



# **Masters of Analytical Tradecraft**

**Certifying the Standards and Analytic  
Rigor of Intelligence Products**

**J. Tucker Rojas, Lieutenant Colonel, ANG**

A historical black and white photograph of the Wright Flyer biplane in flight over a rural landscape. The plane is a two-winged aircraft with a propeller and a tail. In the background, there are several small buildings and a line of trees under a clear sky.

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The Wright Flyer Papers  
Department of Research and Publications (ACSC/DER)  
Air Command and Staff College  
225 Chennault Circle, Bldg. 1402  
Maxwell AFB AL 36112-6426  
Tel: (334) 953-3558  
Fax: (334) 953-2269  
E-mail: [acsc.der.researchorgmailbox@us.af.mil](mailto:acsc.der.researchorgmailbox@us.af.mil)

**AIR UNIVERSITY**

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*Certifying the Standards and Analytic  
Rigor of Intelligence Products*

J. TUCKER ROJAS, LIEUTENANT COLONEL, ANG

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*Project Editor*

Jeanne K. Shamburger

*Cover Art and Illustrations*

Daniel Armstrong and L. Susan Fair

*Composition and Prepress Production*

Megan N. Hoehn

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*Director, Air University Press*

Lt Col Darin Gregg

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600 Chennault Circle, Building 1405  
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## Contents

<b>Abstract</b>	<i>iv</i>
<b>Foreword</b>	<i>v</i>
<b>Introduction</b>	1
<b>Background</b>	2
<b>Sufficiency of Analytical Rigor</b>	8
<b>Proposal</b>	10
<b>Research Methodology</b>	11
<b>Analysis/Evaluation</b>	12
<b>Recommendations</b>	16
<b>Notes</b>	19
<b>Abbreviations</b>	22
<b>Bibliography</b>	23

## **Abstract**

This paper explores analysis in intelligence and evaluates a proposal to certify and convey analytical rigor as it relates to intelligence products. To accomplish this, an examination of intelligence failures is conducted to assess the application of analytical rigor across historic case studies. The historic failures demonstrate gaps in standardization and insufficiencies in analytical rigor. This paper proposes establishing unit-level certified Masters of Analytic Tradecraft (MAT) analysts to be trained and entrusted to evaluate and rate the standards and analytical rigor of intelligence products prior to publication. This certification model is based on research of the structure of professional civilian corporations. Implementing the MAT analyst certification will allow decision makers to judge the robustness of analysis so that they can meter their trust accordingly. This certification will hold the intelligence community accountable for their adherence to established analytical standards, ensure compliance is properly conveyed, and promote quality of analysis.

## Foreword

It is my great pleasure to present another issue of the *Wright Flyer Papers*. Through this series, Air Command and Staff College presents a sampling of exemplary research produced by our residence and distance-learning students. This series has long showcased the kind of visionary thinking that drove the aspirations and activities of the earliest aviation pioneers. This year's selection of essays admirably extends that tradition. As the series title indicates, these papers aim to present cutting-edge, actionable knowledge—research that addresses some of the most complex security and defense challenges facing us today.

Recently, the *Wright Flyer Papers* transitioned to an exclusively electronic publication format. It is our hope that our migration from print editions to an electronic-only format will fire even greater intellectual debate among Airmen and fellow members of the profession of arms as the series reaches a growing global audience. By publishing these papers via the Air University Press website, ACSC hopes not only to reach more readers, but also to support Air Force-wide efforts to conserve resources. In this spirit, we invite you to peruse past and current issues of the *Wright Flyer Papers* at <https://www.airuniversity.af.edu/AUPress/Wright-Flyers/>.

Thank you for supporting the *Wright Flyer Papers* and our efforts to disseminate outstanding ACSC student research for the benefit of our Air Force and war fighters everywhere. We trust that what follows will stimulate thinking, invite debate, and further encourage today's air, space, and cyber war fighters in their continuing search for innovative and improved ways to defend our nation and way of life.



BRIAN HASTINGS  
Colonel, USAF  
Commandant

## Introduction

Research has shown the difficulty in recognizing inadequacies of analytical rigor when consuming intelligence analysis within information domains.<sup>1</sup> For the purposes of this paper, *analytical rigor* is defined as “an emergent multi-attribute measure of sufficiency.”<sup>2</sup> The term *analytic rigor* is used to convey the level of analytic tradecraft application, which is sometimes robust and other times weak. Decision makers should be provided “with actionable data backed by analytical rigor.”<sup>3</sup> When evaluating a problem set, an intelligence consumer’s perceived analytical rigor (based on perceived cues) ideally should meet or exceed effective rigor (based on analytical process).<sup>4</sup> Thus, decision makers should not be left to their own perceptions in judging the analytic rigor of a given intelligence product. They need to be provided fidelity on the level of analytical rigor—or the robustness of the analytical process used in creating the product—so that they can meter their trust accordingly.

Unfortunately, examples of high-consequence, high-profile intelligence fails have been common, revealing a consistent lack of analytical sufficiency and raising concerns about the condition of US intelligence.<sup>5</sup> The 2003 assessment of Iraq’s weapons of mass destruction (WMD) is one example of a catastrophic failure on the part of the intelligence community (IC).<sup>6</sup> The report from the Commission on the Intelligence Capabilities of the United States Regarding Weapons of Mass Destruction (WMD Commission report) summarized the assessment failures that informed the 2003 invasion of Iraq: “This failure was in large part the result of analytical shortcomings; intelligence analysts were too wedded to their assumptions about Saddam’s intentions. . . . We conclude that the Intelligence Community was dead wrong in almost all of its pre-war judgments about Iraq’s weapons of mass destruction. . . . [There existed] serious errors in analyzing . . . [and a] failure to make clear just how much of its analysis was based on assumptions, rather than good evidence.”<sup>7</sup>

Where it is typical for analysts to use tradecraft language to convey likeliness and confidence, no such effort is afforded to articulating analytical rigor. If an assurance of standards and a conveyed level of rigor accompanied assessment, decision makers would be empowered as they evaluate and measure the level of confidence they should apply to the assessment. US law mandates that the Office of the Director of National Intelligence (ODNI) conduct postproduction, after-action quality assurance spot checks. However, there is not a universal method or qualifying standard of analytical rigor prior to the publication of intelligence reports. Perceived levels of rigor can be misled by the appearance of product quality, with the perception of “sufficient rigor” evolving once insight to the analytical process is provided.<sup>8</sup>



The application of a certification model will challenge analysts and organizations to meet higher levels of analytical rigor while providing process insight to decision makers. In the civilian world certifications are used to help regulate professional fields such as medicine, law, and engineering by (1) establishing minimally acceptable standards, (2) providing accountability and reassuring consumers that the professionals are deserving of trust, and (3) improving quality by providing guidance and by capturing and disseminating best practices.<sup>9</sup> The US Green Building Council (USGBC), an organization that promotes sustainability-focused construction practices, has a unique approach in its Leadership in Energy and Environmental Design (LEED) program.<sup>10</sup> The USGBC not only credentials its associates (builders, architects, designers) but also has a four-tiered rating system to certify standards of construction for a given project. The LEED tiered rating system quantifies and clearly conveys that standard to consumers.

This paper evaluates the achievability of certifying intelligence products by first providing context and initial historical and current analysis of intelligence practices. It defines sufficiency of analytical rigor by evaluating its independent attributes and analyzing how ODNI and Air Force guidance define analytical standards. A proposal for both an analyst and prepublication product certification process is presented and evaluated to assess if a certification process should be incorporated across the IC and whether that process would affect how analytical rigor is conveyed to decision makers.

## Background

Today, the IC comprises 17 agencies and organizations with over 1,200 suborganizations and 1,900 private companies. It has a \$50 billion-plus budget and employs more than 800,000 people with Top Secret clearances.<sup>11</sup> Its collective analytical might culminates in intelligence reports like the *President's Daily Brief (PDB)*, *Worldwide Intelligence Review (WIRe)*, *National Intelligence Estimate (NIE)*, *Secretary of Defense/Chairman of the Joint Chiefs of Staff Daily Intelligence Update (SECDEF/CJCS J2 Daily Intelligence Update)*, and the *Secretary's Morning Summary (SMS)*.<sup>12</sup> The IC's effectiveness has been the topic of much investigation. How analysis is accomplished and communicated varies greatly across the IC's 17 agencies and organizations, which continually battle tendencies to stovepipe information behind shrouds of secrecy and "need-to-know" compartmentalized barriers. Many experts have pointed to an IC obsessed with the churn of data and overly focused on the tactical and current intelligence needed to impact the tactical battlefield in real time. They have gone as far as to reference this phenomenon as "tyranny": the tyr-

anny of current intelligence, tyranny of taskings, tyranny of daily operations, and tyranny of the immediate, to name a few.<sup>13</sup> Although valued by its consumers, a focus on the immediate has detracted from the strategic intelligence priorities that inform national-level decision makers and the deep understanding required for strategic, long-term analysis.<sup>14</sup> The propagation of information and the availability of real-time interconnected data has “exacerbated the risk of shallow information analysis.”<sup>15</sup> Where a tactical real-time focus can save lives and assists in capturing adversaries on the battlefield, strategic intelligence has the power to both justify and deter wars. Under production pressures, this collection-driven, real-time focus is much desired by war fighters, albeit at the detriment of deep understanding. This focus lacks the sustained expert scrutiny required to do the long-term analysis necessary to evaluate and inform strategic problem sets. Tactical and strategic assessments are not mutually exclusive, for they inform one another. A strategic, deep understanding of a target system or a target country is informed through the aggregation of hundreds, if not thousands, of tactical and operational assessments.

The 2008 RAND report *Assessing the Tradecraft of Intelligence Analysis* phrases this tension as “intelligence reporting” versus “intelligence analysis”; intelligence reporting requires little if any critical thinking, application of tradecraft, or utilization of structured analytical techniques.<sup>16</sup> This same report suggested that “the need for a focal point in analysis, and analytic tradecraft is striking, and this need will only grow as the Community strives to be more ‘joint’ in the wake of the December 2004 intelligence reform law and the creation of a director of national intelligence [DNI].”<sup>17</sup> Community-wide standards are essential for analysts to be effective in how they communicate assessments to their customers.

The intelligence process pulls collection from the operational environment and then converts that data into information.<sup>18</sup> Once put through the rigors of analysis, information then becomes intelligence. Actionable, timely, and relevant intelligence informs national decision makers and the war-fighter consumers. This requirement-driven intelligence process is enabled through analysis, which is the “thinking” part of intelligence.<sup>19</sup> Analysis is the pursuit of situational understanding and thus facilitates the goal of bold, predictive, and informative assessments. The tradecraft of analysis is the underpinning of the intelligence cycle and is key to the development of deliverable intelligence.<sup>20</sup>

A review of intelligence failures has shown deficiencies in analysis to be a consistent cause of IC shortcomings.<sup>21</sup> Poorly applying analytical tradecraft standards, not employing structured analytic techniques (SAT), and applying levels of mediocre analytical rigor have caused strategic assumptions, dating back over a half century, that were not appropriately challenged. Some ex-

amples include the 1962 Cuban missile crisis, the 1973 Yom Kippur War, the 1989 German unification, and the 1998 Indian nuclear test.<sup>22</sup>

Effective analysis is the key to preventing shortfalls such as those highlighted in the surprise attacks of 11 September. The 9/11 Commission relied on Staff Statement No. 11, “The Performance of the Intelligence Community,” to inform its understanding of the IC’s performance leading up to the 11 September attacks on the United States. This document described how the IC’s emphasis on analysis waned in the 1990s as budget cuts prevailed and competition with operations and collection further detracted from the importance of analysis.<sup>23</sup> Analysis competed with the introduction of the 24-hour news cycle and analytical production was driven away from strategic, long-range, deep analysis and instead shifted toward current, tactical intelligence. The Intelligence Reform and Terrorism Prevention Act of 2004 (IRTPA) acted on these shortfalls and mandated that the director of national intelligence convey analytical tradecraft standards and implement processes to ensure that the intelligence community production meets a standard of high analytical rigor.<sup>24</sup>

An analysis of the 2002 National Intelligence Estimate (NIE) on Iraq’s WMDs and the prewar intelligence leading up to the invasion of Iraq was accomplished by the Senate Select Committee on Intelligence, which exposed significant analytical shortcomings.<sup>25</sup> This extensive review highlighted that groupthink dynamics, failure to challenge key assumptions, and instances of low rigor analysis that built on previous reports without critically challenging their findings were factors contributing to a misleading, low-rigor analytical assessment.<sup>26</sup> An additional review, the 2005 WMD report (Robb-Silberman Report), confirmed the need to more thoroughly train analysts on analytical tradecraft requirements and emphasized the necessity for analysts to challenge assumptions through heightened analytical rigor.<sup>27</sup>

Recent intelligence case studies further demonstrate the need for increased analytical rigor. These cases include how the IC failed to predict the 2012 attacks on the US Embassy in Benghazi, underestimated the 2014 rise of the Islamic State in Iraq, and failed to predict the 2014 Russian invasion of Crimea. The retrospective review of these recent examples is still ongoing and has yet to be fully evaluated. The exception is the 2014 Senate Intelligence Committee report 113-134—*Review of the Terrorist Attacks on U.S. Facilities in Benghazi, Libya, September 11–12, 2012*—one of seven investigations on the topic containing varying degrees of focus on the State Department and specifically Secretary Hillary Clinton’s role. This particular report focuses on the analysis and actions of the IC and poor application of rigor and lack of emphasis in conducting open-source analysis.<sup>28</sup>

The lessons from these failures require evaluation and application to the ever-changing, challenging intelligence environment of today. Analysts should not only understand their target systems and countries through their available collection sources but also be able to identify nuanced inferences and cultural undertones in their analysis. Operating in an environment of fragmented ambiguity, with undefined adversaries, they are presented with challenging and evolving problem sets. Analysts are expected to provide thorough analysis with limited time, scarce resources, evolving technologies, complex geostrategic conditions, and extremely agile adversaries. The IC is asked to be predictive, assessing intent and ascertaining the probability of events that have yet to occur. It operates under the pressures of ongoing, time-critical wars and continually fights to identify and prevent the next catastrophic event. The IC strives to be right 100 percent of the time, whereas the adversary needs to be right only once. It is a daunting challenge requiring adaptability and agility. It is a challenge that must be approached methodically with a sustained and communicated application of analytical rigor.

The 2004 IRTPA provided a foundational change in its mandate to establish a director of national intelligence “to be responsible for ensuring that finished intelligence products produced by any element or elements of the intelligence community are timely, objective, independent of political considerations, based upon all sources of available intelligence, and employ the standards of proper analytic tradecraft.”<sup>29</sup> The IRTPA additionally mandated that the DNI assign an individual responsible to establish processes to ensure “alternative analysis” (commonly referred to as SATs) and perform regular reviews of finished intelligence products to “draft lessons learned, identify best practices, or make recommendations for improvement to the analytic tradecraft.” The Office of the Director of National Intelligence established a deputy director of national intelligence for intelligence integration (DDNI/II) who then established the Mission Integration Division’s Analytic Integrity and Standards group (AIS). The AIS was established to stimulate analytic integrity, promote rigor, encourage learning, and institutionalize tradecraft across the analytic community.<sup>30</sup> The ODNI’s AIS group has a unique requirement to evaluate samples of the IC’s analytical products for adherence to the nine analytic tradecraft standards identified in Intelligence Community Directive 203 (ICD 203), *Analytic Standards*. To accomplish this task, AIS staff evaluators are thoroughly trained (but not certified) to use a published rating scale. Doing so helps to ensure that they evaluate sampled intelligence products and analysis in a fair, consistent, measured, and largely unbiased manner.

On 21 June 2007, the AIS presented a milestone effort in the publication of ICD 203. ICD 203 was intended to serve as a foundational document, seeding

IC training and education initiatives while promoting a culture of analytic rigor and excellence. Additionally, ICD 203 serves as the preproduction baseline and post-intelligence standard by which the ODNI evaluates IC analytic products. While ICD 203 presents 14 analytic and analytic tradecraft standards, it is a mere five and a half pages long, including introductory materials and a section outlining DDNI/II responsibilities. ICD 203 provides the expectations of analytic standards but does little to describe how these standards should be applied. As a complement to ICD 203, the ODNI has published the *Rating Scale for Evaluating Analytic Tradecraft Standards*, primarily intended to guide ODNI evaluators in their analysis of postproduction intelligence products, but also encouraged as a guide for analysts to enhance their tradecraft. As an impromptu survey to judge penetration of these ODNI initiatives, 30 professional Air Force intelligence analysts were asked if they knew about these foundational, standard-setting documents. Of these officers and enlisted members across three unique and independent squadrons (two geospatial targeting squadrons; two cyber intelligence, surveillance, and reconnaissance (ISR) squadrons; and one remotely piloted aircraft squadron), none were aware of ICD 203 or the rating-scale evaluation document.

With the 29 March 2016 publication of Air Force Instruction (AFI) 14-133, *Intelligence Analysis*, the Air Force is set to improve organization-wide visibility of analytical standards. AFI 14-133 is the Air Force's attempt to recognize the foundational importance of analysis and to codify standards, roles, and responsibilities. It focuses primarily on Air Force—level, major command, and National Air and Space Intelligence Center roles and responsibilities. How this regulation will translate to unit level analysis, adaption rates, and cultural change are all unknowns as they relate to the Air Force's effort to translate ICD 203's tradecraft standards across the entire Air Force ISR enterprise.

While congressional reports have identified issues at a surface level, an abundance of additional research conducted in the time frame since 9/11 has provided retrospective and forward-thinking assessments on the state of analysis across the IC. The *9/11 Commission Report* states that there is a “lack of common standards and practices across the foreign-domestic divide . . . holding the work—wherever it is done—to a common standard of quality in how it is collected, processed (e.g., translated), reported, shared, and analyzed.”<sup>31</sup> The 2008 RAND report identified “quality of intelligence” as the most frequently mentioned analytic concern, with 54 percent of respondents identifying the issue in interviews.<sup>32</sup> Jeffrey Cooper, a senior Central Intelligence Agency (CIA) analyst, has identified the analytical pathologies that permeate all levels of analysis across the entirety of the IC.<sup>33</sup> He and many others have emphasized and praised the standards found in the professional

practices of law, medicine, and science and offer tools—practical and cognitive—that can be leveraged to improve the tradecraft of analysis. David Moore, career senior analyst at the National Security Agency (NSA), authored *Critical Thinking and Intelligence Analysis* (2007) and *Sensemaking: A Structure for an Intelligence Revolution* (2011). He argues that critical thinking needs to be woven into the analysis process to maximize an analyst’s ability to produce effective intelligence assessments while minimizing the potential for intelligence failures. Another prolific author in the field is Richard Heuer. A CIA veteran whose research on SATs is the foundation for the Air Force’s 14N intelligence officer analysis teachings, Heuer emphasizes separate analytical techniques that range across eight categories of analysis, thus informing much of the research to follow.

Dr. Daniel Zelik, Dr. Emily Patterson, and Dr. David Woods from Ohio State University published two Department of Defense sponsored papers—“Understanding Rigor in Information Analysis” and *Judging Sufficiency: How Professional Intelligence Analysts Assess Analytical Rigor*—highlighting the importance of analytical rigor and evaluating how sufficiency of rigor is perceived and communicated.<sup>34</sup> These papers explore the attributes of analytical rigor and describe rigor as building on a process-driven approach of standardized adherence and achieved sufficiency. The researchers built an attribute-based metric to assess analytical rigor against eight unique attributes. These attributes are (1) hypothesis exploration, (2) information search, (3) information validation, (4) stance analysis, (5) sensitivity analysis, (6) specialist collaboration, (7) information synthesis, and (8) explanation critiquing.<sup>35</sup>

Zelik et al. underscore the pressures driving analysts to low rigor analysis, including data-rich overload and production pressure. In turn, it is extremely difficult for decision makers to recognize insufficient rigor balanced against a given decision and the consequences of failure. Their rigor metric helps frame an understanding of analytical rigor, which can be leveraged to reduce shallow analysis by bolstering and conveying analytical rigor visually. Zelik et al. recommend a “participatory exchange model” in which analysts and decision makers dialogue on analytical rigor as opposed to a one-way transfer of information. Zelik et al. apply this model to a briefing-type exchange, but a logical inference would suggest that conveying analytical rigor along with written intelligence reports would have similar value.

Advanced analysis brings a high level of analytical rigor and applied tradecraft to fulfill sufficiency to the above-stated measurables. To achieve rigor, both critical thinking and SATs should be applied. Structured analytic techniques are used to challenge assessments, identify cognitive bias, stimulate creativity, and measure uncertainty.<sup>36</sup> SATs include mental network analysis,

structured brainstorming, analysis of competing hypothesis, red hat analysis, pre-mortem analysis, devil's advocacy, and structured debate.<sup>37</sup> These techniques fall into broad categories like visualization, decomposition, challenge analysis, idea generation, and hypothesis generation/testing. SATs are a process driven approach that when combined with intuition, critical thinking, and subject matter expertise reduce analytical error and promote quality, effective, and rigorous analysis.

### **Sufficiency of Analytical Rigor**

ICD 203 and Joint Publication 2-0, *Joint Intelligence*, articulate an expectation of analytical rigor required to facilitate the intelligence process. However, in close review of these documents, the expected level of rigor is not specifically defined, quantified, or communicated.<sup>38</sup> They have provided neither any process nor training required to achieve this standard nor the mechanism for analysts to communicate a measure of applied rigor. This is not to say that standards do not exist; in ICD 203 tradecraft standards are classified into five "Analytic Standards" that include nine "Analytic Tradecraft Standards." ICD 203 introduces these broad categories of expectations in just a two-page overview and goes no further.<sup>39</sup> A literary review quickly provides a depth of academic thought on how things like structured analytical techniques, estimative language, sourcing, assumption checks, critical thinking, and alternative hypotheses exploration should be applied, but the academic explanation does not translate well to regulatory guidance. Derived from and similar to ICD 203, AFI 14-133 again labels and categorizes analytic standards but does little else to elaborate on the processes required to facilitate and achieve success. Additionally, AFI 14-133 uses slightly different terminology than ICD 203, showing that the Air Force's attempt to convey and uphold standards breaks down quickly as the two documents are unable to agree on which standards to uphold and how they should be labeled. For example, the Air Force has injected confusion by introducing "tenets" in place of ICD 203's "analytic standards" and using "integrity" in place of "independent of political consideration." The following table delineates the differences in standards between ICD 203 and AFI 14-133. It illustrates how quickly ICD 203's standards migrated with the publication of the Air Force instruction. How the remaining 15 members of the IC implemented ICD 203's standards was not analyzed.

**Table. ICD 203 standards versus AFI 140-133 standards**

ICD 203 Analytic Standards	AFI 14-133 Intelligence Analysis
Analytic Standards	AF Intelligence Analysis Tenets
<ul style="list-style-type: none"> <li>a. Objective</li> <li>b. Independent of political consideration</li> <li>c. Timely</li> <li>d. Based on all available sources of intelligence information</li> <li>e. Implements and exhibits Analytic Tradecraft Standards, specifically:</li> </ul>	<ul style="list-style-type: none"> <li>3.1.1. Objectivity</li> <li>3.1.2. Integrity</li> <li>3.1.3. Synthesis</li> <li>3.1.4. Collaboration</li> <li>3.1.5. Anticipation</li> <li>3.1.6. Requirements</li> </ul>
<ul style="list-style-type: none"> <li>(1) Properly describes quality and credibility of underlying sources, data, and methodologies</li> <li>(2) Properly express and explains uncertainties associated with major analytic judgments</li> <li>(3) Properly distinguishes between underlying intelligence information and analysts' assumptions and judgments</li> <li>(4) Incorporates analysis of alternatives</li> <li>(5) Demonstrates consumer relevance and address implications</li> <li>(6) Uses clear and logical argumentation</li> <li>(7) Explains change to or consistency of analytic judgments</li> <li>(8) Makes accurate judgments and assessments</li> <li>(9) Incorporates effective visual information</li> </ul>	AF Intelligence Analysis Standards <ul style="list-style-type: none"> <li>3.2.1. Timeliness</li> <li>3.2.2. Appropriate Sourcing</li> <li>3.2.3. Accuracy</li> <li>3.2.4. Level of Confidence</li> <li>3.2.5. Assumptions vs. Judgements</li> <li>3.2.6. Analysis of Alternatives</li> <li>3.2.7. Relevance</li> <li>3.2.8. Logical Argumentation</li> <li>3.2.9. Utility</li> <li>3.2.10. Customer Engagement</li> </ul>

Additionally, the AFI 14-202 intelligence series provides regulatory guidance to the Air Force intelligence enterprise across three independent volumes: *Training, Standards and Evaluation*, and *General Intelligence Rules*. However, it does not expand upon or reference the overarching ODNI-directed intelligence standards—ICD 203. The ODNI attempts to provide the IC with the principles of analysis through a top-down application of analytical standards, but these standards do not penetrate to line unit analysts. With AFI 14-133 introducing the service to analytic standards, the regulation falls well short of defining and delineating analytical rigor. This regulation suggests to its readers that one must meet all of the standards, but it fails to provide measures of success. The ODNI's *Rating Scale for Evaluating Analytic Tradecraft Standards* provides what the Air Force has failed to adapt. It acknowledges that analysis is not binary and that there are variations in quality and sufficiency. The ODNI rating scale is intended primarily for ODNI evaluators to conduct postproduction evaluations. This document provides amplified guidance for evaluators and assists them in judging ICD 203 compliance on a scale of poor (0), fair (1), good (2), and excellent (4). ODNI evaluators provide postproduction quality control (QC) for review purposes. However,



while this tool can provide consumers a rating of effective rigor and analytic compliance, it is not currently shared with intelligence consumers or decision makers. The historical failures previously discussed in this paper have shown that when decision makers perceive a sufficient amount rigor, yet the rigor is weak, the consequences can be catastrophic.

Expected dialogue between analysts and consumers is implied in the evaluation and feedback section of the intelligence process, but this feedback process has limited structure. At best, an intelligence product goes out and feedback comes back. There are many mechanisms to facilitate this type of feedback, but this does not meet the expectation of dialogue. Dialogue, as opposed to monologue, requires two-way communication. There is an expectation by the intelligence consumer that the analysis being presented is sufficiently rigorous, yet there is currently no systematic mechanism or standard for an analyst to quantify, convey, and certify analytical rigor prior to publication of intelligence products. The IC's current evaluation capabilities comply with 2004 IRTPA requirements to conduct postproduction, after-action reviews. Rigor and accuracy are mutually exclusive; one does not guarantee the other. This is understood in the tradecraft, and indeed the ICD 203 analytic tradecraft standard requiring analysts to "properly express and explain uncertainties associated with major analytic judgments" was established to codify how confidence levels and expressions of likelihood are conveyed to consumers, which is different than conveying rigor. It is safe to say that national policy makers consuming an NIE would expect high rigor, where a combatant commander digesting current intelligence might accept the risk of low analytical rigor given time constraints or limited corroboration. High rigor analysis can appropriately result in a low confidence assessment.

## **Proposal**

This paper will analyze the impacts and costs of establishing an ODNI center of excellence, a schoolhouse designed to train and certify Masters of Analytic Tradecraft (MAT) analysts. The primary purpose of MAT analysts is to evaluate and rate intelligence products for adherence to ICD 203, *Analytic Standards*, and to assess and convey analytical rigor to production analysts and intelligence consumers. The ODNI's AIS group currently employs evaluation and rating processes to assess post-publication intelligence as spot-check, quality control, and review mechanisms in accordance with section 1019 of the 2004 IRTPA, stating that evaluators "shall perform, on a regular basis, detailed reviews of finished intelligence product(s)."<sup>40</sup> MAT analysts and their evaluation capability would differ from and potentially complement

existing AIS processes in that MAT analysts would (1) be embedded at the unit and organizational levels, (2) evaluate intelligence reporting prior to publication, (3) exponentially robust current efforts in manpower and capability, and (4) culturally build a cadre across the IC focused on ICD 203 compliance and adherence to analytical rigor expectations. Certified MAT analysts will be effectively trained to certify the level of analytical rigor prior to publication of intelligence publications. This certification will accompany the intelligence report in the form of a unique and branded label, thus providing a simple, standardized, and easily recognizable conveyance of analytical rigor that is stamped with the license number of the MAT analysts (see below figure). This procedure would communicate an authoritative assessment of analytical rigor and adherence to ICD 203 *Analytic Standards*.



**Figure. Proposed MAT rating badges (as conceptualized by the author)**

Evaluations and MAT certifications of analytical rigor will be a unique capability of certified MAT analysts. Only certified MAT analysts will be empowered to evaluate and certify intelligence products. The following analysis will determine if an AIS-sponsored schoolhouse, certified MAT analysts, and certified intelligence products would increase adherence to ICD 203 standards and improve the culture of analytical rigor across the IC.

## **Research Methodology**

The following analysis evaluates the above proposal utilizing the following criteria:

### **Evaluation Criterion 1: Effectiveness**

Criterion one will analyze how effective given proposals might be toward achieving the goals of promoting and conveying analytical rigor across the IC, ensuring that the rigor is standardized, and assessing how effective a given proposal might be in facilitating communication. It is recognized that given

the classified nature of the materials and the limited amount of unclassified data, effectiveness will be difficult to measure.

### **Evaluation Criterion 2: Implementation**

The proposal will be evaluated against identified barriers to implementation. Along this line, the evaluation will strive to understand and identify barriers such as training, manpower, and support requirements. From a resourcing perspective, proposals will be evaluated for cost effectiveness and will explore resourcing implications.

### **Evaluation Criterion 3: Adaptation**

The adaption is the final criterion by which proposed processes will be evaluated. Factors effecting adaption include consensus, leadership buy-in, cooperative elements, feasibility, target population, performance measures, and goals. Given the size of the IC, this paper evaluates how long it will take to implement the given proposals and subsequently how long it will take to effectively penetrate the proposals to the unit level.

## **Analysis/Evaluation**

### **Evaluation Criterion 1: Effectiveness**

Evaluating the certification proposal against existing processes suggests that this would be an effective approach on multiple levels. Establishing a center of excellence facility to train MAT analysts under the authority of the ODNI would be another step in consolidating a fragmented analytic community that was so aptly described in the 9/11 Commission Report: “It is hard to ‘break down stovepipes’ when there are so many stoves that are legally and politically entitled to have cast-iron pipes of their own.”<sup>41</sup> The ODNI currently sponsors two training initiatives that can be used as a model for MAT analysts training. The ODNI’s Analysis 101/201 courses are intended for relatively new analysts and focus on the fundamentals of analysis and analytical collaboration, respectively. By building intelligence product evaluators trained and certified to evaluate on ICD 203 standards, MAT training would further promote a joint intelligence community culture versus a culture of independent CIA, NSA, Defense Intelligence Agency, and Air Force analysts. Cultural affiliation with independent intelligence agencies is not a bad thing as long as there is a touchstone to a larger, interconnected culture consolidated under the ODNI and its ICD 203 standards. This is in line with the 9/11 and WMD commis-

sion recommendations and meets the underlying intent of the IRTPA when it established a director of national intelligence and the ODNI's responsibilities.

Having ODNI-certified MAT analysts to evaluate and certify intelligence products prior to production would be an unprecedented approach at the scale being suggested. Current quality assurance efforts are fragmented and scattered across the entirety of the IC. As AFI 14-133 has demonstrated, ICD 203 interpretation evolves as the organizational process gets further away from the originating source. To certify MAT analysts as evaluators would consolidate the tribe and extend the ODNI's ICD 203 penetration into the disparate organizations and agencies of the IC. Given that many organizations already have standardization and evaluation (stan/eval) or QC functions established, a certification process would take the same billets and efforts and align them across the IC. If an IC component wanted to exceed a given standard, there would be no resistance, but a foundational, tiered evaluation and analytical rating scale would be the baseline. Unifying the IC efforts under one recognized certification process would be healthy as it relates to establishing a feedback mechanism and evaluating and promoting analytical rigor, thus benefiting intelligence consumers and analysts alike. Having MAT evaluators certify intelligence products and share their findings would be revolutionary. For the first time, decision makers would have an understanding of the quality of analytical rigor that informed the consumed intelligence products that they base their decision making processes on. This change would effectively empower intelligence consumers to judge sufficiency for themselves.

Given the known analysis issues leading to the invasion of Iraq and the level of dependence of the nation's decision makers on the 2002 *NIE*, it is assessed that had the *NIE* been accompanied by a pre-production evaluation of analytical rigor and adherence utilizing today's tradecraft standards, decision makers would have been informed on the insufficiency of process and thus demanded additional rigor. Instead, decision makers perceived rigor and falsely trusted the analysis, resulting in an over two trillion dollar expense and almost 190,000 lives lost over the course of the Iraq conflict.<sup>42</sup> This is not to suggest that a MAT analyst certification alone would have prevented the war in Iraq. There were many issues identified, some of which were addressed in the 2004 IRTPA, but a MAT certification of the 2002 *NIE* would have been a valuable tool in communicating sufficiency of analytical rigor.

MAT evaluators would be vulnerable to error, thus requiring continued training. To carry authority, MAT analysts would need to come to this training seasoned by years of analytical experience. MAT evaluators would require currency training and a mechanism to communicate and collaborate with

senior evaluators. Evaluations would need to be reviewed for quality control and adherence to yet to be established or vetted processes.

The credentials of MAT evaluators would continually be tested. Mistakes could damage the MAT “brand” and in turn devalue the initiative. Trust in the MAT brand would require time, a consistent product, and diligent individuals, all of which could be variable and undermined by missteps as the process is created.

## **Evaluation Criterion 2: Implementation**

Implementation of a MAT analyst training and certification process will have challenges. For this analysis I assumed the following: (1) The course will be one month long, tripling the current Analysis 101 time frame due to the expanded syllabus and certification requirements; and (2) The class size will be 25, typical for this type of instructor-led engagement and also modeled after the approximate ODNI Analysis 101 class size.<sup>43</sup>

The barriers to implementation are training, manpower, and support requirements. For a schoolhouse to be established, facilities, instructor cadre, administrative overhead, and syllabus development would all need to be established. To stand up a schoolhouse would require a significant amount of funding. Fortunately, much of this work has already been accomplished. The ODNI’s AIS already has a means for training evaluators, and amplified guidance for evaluators already exists in the form of the ODNI’s *Rating Scale for Evaluation Analytic Tradecraft Standards*. Instructor cadre and infrastructure are already established at the Chantilly, Virginia, training facility. Current efforts would need to be scaled at a cost that would require further evaluation beyond to scope of this paper. If the return on investment of the Analysis 101 course is deemed cost effective, a MAT certification would be a double down on this same investment. Most organization across the IC offer some form of analytical training; the Air Force offers such a class at Goodfellow Air Force Base. If the Air Force were to dissolve its service-specific analysis training in trade for joint, ODNI-sponsored training, then the cost of implementation would be negligible from the Air Force’s perspective.

A 2008 RAND report, *Assessing the Tradecraft of Intelligence Analysis*, recommended instituting IC-wide tradecraft training and was quick to acknowledge the need for and the difficulty of implementing such community-wide training. As compared to the RAND recommendations, this proposal is surgical in its execution. One given benchmark of success is the ODNI Analysis 101 course, which has graduated over 7,000 students from over 30 intelligence and law enforcement organizations since its conception in February

2007.<sup>44</sup> A similar scale of effort would be appropriate for a MAT certification program, with the goal of providing MAT-trained analysts embedded at various organizational levels.

With manpower being a valued commodity, it is not expected that additional billets will be funded for MAT analysts on unit manning documents. Therefore, this capability and function would have to be absorbed by already stressed personnel. Most organizations have a section dedicated to stan/eval or QC, but currently these functions are not aligned with the ODNI and ICD 203 analytic standards. For implementation to be successful, IC elements would have to shift current stan/eval and QC functions to align with ODNI direction. In many ways this change would require disparate elements across the IC to defer some control to the ODNI, which would be politically challenging. For example, AFI 14-133 defines the Air Force's established analytic standards, which differ from established ODNI standards. For this proposal to be successful, Air Forces standards would have to defer to ODNI standards. The Air Force could implement higher standards if it chooses but could not relax those standards without the consent of the ODNI.

Instead of forcing MAT-certified analysts upon the entirety of the IC, one implementation approach would be to offer MAT certification as an enhancement to current unit-level processes. IC organizations that elect to invest in and train MAT-certified analysts would then be allowed to self-evaluate and certify their intelligence products with the branded MAT certification badges described above. Organizations electing to opt out would not be able to certify their products.

### **Evaluation Criterion 3: Adaptation**

Given the exclusive and unique qualities of the MAT analyst's ability to evaluate and label intelligence with branded rating labels, it is possible that once intelligence consumers become aware of MAT certification, they would be a driving force in encouraging implementation. Of course, this demand is currently unknown. It is foreseeable that reporting intelligence agencies would want this capability as a way to laud their own due diligence and adherence to ODNI established processes. Further, once intelligence consumers are educated on the MAT certification program, they may push for intelligence products that they consume to be pre-evaluated and MAT rated for rigor and standard adherence. Given that MAT certification is additive in nature, resistance from intelligence consumers is not likely. But since the burden of certifying products falls to the intelligence producers, analysts and organizations conceivably might push back if they are unable to see its value. If senior ana-

lysts and organizational leaders were to covet MAT certification, then buy-in from analysts and decision makers would be likely.

A phase-in approach would provide minimal risk on investment, with scale and IC penetration growing as MAT analysts obtain certification and initiate the evaluation of their organizations' intelligence assessments. Once products are accompanied by analytical rigor ratings, intelligence consumers may request the highest ratings possible of the products they are digesting. MAT ratings that fall below the intelligence consumer's sufficient requirements for analytic rigor could facilitate further and potentially healthy dialogue. IC components and consumers might discuss such topics as resources, capabilities, time requirements, collection, analysis, and depth of expertise.

Adapting MAT certified analysts would not require day one, mass, IC-wide adaptation. A measured, steady implementation of the proposal would be a feasible. No changes to the current intelligence process would be required, with MAT certification being an additive supplement to established baseline intelligence production. Minimal penetration could still present positive results. Success would beget success. If MAT analysts conducting per-publication evaluations proves to be a failure, then the investment lost would be measured and relative to the number of graduates. The first year of implementation could be considered a beta, proof of concept, thus further managing expectations as some of the trial and error implementation is worked out.

Where establishment of MAT analysts would invigorate existing processes, the cultural change and adaptation across 17 unique IC organizations and agencies would be difficult. ODNI directives would need to be written and enforced to ensue IC-wide adaptation. It has taken multiple congressional investigations and the passing of the 2004 IRTPA to get to the two and a half pages of analytic standards outlined in ICD 203. To see MAT certification fully adapted would require more than IC-wide buy-in. It would require mandated adherence.

## **Recommendations**

Modeling after the civilian sector's USGBC LEED program and borrowing from the medical and legal professions, it is recommended that the ODNI establish a certification board process to credential analysts as Masters of Analytic Tradecraft. MAT analysts would be certified to employ the ODNI's analytic rating scale, evaluate analytic products, and certify the rigor of those products prior to publication. To become MAT certified, analysts would need to attend a centralized training schoolhouse. This center of excellence would be sponsored by the ODNI, thus being joint in nature and linked across the

IC. Having this level of consolidated analytical tradecraft training at the top of the IC, with a joint cadre of senior analysts teaching curriculum, would be a top-down approach currently lacking in the IC. Graduation would require the passing of a board-style examination. Although ICD 203 has provided unifying direction, it is this author's opinion that resultant training opportunities continue to be disjointed, stove-piped, and fragmented across agency lines, resulting in poorly disseminated standards and divergent lines of effort. An IC, enterprise-wide analytical center of excellence is needed to raise the focus on analysis and analytical tradecraft. This schoolhouse would be the driving force behind standards, collaboration, continued learning, the sharing of best practices, quantifying and communicating analytical rigor, and certifying MAT analysts.

The curriculum of MAT certifying courses would center on the application and evaluation of analytic tradecraft standards. This focus would be different from existing agency and service-specific analysis training courses in that MAT analysts would graduate uniquely certified as ODNI analytic tradecraft evaluators and thus able to evaluate assessments and rate associated analytical rigor. This certification would turn what is currently a post-report quality-control spot check conducted by a small portion of ODNI staff into an IC, enterprise-wide self-evaluation of analytical rigor that happens prior to an intelligence report ever being published.

By establishing a certification process, a MAT analyst would be trained and empowered (by virtue of their unique ODNI certification) to uphold established standards. Quantifying and evaluating the level of analytical rigor that informed an organization's assessment and publishing the resultant rating in the intelligence report will educate decision makers about the amount and quality of analytical rigor that informed the analysis they are trusting. It is then the intelligence consumer's responsibility to determine if the rated level of rigor is sufficient for their needs. Due to the overt evaluation of intelligence products, this rating system would reward analysts to strive for high levels of rigor.

It is recommended that the IC mimic the LEED model, certifying MAT analysts to evaluate their assessments for analytical rigor and standardization by applying their training and utilizing the ODNI's *Rating Scale for Evaluating Analytic Tradecraft Standards*. The resultant evaluation findings would accompany the assessment. This rating could only be given by certified MAT analysts and would be branded in a standardized way to convey the amount of analytical rigor that went into the published intelligence report. Similar to how the USGBC uses LEED certifications to convey a level of environmental performance and adherence to standards and established practices, so would MAT certification convey a level of analytical rigor to the intelligence con-



sumer. In the case of analysis, MAT analysts would measure and certify rigor using the ODNI rating scale and convey the findings utilizing a conformed branding scale. Departing from the current ODNI scale of poor, fair, good, and excellent, the badges displayed in the proposal section envision a level one through four criteria, with level one equating to low rigor and building up to a level four equating to excellent rigor. Similar to how licensed engineers might stamp their works with a seal containing their license numbers, so it is recommended that MAT analysts certify their evaluations by including their assigned MAT number.

Currently, the ODNI encourages analysts across the IC to become familiar with the ODNI rating scale as a way to enhance analytic tradecraft. The MAT certification proposal goes much further, intensively training MAT analysts to be evaluators of ICD 203 analytic tradecraft standards, having intelligence reports assessed for analytical rigor before publication, communicating that rigor to intelligence consumers, and providing an immediate feedback loop to the analysts presenting their analysis. By embedding MAT analysts at the unit level and connecting them to the intelligence production process, the ICD 203 standards would be effectively pushed down and permeated across the IC.

An additional requirement to maintain MAT certification would be to complete and track continuing education (CE). Keeping with the LEED model, MAT analysts would be required to earn 30 CE hours every two years.<sup>45</sup> Qualifying CE opportunities would be defined and tracked by ODNI's Analytic Integrity and Standards group and thus ensure currency and proficiency of MAT analysts.

Additional benefits of establishing MAT certified analysts would be their dual-hatted nature as evaluators of analytic products and as embedded subject matter experts expected to act as analysis tradecraft instructors and leaders. MAT analysts would provide advanced unit-level instruction on ICD 203's nine analytic tradecraft standards. Beyond their individual instructor roles, a community of close-knit MAT analysts would be developed, thus facilitating effective cross talk and communication. The ODNI would use MAT analysts to maintain dialogue; convey best practices; provide feedback avenues; disseminate time-sensitive bulletins; build and maintain unit-level libraries; capture and convey tactics, techniques, and procedures as they pertain to analysis; and provide analytical experts who conduct post-product after-action reviews and assess where analysis went right and came up short. MAT analysis will be unit- and organizational-level focal points, ensuring ICD 203 integration and coordination. MAT analysts could also fill an advisory role to intelligence production commanders and leaders, ensuring that the need for analytical rigor has a voice among the myriad of competing

forces, including manning, resources, and production rates. Additionally, MAT analysts could liaise between intelligence consumers and production analysts to ensure feedback is provided and absorbed.

In addition to the civil sector professions that require certification (doctors, lawyers, engineers, LEED associates, etc.), the Air Force's Weapons Instructor Course (WIC) provides another model that could be adapted by the ODNI and applied to MAT certification. The Air Force's WIC prides itself on its ability to develop an institutional pool of tactical and operational experts.<sup>46</sup> Embodying a creed of "humble, approachable and credible," the aggregate of WIC graduates form a fraternity of trusted experts and valued problem solvers.<sup>47</sup> Upon completing an intensive, graduate-level curriculum, Air Force WIC graduates integrate at the unit level and provide a wide spectrum of academic and advisory support. They facilitate the collection of tactical-level knowledge and use it to inform and author tactical doctrine. This collective of the Air Force's best weapon's officers forms a self-aware, continually improving, and always communicating trust of knowledge that both informs and enables best practices across the multidomain tactical environments in which the Air Force fights.<sup>48</sup>

In this same vein, but transcending any one service or agency, MAT analysts would be ODNI trained and credentialed, providing unit and organizational-level experts in analytical tradecraft and informing and upholding ICD 203's standards of analysis. Empowered as evaluators of analytical rigor, MAT analysts would rate assessments using the aforementioned branded rating system to ensure and convey rigor while concurrently fulfilling the roles of trainer and trusted advisor.

#### Notes

(All notes appear in shortened form. For full details, see the appropriate entry in the bibliography.)

1. Zelik, Patterson, and Wood, "Understanding Rigor in Information Analysis," 1.
2. Zelik, Patterson, and Wood, 1.
3. Joint Publication (JP) 2-0, *Joint Intelligence*, I-22.
4. Zelik, Patterson, and Wood, "Understanding Rigor in Information Analysis," 3.
5. Johnston, *Analytic Culture*, 7; and Cooper, *Curing Analytic Pathologies*, 4.
6. US Government, *Tradecraft Primer*, 3.
7. Commission on the Intelligence Capabilities of the United States, *Report to the President*, opening letter, 3.
8. Zelik, Patterson, and Wood, *Judging Sufficiency*.
9. Sutherland and Leatherman, "Does Certification Improve Medical Standards?"

10. US Green Building Council, "About USBGC."
11. Keck, "US Intelligence Community"; and Priest and Arkin, "Hidden World."
12. Rosenbach and Peritz, *Confrontation or Collaboration?*, 11.
13. Cooper, *Curing Analytic Pathologies*, xx; Bartholomees, *U.S. Army War College Guide to National Security Issues*, 133; and Treverton and Gabbard, *Intelligence Analysis*, xi.
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15. Zelik, Patterson, and Wood, "Understanding Rigor in Information Analysis," xx.
16. Treverton and Gabbard, *Intelligence Analysis*, 1.
17. Treverton and Gabbard, 1.
18. JP 2-0, *Joint Intelligence*, I5.
19. Pigg, "Common Analytic Standards."
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21. Cooper, *Curing Analytic Pathologies*, 3.
22. US Government, *Tradecraft Primer*, 3.
23. "Performance of the Intelligence Community," 3.
24. Intelligence Reform and Terrorism Prevention Act of 2004, secs. 1001–20.
25. Senate Select Committee on Intelligence, *Prewar Intelligence Assessments on Iraq*; and Commission on the Intelligence Capabilities of the United States, *Report to the President*.
26. Senate Select Committee on Intelligence, *Prewar Intelligence Assessments on Iraq*; and Rosenbach and Peritz, *Confrontation or Collaboration?*, 38.
27. Commission on the Intelligence Capabilities of the United States, *Report to the President*, 12.
28. Senate Select Committee on Intelligence, *Review of the Terrorist Attacks on U.S. Facilities in Benghazi, Libya*.
29. Intelligence Reform and Terrorism Prevention Act of 2004, secs. 1001–20.
30. *Intellipedia* contributors, "Analytic Integrity and Standards."
31. National Commission on Terrorist Attacks, *9/11 Commission Report*, 409.
32. Treverton and Gabbard, *Intelligence Analysis*, 11.
33. See Cooper, *Curing Analytic Pathologies*.
34. Zelik, Patterson, and Wood, "Understanding Rigor in Information Analysis"; and Zelik, Patterson, and Wood, *Judging Sufficiency*.
35. Zelik, Patterson, and Wood, "Understanding Rigor in Information Analysis."
36. US Government, *Tradecraft Primer*, 2.
37. Heuer and Pherson, *Structured Analytic Techniques*.
38. Intelligence Community Directive 203, *Analytic Standards*; and JP 2-0, *Joint Intelligence*.
39. Intelligence Community Directive 203, *Analytic Standards*.
40. Intelligence Reform and Terrorism Prevention Act of 2004, sec. 1019.
41. National Commission on Terrorist Attacks, *9/11 Commission Report*, 403.
42. Trotta, "Iraq War Costs U.S. More Than \$2 Trillion."
43. *Intellipedia* contributors, "Analysis 101."

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45. US Green Building Council, "Credential Maintenance."
46. Nellis AFB, "Air Force Weapons School."
47. Nellis AFB.
48. Nellis AFB.

## Abbreviations

AIS	Analytic Integrity and Standards
CE	continuing education
CIA	Central Intelligence Agency
DDNI/II	deputy director of national intelligence for intelligence integration
DNI	director of national intelligence
ICD 203	Intelligence Community Directive 203
IRTPA	Intelligence Reform and Terrorism Prevention Act of 2004
ISR	intelligence, surveillance, and reconnaissance
LEED	Leadership in Energy and Environmental Design
MAT	Masters of Analytic Tradecraft
NSA	National Security Agency
ODNI	Office of the Director of National Intelligence
stan/eval	standardization and evaluation
USGBC	United States Green Building Council
WMD	weapons of mass destruction

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