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DELIBERATE AGILITY:
STREAMLINING AIRBORNE ISR SENSOR ACQUISITION

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Introduction

To keep pace with changing operational requirements and dynamic threat environments, the Air Force Intelligence, Surveillance, and Reconnaissance (ISR) community needs adaptable intelligence collection capabilities to ensure the warfighter is equipped with the right tool for the right fight. Historically, the Air Force has relied on two distinctly separate systems to deliver new capabilities: a streamlined process to rapidly meet urgent needs and a slower, more deliberate process to acquire all other capabilities.[1] Customarily, the "rapid acquisition" programs are heralded for their ability to meet urgent ISR collection requirements in a matter of mere months. In contrast, more traditional ISR programs often struggle to meet warfighter needs and are plagued by years of cost overruns and schedule delays.[2]

After close examination of the rapid acquisition community's successes, this paper proposes how the deliberate acquisition community can leverage "agile practices" to increase the likelihood of fielding timely, operationally relevant ISR sensor capabilities to equip the warfighter for current and future fights. The deliberate acquisition system already provides latitude to lean forward, instill agility, accelerate development, streamline delivery, and improve overall programmatic flexibility; however, taking advantage of these opportunities will require a shift in how the Air Force approaches airborne ISR sensor acquisitions. Continual collaboration between the intelligence, operational, and acquisition communities will enable developers to anticipate operational needs, plan for future warfighter requirements, and deliver improved ISR collection capabilities every three to four years.

A Charge from the Air Force Chief of Staff

The 2015 Air Force Strategic Master Plan challenges the assumption that deliberate acquisitions must be inherently slow and unwieldy, charging the Air Force acquisition

community to become more "responsive, adaptable… and embrace agile acquisition techniques" to satisfy dynamic warfighter requirements.[3] Looking forward, the Strategic Master Plan surmises "the increasing rate of change of today's technologies and security environment is fundamentally at odds with a decades-long capability development process that often fields cumbersome, inflexible, and expensive systems."[4] To meet operational demands, the Air Force ISR community needs "modular, adaptable, and upgradeable solutions" to equip the warfighter with the right tool for the right fight.[5] To instill agility into the current deliberate acquisition system, the Air Force should re-examine its established processes and incorporate lessons from the agile acquisition community that encourage bold leadership to purposefully build flexibility into future plans and programs.[6]

Agile Acquisition Best Practices and a Path Forward

A deep dive into current regulations and existing publications revealed several overarching themes that enable rapid organizations to deliver first-class capabilities to warfighters at lightning speed. First, contrary to popular perception, rapid organizations must abide by the same set of laws and rules as the rest of Department of Defense (DoD), but they are careful not to impose additional constraints on themselves.[7] They pursue "intense interaction" with networks of operators and stakeholders and actively seek feedback from the warfighters "on the ground," to ensure new capabilities meet operational needs.[8] Rapid projects are broken into smaller chunks of capability, with the most vital pieces fielded first; the warfighter has the final vote on when a capability is "good enough," and partial solutions are acceptable.[9] Rapid acquisition organizations modify, tweak, and integrate mature technologies, rather than develop something new, to reduce time, cost, and technical risk.[10] Finally, rapid organizations tackle acquisitions with small, highly-selective, empowered teams with minimal oversight or layers of

bureaucracy.[11] The secret to their success is a culture that embraces ideas, innovation, trust, speed, risk, and even failure.[12]

The above analysis demonstrates that the key to rapid acquisition lies not in a special set of rules, but in the innovative culture and sense of urgency fostered by these rapid organizations.[13] Admittedly, a couple "special" elements enable them to deliver capabilities quickly, such as additional funding, higher priority, and waivers.[14] However, even without these additional benefits, the true key to agile acquisitions is a laser-like focus on low-cost, simple solutions delivered to the warfighter as fast as possible.[15] All other facets (organization, staffing, funding, etc.) revolve around this singular purpose, and anything that does not align is discarded. Therefore, most of the success factors employed by rapid organizations like BIG SAFARI, USSOCOM/Acquisition, Technology, and Logistics (AT&L), and the Air Force Rapid Capabilities Office (AFRCO) are entirely applicable to deliberate acquisition programs.

Perhaps most neatly packaged and articulated by Lt Col (Ret) Dan Ward, the rapid acquisition community achieves its success through "F.I.R.E.: fast, inexpensive, restrained, and elegant" solutions -- using small teams, tight budgets, and short timelines to deliver simple technologies to the warfighter.[16] Based on extensive research, "F.I.R.E." presents a "decision making framework to encourage leaders to streamline, accelerate, and simplify" whenever possible, resulting in "rigorously enforced schedules and budgets, pared down requirement sets, and a disciplined focus on delivering capabilities on operationally relevant timelines."[17] Historically, capabilities fielded using the "F.I.R.E." approach "tend to outperform more expensive, complex systems when actually fielded;" their well-documented successes "offer great promise" to deliver affordable airborne ISR sensors when the warfighter needs them.[18] While this may seem like an overly simplistic proposal for how to "fix" acquisition, adopting the

"F.I.R.E." model is the first step to institutionalizing agile practices across Air Force deliberate acquisition programs, particularly among smaller Acquisition Category (ACAT) III programs with overall research, design, test, and evaluation (RDT&E) budgets under $185M.[19] The application of agile practices, however, will require a shift in the way the Air Force traditionally approaches capability development.

Fortunately, the DoD updated its primary acquisition regulation in 2015 to provide more opportunities to instill flexibility into the deliberate acquisition process. Specifically, the revised DoD Instruction (DoDI) 5000.02, states that "Milestone Decision Authorities (MDAs) have full latitude to tailor programs in the most effective and efficient structure possible, to include eliminating phases and combining or eliminating milestones and decision points, unless constrained by statute."[20] This guidance not only empowers, it also encourages MDAs to tailor, adapt, and waive portions of the development process for their respective capability requirements and timeline. [21]

Deliberate Agility: Framework for Streamlining Airborne ISR Sensor Acquisition

Blending the best practices from the agile acquisition community with the latitude permitted by the revised DoDI 5000.02, opportunities exist to insert agility into the deliberate planning process to improve the delivery of timely, relevant, sustainable, platform-agnostic airborne ISR sensors to meet warfighter requirements. To respond to dynamic operational needs, an iterative, incremental development model can field new ISR sensor capabilities every three to four years, while working follow-on capabilities in parallel, with the aim of an overall "cradle to grave" lifespan of five to ten years.[22]

Utilizing incremental development will require continuous forecasting and planning to field new sensor capabilities quickly, frequently, and efficiently.[23] Leveraging the "F.I.R.E."

decision-making model and guidelines set forth in the National Defense Authorization Act of 2010, this paper provides a framework to institutionalize flexibility through: "1) early and continual involvement of the user; 2) multiple, rapidly-executed increments or releases of capability; 3) early, successive prototyping supporting an evolutionary approach; 4) a modular open-systems approach;" and 5) empowerment of leaders.[24] Looking at each of these guidelines in turn -- in no particular order -- ISR sensor programs can employ the following best practices to build deliberate flexibility into the existing capability development process.

1. Early and Continual Involvement of the User

a.   <u>Forecast ISR Capability Gaps 4-5 Years in Advance</u>. Constant communication between the acquisition and intelligence communities drives proactive acquisition strategies. Currently, there appears to be a gap between "urgent" and "long-term" planning efforts, without a solid established process to meet emerging mid-range requirements between the 12 to 24 month delivery of "rapid" capabilities and the fifteen-year "traditional" program timelines.[25] Intelligence and acquisition personnel must work together to anticipate future midrange threats, operating environments, and potential capability gaps.[26] While predictions may not be correct all the time, few world events take the Intelligence Community completely by surprise. By anticipating future warfighter needs and capability gaps, the acquisition community can lean forward to plan, pre-position, and explore possible solutions before the requirement becomes dire. By the time official requirements emerge, the acquisition community can already be poised to respond within the existing deliberate process, decreasing the number of capabilities fielded as Quick Reaction Capabilities (QRCs) and minimizing the impacts to other programs' resources.[27]

b. <u>Expand the Operator's Role</u>. Continuous communication is essential to correctly understand and meet the warfighter's requirement. Developing "intense interaction" creates an "iterative dialogue" throughout the development process with all key operators and stakeholders: the Processing, Exploitation, and Dissemination (PED) analyst who receives the data, the warfighter who relies on the final intelligence, the aircrew who operates the sensor, and the maintenance crew that sustains it.[28] These operators provide the "actual field experience and direct feedback" necessary to identify potential trade space, future operational environments, and evolving threats.[29] USSOCOM/AT&L ensures operators are present for acquisition decision briefings, assist in advocacy for funding, participate in program management reviews, and provide input to determine if a capability is "good enough" to meet the requirement. Even further, they provide spaces for operators to visit regularly and rotate hand-selected Ghost acquisition teams with deployed units to understand and appreciate the operational environment.[30]

2. **Multiple, rapidly-executed increments or releases of capability**

a. <u>Create Independent ISR Sensor Product Lines</u>. Separate the ISR sensor from the platform to establish and fund independent ISR sensor Programs of Record under their own Program Elements (PEs).[31] Managing ISR sensors like other aircraft stores (targeting pods, weapons, etc.) will enable operators to manage each configuration independently and customize sensor capabilities for each platform or mission. Stand-alone, platform-agnostic ISR sensor capabilities mitigate paying for the same capability multiple times on different platforms and build the foundation for future multi-domain operations.[32]

b. <u>Deliver ISR Sensor Capabilities in Smaller Increments</u>. Smaller increments create more opportunities for user feedback and take less time to integrate, deliver, and field.[33]

Incremental delivery is preferable to waiting until the entire capability is complete, because "actual capabilities beat imaginary ones."[34] Smaller increments are simpler, more reliable, and reduce technological risk.[35] Smaller budgets require less oversight and lower levels of approval.[36] In the event of program failure or cancellation, smaller increments also mitigate losses (in both time and money).[37]

c.   <u>Restrain Requirements Based on Schedule and Cost</u>. Using USSOCOM/AT&L's approach, requirements should be framed: "In this specified timeframe/budget, how much capability can be delivered?" (In contrast, the all-too-common inverse found in deliberate acquisitions is: "This is the requirement – how much time/money will it take?")[38] Setting a fixed schedule and budget increases the likelihood of "delivering something useful in an operationally relevant timeline."[39] Floating requirements enable quicker responses to emerging needs and the ability to adjust when problems arise (rather than extending the schedule or budget).[40] Add-on requirements should only be considered if they can be made with "negligible or minimal disruption" to the current budget and schedule.[41] It is generally better to de-scope requirements before accepting a slip in the schedule, because delivering something is better than nothing.[42] Programs should strive for flexibility, but not instability -- once an increment starts, requirements should be locked down and any subsequent changes saved for the next iteration.[43]

d.   <u>Shoot for the Minimum</u>. USSOCOM/AT&L and the AFRCO do not wait until capabilities are perfect or complete to field them – they aim to deliver a partial solution quickly and then reconvene with the warfighter for feedback to determine the next step.[44] Similarly, deliberate ISR sensor programs should aim for the minimum key performance parameter threshold detailed in the requirement – this minimum requirement has already been

identified as what constitutes "good enough." Adding capabilities above what has been stated as acceptable only increases complexity, time, cost, and risk.

e. Build Sustainability Concurrently. Create development, supportability, and transition plans in parallel to field sustainable systems, so nothing is left as an afterthought.[45] Acquisitions, logistics, and intelligence experts need to cultivate networks to share their respective planning considerations. In particular, ISR sensors and PED solutions must be developed simultaneously to ensure systems are fully mission capable upon delivery.[46] Engage in "fleet normalization activities" up front; the simultaneous creation of training, Technical Orders (TOs), sustainability, and information sharing plans will increase opportunities to insert more operational feedback into the development process.[47] The ISR and acquisition communities should work together to pre-position funding and transition documentation whenever possible.[48]

3. **Early, Successive Prototyping Supporting an Evolutionary Approach**

a. Assume "Only One Miracle Per Program." Mature sensor technologies reduce the number of unknowns and increase program stability.[49] Employing the scientific model limits each increment to only one new variable (a new piece of hardware, software upgrade, PED solution, etc.). Incorporating or tweaking an existing mature technology will nearly always be faster and more reliable than developing a new one. Market research may reveal potential solutions already available across the DoD, other government agencies, and industry.[50]

b. Create Building Block Capabilities. Each sensor capability builds on its predecessor, with upgraded technology continuously replacing outdated systems, as operating environments and/or objectives change. Leveraging previous research and existing mature technologies enables streamlined fielding to meet new collection priorities.[51]

c.   <u>Leverage Demos and Prototypes</u>. The "fly before you buy" approach enables the DoD to

conduct demonstrations, identify the best solution for warfighter requirements, and gain the

best value for the government prior to investing in a capability.[52] Demos are generally low-

cost and low-risk to the government, as contractors showcase their best new technology. The

USSOCOM/AT&L employs this tactic regularly to glean new solutions for their specific

operational needs.[53] "Fly offs" between contractors can encourage competition and allow the

warfighter to assess multiple prototypes. Additionally, leveraging organic capabilities for

prototype development, such as the Air Force Life Cycle Management Center's (AFLCMC)

Rapid Development Integration Facility, has demonstrated 75-90 percent cost and schedule

savings to date.[54]

4. Modular open-systems approach

a.   <u>Leverage Open Architectures</u>. The AFLCMC and Air Force Research Lab Sensors

Directorate (AFRL/RY) have made significant headway to renew Air Force ownership of the

ISR sensor architecture baseline and establish common interfaces to standardize how sensors

talk to each other.[55] Their groundbreaking efforts will mitigate contractor proprietary

restrictions on data, reduce complexity, and enable quicker integration of new capabilities.[56]

The ISR community must continue to invest in open modular systems to improve platform

and PED interoperability and integrated command and control, driving opportunities for joint

and coalition partners to plug-and-play into US intelligence capabilities.[57]

b.   <u>Pursue Flexible Contracting Solutions</u>. Contracting is widely cited as the "long pole" in

development, but there are still opportunities to streamline the process and instill more

flexibility within existing regulations and laws.[58] For example, USSOCOM/AT&L pre-

positions and drafts initial contracting documents as broadly as possible to provide maximum

flexibility to respond to warfighters' needs at a later date.[59] Initial requirements are

intentionally vague to start the process moving, with the full expectation they will be refined

later when requirements become clearer. Traditionally, the Air Force views broad

requirements as ill-defined, ambiguous, or risky; instead, the Special Operations community

embraces vagueness to provide a jump start on development while dynamic operational needs

are still emerging. Broad documents deliberately provide flexibility; overly-detailed

documents limit future options. Continuous iterative planning also should include contracting

officers as early as possible, who can help teams lean forward in the following four areas:

requirements documentation, market research, statement of work, and funding approval.

These combined areas make up the largest share of the contracting workload (and timeline)

and fall entirely within the requirement owner's control; there is a strong correlation between

streamlined contracting efforts and successful minimization of lag time spent in these four

areas.[60] At Headquarters 24th and 25th Air Force, the joint Cyberspace Multi-Domain

Innovation Team has taken advantage of other organizations' existing contracts to obtain

demo equipment, and the AFLCMC Sensors Division (AFLCMC/WIN) has found success

combining two organizations' contracting efforts to minimize source selections.[61] Currently,

at least 80 percent of DoD contracts dictate a set delivery schedule to the contractor, and less

than 10 percent of them contain any schedule incentives.[62] Utilizing contracts that incentivize

(or penalize) adherence to schedule or cost parameters places a greater emphasis on timeliness

and cost-effectiveness.[63] Partnerships with industry or academia through Small Business

Innovation Research agreements, Cooperative Research and Development Agreements, or

Educational Partnership Agreements can provide cost-effective opportunities to obtain

cutting-edge ideas or technology, as the 688th Cyberspace Wing has discovered through its

multitude of research partnership agreements.[64] In addition, the Defense Innovation Unit Experimental (DIUx) has aggressively pursued new flexible contracting solutions and rapid tools to acquire emerging technology and prototypes, particularly from non-traditional commercial sources, such as Commercial Solutions Openings, Other Transaction Authorities, or Broad Agency Announcements.[65]

c.   Instill Flexible Funding Practices. Within the current Planning, Programming, Budgeting, and Execution (PPBE) system, submitting general "placeholders" can secure funding for future ISR sensor upgrades, while still incorporating the flexibility to refine the requirement within the next five years when the operational environment becomes clearer. To date, organizations that have attempted this method have not had much success, as their generic requests fell to the bottom of the prioritization list, in favor of more detailed Program Objective Memorandum (POM) submissions.[66] To ensure these "placeholders" are prioritized appropriately in the POM process, the corporate process will need to change what it values and recognize the benefits that generic POM "placeholders" provide in terms of flexibility down the road, rather than locking into a particular course of action five years too early. Following USSOCOM's example, allowing Program Executive Officers (PEOs) to "pool" the PEs within their portfolios increases their ability to respond to emerging ISR requirements and shift money as needed.[67] Continuous planning can also pre-position funding requests to take advantage of "unfunded requirements."[68]

d.   Attain Senior Leader Buy-In Early. Air Combat Command (ACC), the Core Function Lead Integrator for the Global Integrated ISR (GIISR) portfolio, is the warfighter's primary advocate and key to this process. Keep all stakeholders engaged -- the tactical warfighters, AFRL engineers, acquisition decision authorities, ACC advocates, and Air Staff ISR

champions and policy makers -- to synchronize efforts, minimize misunderstandings, and enable more rapid integration of new capabilities into the arsenal from an acquisition, operational, and policy perspective.

5. Empower Acquisition Leaders

a. <u>Create a Sense of Urgency</u>. With decreasing budgets and increasing threats, the acquisition community should take a lesson from USSOCOM/AT&L to revive its sense of urgency to deliver new capabilities.[69] Countless soldiers, sailors, airmen, marines, policy makers, and taxpayers are counting on the intelligence provided by Air Force ISR sensors.[70] The clock is ticking -- each moment and every dollar counts. However, speed is not just about acting faster; "deliberate and efficient forward movement, even if it seems slow in the short term, might be the fastest way to the finish line."[71] A sense of urgency motivates personnel to field capabilities quickly, encourages simplicity, and increases the chances of delivering ISR capabilities on time, on cost. Short timelines help instill overall program stability, by focusing on a narrow set of requirements, minimizing the risk of losing funding, and decreasing the chance of requirements creep and personnel turnover. [72] Schedule slips should be avoided at all costs; things rarely get faster, cheaper, or simpler over time.[73]

b. <u>Encourage Risk Taking and Embrace "Optimal Failure."</u>[74] True innovation only comes when leadership understands and accepts that some failure is inevitable when trying something new.[75] Accepting some risk enables "new and glorious mistakes" that provide valuable lessons for future development.[76] While it may be "justifiably scary" to accept that capabilities may not be perfect or fully address the requirement the first time around, the incremental approach enables "optimal failure" and opportunities to learn much without investing excessive amounts of time and money. Advanced technology development may

require the Air Force to "relax its 100 percent solution mind set" and try several different options (another benefit to the incremental approach).[77] Project leaders need the freedom to divert off unproductive paths, but this requires flexibility, creativity, humility, honesty, and the courage to admit failure and start again from a different angle.[78] Adopting the USSOCOM mantra of "Fail fast, fail often, fail early," ISR sensors (and other low cost ACAT III programs) are areas where the Air Force can afford to take some risk to gain technological advances, with the explicit understanding that not all endeavors will be fruitful.[79] Effective risk management essentially boils down to an "exercise in personal courage and professional judgement," and senior leaders set the tone – when they encourage brainstorming, risk taking, failure, questioning, and speaking out against inefficient processes or unnecessary bureaucracy, their teams will follow suit. [80]

c.   Foster Trust. To instill agility into the traditional acquisition culture, it is important to remember that "sustainable change moves at the speed of trust."[81] Senior leaders must empower their teams with a significant amount of autonomy and give them room to execute and allow new ideas to flourish.[82] While traditional Air Force programs may not get to hand-select every member of their team, leaders can still create an environment that will foster and inspire the creativity and tenacity traditionally seen in the small, high-performing teams of rapid acquisition organizations.[83] Robust training and strong two-way communication can resolve issues at the lowest level possible, without significant oversight or bureaucracy."[84] Empowered acquisition teams "move away from programmatic predictability and toward programmatic reliability, preferring to trust rather than know, relying on teamwork rather than paperwork."[85]

d.   Know the Law. Teams that understand the laws and regulations governing the requirements and acquisition processes (both agile and deliberate) know what leeway they have to deliver the best solution quickly, cost effectively, and legally.[86] This knowledge enables discernment between what is actually required and what can be waived and consequently empowers taking calculated risks.

e.   Document Only as Necessary. Take advantage of the latitude provided by DoDI 5000.02 to tailor processes liberally and pursue waivers whenever possible.[87] Most of the acquisition requirements for ISR sensors (typically ACAT III programs) stem from an instruction or policy, rather than from law. Consequently, most documentation requirements for ACAT III programs are entirely within the Air Force's control, and "if it's not statutory, then it's waiverable."[88] Minimal documentation should be the default; the MDA may add on additional documentation requirements, as desired, but assuming what is required will likely result in time-intensive (and potentially unnecessary) work.[89]

f.   Redefine Success. Ultimately, successful delivery of a sustainable, affordable, operationally relevant capability is more important than how it was accomplished (within legal, moral, and safe boundaries, of course).[90] Assess program success by whether or not the warfighter's requirements were met, rather than "basking in compliance with the required processes" or measuring progress towards a contractual goal.[91]

Challenges

While many of these ideas have been proposed independently through a myriad of formal acquisition studies, white papers, and lessons learned over the years, they have not seen widespread application, due to a number of corresponding challenges. First, implementation of an incremental delivery model places considerable stress on configuration management.

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Requirements and acquisition managers must increase their active planning, coordination, and supervision of multiple capability increments simultaneously, throughout various stages of development, testing, fielding, deployment, and demilitarization.[92]

In addition, systems engineering and interoperability also become more difficult as a system is upgraded incrementally, placing a greater burden on engineers to understand and predict how changes in one subsystem impact interactions with another subsystem.[93] Platform-agnostic ISR sensors may increase the complexity or number of variants required for integration, making constant communication with all potential aircraft (or ground or naval systems) program offices even more critical, to mitigate and de-conflict potential interference with other platform requirements.[94]

Finally, and perhaps most importantly, instilling "deliberate agility" will require a significant shift in the way the Air Force approaches capability development.[95] First, warfighters will no longer be able to simply submit a requirement to a faceless system and then wait for a solution. Instead, continuous interaction and flexibility means warfighters must become "full-time participants in the acquisition process."[96] Forecasting operational needs by leaning forward and streamlining delivery of new capabilities goes against conventional wisdom, because the Air Force usually attempts to solve emerging needs by adding more resources, time, or people *after* a requirement has become critical.[97] For true "innovation and change to occur, the Government must be willing to challenge established processes and procedures in order to break through self-inflicted barriers to progress."[98] In the words of Lieutenant General David A. Deptula, former Air Force Vice Chief of Staff for ISR:

> "We need to make accelerated acquisition the norm… we have to be more agile in this regard, because our adversaries are not limited by the same bureaucratic and legislative constraints that we have… If we're going to succeed, we have to operate inside our adversaries' decision loop. To do that is going to require significant changes not just

to the acquisition processes we built in the last century, but to our decision-making processes."[99]

Conclusions

There is nothing inherently new or radical in any of the ideas presented above; a number of DoD organizations have successfully implemented many of these recommendations for years. This paper has merely synthesized their best practices to propose a flexible, incremental framework to field "fast, inexpensive, restrained, and elegant" ISR sensor capabilities. To export and institutionalize the "F.I.R.E." model, these ideas cannot be implemented wholesale. Program offices must be empowered to select the concepts that best fit the needs of their respective organization and capability.[100]

Research demonstrates the key to implementing flexible acquisition strategies is an agile cultural environment that accepts and constantly encourages initiative, creativity, and autonomy. Empowerment, trust, collaboration, and calculated risks drive true innovation. Rather than relying solely on quick reaction processes to meet emerging requirements, ISR sensor programs must adopt "agile processes [that] promote sustainable development…and maintain the pace indefinitely," continually leaning forward to field timely, relevant, and affordable ISR sensor capabilities.[101] To meet the warfighter's most pressing needs and equip the ISR community for current and future fights, the Air Force must deliberately build flexibility into its current processes and take advantage of the highly tailorable regulations that already enable its success. Specifically, the Air Force ISR community should instill "agile acquisition" best practices into the existing deliberate requirements process and acquisition lifecycle by 1) developing and funding ISR sensors as independent, platform-agnostic capabilities; 2) leveraging existing regulations, authorities, and rarely-used flexibilities to shorten the development and fielding timelines; 3) maintaining constant communication with users (e.g. sensor operators, intelligence

analysts, warfighters) 4) anticipating emerging threats, operating environments, and potential trade space; 5) delivering smaller, sustainable capability increments every 3-4 years to meet operational demands; 6) continuously planning for the next iteration of capability; and 7) deliberately building flexibility into early planning documents (requirements, funding, contracting, and program documentation) to enable responsiveness to operational needs.

While this paper focused solely on the applicability of "agile practices" to airborne ISR sensor programs, its narrow scope only touched on a small portion of a much larger dialogue within the DoD.[102] As more organizations explore the concepts of agility and innovation, the Air Force gains traction towards "responsive, adaptable processes" that encourage flexible acquisition as the norm. For those who wish to join the conversation, there are still many opportunities for further research and greater analysis, including (but not limited to): how to cultivate, evaluate, or reward "innovative behaviors" among Air Force leaders; what organizational modifications (if any) are necessary to institutionalize agile practices; and what additional factors need to be considered to apply these agile tenets to larger, more expensive, more complex, or joint programs.

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