations, presenting a common lexicon, exploring key issues, and outlining the way ahead. The paper asserts that intelligence analysis is changing and increasing in prominence and therefore our analysis processes and emphasis must also adapt.

ISR Capability Planning and Analysis Process Committee on Examination of the Air Force Intelligence, *Capability Planning and Analysis to Optimize Air Force Intelligence, Surveillance, and Reconnaissance Investments*, National Academies Press, 2012

This report answers a request from the AF to assess the current AF approach to ISR corporate planning and programming. The report identifies best practices and recommends specific improvements to build-out existing tools and processes to ensure AF ISR processes can enable successful satisfaction of customer needs in accomplishing their missions.

Lin-Greenberg, Capt Erik, Krysten Young, and Col Brian Ray, *Improving Intelligence Analysis for the A2/AD Environment*, March 2015

This paper discusses the impact an Anti-Access/Area Denial (A2/AD) environment would have on the AF's ability to collect, analyze, and act on intelligence.

McClung, Lt Col Michael E., *2 Propositions Regarding Intelligence for Airpower*, Air University, 14 February 2013

This research paper provides two propositions concerning AF intelligence: 1) "the nature of intelligence for airpower is driven by the rapid evolution and expanding breadth of airpower itself" and; 2) "Analysis is the essence of intelligence for airpower, and like airpower it is broad, but targeting and threat analysis are central."

***Report of USAF ISR Analysis and Production—CY 2014*, 19 June 2014**

This report is the result of a survey of AF ISR leaders to document AF production, including identifying production goals, focus, and areas for improvement. This survey built upon findings from a 2013 survey and further developed a baseline for comparison of the 2016 survey results.

***Survey Report of USAF All-Source Intelligence Analysis*, 1 August 2013**

This report is the outcome of a survey to gauge results and assessments of AF all-source analysis. The report asserts that if the USAF is serious about 'revolutionizing analysis,' it must concur with improved emphasis and investment.

Treverton, Gregory F., and C. Bryan Gabbard, *Assessing the Tradecraft of Intelligence Analysis*, Santa Monica, California: RAND Corporation, 2008,

http://www.rand.org/content/dam/rand/pubs/technical_reports/2008/RAND_TR293.pdf

This RAND report is the result of a survey of the IC and other research to discover what constitutes intelligence analysis and how is it performed. The researchers found that "analysis" covers a range of activities that varies from organization to organization. The report concludes that to foster collaboration and shared understanding, common tools, agendas, and education curriculums should be established and shared across the community.

Treverton, Gregory F., and Jeremy J. Ghez, *Making Strategic Analysis Matter*, Santa Monica, California: RAND Corporation, 2012,

http://www.rand.org/content/dam/rand/pubs/conf_proceedings/2012/RAND_CF287.pdf

This RAND report is the result of a workshop that found that though there is not much demand for strategic analysis from policy and decision makers, there is substantial value in conducting this level of analysis.

A8.4. Analysis Scenarios and Historical Applications. Bruce, James B., and Jeffrey Martini, *Whither Al-Anbar Province? Five Scenarios Through 2011*, Santa Monica, California: RAND Corporation, 2010,
http://www.rand.org/pubs/occasional_papers/OP278.html

This report produced for the Marines by RAND analyzes the question, ‘what does the future hold for Iraq’s al-Anbar province?’ The researchers play through five scenarios. The report concludes that the U.S. (and specifically the Marines) can influence some of the drivers shaping the scenario outcomes and suggests constant course of action evaluations to identify possible and probable future trajectories.

Ehlers, Robert S., Jr., *Targeting the Third Reich: Air Intelligence and the Allied Bombing Campaigns*, University Press of Kansas, 2009

This book highlights the cooperative intelligence elements (Royal Air Force) and bombing elements (U.S. Army Air Force) of the allied forces in Europe during World War II. The text discusses the often overlooked value added by the combined intelligence-bomber efforts in crippling the German war-making capabilities.

Fukuyama, Francis, *Blindside: How to Anticipate Forcing Events and Wild Cards in Global Politics*, Baltimore, Maryland: Brookings Institution Press, 2007

This book discusses the value, necessity, and difficulties for foreign policy analysts to anticipate wild card events (such as, the 9/11 attacks, the rapid emergence and spread of diseases like H5NI, and the collapse of communism) in world politics. The author points out that biases and political pressures often influence the prediction and likelihood assessments of these types of events. Additionally, the credibility of some assessments for the probability of these “wild cards” is questionable, with a “boy that cried wolf” tainted view.

Neustadt, Richard E., and Ernest R. May, *Thinking in Time: The Uses of History for Decision-Makers*, 1st edition, New York: Free Press, 1986

This book provides methods decision-makers and analysts can apply from historical lessons to current decisions.

Taleb, Nassim Nicholas, *The Black Swan: The Impact of the Highly Improbable*, 2nd edition, Random House Trade Paperbacks, 2010

This book defines and discusses “black swan” events. The author highlights the importance of considering black swans when conducting analysis and making judgments. Although rare, black swan events have occurred and may occur, with far reaching and dramatic consequences.

Vertzberger, Yaacov, *Risk Taking and Decision Making: Foreign Military Intervention Decisions*, Stanford University Press, 1998

This book discusses the realities of risk and provides analysis of what elements impact risk judgments and preferences in individuals’ decision-making. The author uses five case studies to illustrate the calculations and consequences of risks in military interventions.

Walton, Timothy, *Challenges in Intelligence Analysis: Lessons from 1300 BCE to the Present*, Cambridge University Press, 2010

This work provides short, critical analyses of past scenarios that successfully or unsuccessfully employed intelligence analysis.

A8.5. Analysis Education and Training. Center for the Study of Intelligence, *The Future of Higher Education: Implications for Intelligence*, March 2015

This paper argues that because education models in formal education institutions have and continue to change, methods for training in the workplace must also change and adapt for new generations' learning styles.

Chang, Welton, and Philip E. Tetlock, *Rethinking the Training of Intelligence Analysts*, Taylor & Francis, 29 February 2016,

<http://www.tandfonline.com/doi/pdf/10.1080/02684527.2016.1147164#.V6SgAqpf3xg>

This article discusses the continuing challenge of erroneous and/or incomplete intelligence assessments in the IC. The authors advocate for new training approaches for intelligence analysts that adopt a scientifically validated process, which regularly reevaluated against benchmarks.

A8.6. Deception Analysis. Barton Whaley, *Textbook of Political-Military Counterdeception: Basic Principles & Methods*, National Defense Intelligence College, 2007

This is a textbook on counterdeception. It is designed to help users think like a detective in employing analytical skills.

Godson, Roy, and James J. Wirtz, *Strategic Denial and Deception: The Twenty-First Century Challenge*, Transaction Publishers, 2008

This book considers whether globalization, proliferating communication technologies, and the dissemination of vast amounts of information make effective foreign denial and deception more or less likely.

Gooch, John, and Amos Perlmutter, *Military Deception and Strategic Surprise*, Digital Printing, 2007

The six essays in this book deal primarily with the theory of deception and strategic-level deception. They present a picture of the dynamics and potential benefits of deception. Examples of operational-level deception are mentioned in some of the essays to illustrate certain points.

Latimer, Jon, *Deception in War: The Art of the Bluff, the Value of Deceit, and the Most Thrilling Episodes of Cunning in Military History, from the Trojan Horse to the Gulf War*, The Overlook Press, 2001

This work shows how simple some tricks have been, but also how technology has increased the range and subtlety of what is possible—bogus radio traffic, virtual images, even false smells. He draws examples from land, sea, and air to show how great commanders have always had, as Winston Churchill put it, that indispensable “element of legerdemain, an original and sinister touch, which leaves the enemy puzzled as well as beaten.”

A8.7. Analysis Policy and Guidance . This list is not intended to be comprehensive but rather to highlight several key resources.

AFI 14-133, *Intelligence Analysis*, 29 March 2016

As the keystone instruction for AF intelligence analysis, this publication codifies how the Air Force conducts and presents analysis capabilities in support of Global Integrated ISR and other service core functions. It establishes the standards for AF intelligence analysis and delineates the associated roles and responsibilities of AF ISR Enterprise organizations.

AFI 14-134, *Intelligence Analysis Production and Requirements Management*, 21 June 2016

This publication provides guidance and procedures on AF intelligence analysis production and requirements management in support of internal AF requirements, as an integral complement to the IC for DIAP-focused production, and in support of the annual AFISRPoA.

Air Force ISR 2023: Delivering Decision Advantage,

http://www.defenseinnovationmarketplace.mil/resources/AF-ISR_2023.pdf

This strategic document approved by AF/A2, discusses emerging and future challenges for the AF ISR Enterprise, and focuses on how the enterprise should posture to address these challenges while meeting enduring core missions.

Annex 2-0, Global Integrated Intelligence, Surveillance, and Reconnaissance, 29 January 2015

The annex serves as an AF supplement to JP 2-0 and covers AF specific topics and perspectives on GIISR.

Commander ACC, GIISR Core Function Concept, 23 Jan 2013

This document identifies five enduring core GIISR capabilities that directly support the JCA of Battlespace Awareness. Analysis is an essential and integral component of each of the five enduring capabilities.

DoDI 3115.17, Management and Oversight of DoD All-Source Analysis, November 16, 2016

This instruction establishes DoD policy and assigns responsibilities for the management and oversight of DoD ASA. It also establishes the DIAAE BOG, an intergovernmental committee as the primary forum for DoD-wide analytic synchronization and integration.

ICD 203, Analytic Standards, 2 January 2015

This directive establishes common analytic standards to be used across the IC to ensure clear communication among organizations.

ICD 204, National Intelligence Priorities Framework, 2 January 2015

This directive establishes the NIPF as the mechanism to create, prioritize and share intelligence priorities.

ICD 206, Sourcing Requirements for Disseminated Analytic Products, 22 January 2015

This directive establishes the sourcing information that must be included in covered analytic products so as to increase the credibility and transparency of intelligence analysis.

ICD 501, Discovery and Dissemination or Retrieval of Information within the Intelligence Community, 21 January 2009

In pursuit of a culture of responsible sharing and collaboration across the IC, this directive establishes guidance and policies for the discovery, dissemination or retrieval of intelligence and intelligence-related information collected or analysis produced by the IC.

JP 2-0, Joint Intelligence, 22 October 2013

This publication addresses the nature of intelligence and establishes the principles of joint intelligence. It is one of the base guiding documents for DoD IC organizations.