USAF Strategic Master Plan

May 2015

FOREWORD

Airmen and Airpower Advocates,

This 20-year *Strategic Master Plan* advances the strategic vectors and imperatives set by *America's Air Force: A Call to the Future* to provide a strategic framework that will shape the Air Force's future. It provides consistent direction across all Air Force portfolios and brings year-to-year coherency to our plans and programs. However, the changes we need to enact are wider than just choices about equipment programs. Our Airmen are essential to all our capabilities and we must deliberately plan and invest in them to meet the challenges of the future. We must be more flexible in our posture at home and overseas. We must align our science and technology efforts with innovative concepts and capability development that will offer the opportunity to dominate in the future environment we envision and adapt rapidly when it changes. These aspects are covered in the four annexes to this plan, which provide actionable tasks to Air Force commands and agencies.

The *Strategic Master Plan* does not stand alone. It is at the center of a fully revised Air Force Strategy, Planning and Programming Process, which enables us to make strategy-informed resource decisions. Programmers and planners at Air Force Headquarters and Major Commands are the primary audience for this document. The *Strategic Master Plan* fills a void in strategic direction and will reduce the need for many existing strategic plans currently issued by various headquarters and organizations. It will be complemented by an Air Force Future Operating Concept document that will describe how we will deliver Global Vigilance, Global Reach and Global Power in agile and innovative ways – appropriate for the future we face.

These documents certainly do not reflect the sum total of all strategic planning efforts across our Air Force. There are significant planning documents created by the functional staffs, MAJCOMs, and Core Function Leads that are critical to form a comprehensive plan. It is imperative, however, that these Core Function Support Plans and Flight Plans are consistent with the direction in this plan.

Finally, bear in mind that this plan is long-term and iterative, and will be updated regularly. We need your help to improve and refine the plan as conditions and priorities dictate. We must apply discipline and adjust to the world around us; only through your efforts can this plan succeed.

Deborah Lee James
Secretary of the Air Force

Mark A. Welsh III
General, USAF
Chief of Staff

EXECUTIVE SUMMARY

This Strategic Master Plan (SMP) translates the United States Air Force's 30-year strategy, *America's Air Force: A Call to the Future*, into comprehensive guidance, goals, and objectives. The complete SMP consists of a core narrative, goals, objectives, and four annexes: the Human Capital Annex (HCA), Strategic Posture Annex (SPA), Capabilities Annex (CA), and the Science and Technology Annex (STA). The core SMP will be updated every two years, while the annexes may be revised annually, as required.

The SMP's primary audience includes the Headquarters Air Force (HAF) staff, the Air Force Major Commands (MAJCOMs), and the Core Function Leads (CFLs) that reside within the MAJCOMs who are responsible for planning, programming and budgeting. However, guidance in the SMP also serves as authoritative direction for all Air Force programs and Flight Plans.

The SMP aligns long-range Air Force strategy, policy, and guidance with planning and programmatic decisions of senior Air Force leadership in support of National Defense and Combatant Command requirements. It does this by prescribing broad goals and objectives that help guide development of plans throughout the Strategy, Planning, and Programming Process (SP3) and associated inputs to the Joint Capabilities Integration Decision System (JCIDS) and Planning, Programming, Budgeting, and Execution (PPBE) systems. As described in the Air Force Strategy, the Air Force must aggressively pursue a path that leads to the institutional strategic agility required to adapt and respond faster than our adversaries in an increasingly dynamic environment characterized by constrained resources. Although the core SMP does not specify priorities for investment or divestment, its imperatives and vectors provide shared understanding that empowers Air Force senior leaders to align interests and reach consensus in the face of difficult planning choices. The priorities expressed in the four annexes provide a framework to guide HAF, MAJCOM, and CFL staffs as they build balanced options for the Air Force within the SP3.

The Air Force will increase **Agility** by strengthening our culture of adaptability and innovation in Airman development and education, capability development, operational training and employment, and organizations. To increase our **Inclusiveness**, we must focus on empowering the members of the Air Force Team, improving the structure and culture that populates it, and expanding our connections both outside and within the Service.

The Air Force Strategy's five strategic vectors identify priority areas for investment, institutional change, and operational concepts:

1. **Provide Effective 21st-Century Deterrence:** The nuclear mission remains the clear priority of Air Force leaders, but the Air Force also offers many additional capabilities to deter a wide range of actors.
2. **Maintain a Robust and Flexible Global Intelligence, Surveillance, and Reconnaissance (ISR) Capability:** The Air Force will employ agile multi-domain solutions to detect, characterize, deter, and defeat adversaries. This requires an agile, coordinated multi-domain ISR approach that provides commanders with multiple options.
3. **Ensure a Full-Spectrum Capable, High-End Focused Force:** The Air Force must focus on the skills and capabilities that deliver freedom of maneuver and allow decisive action in highly-contested spaces. However, we must retain the ability to succeed in low-intensity conflict.

4. **Pursue a Multi-Domain Approach to our Five Core Missions:** To achieve the most effective solutions across the spectrum of military operations, we will increasingly integrate and employ capabilities operating in or through the cyberspace and space domains in addition to air capabilities.
5. **Continue the Pursuit of Game-Changing Technologies:** We must continue to pursue radical improvements in technology, that when combined with new approaches and organizational changes, expand or maintain asymmetric advantages over adversaries. This requires the identification and harvesting of potential breakthroughs in thinking that might amplify the enduring effects that underpin our advantages in air, space, and cyberspace.

By establishing a core strategic approach that spans the Air Force, the SMP represents a significant shift in the way the Air Force conducts its business. As subsequent iterations of the SMP inform—and are informed by—annual Planning Choices events and ongoing Service-wide activities to organize, train, and equip the Service, the structure and content of this document will evolve to best articulate the Air Force's long-range strategic plan.

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INTRODUCTION

Background and Purpose

In the 2014 Air Force Strategy, entitled *America's Air Force: A Call to the Future*, the United States Air Force outlines its 30-year strategy to address a future environment characterized by uncertainty and change. The following Strategic Master Plan (SMP) operationalizes the Air Force Strategy by providing authoritative direction that informs Service-wide planning and prioritization on a 20-year timeline.

The 2014 Air Force Strategic Environment Assessment (AFSEA) identified four areas where emergent threats to our current world model are likely to provoke profound and rapid change over the next 20 years:

- Geopolitics
- Natural resources
- Challenges to the Global Commons
- Speed of technological change

To provide for a robust national defense and field suitable capability and capacity in support of joint operations, the Air Force will pursue systems, concepts, people, and organizational structures that are more agile and inclusive. The Air Force Strategy addresses this need by expounding these two strategic imperatives to drive a culture change. To focus our efforts in making tough choices about future capabilities, the Strategy further identifies five strategic vectors. These vectors will guide investments, institutional changes, employment concepts, and ultimately shape efforts to deliver national security through the strength of our Airmen and the responsive and effective application of *Global Vigilance-Global Reach-Global Power* for America.

The SMP focuses largely on elements of change in the organization, training, and equipping of the Air Force. This focus should not discount or diminish many of the successful ongoing efforts of today's Airmen or the incremental improvements already underway such as Air Force 2023, which remains in effect. The direction in the SMP provides the basis for determining what we should continue doing and what we should change, but informed collaboration will be the true driving force behind our efforts.

The following sections explain the intent of the SMP, its internal structure (see Figure 1), and its position within the hierarchy of the Strategy, Planning, and Programming Process (SP3) (see Figure 2). The three main purposes of the SMP are to:

- **Translate the Air Force Strategy's Imperatives and Vectors into capability development and planning direction**. The SMP discusses each Imperative and Vector in detail, and defines supporting goals and objectives. While the broad goals and objectives defined in the SMP will be a key factor in subsequent prioritization decisions, they themselves are not prioritized because they are inherently interdependent and are all essential to achieve the Air Force Strategy. Initial prioritization will be described in the SMP annexes and subordinate documents, particularly Core Function Support Plans (CFSPs) and Flight Plans, but prioritization will not be complete until the periodic Planning Choices event (see definitions and Figure 2 below).
- **Align activities across the Air Force.** Subordinate plans must aim to achieve the SMP objectives, and may include subordinate objectives and tasks as appropriate. Core Function Leads

(CFLs) are formally directed to comply with the SMP through the SP3. MAJCOMs and other agencies will ensure their plans are consistent with the SMP.

- **Provide a mechanism to track progress against the Air Force Strategy.** Headquarters Air Force (HAF) A5/8 will measure progress against the Air Force Strategy using the objectives in the SMP.

Scope and Structure of the Strategic Master Plan

The SMP is directly below the Air Force Strategy in precedence and includes four annexes. Each annex focuses on a foundational element of the Air Force Strategy, which relates broadly to people, places, things, and the future. The annexes translate the SMP's comprehensive goals and objectives into tangible actions and priorities. The four annexes are as follows:

- **Human Capital Annex (HCA).** The Human Capital Annex will be the principal driver behind the changes we seek in our Air Force. It sets the conditions for a much more agile and inclusive Air Force by providing strategic-level guidance on accessions, professional development, retention, and organization of our Airmen.
- **Strategic Posture Annex (SPA).** The Strategic Posture Annex provides direction on where and how the Air Force will pursue the mid- and far-term development of stateside and overseas basing priorities to support the steady state and rotational forces. The Air Force's strategic posture is managed by assessing force requirements against the Strategy and ensuring adequate footprint and agreements are in place to support critical military operations.
- **Capabilities Annex (CA).** The Capabilities Annex describes Air Force core capabilities, capability gaps, and capability development priorities over time. The annual Strategic Planning Guidance refines CA priorities, as fiscal realities are factored into the SP3.
- **Science and Technology Annex (STA).** The STA guides the Air Force's Science and Technology (S&T) portfolio in two ways. First, it looks at technology evolution to address existing capability needs. Second, it addresses potentially revolutionary technologies that, while not mature, have the potential to be game-changing.

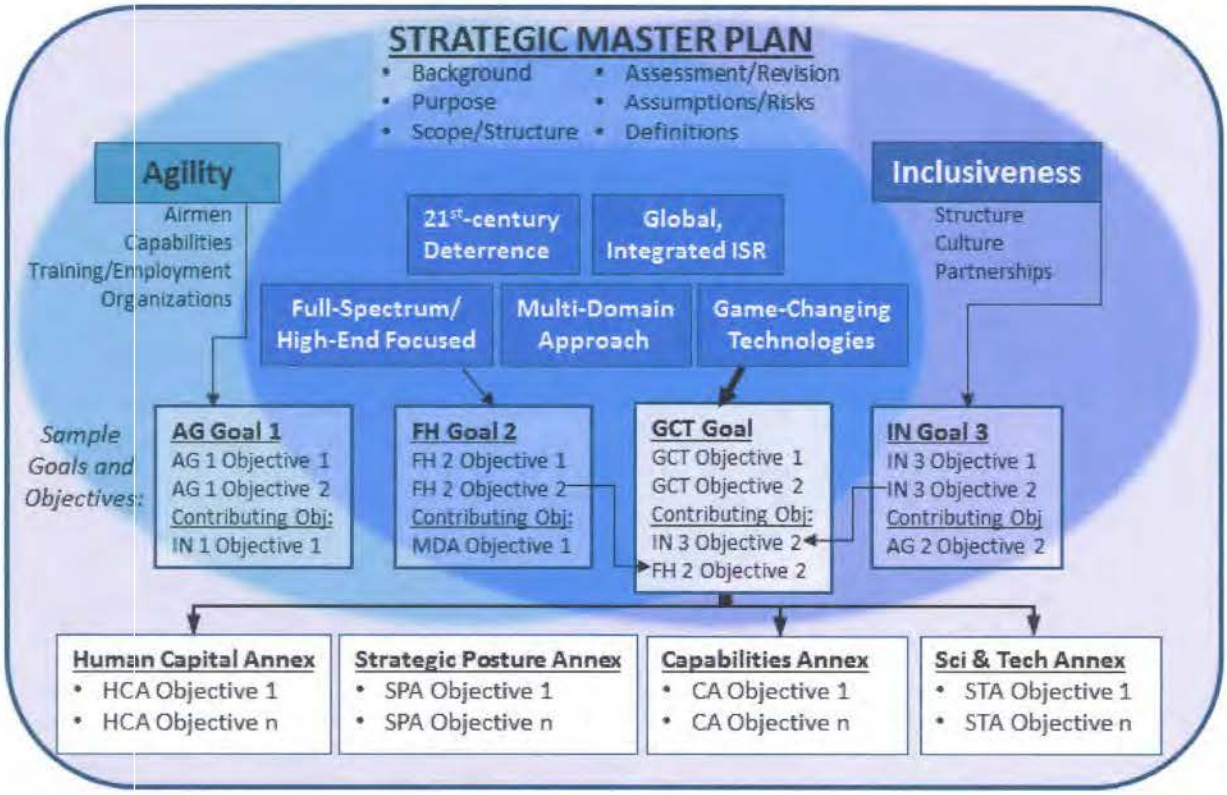


Figure 1: Internal Structure of the SMP

Through the HCA, SPA, CA, and STA, the SMP consolidates and transmits strategic direction to staffs preparing Strategic Planning Guidance, Core Function Support Plans, and Flight Plans:

- **Strategic Planning Guidance (SPG).** The annual SPG provides strategic fiscal and force structure guidance to Core Function Leads and MAJCOMs.
- **Core Function Support Plans (CFSPs).** The SMP and SPG provide direction for the CFSPs. CFSPs provide proposals approved by CFLs for organizing, training, and equipping (OT&E) assigned Service Core Functions. These proposals are created under various risk and resource constraints defined in the SPG. They provide a description of the Core Function's capabilities and an analytically-based, prioritized list of gaps in those capabilities based on time, scenario, and risk to mission and force. CFSP narratives provide the analytic basis for their accompanying capability gap assessments and Planning Choice Proposals (PCPs).
- **Flight Plans.** All top-level plans that inform resourcing decisions (other than CFSPs), such as MAJCOM plans or functional plans by Deputy Chiefs of Staff are referred to as Flight Plans. Flight Plans do not specifically need to address SMP objectives, but must be aligned with the Strategy and SMP. Flight Plans may be used to achieve alignment across functional areas,

influence resourcing decisions, provide informative inputs to CFSPs, or direct discrete (i.e. non-CFL-related) activities. Flight Plans may also be used to develop PCPs.[1]

- **Planning Choices Event.** Air Force senior leaders meet annually to convene a Planning Choices Event, where they incorporate and adapt CFSP PCPs into options for investment and divestment in accordance with the SMP/SPG priorities. The result is a 20-year Resource Allocation Plan including a 10-year Balanced Budget. This becomes the basis for Program Planning Guidance, which provides strategy-informed, capability-driven, and resource-balanced instructions for the Air Force Program Objective Memorandum (POM).

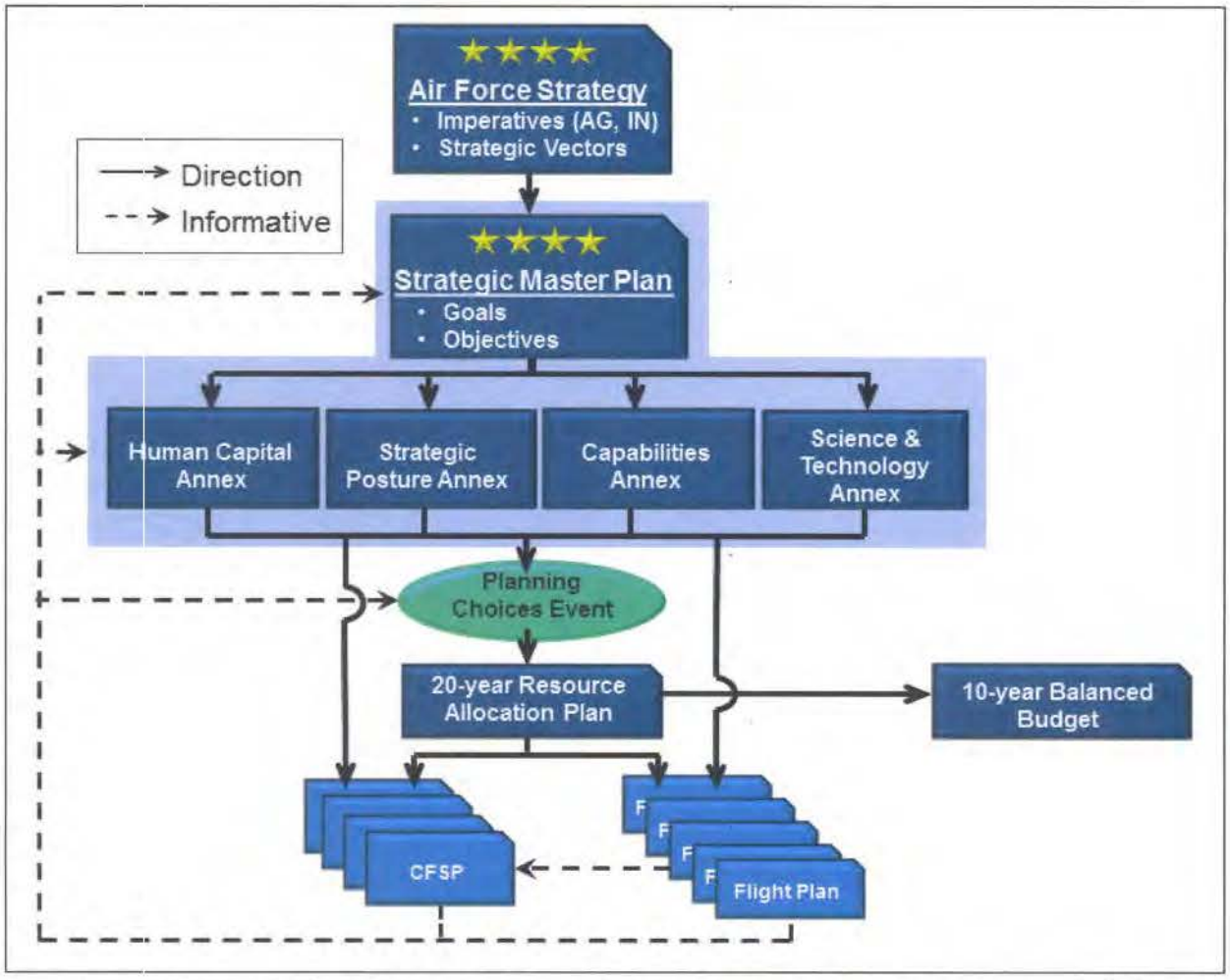


Figure 2: The SMP within the Strategy, Planning, and Programming Process (SP3)

[1] The Chief of Air Force Reserve's (CAFR) Component Master Plan has a unique scope, but is a similar-level document that can also be considered in PCPs.

Assessment and Revision

The SMP is an iterative document and will be revised every two years based on progress against the enduring Air Force Strategy and as higher-level defense strategy and guidance evolves. However, this initial version may be revised earlier. Regular assessments will evaluate compliance and consistency as well as measure progress toward meeting the goals and objectives in the Strategy.

Any suggestions for improving the SMP are welcome and should be forwarded to AF/A5SS as they arise to ensure this plan remains agile and useful.

Assumptions

Developing a strategy requires certain assumptions about a future state. In order to manage accuracy and relevance, these assumptions are clearly explained to permit periodic review and update.

- **Responsibilities.** The Air Force will remain responsible to the nation for organizing, training, equipping, and providing disciplined forces to deliver responsive and effective Global Vigilance, Global Reach, and Global Power through our five core missions, which may evolve over the next 20 years (as they have done since 1947).
- **Posture**. The Asia and Pacific Area of Responsibility (AOR) will be a region of increased national emphasis. However, the United States will continue to rely on the Air Force's ability to provide rapid, effective forward presence anywhere around the world.
- **Demand**. Combatant Command missions and requirements will exceed the Air Force's capacity to meet them.
- **Resourcing**. We can expect reduced funding levels, with further reductions in the near-term and no more than moderate increases in the mid- to far-term.
- **Total Force**. The Air Force as an institution will remain fundamentally committed to the Total Force, with a multi-component approach throughout the SP3.

Risk

Strategic agility hinges on the ability to negotiate risks associated with change and avoid the risks connected to stagnation. Risk is a function of uncertainty quantified by probability, exposure, likely consequences, and cost; however, uncertainty and chance are integral elements of warfare that cannot be eliminated. The Air Force must avoid defaulting to the safest course, and prudently accept risk in order to yield new opportunities. Strategic Choices and related decisions must be based on robust risk assessments conducted under various resource constraints and against approved scenarios. Development of a common risk framework will allow CFL risks and detailed understanding of the available trade space to be integrated at the HAF in preparation for Planning Choices events.

Terms and Definitions

For the purposes of this document, the following apply:

- **Goal**: An expression of the desired future state of the Air Force in a particular area or theme. Goals define and prioritize broad direction, and are inherently long-term in nature.
- **Objective**: A major milestone or action required to achieve a goal.

  - SMP objectives adhere as far as possible to the SMART (specific, measurable, achievable, realistic, and time-bound) model. However, some may need further development as the plan matures.
  - Objectives in the SMP annexes are subordinate to the SMP goals and objectives. More than one annex will often contribute to achieving an SMP objective. For example, introduction of a new capability may have human capital and posture implications.
  - Most SMP objectives link directly to one or more annexes, but some also include additional action or involvement from other agents not covered by the CA, HCA, SPA or STA. The "Other" category in the tables and graphics depicts these links.
  - CFSPs and Flight Plans may have their own subordinate objectives.
- **Contributing Objective**. An objective may contribute to achieving more than one goal. Such an objective is listed under the primary goal, and as a contributing objective under any other goals on which it acts (see Figure 4).
- **Time Factors**: Objectives are classified as near-term, mid-term or far-term based on when they need to be completed. Activity contributing to the objective may need to begin much earlier (in most cases in the near term), and, in the case of a steady-state objective, activity may continue beyond its achievement.
  - **Near**: 0-5 years, or within the current Future Years Defense Program (FYDP).
  - **Mid**: 6-10 years.
  - **Far**: beyond 10 years.
- **Objective Naming Convention**: Objectives are prefixed by the 3-digit code for the goal to which they primarily contribute, and then numbered sequentially, such as AG1.2. Objectives are then assigned to the applicable annexes for action as indicated in the tables of goals and objectives. In each of the SMP annexes, sub-objectives are prefixed by the code for the goal and SMP objective, and then identified by H, P, C, or S for objectives in the HCA, SPA, CA and STA respectively; see Figure 3 below:

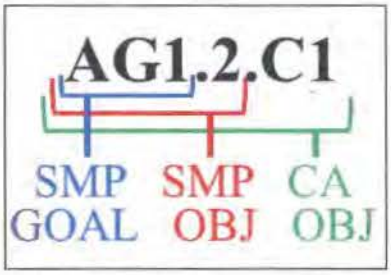


Figure 3: Objective Naming Convention

STRATEGIC IMPERATIVES

The Air Force Strategy identifies two strategic imperatives that underpin a fundamental change in the nature of the Service: Agility (**AG**) and Inclusiveness (**IN**).

IMPERATIVE: AGILITY

Section Overview. The Agility we seek will enable the Air Force to adapt our capabilities and thinking to assess a dynamic threat environment, outmaneuver adversaries, and support our partners. Our strategy expresses an iterative approach, balancing desired capabilities with available resources within an evolving strategic context. The Air Force will enhance agility by strengthening our culture of adaptability and innovation by long-term investments in:

- **Airman Development and Education, specifically related to recruiting and new options for service, retention, and education.**
- **Capability Development, emphasizing agility through modularity, system integration, acquisition agility, and increased experimentation.**
- **Operational Training and Employment through new and affordable approaches to training, modeling and simulation, and command and control.**
- **Adaptive Organizations through new and more agile structures and processes.**

Development and Education

An agile Air Force requires agile Airmen. We must adapt our recruiting, development, and retention processes to grow such Airmen.

- **Recruit cutting-edge talent.** Mission-critical qualities are evolving. A complex future demands a new generation of Airmen with a diverse blend of talent suitable for that environment. The Air Force must increasingly develop Airmen with abilities that can exploit the emerging globalized, information-based, and networked environment rather than the industrial processes of the last century. These desired skills influence operations in all domains and across all core missions. The Air Force will devote increased resources and attention to nontraditional venues (one example is the CyberPatriot[2] competition). Those who answer the call to serve will join an agile team that cultivates their skills and values their contributions to operational success in the multi-domain complexity of highly contested environments.
- **Provide a range of options for service.** Many Airmen will continue to follow traditional career tracks that hone perishable skills in mission-critical fields. However, we will also broaden the options available to pursue agile developmental paths. The Air Force will explore increased opportunities for Airmen to transition back and forth between active duty, Guard and Reserve

[2] www.uscyberpatriot.org

service. In addition, Airmen should be able to pursue opportunities with organizations across the Department of Defense (DoD) or outside it with a subsequent return to uniformed service. Individuals with broad experience along a continuum of service will complement those with concentrated expertise in specific mission sets. The result will be a more diverse team of innovators who will sustain the Air Force with a steady influx of new ideas and informed judgment, allowing us to adapt and operate more responsively than our adversaries.

- **Retain our expert warriors.** Airmen serving today have spent years fighting alongside joint, interagency, and allied partners. They represent a significant investment by the Air Force. We must preserve our ability to integrate and collaborate across the full spectrum of operations, and that means retaining the experience and judgment of our veteran warriors even as we recruit new minds. The Air Force will retain its top talent by providing Airmen and their families with better incentives that go beyond simple financial rewards. As we become a lighter, leaner force, taking care of Airmen and families must remain an Air Force priority.
- **Unlock capacity for comprehensive education.** The Air Force will develop Airmen who are critical and creative thinkers by implementing an agile, individually tailored approach to life-long education, and eliminating superfluous demands from already encumbered schedules. However, while we will support learning with appropriate technology such as computer-based training, we will not lose the mentorship inherent in the instructor-student relationship.

Capability Development

The Air Force needs capability options to execute missions in support of national defense and joint and combined operations under a wide array of contingencies. These capabilities must be responsive to changing needs. They must be affordable and adaptable enough to be modified easily or divested when no longer mission effective. They must be able to integrate seamlessly with other assets. The capability development process itself must also become more responsive, adaptable, and agile. 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. Therefore, we must:

- **Pursue modular, adaptable, and upgradeable solutions.** A modular approach to capability development will mitigate and distribute risk across a wider range of providers. We will embrace "agile acquisition" techniques and focus on risk reduction through production prototyping and new engineering development models. Future systems will include air and space frames, power plants, sensors, processors, multi-domain communication pathways, and armaments that are compatible, interchangeable, resilient, and suitable for diverse, multi-domain missions and force compositions that may not have been apparent at the outset of a program. This includes designing prudent Human Systems Integration (HSI) early in the systems engineering process. Modular and interoperable systems developed through an Open Systems Architecture (OSA) using components with well-defined functions and interfaces will reduce costs and shorten the acquisition timeline. The Air Force will examine all capability requirements against existing joint capabilities with an eye toward adopting shared solutions, even if that adoption requires changing Air Force operational concepts.
- **The Air Force will act as integrator** at both the platform and enterprise level, and will define technical standards and common architectures that will ensure our capabilities are integrated and

interoperable with weapon systems in other domains and with those of our partners. While this approach to systems integration will require investment in both organization and people, it will lower the cost of failure and inspire creative risk-taking. Modularity will allow platforms to receive timely upgrades that amplify and extend their usefulness as both environments and adversaries evolve. OSA also provides maximum flexibility in designing a "system of systems" to provide unique capabilities. We will also examine innovative ways to use mature systems for a greater variety of circumstances and environments.

- **Empower the Air Force as a customer.** An agile Service demands an agile acquisition enterprise that can balance capabilities, time, and costs. The Air Force will strengthen the acquisition workforce through enhanced training, education, and recognition. We will improve business acumen in the acquisition workforce, competitively hiring professionals externally where necessary. This cadre of cross-functional professionals will collaborate effectively with operators and requirements experts to deliver agile, innovative, adaptable, and affordable capabilities. In conjunction with senior Air Force and DoD leaders, they will work with Congress to improve acquisition processes and identify and change or eliminate the practices and bureaucracies that hinder the delivery of warfighter capabilities. Additionally, the Air Force will aim to own system technical baselines wherever possible to improve program performance.
- **Incentivize innovative, competitive solutions.** The Air Force will invigorate the extraordinary talent resident in America's industrial, commercial, and academic sectors by increasing communication, healthy competition, and transparency. The Air Force will conduct prototyping, experimentation, and development planning, to include systems engineering, to formulate and evaluate viable concepts, identify technology shortfalls, and assist in refining requirements. In addition to current research and development efforts, the Air Force will invest seed money into competitions, studies, and demonstrations that galvanize the S&T community to apply their creativity and resources to solve complex problems.[3] These modest investments will allow the Air Force to determine quickly the viability of potential pathways forward.
- **Inject Pivot Points to assist acquisition agility.** The Air Force will ensure that the requirements and acquisition processes include opportunities for programs to change the direction they are headed based on developments in technology, demonstration of new concepts, or budget issues. Properly implemented, these "pivot points" will provide an opportunity to make cost and capability trades across, as well as within, programs. They will create opportunities to augment, adjust, or sever components of systems without derailing development planning, generating cost overruns, or crippling our industry partners. They also create opportunities for inserting new technologies into existing programs. Increased capability in the acquisition enterprise will enhance our ability to control lifecycle costs and reliably deliver timely, suitable solutions to the warfighter.
- **Use experimentation for agile capability development.** Meeting the challenge articulated in the Air Force Strategy necessitates a more integrated, agile capability development framework and a

[3] Exemplified by contests such as the XPRIZE or the Defense Advanced Research Projects Agency (DARPA) Robotics Challenge.

renewed commitment to fostering innovation enabled by development planning, science and technology, and robust experimentation campaigns. Experimentation is a tool to transform innovative ideas, concepts, and technologies into demonstrated warfighting capabilities. It provides a means for multi-disciplinary teams of operators, researchers, and acquirers to conceive and co-evolve new system concepts with the doctrine to implement them effectively. Experimentation will also examine innovative and unconstrained methods of employing existing systems in a variety of circumstances and environments to provide potentially entirely new capabilities. In concert with development planning, experimentation will evaluate "system of systems" or "family of systems" concepts and multi-domain approaches resulting in mature concepts; concepts of operations (CONOPs); tactics, techniques, and procedures (TTPs); and enabling technologies that inform Air Force strategic decisions.

Operational Training and Employment

Although the Air Force faces an extended period of drastically constrained resources, the imperative to train and employ combat power with agility and resolve remains paramount. Airmen will rise to these challenges when they receive the trust, training, and doctrinal flexibility needed to improve and innovate.

- **Mutual trust and delegation.** Airmen exemplify initiative and prudent risk-taking when their commanders trust their judgment and empower them to act boldly. This mindset must permeate our operations. To empower innovative Airmen at all levels, Air Force leaders will establish and uphold a Service-wide climate of mutual trust. We will review our promotion and assignment systems to ensure time-in-grade and milestone-based qualifications for advancement do not stifle initiative and innovation to develop these Airmen and leaders.
- **Initial Skills Training (IST).** IST must keep pace with both Air Force requirements and technology. When technology and cyber threats are changing at a geometric rate, we cannot wait 18-24 months for our school houses to update curriculum. Iterative curriculum updates and incorporation of a rapid feedback loop from the field (supervisors, commanders and MAJCOM Functional Managers) is the way we will overcome the gap between current day IST and the skills needed in the field.
- **Comprehensive, integrated training.** Training for full-spectrum operations has suffered during recent operations when our focus was, rightly, on a particular part of the range of military operations. Despite the prospect that the demands on our force will change, keeping our Airmen trained and ready for full-spectrum conflict will remain a challenge. The Air Force will pursue creative approaches to combine training across multiple mission sets, to cultivate Airmen who are not only experts of their own crafts but are also cognizant of complementary capabilities.
- **Advanced Live-Virtual-Constructive (LVC) training.** Future training and exercises will integrate LVC venues to enable the Air Force to develop and evaluate realistic, multi-domain approaches to complex and emergent challenges. Training will emphasize disciplined initiative, prudent risk-taking, and comprehensive problem solving against agile adversaries in uncertain, contested environments.
- **Experimentation enabled by Modeling and Simulation (M&S).** Distinct from training, our most experienced operators must be able to experiment with concepts and TTPs in a robust M&S environment. While not training in a pure sense, this is an operator-driven activity that establishes a firm feedback loop into the Capability Development process.

- **Agile, integrated command, control, and employment**. The Air Force will lead the high-end fight even as it remains a crucial component of unified action across the spectrum of military operations. Accordingly, we will build and maintain common standards and architectures for command and control (C2) and communications with our joint, interagency, and international partners. This progress involves acknowledging that distinct contingencies demand different methods of multi-domain C2. We will evolve Air Force C2 doctrine to include variable models of centralization and decentralization, organization, and execution. We will preserve the lessons learned from decades of combat by maintaining robust relationships with our partners. Frank interactions, more frequent exchanges, and unified training will cement these bonds and enhance our agility.
- **Cost-conscious mindset.** The requirements and challenges of the future will be faced within an enduring fiscally constrained environment. Airmen must balance operational readiness and risk within a cost-conscious mindset that supports the utilization of resources toward maximum operational effectiveness. This mindset is particularly important in the development and use of technologies and techniques to optimize energy usage and efficiency across our missions in air, space, and cyberspace.

Agile Organizations

Risk of failure is a necessary condition for true innovation, and agile organizations maintain the flexibility to adapt and adjust their approaches and structures in response. Institutional entrenchment in the form of deep hierarchy, overregulation, massive coordination requirements, and an erroneous attachment to "the way we've always done it" can stifle progress. The Air Force will foster organizations that can responsibly learn from minor setbacks in pursuit of major achievements.

- **Accelerate Institutional Feedback Loops.** Mutual trust is the foundation of agile, successful organizations because it allows for constructive communication. The Air Force will improve its organizational structure by accelerating feedback loops vertically within the chain of command and laterally across organizations. Commanders must empower Airmen to modify counterproductive practices promptly and to share innovations laterally.
- **Enable Emergent Networks of Experts.** Technology provides numerous means to create and encourage collaboration in an era of constrained resources. The Air Force will leverage advanced telecommunications and integrated LVC venues to allow Airmen of all disciplines to collaborate with each other and our joint, interagency, and international partners. Flexible, self-organizing networks of subject matter experts will be fertile grounds for advances that are currently inconceivable.
- **Flatter, More Agile Organizations.** The Air Force needs to be able to push decisions and execution to the lowest informed level. Discipline and the unbroken chain of command will remain fundamental elements of the profession of arms. However, in the future, organizations with distributed decision-making and execution authority will be optimally poised to engage emergent obstacles and threats. To leverage a diversity of backgrounds, experiences, and perceptions, Air Force leaders at all levels must be trained and empowered to build their own teams, using a decentralized personnel assignment authority within responsible constraints, and to create a culture of inclusiveness.

- **Renovate Organizational Processes and Structures.** We will train Airmen to be skilled practitioners of process improvement and organizational techniques that maximize productivity and efficiency while inculcating a philosophy of continual improvement within the service culture.[4] Airmen will be encouraged to bring forth ideas at every level of leadership for potential implementation. Air Force units at every echelon will continually analyze and implement approaches to eliminate redundant oversight and duties that encumber Airmen and stifle productivity. This will result in fewer additional duties, fewer formal meetings, simplified staff coordination, and tailored approaches to reporting and accountability that are not "one-size-fits-all." The Air Force organizational structures at every echelon will be routinely updated to reflect optimal alternatives that emerge from implemented process changes.

[4] For example, CMO (SAF/US) has directed implementation of Continuous Process Improvement (CPI).

Table 1: Goal and Objectives Supporting Agility	Action				
	HCA	SPA	CA	STA	Other
AG1. Ready and responsive Airmen who apply diverse backgrounds, experiences, and perspectives; cutting-edge skills; and critical thinking to fulfill Air Force missions alongside our joint, interagency and international partners across the full spectrum of conflict.					
AG1.1 Recruit/access individuals with demonstrated potential for critical thinking, adaptive behavior, character, initiative, innovation, and contemporary mission-critical skills.	NEAR				
AG1.2 Implement an individually tailored, generationally appropriate, cutting-edge, life-long approach to education and training.	MID				
AG1.3 Ensure institutional processes and culture value individual initiative, support productive failure in pursuit of innovation, provide latitude to experiment, and instill a cost-conscious mindset in all Airmen.	FAR				
AG1.4 Combine training across multiple mission sets, including integrated LVC venues and operator-in-the-loop M&S, to cultivate Airmen trained in agile and robust decision-making who can devise multi-domain solutions to complex problems in uncertain, contested environments.	FAR	MID	MID	NEAR	
AG1.5 Preserve full-spectrum warfighting, expeditionary, and combat support capabilities by retaining expert Airmen with experience in recent conflicts, codifying lessons learned, and further integrating joint training (including LVC) to offset reduced resourcing for low-intensity operations.	FAR	FAR	FAR		MAJCOMs / AIR UNIVERSITY (AU): FAR
AG1.6 Modernize Airman management mechanisms to ensure they value and provide increased opportunities for broad and varied professional experience; enable the continuum of service; improve Commander- and Airman-level professional development; and provide career-long, proactive retention measures beyond financial incentives.	NEAR				

AG1 Contributing Objectives:

- ***IN1.1*** *Produce decision makers who are adept in finding creative ways to access the force structure and optimizing it to meet mission demands. Focus on arming a generation of leaders with doctrine, history and experience to provide cross-component expertise.*
- ***IN2.1*** *Strengthen the environment of inclusiveness that permits the utilization of the diverse talents of Airmen. Focus on intentionally embedding this environment into Air Force culture.*
- ***IN3.3*** *Deepen our relationships with the joint team, intelligence community, diplomatic institutions, developmental agencies, local governments, businesses, communities, and international partners through sustained dialogue, increased training and exchange, aviation security cooperation, and iterative enterprises to codify shared doctrine, tactics, and capabilities.*

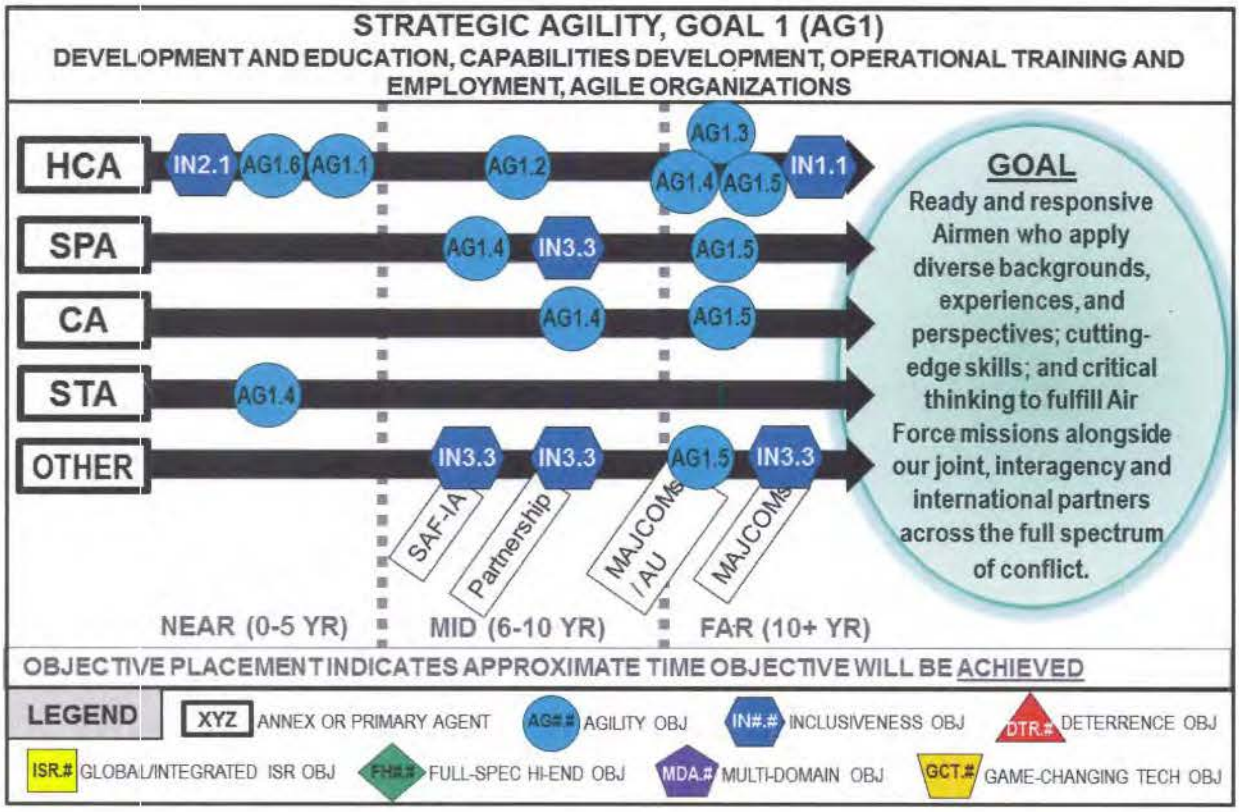

STRATEGIC AGILITY, GOAL 1 (AG1)
DEVELOPMENT AND EDUCATION, CAPABILITIES DEVELOPMENT, OPERATIONAL TRAINING AND EMPLOYMENT, AGILE ORGANIZATIONS
HCA
IN2.1
AG1.6
AG1.1
AG1.2
AG1.3
AG1.4
AG1.5
IN1.1
SPA
AG1.4
IN3.3
AG1.5
CA
AG1.4
AG1.5
STA
AG1.4
OTHER
IN3.3
IN3.3
AG1.5
IN3.3
SAF-IA
Partnership
MAJCOMS / AU
MAJCOMS
GOAL
Ready and responsive Airmen who apply diverse backgrounds, experiences, and perspectives; cutting-edge skills; and critical thinking to fulfill Air Force missions alongside our joint, interagency and international partners across the full spectrum of conflict.
NEAR (0-5 YR)
MID (6-10 YR)
FAR (10+ YR)
OBJECTIVE PLACEMENT INDICATES APPROXIMATE TIME OBJECTIVE WILL BE ACHIEVED
LEGEND
XYZ ANNEX OR PRIMARY AGENT
AG#.# AGILITY OBJ
IN#.# INCLUSIVENESS OBJ
DTR.# DETERRENCE OBJ
ISR.# GLOBAL/INTEGRATED ISR OBJ
FH#.# FULL-SPEC HI-END OBJ
MDA.# MULTI-DOMAIN OBJ
GCT.# GAME-CHANGING TECH OBJ

Table 2: Goal and Objectives Supporting Agility	Action				
	HCA	SPA	CA	STA	Other
AG2. Innovative, adaptable, affordable options for Airmen through an agile acquisitions enterprise that takes advantage of technological developments and concept demonstrations/prototypes.					
AG2.1 Ensure systems are designed, engineered, tested, acquired, and sustained smartly, efficiently, and cost-effectively. As integrator, the Air Force will define technical baselines and common architectures and ensure modularity and responsiveness to Airmen's needs in a dynamic strategic environment.			MID	NEAR	SAF/AQ, SAF/CIO/ A6: MID
AG2.2 Improve acquisition tradecraft and business acumen by actively managing people with the appropriate education, training, and skills; and increasing efficiency and effectiveness in acquisition tools and techniques (including disciplines like systems engineering and digital thread tools).	MID				SAF/AQ: NEAR
AG2.3 Develop an "agile acquisition" mindset that challenges bureaucratic inertia, streamlines processes, implements continuous improvement, and reduces risk through prototyping and new engineering development models.	NEAR		FAR	NEAR	SAF/AQ: MID
AG2.4 Incentivize innovative solutions and improve competition in the defense industrial base by providing transparency and stability in requirements and funding, increasing competitive bids, reducing developmental risks, and encouraging partnering with industry.			MID	NEAR	SAF/AQ: MID
AG2.5 Establish an agile capability development framework that leverages credible and defendable knowledge resulting from development planning and experimentation activities to inform the strategic planning and programming process decisions.			NEAR	NEAR	SAF/AQ NEAR
AG2.6 Identify "pivot points" in new and existing programs, as required, that can take advantage of the potential for incorporating promising technologies, concepts from experimentation, and results from cost capability analysis.					SAF/AQ NEAR
AG2 Contributing Objectives: • ***AG1.2*** *Implement an individually tailored, generationally appropriate, cutting-edge, life-long approach to education and training.* • ***AG1.4*** *Combine training across multiple mission sets, including integrated LVC venues and operator-in-the-loop M&S, in order to cultivate Airmen trained in agile and robust decision-making to devise multi-domain solutions to complex problems in uncertain, contested environments.* • ***IN3.2*** *Capitalize on the variety of perspectives and expertise resident within think tanks, academia and industry to enrich our understanding of threats and opportunities.* • ***IN3.3*** *Deepen our relationships with the joint team, intelligence community, diplomatic institutions, developmental agencies, local governments, businesses, communities, and international partners through sustained dialogue, increased training and exchange, aviation security cooperation, and iterative enterprises to codify shared doctrine, tactics, and capabilities.*					

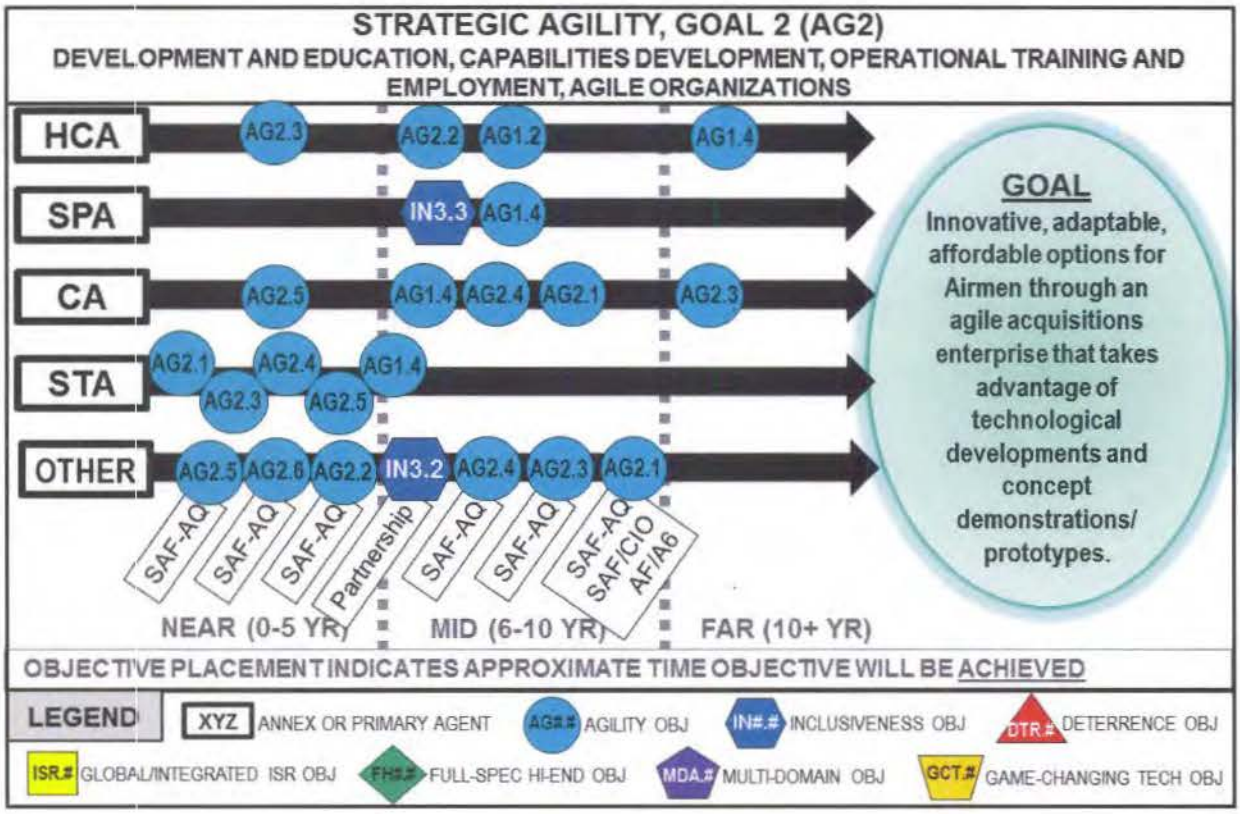
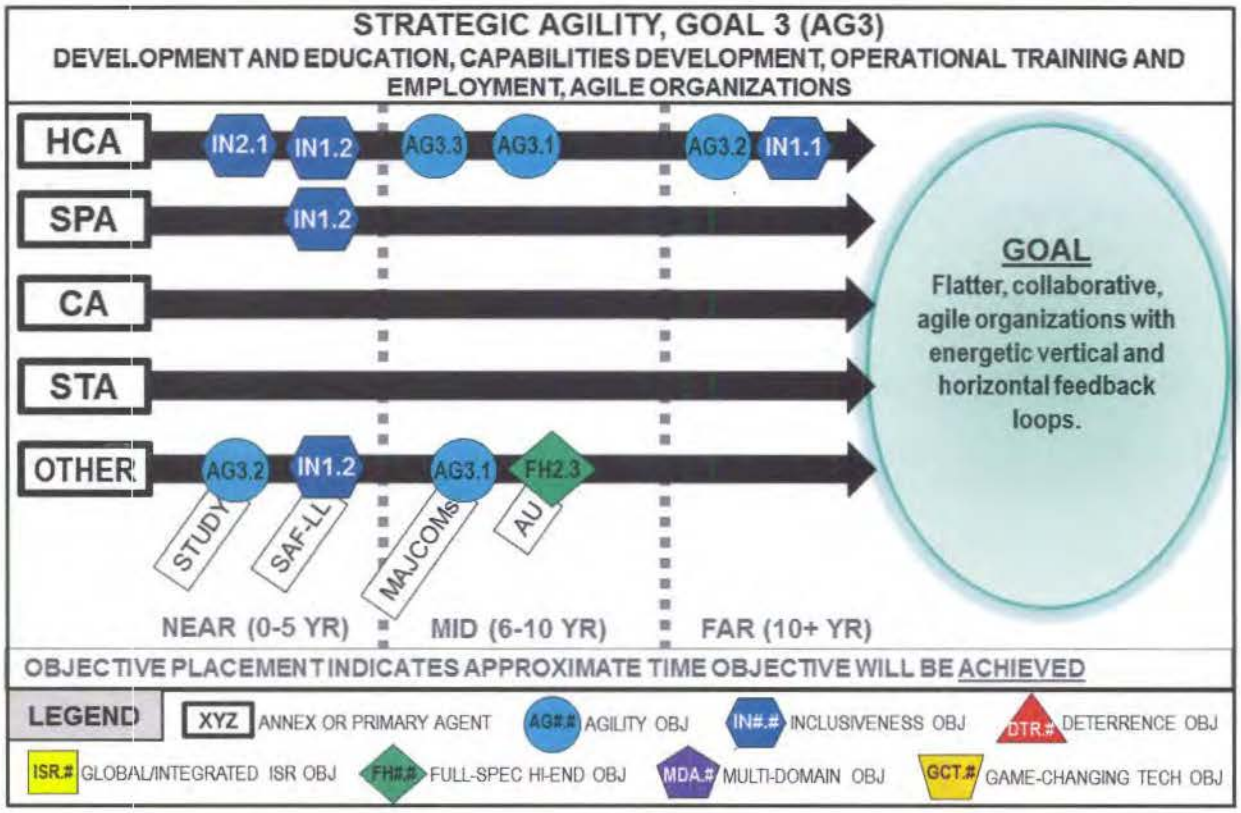

STRATEGIC AGILITY, GOAL 2 (AG2)
DEVELOPMENT AND EDUCATION, CAPABILITIES DEVELOPMENT, OPERATIONAL TRAINING AND EMPLOYMENT, AGILE ORGANIZATIONS
HCA
AG2.3
AG2.2
AG1.2
AG1.4
SPA
IN3.3
AG1.4
CA
AG2.5
AG1.4
AG2.4
AG2.1
AG2.3
STA
AG2.1
AG2.4
AG1.4
AG2.3
AG2.5
OTHER
AG2.5
AG2.6
AG2.2
IN3.2
AG2.4
AG2.3
AG2.1
SAF-AQ
SAF-AQ
SAF-AQ
Partnership
SAF-AQ
SAF-AQ
SAF-AQ
SAF/CIO
AF/A6
NEAR (0-5 YR)
MID (6-10 YR)
FAR (10+ YR)
GOAL
Innovative, adaptable, affordable options for Airmen through an agile acquisitions enterprise that takes advantage of technological developments and concept demonstrations/ prototypes.
OBJECTIVE PLACEMENT INDICATES APPROXIMATE TIME OBJECTIVE WILL BE ACHIEVED
LEGEND
XYZ ANNEX OR PRIMARY AGENT
AG#.# AGILITY OBJ
IN#.# INCLUSIVENESS OBJ
DTR.# DETERRENCE OBJ
ISR.# GLOBAL/INTEGRATED ISR OBJ
FH#.# FULL-SPEC HI-END OBJ
MDA.# MULTI-DOMAIN OBJ
GCT.# GAME-CHANGING TECH OBJ

Table 3: Goal and Objectives Supporting Agility	Action				
	HCA	SPA	CA	STA	Other
AG3. Flatter, collaborative, agile organizations with energetic vertical and horizontal feedback loops.					
AG3.1 Foster Air Force organizations that responsibly learn from minor setbacks in pursuit of major achievements.	MID				MAJCOMs: MID
AG3.2 Rigorously reevaluate and adjust Air Force organizational structures to address a dynamic security environment.	FAR				Further Study Required: NEAR
AG3.3 Educate, train, and empower Airmen to implement agile, tailored approaches to organization and accountability, to modify counterproductive practices, and to improve lateral and vertical collaboration.	MID				
AG3 Contributing Objectives: • ***IN1.1*** *Produce decision makers who are adept in finding creative ways to access the force structure and optimizing it to meet mission demands. Focus on arming a generation of leaders with doctrine, history and experience to provide cross-component expertise.* • ***IN1.2*** *Ensure our force structure is flexible enough to respond to specific situations in a complex and dynamic future. Focus on eliminating structural and legal barriers, while increasing opportunities for component integration.* • ***IN2.1*** *Strengthen the environment of inclusiveness that permits the utilization of the diverse talents of Airmen. Focus on intentionally embedding this environment into Air Force culture.* • ***FH2.3*** *Improve Air Force command and control doctrine and implementation through study, wargaming, and exercises to validate best practices that embrace variable models of centralization/decentralization, organization, and execution.*					


STRATEGIC AGILITY, GOAL 3 (AG3)
DEVELOPMENT AND EDUCATION, CAPABILITIES DEVELOPMENT, OPERATIONAL TRAINING AND EMPLOYMENT, AGILE ORGANIZATIONS
HCA
IN2.1
IN1.2
AG3.3
AG3.1
AG3.2
IN1.1
SPA
IN1.2
CA
STA
OTHER
AG3.2
IN1.2
AG3.1
FH2.3
STUDY
SAF-LL
MAJCOMS
AU
GOAL
Flatter, collaborative, agile organizations with energetic vertical and horizontal feedback loops.
NEAR (0-5 YR)
MID (6-10 YR)
FAR (10+ YR)
OBJECTIVE PLACEMENT INDICATES APPROXIMATE TIME OBJECTIVE WILL BE ACHIEVED
LEGEND
XYZ ANNEX OR PRIMARY AGENT
AG#.# AGILITY OBJ
IN#.# INCLUSIVENESS OBJ
DTR.# DETERRENCE OBJ
ISR.# GLOBAL/INTEGRATED ISR OBJ
FH#.# FULL-SPEC HI-END OBJ
MDA.# MULTI-DOMAIN OBJ
GCT.# GAME-CHANGING TECH OBJ

IMPERATIVE: INCLUSIVENESS

Section Overview. The complex strategic environment demands a diverse team of people to overcome its challenges and exploit its opportunities. Inclusiveness ensures that we are leveraging the broadest possible set of human resources to produce the maximum number of options. In this way, inclusiveness serves as the power underwriting our agility. We will focus on three areas:

- **Improving the structure of the Air Force Team, in particular the organization and employment of all elements of the Total Force.**
- **Evolving the culture of the Air Force by enhancing diversity of thought in both whom we recruit and how we employ them, and by ensuring an environment of dignity and respect throughout the Service.**
- **Strengthening partnerships both within and outside the Air Force, to include our relationship with Congress, think tanks and academia, industry, the joint and interagency team, and our allies and international partners.**

Structure of the Air Force Team

The Active, Guard, Reserve, and civilian components of the Total Force each offer unique capabilities and strengths. To maximize the utility of the Total Force, we need people who are adept at finding creative ways to leverage and optimize the force structure to meet mission demands, within a system that is responsive to their needs. Air Force leaders versed in the unique benefits and capabilities of each component and able to utilize them for the good of the joint mission will be invaluable assets to the joint force and the Nation.

- We will create a generation of senior leaders with cross-component experience who understand the intricacies of both Active and Reserve Components and can leverage that experience to find innovative solutions for a specific situation in a complex and dynamic future. The Air Force should ensure high-potential candidates have the opportunity to undertake assignments with other components and recognize the value of this experience.
- To translate these leaders' ideas into reality, we must ensure our force structure is flexible enough to respond. We must further blur the lines between the components where appropriate, while retaining their strengths. In addition to current associate unit models, we must identify additional opportunities for integration between Active and Reserve Components. We will continually assess our mission allocation to each component, aligning to each component's strengths as appropriate and being mindful of reversibility, in order to both harmonize and optimize the Total Force. We must also adapt our personnel system to allow members to flow between Active, Guard, and Reserve Components and back over the course of their careers to provide career flexibility and broaden opportunities.
- We will conduct a comprehensive review of the existing legal and policy framework governing the operational use of the Air Reserve Components (ARC) and utilization of individuals, to identify the major friction points in the system and methodically engage the Office of the Secretary of Defense, the National Guard Bureau, state leaders, and Congress to eliminate

barriers. The Total Force may benefit from a large-scale reform akin to the impact of the Goldwater-Nichols Act on joint operations.

Operational Utilization of the ARC

- We need to capitalize on the evolution of the last several decades. Our foundational assumption on the use of the ARC has shifted from a strategic reserve augmenting active capacity to a force that is fully engaged and organized in operationally indistinguishable units. In addition, the ARC still provides strategic depth and surge capacity. We must ensure this development is accounted for in our doctrine. Additionally, we must record this change for critical analysis by future thinkers. Leaders armed with the doctrinal concepts, critical histories, and experiences stand the greatest chance of conceiving how to wield the Total Force effectively.
- We will identify the full mission requirement for operational utilization of the ARC. We will synchronize the planning, programming, and budgeting of all required military personnel (MILPERS) and operation and maintenance (O&M) resources to ensure our plan for ARC operational utilization is executable.

Air Force Culture

Diverse backgrounds, experiences, and competencies will drive the innovative perspectives that give us agility. Therefore, diversity must become a core component of how we succeed as a Service.

- Diversity alone will not ensure success. An environment of inclusiveness serves as a necessary catalyst to translate diversity effectively into strategic agility. An inclusive environment allows everyone to engage to their full capability without limits imposed by artificial barriers. Without inclusiveness, diverse viewpoints and creative solutions are stifled and agility is diminished. We will continue to enforce a zero-tolerance policy against discrimination, sexual assault, and abuse of power. We will move beyond ad-hoc or reactive measures as we work to address the underlying causes. In addition to credible and effective response measures, we will seek to proactively support a broad range of programs and communication activities to demonstrate Service-wide commitment to Air Force Core Values and promote an Air Force culture of professionalism. We must strengthen a character-based, respectful, and inclusive culture in the Air Force—underscored by our shared Core Values—that facilitates a blend of varied perspectives, cognitive approaches, and critical thought in planning, and unity of action in execution.

To increase our diversity, the Air Force must generate it from external sources and cultivate it from within.

- **Externally**, when set against the backdrop of generational, cultural, and demographic change and the strong competition for talent, our current recruiting efforts will need to modernize to meet both the future talent pool and the ever-changing requirements of tomorrow's force. We will capture new demographics in recruiting efforts, focused not merely on race or gender, but also talent, background, and experience. We will aim to build relationships with students and potential Airmen long before graduation. Beyond specific recruiting efforts, we will demonstrate the Air Force purpose and culture to a broader U.S. audience. Flight, innovation and the spirit of adventure and discovery have always captured the public's imagination. We are an aerospace-minded nation. We need to capitalize on opportunities to reclaim public excitement and interest

by leading or partnering in high-profile, competitive endeavors.[5] We need to improve how we leverage popular entertainment to gain public exposure. We will strengthen our partnerships with the entertainment industry to increase public exposure to Airmen and Air Force capabilities. Highlighting our heritage, culture, and mission in popular media and events will increase public awareness of the Air Force and inspire a new generation of Americans to join us in service.

- **Internally**, we must ensure all Airmen understand the value of diverse backgrounds, experiences and perspectives, as well as diverse teams. We will identify institutional barriers to creating and retaining a diverse team, and then assemble a cadre of credible leaders from a cross-section of functions to eliminate these barriers. We will hold leaders accountable for advancing diversity and inclusiveness. At the individual level, the Air Force needs to create broadening experiences for Airmen to gain exposure to different functional areas and diverse teams of contributors. We must reorient the force to the idea that the ability to cultivate and leverage diverse options is as much a critical capability as our expertise to conduct cyberspace, ISR, or mobility operations, and integrate it into all aspects of how we do business.

Partnerships

An ability to adapt and generate new ideas springs from sharing knowledge, attitudes, and approaches across a wide spectrum of partners. To tap into the expanse of available knowledge, we must cultivate more connections outside of the Air Force and develop our community of supporters. Likewise, we can offer our unique perspective and expertise to other sectors. We must actively invest in genuine, mutually beneficial relationships with Congress, think tanks and academia, industry, the joint and interagency team, alliances, and international partnerships to create a sustainable source of external inputs and expand our influence. The aims of these efforts are to create new learning opportunities, gain exposure to different ideas, and earn the trust of partners.

- **Congress.** We will strengthen our relationship with Congress by increasing engagements based around continuity, trust, transparency, and an affinity for the Air Force: all building on existing links between Congress and various elements of the Total Force. To build continuity and trust, the Air Force will improve feedback channels and develop staffing plans that bring select officers through legislative liaison positions at multiple points over the span of their careers to ensure a continuity of personal relationships. To promote transparency, the Air Force will clearly explain the logic behind key strategic decisions, grant greater access to our processes, increase dialogue and proactive assistance. To generate affinity, the Air Force will develop a coherent and consistent narrative that communicates our Service's position as a critical national security requirement in the eyes of legislators. Improving our relationship with Congress will help us ensure our policies, rules, and laws will enhance strategic agility.
- **Think Tanks and Academia.** A broader relationship between the Air Force and experts in these communities will spur innovation and generate tangible solutions to emergent challenges. We will open more conduits between senior Air Force leaders and think tanks to stimulate accurate

[5] Recent examples include, but are not limited to, Rutan Voyager, SpaceShipOne, and the Red Bull Stratos.

decision making and assist with effective messaging in a complex world. We will create a broader network of informed professionals who can publish and advocate the virtues of a robust Air Force. We will leverage relationships with different institutions to raise awareness of issues for further, directed study and research and capitalize on the studies of students in educational programs to document solutions. The Air Force must also incentivize and expand broadening experiences and non-traditional assignments with these institutions for our Airmen.

- **Industry.** Industry is our key partner in developing technology and delivering and sustaining systems and platforms for the warfighter. The Air Force will engage in frank and open discussions with industry leaders and promising new providers to build a more responsive, adaptable, and iterative approach to capabilities development. This initiative will include restructuring requirements and acquisitions processes, as well as broadening the industrial base to include a wider array of providers. We must engage industry partners to help develop a business model that works for them and meets our needs to facilitate a healthy and competitive industrial base. We are responsible for thoughtfully shaping the industrial base through our requirements development decisions to create capability, competition, and choice resulting in agile and affordable systems and services for the warfighter. We intend to help each other eliminate or change processes, rule sets, and laws that may unintentionally inhibit creative solutions. We will improve our industry partners' understanding of requirements and educate them on the Air Force's shift to a systems integrator role. We will stimulate innovation in the private sector and promote cutting-edge technological development in line with the Air Force's vision for the future by sponsoring or partnering in innovation contests. Additionally, we will regularly network with industry labs to offer insight into the operational utility of their research that could potentially open new markets for them and provide new capabilities for us. Concurrently, we will actively search for small businesses that are developing prospective disruptive technologies to provide small investments and perspective for possible game-changing innovations.
- **The Joint and Interagency Team.** The Air Force provides critical capabilities across the spectrum of conflict. We are at our best when we work with our joint and interagency partners to leverage and synchronize our collective strengths. A generation of joint warriors will preserve the bonds we have built across the Services and provide multi-domain solutions to difficult problems. We will also deepen our relationship with the intelligence community, diplomatic institutions, and developmental agencies through sustained dialogue, increased training and exchange, and the rejection of parochialism. We must enhance our joint and interagency partners' understanding of Air Force capabilities and how these capabilities complement their efforts. These measures will produce agile, comprehensive approaches to complex challenges.
- **Alliances and International Partnerships.** America's allies and coalition partners will remain vital to our success in addressing strategic challenges that increasingly span sovereign borders and strain the international system. While the Air Force can deliver unmatched capabilities, our strengths can be amplified exponentially when complemented by our global partners. Increasing partner capacity can also mitigate risks due to gaps in our own capabilities, increase access, shorten our response time, and affect the strategic calculus of potential adversaries. We will lead efforts to codify and integrate shared doctrine, tactics, and capabilities to shape and assess strategic conditions effectively, posture appropriately, and, when necessary, fight seamlessly. We must increase training and exercise opportunities to enhance trust and familiarity with allies and partners. This requires capabilities, resources, and the means for technical collaborations and

transparent sharing wherever appropriate for mutual benefit. We will also gain insights into the abilities and willingness of allies and partners to engage in global operations and increase appreciation of the capabilities, capacities, and technologies they bring to bear. Simultaneously, we will train our Airmen to be cross-culturally competent, enabling them to be more effective in operations with allies and in global environments.

Table 4: Goal and Objectives Supporting Inclusiveness	Action				
	HCA	SPA	CA	STA	Other
IN1. One Air Force that optimizes Active, Guard, Reserve, and Civilian contributions to the Air Force mission, while recognizing and leveraging their unique strengths and capabilities.					
IN1.1 Produce decision makers adept in finding creative ways to access the force structure and optimizing it to meet mission demands. Focus on arming a generation of leaders with doctrine, history, and experience to provide cross-component expertise.	FAR				
IN1.2 Incorporate Total Force considerations wherever possible to increase the flexibility of our force structure and optimize our operational responses. Focus on identifying appropriate force mix options, eliminating structural and legal barriers, and increasing opportunities for component integration.	NEAR	NEAR			OCR: SAF/LL, NEAR
IN1.3 Synchronize programming and planning across the Active and Reserve Components to enable specific and timely input to the HAF that ensures adequate time to align ARC planning and programming efforts.					HAF: NEAR
IN1.4 Devise and implement a transparent process to collect, categorize, and prioritize ARC operational augmentation requirements, then program and budget for the required MILPERS and O&M resources.					AF/A3O MAJCOMs NEAR
IN1 Contributing Objective: • ***AG1.5*** *Preserve full-spectrum warfighting, expeditionary, and combat support capabilities by retaining expert Airmen with experience in recent conflicts, by codifying lessons learned, and by further integrating joint training (including LVC) to offset reduced resourcing for low-intensity operations.*					

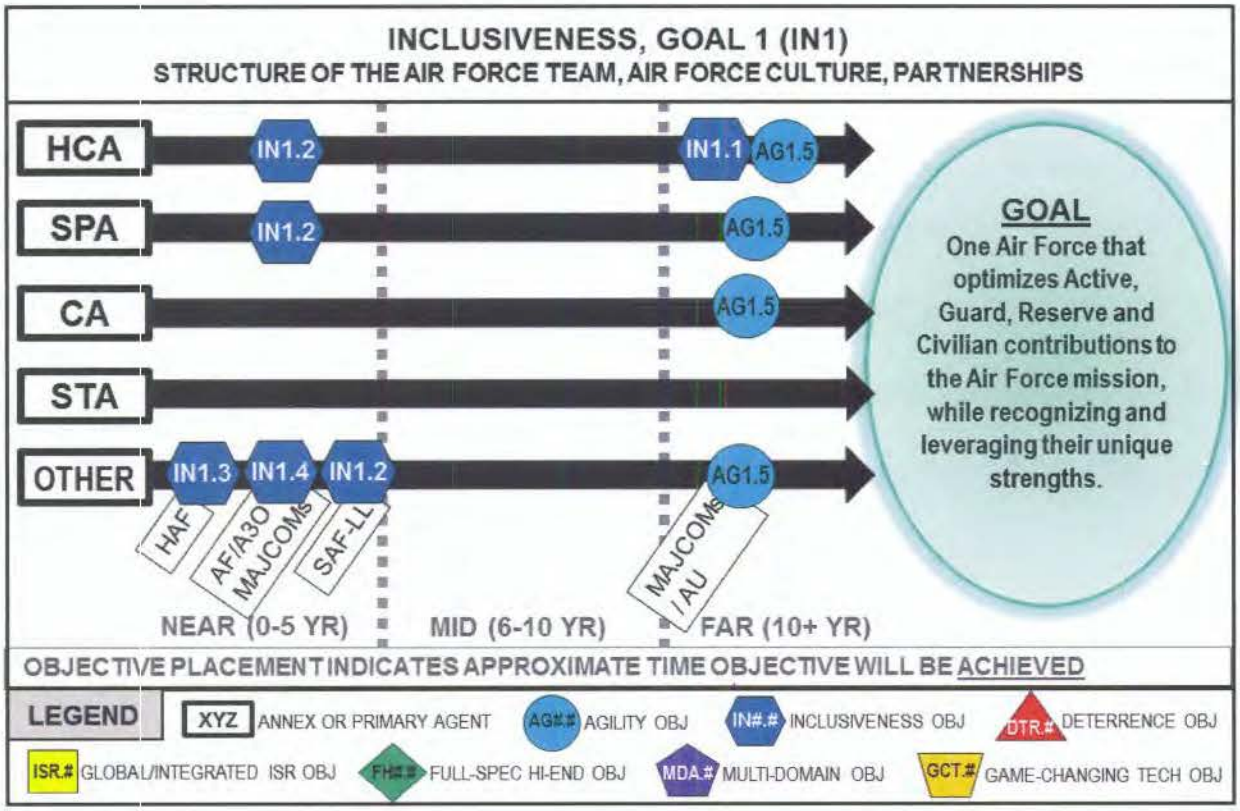

INCLUSIVENESS, GOAL 1 (IN1)
STRUCTURE OF THE AIR FORCE TEAM, AIR FORCE CULTURE, PARTNERSHIPS
HCA
IN1.2
IN1.1
AG1.5
SPA
IN1.2
AG1.5
CA
AG1.5
STA
OTHER
IN1.3
IN1.4
IN1.2
AG1.5
HAF
AF/A3O MAJCOMS
SAF-LL
MAJCOMS / AU
GOAL
One Air Force that optimizes Active, Guard, Reserve and Civilian contributions to the Air Force mission, while recognizing and leveraging their unique strengths.
NEAR (0-5 YR)
MID (6-10 YR)
FAR (10+ YR)
OBJECTIVE PLACEMENT INDICATES APPROXIMATE TIME OBJECTIVE WILL BE ACHIEVED
LEGEND
XYZ ANNEX OR PRIMARY AGENT
AG#.# AGILITY OBJ
IN#.# INCLUSIVENESS OBJ
DTR.# DETERRENCE OBJ
ISR.# GLOBAL/INTEGRATED ISR OBJ
FH#.# FULL-SPEC HI-END OBJ
MDA.# MULTI-DOMAIN OBJ
GCT.# GAME-CHANGING TECH OBJ

Table 5: Goal and Objectives Supporting Inclusiveness	Action				
	HCA	SPA	CA	STA	Other
IN2. An Air Force culture that leverages diversity of thought to provide enhanced mission effects.					
IN2.1 Strengthen the environment of inclusiveness that permits the effective utilization of the diverse talents of Airmen. Focus on intentionally embedding this environment into Air Force culture.	NEAR				
IN2.2 Engage the broader U.S. audience to demonstrate the Air Force purpose, reclaim public excitement and interest, and showcase our heritage, culture and mission. Focus on crafting and communicating a consistent, unified Air Force story via a variety of venues and events.					OPR: SAF/PA, OCRs: HAF/CX, AF/A5S: NEAR; PARTNERSHIP PLAN (to follow) MID
IN2.3 Orient and educate the force to the idea that a blend of varied perspectives, cognitive approaches, and critical thought is a vital combat capability and integrate it into all aspects of our operations. Focus on eliminating institutional barriers to creating and retaining a diverse team.	MID	MID			
IN2 Contributing Objectives: • ***AG1.1*** *Recruit/access individuals with demonstrated potential for critical thinking, adaptive behavior, character, initiative, innovation, and contemporary mission-critical skills.* • ***AG1.3*** *Ensure institutional processes and culture value individual initiative, support productive failure in pursuit of innovation, provide latitude to experiment, and instill a cost-conscious mindset in all Airmen.* • ***IN1.1*** *Produce decision makers who are adept in finding creative ways to access the force structure and optimizing it to meet mission demands. Focus on arming a generation of leaders with doctrine, history and experience to provide cross-component expertise.* • ***IN1.2*** *Ensure our force structure is flexible enough to respond to specific situations in a complex and dynamic future. Focus on eliminating structural and legal barriers, while increasing opportunities for component integration.*					

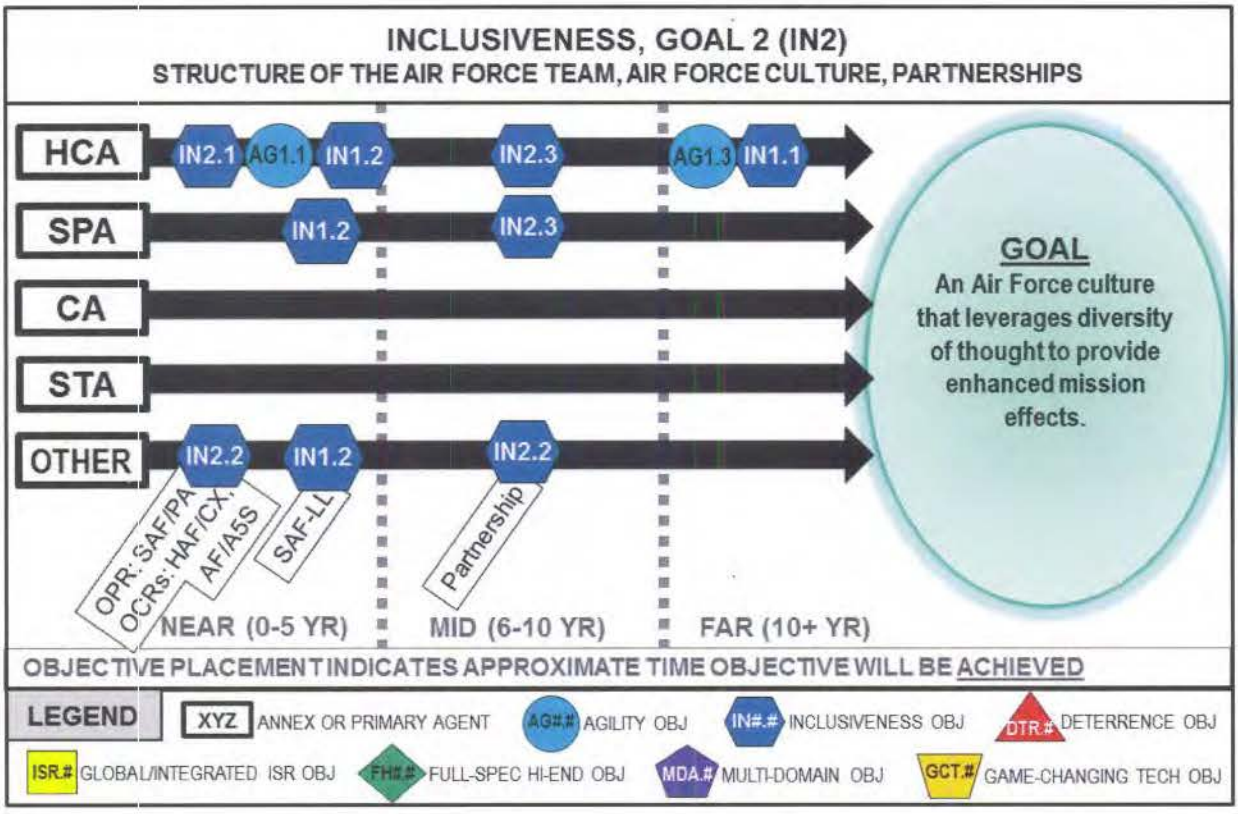
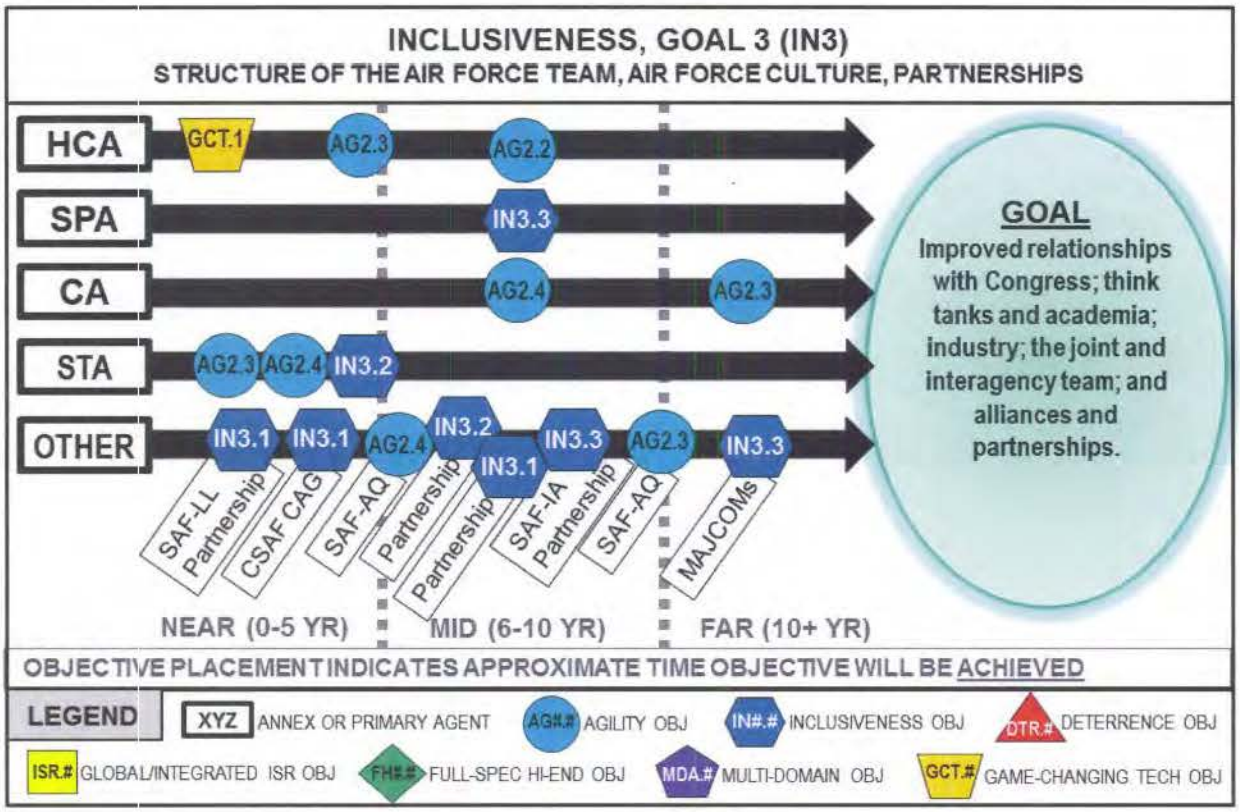

INCLUSIVENESS, GOAL 2 (IN2)
STRUCTURE OF THE AIR FORCE TEAM, AIR FORCE CULTURE, PARTNERSHIPS
HCA
IN2.1
AG1.1
IN1.2
IN2.3
AG1.3
IN1.1
SPA
IN1.2
IN2.3
CA
STA
OTHER
IN2.2
IN1.2
IN2.2
OPR: SAF/PA
OCRs: HAF/CX, AF/A5S
SAF-LL
Partnership
GOAL
An Air Force culture that leverages diversity of thought to provide enhanced mission effects.
NEAR (0-5 YR)
MID (6-10 YR)
FAR (10+ YR)
OBJECTIVE PLACEMENT INDICATES APPROXIMATE TIME OBJECTIVE WILL BE ACHIEVED
LEGEND
XYZ ANNEX OR PRIMARY AGENT
AG#.# AGILITY OBJ
IN#.# INCLUSIVENESS OBJ
DTR.# DETERRENCE OBJ
ISR.# GLOBAL/INTEGRATED ISR OBJ
FH#.# FULL-SPEC HI-END OBJ
MDA.# MULTI-DOMAIN OBJ
GCT.# GAME-CHANGING TECH OBJ

Table 6: Goal and Objectives Supporting Inclusiveness	Action				
	HCA	SPA	CA	STA	Other
IN3. Improved relationships with Congress, think tanks and academia, industry, the joint and interagency team, and alliances and partnerships.					
IN3.1 Strengthen the Air Force's relationship with Congress through increased engagements focused on common purpose, continuity, and transparency. Concentrate efforts to frame Air Force narratives in terms of relevant value propositions, increase continuity in staff assignments, and promote transparency in dealings with legislators and their staffs.					SAF/LL: NEAR CSAF CAG: NEAR PARTNERSHIP PLAN (to follow) MID
IN3.2 Capitalize on the variety of perspectives and expertise resident within think tanks, academia and industry to enrich our understanding of threats and opportunities.				NEAR	PARTNERSHIP PLAN (to follow) MID
IN3.3 Deepen our relationships with the joint team, intelligence community, diplomatic institutions, developmental agencies, local governments, businesses, communities, and international partners through sustained dialogue, increased training and exchange, aviation security cooperation, and iterative enterprises to codify shared doctrine, tactics, and capabilities.		MID			SAF/IA: MID MAJCOMs: FAR PARTNERSHIP PLAN (to follow) MID
IN3 Contributing Objectives: • ***AG2.2*** *Improve acquisition tradecraft and business acumen by actively managing people with the appropriate education, training, and skills; and increasing efficiency and effectiveness in acquisition tools and techniques (including disciplines like systems engineering and digital thread tools).* • ***AG2.3*** *Develop an "agile acquisition" mindset that challenges bureaucratic inertia, streamlines processes, implements continuous improvement, and reduces risk through prototyping and new engineering development models.* • ***AG2.4*** *Incentivize innovative solutions and improve competition in the defense industrial base by providing transparency and stability in requirements and funding, increasing competitive bids, reducing developmental risks, and encouraging partnering with industry.* • ***GCT.1*** *Increase the technical acumen of all Airmen to enable greater innovation and experimentation.*					


INCLUSIVENESS, GOAL 3 (IN3)
STRUCTURE OF THE AIR FORCE TEAM, AIR FORCE CULTURE, PARTNERSHIPS
HCA
SPA
CA
STA
OTHER
GCT.1
AG2.3
AG2.2
IN3.3
AG2.4
AG2.3
AG2.3
AG2.4
IN3.2
IN3.1
IN3.1
AG2.4
IN3.2
IN3.1
IN3.3
AG2.3
IN3.3
SAF-LL Partnership
CSAF CAG
SAF-AQ
Partnership
Partnership
SAF-IA Partnership
SAF-AQ
MAJCOMs
GOAL
Improved relationships with Congress; think tanks and academia; industry; the joint and interagency team; and alliances and partnerships.
NEAR (0-5 YR)
MID (6-10 YR)
FAR (10+ YR)
OBJECTIVE PLACEMENT INDICATES APPROXIMATE TIME OBJECTIVE WILL BE ACHIEVED
LEGEND
XYZ ANNEX OR PRIMARY AGENT
AG#.# AGILITY OBJ
IN#.# INCLUSIVENESS OBJ
DTR.# DETERRENCE OBJ
ISR.# GLOBAL/INTEGRATED ISR OBJ
FH#.# FULL-SPEC HI-END OBJ
MDA.# MULTI-DOMAIN OBJ
GCT.# GAME-CHANGING TECH OBJ

STRATEGIC VECTORS

The five strategic vectors identified in the Air Force Strategy identify focus areas for investment, institutional change, and future operational concepts. While not exclusive, they do establish priority areas of interest. By implication, risk may be taken in other areas; however, the absence of discussion of a mission area or capability is not, in itself, intended to convey a preference for divestment or reduction.

The strategic vectors are to:

- Provide effective 21st-century deterrence (**DTR**)
- Maintain a robust and flexible global integrated ISR capability (**ISR**)
- Ensure a full-spectrum-capable, high-end-focused force (**FH**)
- Pursue a multi-domain approach to our five core missions (**MDA**)
- Continue the pursuit of game-changing technologies (**GCT**)

VECTOR: PROVIDE EFFECTIVE 21ST-CENTURY DETERRENCE

Section Overview.

The Air Force must continue to contribute to strategic nuclear deterrence by strengthening and steadfastly performing the nuclear mission.

However, we must also be prepared to confront new types of strategic threats and actors that may not be deterred by nuclear means. We need to develop new capabilities to deal with these threats and actors so we can attribute such attacks and have a range of options to respond appropriately. The Air Force's capacities in ISR, global responsiveness, and variable effects (both lethal and non-lethal) make us uniquely suited to underwrite American deterrence in the 21st Century. We will improve these strengths through focused investments, partnerships, and education.

Strategic Nuclear Deterrence

The nuclear mission remains the clear priority of Air Force leaders at all levels. We will continue to place significant emphasis on the effectiveness and credibility of the nuclear enterprise. The United States will maintain a nuclear capability sufficient to inflict unacceptable costs on any state actor. Specifically, we will:

- **Ensure the effectiveness and credibility of the nuclear force**. Protect investments in the sustainment of: weapons systems; nuclear command, control and communications systems; and infrastructure. This includes life extension programs to ensure a safe, secure, and effective nuclear force.
- **Improve weapons systems and the effectiveness of delivery systems**. Reduce overall cost and complexity while maintaining a fully credible deterrent.
- **Demonstrate that we value the Airmen responsible for delivering the nuclear mission**. Provide incentives and flexibility, including increased visibility, pathways for advancement, and opportunities to transition between career tracks both within and outside the nuclear enterprise.

Deterring Other Strategic Attacks

More actors today have access to technologies with catastrophic effects. These include radiological, chemical and biological weapons, and the means to conduct attacks in space and cyberspace. All of these could have a strategic impact on the United States or its vital interests. Deterring states and non-state actors whose interests, structures, value systems, and objectives mean that they may not respond to nuclear deterrence will require additional capabilities to detect, monitor, attribute, and respond accordingly to undesired behavior while minimizing the risk of escalation or wider conflict.

The core concepts of deterrence do not change. We must identify our intended audience(s), present a credible threat capable of inflicting certain and unacceptable costs on their interests, effectively communicate this message, and demonstrate the will to act. To deter opponents successfully, we must understand what they want to achieve and what they are not willing to sacrifice. The latter may include aspects like state (or transnational) support and funding or encompass less tangible factors like public support, ideology, perceived legitimacy, or personal reputation. Certain actors may not view deterrence in

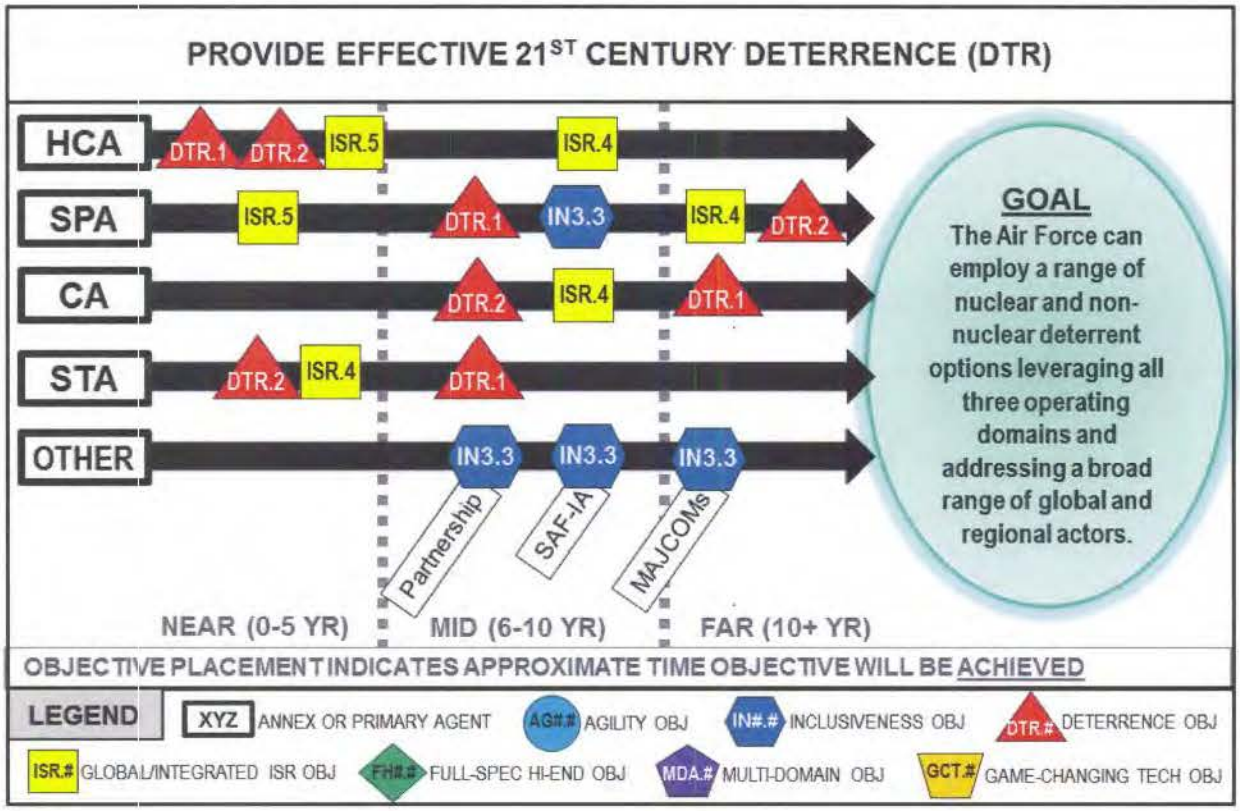
the classic sense—in these cases our efforts will focus on depriving them of the initiative and neutralizing their ability to threaten our interests.

Deterrence and cost-imposing strategies. A cost-imposing strategy induces an opponent to respond in a manner that produces greater hardship for the adversary than the friendly side. Deterrence represents a competitive arena to implement such an approach. Our aim is to offset the threat by maximizing the potential of our constrained defense resources in innovative ways that elicit responses that are cost-prohibitive to the adversary. Concurrently, we will confound adversary attempts to impose excessive costs on the United States by finding affordable asymmetric approaches that undermine opposing capabilities, postures, and operating concepts. We will engage in the greater U.S. grand strategy conversation to ensure our efforts will not create undesired second- and third-order effects. A perceived threat to a competitor could provoke undesirable counter responses; including a decision to strike first as a form of asymmetric capability. Introducing new capabilities, changing force postures, or revising operating concepts may strengthen our deterrence in the near-term while paving the road to escalation and conflict in the far term. We will weigh each of these opportunities based on the degree to which they enhance or diminish our strategic agility and response options.

The Air Force offers unique capabilities to deter a wide range of actors across the spectrum of conflict using both lethal and non-lethal means. We can enhance these capabilities by the continuing development of multi-domain ISR with products and services that can be widely disseminated to allies and the public. Many actors are emboldened by the perception of anonymity, particularly in the cyberspace domain or when using other asymmetric means. To counter these threats, we will:

- **Enhance integrated, multi-domain ISR to detect, monitor, and attribute threats.** These initiatives should focus not just on the signatures of weapon systems and their production, but also identify individuals, groups, and supporting networks. Advancing capabilities within the information environment, particularly the cyberspace domain, will be a priority.
- **Increase the ability to share and release integrated, multi-domain ISR intelligence and knowledge.** This will greatly help whole-of-government and international efforts and bolster international law and norms. An improved ability to share intelligence and knowledge with international partners will help build coalitions against all types of adversaries. Furthermore, the demonstrated ability to accurately detect, analyze, track, share timely intelligence and assess actions taken can significantly enhance deterrence operations. An adversary who cannot achieve surprise through an act of violence has lost one of his most potent instruments: shock value.
- **Develop new response options ranging across domains.** These options include non-kinetic, reversible actions at global ranges to increase our ability to deter a wider range of actors and address unpredicted operational challenges. This may require judicious demonstrations of capabilities hitherto held at high security levels.
- **Improve our ability to apply levels of deterrence and coercion.** Key to this will be education and development of senior leaders, as well as improving our understanding of potential adversary mindsets, strategic calculus, and decision-making processes to apply tailored coercive and deterrent capabilities at the right time and place and control escalation and de-escalation, especially in crisis.

Table 7: Goal and Objectives Supporting Deterrence	Action				
	HCA	SPA	CA	STA	Other
DTR. The Air Force can employ a range of nuclear and non-nuclear deterrent options leveraging all three operating domains and addressing a broad range of global and regional actors.					
DTR.1 Maintain a credible and robust strategic deterrence posture through sustainment, modernization, recapitalization, readiness, and protection of the Air Force's nuclear mission and supporting infrastructure.	NEAR	MID	FAR	MID	
DTR.2 Develop, test, and implement additional non-nuclear capabilities that deter a wide range of adversaries, including non-state actors, and assure allies and partners. Consider low-cost measures that generate high-cost adversary responses.	NEAR	FAR	MID	NEAR	
DTR Contributing Objectives: • ***IN3.3*** *Deepen our relationships with the joint team, intelligence community, diplomatic institutions, developmental agencies, local governments, businesses, communities, and international partners through sustained dialogue, increased training and exchange, aviation security cooperation, and iterative enterprises to codify shared doctrine, tactics, and capabilities.* • ***ISR.4*** *Enhance capabilities to holistically detect, monitor, analyze and attribute threats (kinetic or non-kinetic), perpetrators, and their support network and improve target systems analysis in order to determine the best way to act on this intelligence.* • ***ISR.5*** *Improve policies, processes and organizations for obtaining, sharing, and releasing pertinent multi-domain intelligence with joint, interagency, and international partners.*					


PROVIDE EFFECTIVE 21ST CENTURY DETERRENCE (DTR)
HCA
DTR.1
DTR.2
ISR.5
ISR.4
SPA
ISR.5
DTR.1
IN3.3
ISR.4
DTR.2
CA
DTR.2
ISR.4
DTR.1
STA
DTR.2
ISR.4
DTR.1
OTHER
IN3.3
IN3.3
IN3.3
Partnership
SAF-IA
MAJCOMs
GOAL
The Air Force can employ a range of nuclear and non-nuclear deterrent options leveraging all three operating domains and addressing a broad range of global and regional actors.
NEAR (0-5 YR)
MID (6-10 YR)
FAR (10+ YR)
OBJECTIVE PLACEMENT INDICATES APPROXIMATE TIME OBJECTIVE WILL BE ACHIEVED
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VECTOR: MAINTAIN A ROBUST AND FLEXIBLE GLOBAL INTEGRATED INTELLIGENCE, SURVEILLANCE AND RECONNAISSANCE CAPABILITY

Section Overview. From advanced urban environments to austere corners of the planet, the availability of technology and global interconnectivity is making the collection, analysis, and use of information and knowledge increasingly decisive across the spectrum of conflict. At the same time, the core motivations that drive human conflict have not changed. As a Service, we must be willing to acknowledge that no degree of technological proficiency can guarantee total situational awareness nor predict every crisis. Fortunately, options exist to ensure we maintain an enduring advantage over less-nimble adversaries. The Air Force will conduct agile ISR by:

- **Deepening our understanding and assessment of potential adversary capabilities and intentions.**
- **Ensuring elasticity and fusion in systems and organizations.**
- **Focusing air, space, and cyberspace collection, exploitation, and analysis to inform and support commanders' decisions.**

ISR can affect the behavior of adversaries who believe or know they are being watched. Deterrence is effective only when the adversary is aware of a threat and believes it to be prohibitive and credible. Effective ISR acts as a critical enabler of deterrence and helps friendly forces seize the initiative from adversaries who realize their activities can be or have been detected and thwarted. In addition, it can be used to disarm those who manipulate information to distract, delay, or derail our efforts. Despite our best efforts, resolute adversaries will constantly modify strategies and tactics to seek surprise, freedom of maneuver, and asymmetric advantages. The Air Force will never assume an ISR approach or capability that is effective today will be effective tomorrow, and our Airmen will employ agile cross-domain solutions to detect, characterize, deter and, when necessary, defeat adversaries across all operating environments. Anticipation of adversary adaptations and innovations will allow for rapid responses in capability development and our ISR collection, exploitation, and analytic techniques. This will require developing our Total Force to think and act cross-culturally.

ISR must be dynamic and elastic. The Air Force must enhance its capability to transition rapidly from global surveillance operations to tasks in support of specific warfighter needs. Near-peer state adversaries, transnational non-state threats, and localized contingencies all demand different approaches to - and combinations of - ISR. We must endeavor to discern these insights before and while we direct our advanced assets, adapting as circumstances evolve. We must train and equip Airmen to conduct effective multi-domain ISR anywhere in the world in all domains and operating environments, even if we lack full knowledge of the cultural and technical specifics of every potential adversary we may face. This acceptance of uncertainty, coupled with limitations in resources and operational reach, necessitates an agile, coordinated ISR approach that provides commanders with multiple options to inform prudent decisions. Air Force doctrine must evolve to be both more directive of and more responsive to ISR efforts and better able to integrate information efforts with options that include lethal and non-lethal effects. We

will make our data and information available to all users across the joint team, as well as our international partners as appropriate. To ensure our partner nations are able to access necessary intelligence, we will work for increased integration and strive to remove unnecessary and outdated classification barriers. We will begin by ensuring that wherever possible, classified material is generated in such a way that it is releasable to our trusted allies. In turn, these partners will bolster our ISR resources and deliver critical contextual insight for improved decision advantage.

ISR also must be technologically elastic. Technology has made information sharing easier and faster, and all data have the potential to increase the richness of our characterization and understanding of adversaries and the environment. Advanced ISR sensors remain essential, but intelligence also emerges from innovative methods of linking disparate data streams from open sources or international partners. Skilled intelligence professionals are the key to employing technological capabilities to produce accurate, actionable intelligence. However, in a dynamic environment, there may not always be time for every point of collected data to be translated into intelligence or reviewed by an analyst. In certain critical situations, collected data may need to flow directly to a cockpit or senior leader, regardless of collection method. The same data can simultaneously flow to an intelligence analyst to be analyzed for deeper context. To keep pace with technology, we will ensure that analysis training and education implements the principles of critical thinking across the ISR enterprise. We will also develop and deploy analysis architecture and tools to better automate, visualize, collaborate, and integrate analysis and exploitation. Prudent human-machine teaming will enhance our agility. Proper integration of automated systems within a common network will empower skilled intelligence personnel to convert mass data into actionable intelligence and knowledge and then rapidly convey it to the appropriate recipients, from national authorities to tactical warfighters.

Table 8: Goal and Objectives Supporting ISR

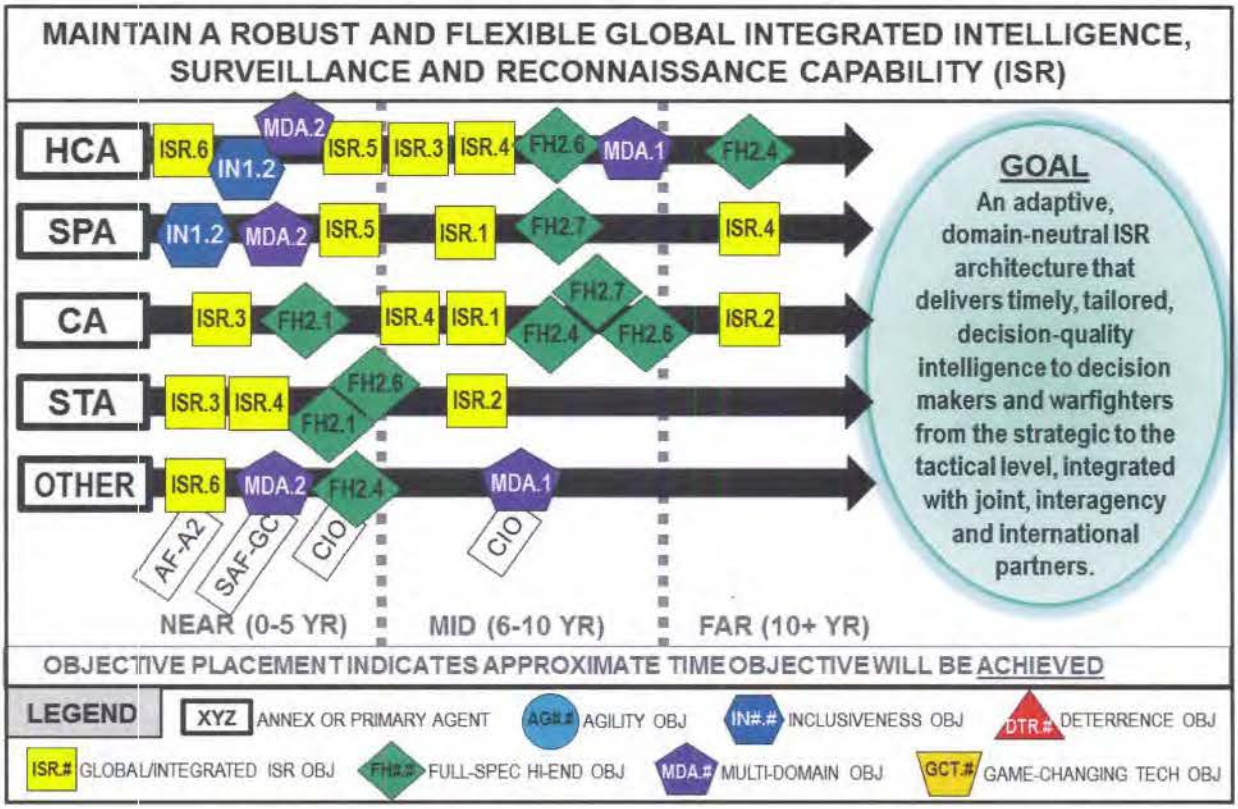
	Action				
	HCA	SPA	CA	STA	Other
ISR. An adaptive, domain-neutral ISR architecture that delivers timely, tailored, decision-quality intelligence to decision makers and warfighters from the strategic to the tactical level, integrated with joint, interagency, and international partners.					
ISR.1 Rebalance resilient ISR sensors, systems, and processes toward operations in high-end contested environments, and focus on moderately priced systems, to include commercial technology, for permissive environments.		MID	MID		
ISR.2 Develop a robust, survivable, secure architecture to connect and integrate ISR operations across all domains, ensuring that collection and analytic systems (including non-traditional ISR platforms and sensors) and users can collaborate seamlessly.			FAR	MID	
ISR.3 Increase flexibility and standardization in ISR processes and knowledge management tools to minimize delays and regulatory obstacles, enabling analysts to provide rapid, decision-level intelligence to overcome adaptive adversaries.	MID		NEAR	NEAR	
ISR.4 Enhance capabilities to holistically detect, monitor, analyze, and attribute threats (kinetic or non-kinetic), adversaries, and their support networks, and improve target systems analysis to determine the best way to act on this intelligence.	MID	FAR	MID	NEAR	
ISR.5 Improve policies, processes, and organizations for obtaining, sharing, and releasing pertinent multi-domain intelligence with joint, interagency, and international partners.	NEAR	NEAR			
ISR.6 Professionalize ISR analysis through training, tradecraft (including cultural competencies), and collaboration; restore analytic and targeting competencies.	NEAR				AF/A2 NEAR

ISR Contributing Objectives:

- ***IN1.2*** *Incorporate Total Force considerations wherever possible to increase the flexibility of our force structure and optimize our operational responses. Focus on identifying appropriate force mix options, eliminating structural and legal barriers, and increasing opportunities for component integration.*
- ***FH2.1*** *Increase emphasis on RDT&E for capabilities that ensure the ability to find, fix, track, target, engage and assess effects against critical target sets in highly contested environments.*
- ***FH2.4*** *Improve flexibility, commonality and interoperability of our C2 to integrate air, space, and cyberspace effects delivered by different Services or agencies.*
- ***FH2.6*** *Improve execution speed and situational understanding through advances in human-machine teaming, automated processing, exploitation, and dissemination (PED), analysis, and updated C2 and communication capabilities.*
- ***FH2.7*** *Provide resilient installations, infrastructure, and combat support capabilities that enable the Air Force to project power rapidly, effectively, and efficiently.*

Table 8: Goal and Objectives Supporting ISR

	Action				
	HCA	SPA	CA	STA	Other
• ***MDA.1*** *Orient the Air Force to a mindset that intuitively considers multi-domain options when solving complex problems, to include development of doctrine and TTPs.* • ***MDA.2*** *Reappraise existing compartmentalization practices and eliminate institutional barriers to empower Airmen and organizations to employ multi-domain approaches.*					



VECTOR: ENSURE A FULL-SPECTRUM-CAPABLE, HIGH-END-FOCUSED FORCE

Section Overview. While the Air Force has conducted nonstop combat operations for more than two decades, multiple adversaries have observed our strengths and developed advanced methods and technologies to counter our dominance in the air, space, and cyberspace domains. These threats will shape the future of warfare, and we cannot afford the risk of stagnation in high-end operations. We must refocus our capabilities to ensure we can operate against demanding adversaries who will certainly challenge our freedom of operation in multiple domains. Our priorities will include:

- **Developing capabilities that ensure freedom of action for the joint force.**
- **Leveraging and integrating new approaches, technologies and capabilities.**
- **Delivering more effects at range.**
- **Increasing our resiliency when presence within the battlespace is required.**
- **Retaining the ability to operate across the full spectrum of operations.**

Posture to set conditions for Joint Force success in the most demanding scenarios. The Air Force must be able to deliver effects against challenging threats and in challenging operating environments. In recent operations, airpower has provided asymmetric advantages in largely permissive environments. Analysis of the future strategic environment (see AFSEA) indicates that we are increasingly likely to face sophisticated enemies with advanced capabilities. As the other Services build more capacity to operate in hostile environments, the Air Force must focus clearly on the capabilities that will allow freedom of maneuver and decisive action in highly contested spaces and extreme and/or contaminated environments. Without high-end air, space, and cyberspace capabilities, these denied regions will pose significant, if not insurmountable, obstacles to friendly forces. Our greatest value to the joint force is dealing with these advanced threats, including:

- Advanced Integrated Air Defense Systems (IADS) with both surface-to-air and air-to-air capabilities that will challenge our technological edge
- Denied or contested electromagnetic environment
- Physical threat to forward operating locations, particularly the growing threat from adversary ballistic and cruise missiles
- Cyber threat to all operations (home and overseas)
- Threats to space-based capabilities

Gain freedom of action for the joint force. In a high-end conflict, this is our highest priority and is needed to prevent effective enemy interference with friendly operations. Our respective aims across the air, space, and cyberspace domains are:

- **Air:** Achieving the required degree of control of the air, protection of the joint force, and freedom of action for a given period and in the required area.

- **Space:** Maintaining freedom of action in, from, and to space to provide mission assurance for joint operations (Joint Publication 3-14, Annex 3-14) and to meet the needs of the national security space enterprise.
- **Cyberspace**: Freedom of action in cyberspace and the ability to deny the same to our adversaries (Joint Publication 3-12, Annex 3-12).

Navigation, communications, and targeting capabilities are critical to high-end operations. As our adversaries challenge our ability to employ these capabilities, we will increase resiliency and continuously improve the doctrine and TTPs necessary to fight through adversary threats. While we continue to design, procure, and operate systems that are capable of withstanding attack or maneuvering through the threat, we will also develop alternative methods to provide these capabilities, to include non-space-based options.

We must strengthen our analysis and targeting processes while complicating those of the enemy. This requires us to gain situational awareness and knowledge while degrading or denying the enemy's. We must expect our current technological advantages to wane, requiring us to invest in new capabilities. However, we must be mindful that few "silver bullets" exist and no technological edge goes unchallenged. Our capabilities development must be informed by an enhanced focus on adversarial innovations and technologies that could hinder our operations or otherwise provide an operational edge to our adversaries. Seeking single-point solutions may appear cost-effective, but carry high risk. We must continue to investigate multiple technologies and concepts, building off-ramps as well as on-ramps to maintain relative advantage as technologies emerge and fade. We must also regain and enhance our proficiency in operational security and information operations, to include military deception.

Integrate air, space, and cyberspace effects delivered by any Service in support of the campaign. Air, space, and cyberspace activities and targeting will be integrated for joint battlespace effects throughout the planning, targeting, execution, and assessment cycle. We will focus on developing common architecture to enable integration and command and control of a diverse set of multi-domain platforms, sensors, communications architectures, and weapons.

Deliver more effects at range. We will deliver effects at range wherever possible to mitigate the increasing area-denial threat to forward bases and to employ a smaller force more efficiently. This will combine:

- **Investment in long-range, stand-off capabilities.** In the far-term, we will invest in longer-range, high-speed platforms, sensors, and weapons as well as multi-domain capabilities that can create effects globally from home base such as cyberspace attack, space-delivered effects, and remotely operated or autonomous platforms. This will permit alternative weapons effects including temporary and reversible impacts. This will decrease the size of the necessary expeditionary force and thus redefine readiness requirements and force presentation models. In human terms, this will allow much greater flexibility in employment models, with the possibility of a more diverse workforce using different work patterns.
- **Fewer long-term deployed forces.** Delivery of timely, assured effects using global resources will allow Combatant Commands to reduce their requirements for assigned, organic forces based in their geographic area. In the near- to mid-term, this can be accomplished by employing Combat Mission Ready forces combining agile basing with rotational deployments, forward presence, and long-range assets. To conserve our resources and facilitate our operations, we will

adapt our basing to optimally leverage the environmental infrastructure in the locations where we operate.

- **Increase C2 agility to permit distribution of control and execution.** To support a more flexible force with the ability to deliver effects globally, we will need to revisit our C2 paradigms to permit rapid and appropriate adaptation between centralized and decentralized models. Some capabilities may need to be directed at a national level whereas other situations demand an ability to push authority to lower levels than current models allow.
- **Improve speed of execution.** While enabled by improvements in weapons and platforms, true advances will come with rapid, accurate, shared situational awareness. We will develop human-machine teaming including automated processing, exploitation, and dissemination (PED) and new C2 practices. By automating suitable data processing tasks, we will be able to employ a smaller number of analysts to perform more skilled interpretation tasks that require human analysis.

Improve resiliency of forward-deployed and stateside forces. Where we must retain a forward presence or need to project power, we will minimize vulnerability. We will reduce the human and physical footprint of forward-stationed forces to the minimum required for sustained operations and develop agile employment and basing concepts. Energy (in its many forms) is the backbone of nearly every element of Air Force operations in air, space, and cyberspace. We will also improve resiliency by reducing our dependence on vulnerable single-point energy sources and utility grids. We can realize significant gains by leveraging advances in manufacturing, energy efficiency, and renewable resources. We will leverage the combat support capabilities of partner nations on lower-risk tasks to reduce U.S. costs further. Bases within likely threat envelopes will need to employ enhanced active and passive protective measures such as protection against weapons of mass destruction (WMD) and increasingly accurate and lethal conventional ballistic and cruise missiles. Where we need to have the ability to "stand in" rapidly, we will employ light, agile, high-readiness forces with a small but resilient footprint that can deploy to the widest possible variety of austere locations.

Improve mission assurance of our space capabilities and be prepared to deny the same to potential adversaries. Air Force space-based capabilities and effects are more than enablers for other domains; they are vital to U.S. national security. Today, these capabilities face advanced, demonstrated, and evolving threats. At the same time, potential adversaries are fielding their own space-based capabilities and becoming increasingly reliant upon space for their military operations, which may be conducted against the United States or our interests. To succeed in the future, we must be able to shape the strategic environment, contribute to crisis stability, and ensure the United States possesses the space capabilities needed to achieve success in any conflict. To do this, the Air Force will assure space capabilities against aggressive and comprehensive counter-space programs through resilient capabilities, agile defense, reconstitution, and robust C2 and communications. The Air Force must also possess the ability, when necessary, to deny space capabilities to potential adversaries who leverage space in their own military operations.

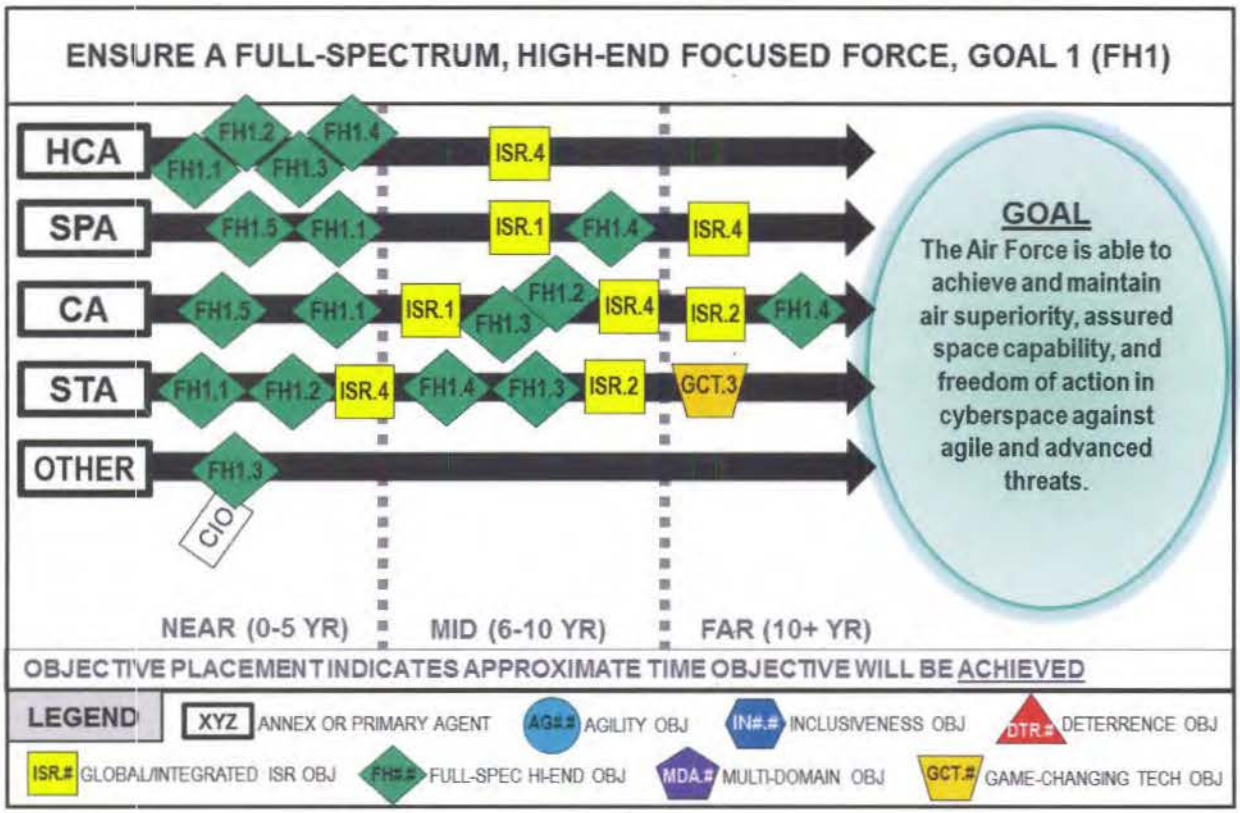
Retain full-spectrum capabilities. The demand for Air Force capabilities is not likely to diminish simply because resources are constrained. Accordingly, we must continue to devise innovative ways to accomplish missions across the spectrum of conflict, to include employing high-end assets in other than extreme cases. While the significant increases in the organic firepower and ISR capabilities of the other Services should allow the Air Force to reduce emphasis on tactical tasks in a permissive environment, we

must not permit our focus on high-end conflict to cause the skills we have gained in low-intensity conflict to atrophy. We will retain many of these skills among experienced personnel with the ability to regenerate capabilities rapidly across the wider force. We will also consider investments in limited numbers of platforms, munitions, and off-the-shelf solutions optimized for lower-intensity situations when it is cost effective to do so. However, we will not posture for extended stabilization operations, nor will low-intensity operations be the primary focus of our capability development.

Table 9: Goal and Objectives Supporting a Full-Spectrum, High-End-Focused Force	Action				
	HCA	SPA	CA	STA	Other
FH1. The Air Force is able to achieve and maintain air superiority, assured space capability, and freedom of action in cyberspace against agile and advanced threats.					
FH1.1 Ensure the ability to gain and maintain the required degree of control of the air to prevent effective enemy interference with friendly operations.	NEAR	NEAR	NEAR	NEAR	
FH1.2 Ensure viable options are available to sustain capabilities provided by space assets in case they are challenged or denied, particularly for position, navigation, timing, strategic warning, and communications. This includes both resilient space systems and non-space options.	NEAR		MID	NEAR	
FH1.3 Strengthen capabilities that enable freedom of action in cyberspace, and enhance our ability to deny the same to adversaries.	NEAR		MID	MID	CIO: NEAR
FH1.4 Enhance abilities to degrade or deny situational awareness and targeting ability to an advanced enemy.	NEAR	MID	FAR	MID	
FH1.5 Reduce emphasis on tactical tasks in permissive environments where other Services have sufficient organic capacity (for example tactical ISR, fire support, and intra-theater mobility).		NEAR	NEAR		

FH1 Contributing Objectives:

- ***ISR.1*** *Rebalance resilient ISR sensors, systems and processes toward operations in high-end contested environments, and focus on moderately priced systems, to include commercial technology, for permissive environments.*
- ***ISR.2*** *Develop a robust, survivable, secure architecture to connect and integrate ISR operations across all domains, ensuring that collection and analytic systems (including non-traditional ISR platforms and sensors) and users can collaborate seamlessly.*
- ***ISR.4*** *Enhance capabilities to holistically detect, monitor, analyze and attribute threats (kinetic or non-kinetic), adversaries, and their support networks, and improve target systems analysis in order to determine the best way to act on this intelligence.*
- ***GCT.3*** *Execute a broad, balanced, and integrated S&T Program responsive to near-, mid-, and far-term Air Force priorities.*


ENSURE A FULL-SPECTRUM, HIGH-END FOCUSED FORCE, GOAL 1 (FH1)
HCA
SPA
CA
STA
OTHER
FH1.1
FH1.2
FH1.3
FH1.4
FH1.5
ISR.1
ISR.2
ISR.4
GCT.3
CIO
GOAL
The Air Force is able to achieve and maintain air superiority, assured space capability, and freedom of action in cyberspace against agile and advanced threats.
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OBJECTIVE PLACEMENT INDICATES APPROXIMATE TIME OBJECTIVE WILL BE ACHIEVED
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Table 10: Goal and Objectives Supporting a Full-Spectrum, High-End-Focused Force	Action				
	HCA	SPA	CA	STA	Other
FH2. The Air Force possesses full-spectrum capabilities to project power and achieve campaign objectives in highly contested environments.					
FH2.1 Increase emphasis on research, development, testing, and evaluation (RDT&E) for capabilities that ensure the ability to find, fix, track, target, engage and assess effects against critical target sets in highly contested environments.			NEAR	NEAR	
FH2.2 Increase emphasis on stand-off capabilities that maximize speed, range, and flexibility, while maintaining the ability to transition to effective, resilient presence in the battlespace.		MID	FAR	MID	
FH2.3 Improve Air Force command and control doctrine and implementation through study, wargaming, and exercises to validate best practices that embrace variable models of centralization/decentralization, organization, and execution.					AU: MID
FH2.4 Improve flexibility, commonality, and interoperability of our C2 and communications to integrate air, space, and cyberspace effects delivered by different Services or agencies.	FAR		MID	NEAR	CIO: NEAR
FH2.5 Ensure rapid, robust global mobility by developing and maintaining smart and adaptive global and theater distribution networks to ensure the most efficient movement and positioning of materials, and by leveraging advanced design and manufacturing.		FAR	MID	NEAR	
FH2.6 Improve execution speed and situational understanding through advances in human-machine teaming, automated PED, analysis, and updated C2 and communication capabilities.	MID		MID	NEAR	
FH2.7 Provide resilient installations, infrastructure, and combat support capabilities that enable the Air Force to project power rapidly, effectively, and efficiently.		MID	MID		

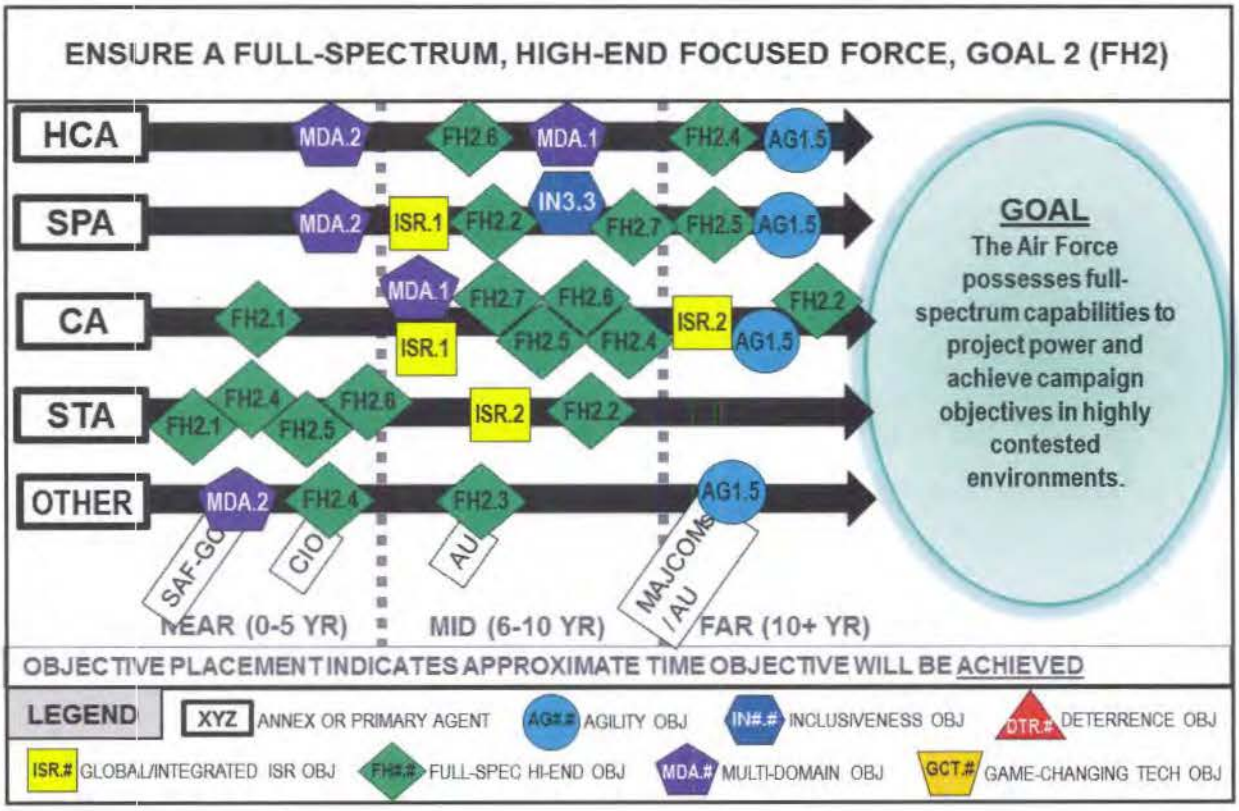
FH2 Contributing Objectives:

- ***AG1.5*** *Preserve full-spectrum warfighting, expeditionary, and combat support capabilities by retaining expert Airmen with experience in recent conflicts, by codifying lessons learned, and by further integrating joint training (including LVC) to offset reduced resourcing for low-intensity operations.*
- ***ISR.1*** *Rebalance resilient ISR sensors, systems and processes toward operations in high-end contested environments, and focus on moderately priced systems, to include commercial technology, for permissive environments.*
- ***ISR.2*** *Develop a robust, survivable, secure architecture to connect and integrate ISR operations across all domains, ensuring that collection and analytic systems (including non-*

Table 10: Goal and Objectives Supporting a Full-Spectrum, High-End-Focused Force	Action				
	HCA	SPA	CA	STA	Other

traditional ISR platforms) and users can collaborate seamlessly.

- ***IN3.3*** *Deepen our relationships with the joint team, intelligence community, diplomatic institutions, developmental agencies, local governments, businesses, communities, and international partners through sustained dialogue, increased training and exchange, aviation security cooperation and iterative enterprises to codify shared doctrine, tactics, and capabilities.*
- ***MDA.1*** *Orient the Air Force to a mindset that intuitively considers multi-domain options when solving complex problems, to include development of doctrine and TTPs.*
- ***MDA.2*** *Reappraise existing compartmentalization practices and eliminate institutional barriers to empower Airmen and organizations to employ multi-domain approaches.*



VECTOR: PURSUE A MULTI-DOMAIN APPROACH TO OUR FIVE CORE MISSIONS

Section Overview. Airpower, cyberspace functions, and space-based capabilities have become indispensable components of modern military operations. In order to achieve the most effective solutions across the spectrum of military operations, the Air Force will increasingly rely on operations executed in or through the cyberspace and space domains in addition to air activities, and Air Force operations in these three domains must be coordinated or integrated with effects generated in the land and maritime domains.

We must focus on ensuring freedom of action within temporal and spatial bounds in all five of the domains, enabled by multi-domain, synergistic mission execution. The most critical component of this approach will be the development of a multi-domain mindset among Airmen throughout the Service. The Air Force must ensure that its systems and processes support this mindset to ensure mission accomplishment in a complex environment.

In order to foster a multi-domain approach, the Air Force will:

- **Holistically develop best practices to integrate capabilities and operations in all domains.** This will benefit employment in the near term and force planning in the long term. If our ability to act in one domain is limited, we will flex to operations in other domains to achieve the required effect.
- **For any given task, integrate planning to use capabilities in all domains to achieve desired effects and outcomes.** Reliance on conventional air platforms can be reduced where assured capability can be provided through cyberspace or space-based capabilities; conversely, kinetic operations may more often be directed at achieving cyberspace effects or affecting space control rather than attacking conventional targets. We will also develop novel ways of delivering effects into and through cyberspace and space from air platforms. Our aim will be to generate an overmatch by integrating effects across all domains, including effects generated by our joint and combined partners in surface and maritime domains.
- **Adapt our thinking and culture.** This will ensure that when presented with a problem, we are able to consider a range of lawful options and possible effects using multiple domains. A side effect of our unmatched success in producing highly proficient tactical operators is the evolution of processes, structures, and mindsets which are not optimized for multi-domain approaches. This mindset shift may be our greatest challenge as an Air Force. It will require a reappraisal of current classifications and compartmentalization to ensure planners and targeteers appreciate the full range of capability available to commanders and understand the likely effects in terms of precision, persistence, collateral damage, reversibility, assurance, and lethality.
- **Institutionalize multi-domain approaches into the education, training, and employment of Airmen from the operator to the component commander.** This will require us to conduct experimentation to develop, explore, and assess new concepts of operations, training programs, simulations, war games, and exercises that reflect and account for these new integrated operations. Our human capital development should seek ways to widen operator perspectives without sacrificing their tactical expertise. Training is central to both of these aims, and we must

develop suitable systems and ranges across the live, virtual, and constructive spectrum to facilitate these efforts.

- **Review our force employment models.** New capabilities best controlled centrally or at a national level may permit a reduction in the conventional forces allocated to Combatant Commanders, provided theater air staffs are able to access the required effects with a suitable degree of assurance.

Air and Space Superiority. The Air Force has dominated the air domain for a generation, enabling joint domination of the land and maritime domains. However, the technological and training advantages we have enjoyed since the Cold War are being increasingly contested by adversaries. While other actors have adapted, advanced their capabilities, invested heavily in realistic training, and developed and fielded ballistic and cruise missiles and unmanned air systems to augment traditional air capabilities, we have not kept pace. Further, concepts of 'dominance' are probably inappropriate in the space and cyber domains. While the space domain used to be considered the unassailable "high ground," our space assets today are endangered by a variety of kinetic and non-kinetic threats. The lower cost of entry to operations in and through the cyberspace domain, together with the difficulty in attribution, means that a wide range of adversaries will more readily challenge us in and through this domain. We must be ready to defend against these challenges. Accordingly, the Air Force will:

- **Take advantage of cyberspace- and space-based capabilities** to constrain adversaries' actions and increase our situational understanding both in the physical domains and within cyberspace so to maintain freedom to maneuver and focus the combat power we have appropriately.
- **Integrate all appropriate air and space platforms with cyberspace capabilities** to maximize integrated lethal and non-lethal effects. Integration of capabilities in all domains will enable freedom of action for the joint force. This requires a common C2 and communications architecture to create a combat network in which capabilities on any platform can be exploited in a way that is transparent to the operators at either end of the effects chain.

Intelligence, Surveillance, and Reconnaissance. As we rebalance to the higher end of the spectrum of conflict, we will rely less on ISR data collected from airborne or space-borne capabilities that cannot operate in a contested environment. We will address the challenges of operating in contested environments in a variety of ways:

- **Enhance stand-off capabilities and invest in multi-domain, penetrating ISR capabilities.** We need to combine the ability to achieve the necessary access with the required persistence. We will invest in air, space, and cyberspace platform and sensor capabilities enabling access to targets anywhere around the world. Some of these capabilities will enhance our existing long-range collection assets that operate from the continental United States (CONUS). Others will increase our persistence from space and our ability to rapidly deploy gap-filling capabilities. Other enhancements will include the ability to work in and through cyberspace to help characterize specific target sets and understand adversaries. In all cases, we will use a multi-domain, all-source mindset to focus the ISR enterprise on providing the right analysis and delivery of key intelligence in order to offer commanders well-informed options.
- **Integrate sensors on all platforms.** Wherever possible, we will integrate joint, interagency, and coalition information sources to create a fused understanding of the adversary and the environment. We will exploit automation for appropriate on-platform processing, improved

combat identification, and targeting. By integrating data from as many sources as possible, we will increase the resilience of our ISR network so if one domain capability is denied (for example, due to adversary space-control activity), our understanding of the battlespace is not catastrophically disrupted.

- **Ensure rapid and wide dissemination of processed ISR data.** Once collected, data must be fused and analyzed and the resulting intelligence disseminated to all customers and decision-makers at the right time. This will require layered, mutually supportive analytic capabilities; improved intelligence generation and dissemination methods that span joint, interagency, and international constructs; and collaboration at multiple clearance levels while maintaining appropriate security controls.
- **Prioritize and pursue attribution capabilities.** We will improve our abilities to attribute action in space and cyberspace to specific actors, both state and non-state.

Rapid Global Mobility. The Air Force plays a critical role in expeditionary and deployed operations globally. We will aim to improve our effectiveness by pursuing multi-domain solutions to mobility challenges such as:

- **Smart and adaptive global distribution networks** (including autonomous systems and cyberspace capabilities) both across and within theaters to ensure the most efficient movement and positioning of supplies. This will require a more agile posture and will take us beyond the conventional 'hub-and-spoke' approach to one that optimizes those networks through a DOD-wide approach.
- **Reduce the logistic tail and enhance sustainability.** Highly efficient airframe and engine designs will provide significant energy savings and enhanced range capabilities. Advanced manufacturing techniques, such as 3-D printing, could overcome the need to deploy a range of spare components that may not all be needed.

Global Strike. The Air Force will continue to be the Nation's pre-eminent means of projecting force rapidly at global ranges. We will expand our precision strike capability to maximize cross-domain integration, including a range of alternative weapons effects including some that may be temporary or reversible.

- **Operate globally while minimizing vulnerable forward deployments.** Develop capabilities to enable full-spectrum effects in and through cyberspace, from space, or using air platforms and sensors with global range.
- **Provide rapid or immediate effects and assessment of our actions**, using all sources of information including multi-domain and open-source data.

Command and Control. Our C2 model will need to be agile enough to integrate air, space, and cyberspace effects delivered directly and remotely and by different Services or agencies. We need to develop a networked, agile, and self-organizing system to achieve measured effects at the right place and time. We must:

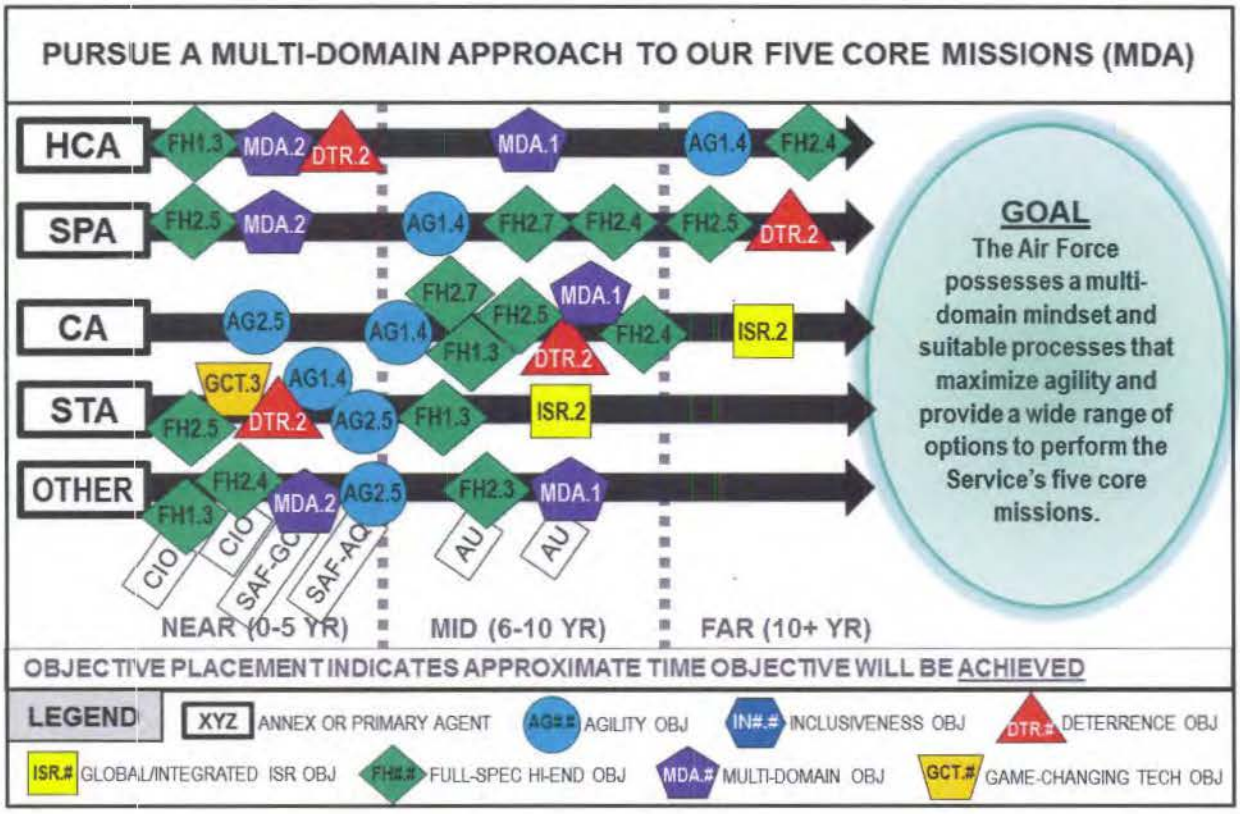
- **Fully integrate effects** achieved through the space and cyberspace domains into planning and targeting at all levels, and be prepared to integrate effects achieved through land and maritime domains as a Joint Task Force.

- **Increase flexibility of C2.** As well as multi-domain integration within traditional theater air operations centers (AOCs), we must be able both to permit more widely distributed control and execution, and also to inform and direct efforts centrally at the theater and national levels.
- **Ensure resiliency of our networks** by exploiting developments in self-healing and adaptive systems and proactive defense against attack from all domains, especially cyberspace.
- **Develop the ability to integrate air, space, and cyberspace effects delivered by any Service in support of the theater campaign.** This will require more agile approaches to C2 in environments where freedom of maneuver and communications are contested or denied. This includes not only technological achievement, but also more flexible thought for operational and tactical-level execution.
- **Develop new and innovative methods** to overcome the increasing adversary challenges to our command and control networks.

Table 11: Goal and Objectives Supporting a Multi-Domain Approach	Action				
	HCA	SPA	CA	STA	Other
MDA. The Air Force possesses a multi-domain mindset and suitable processes that maximize agility and provide a wide range of options to perform the Service's five core missions.					
MDA.1 Orient the Air Force to a mindset that intuitively considers multi-domain options when solving complex problems, to include development of doctrine and TTPs.	MID		MID		AU: MID
MDA.2 Reappraise existing compartmentalization practices and eliminate institutional barriers to empower Airmen and organizations to employ multi-domain approaches.	NEAR	NEAR			SAF/GC: NEAR

MDA Contributing Objectives:

- ***AG1.4*** *Combine training across multiple mission sets, including integrated LVC venues and operator-in-the-loop M&S, in order to cultivate Airmen trained in agile and robust decision-making to devise multi-domain solutions to complex problems in uncertain, contested environments.*
- ***AG2.5*** *Establish an agile capability development framework that leverages credible and defendable knowledge resulting from development planning and experimentation activities to inform the strategic planning and programming process decisions.*
- ***DTR.2*** *Develop, test and create additional non-nuclear capabilities that deter a wide range of adversaries, including non-state actors, and assure allies & partners. Consider low-cost measures that generate high-cost adversary responses.*
- ***ISR.2*** *Develop a robust, survivable, secure architecture to connect and integrate ISR operations across all domains, ensuring that collection and analytic systems (including non-traditional ISR platforms and sensors) and users can collaborate seamlessly.*
- ***FH1.3*** *Strengthen capabilities that enable freedom of action in cyberspace, and enhance our ability to deny the same to adversaries.*
- ***FH2.3*** *Improve Air Force command and control doctrine and implementation through study, wargaming, and exercises to validate best practices that embrace variable models of centralization/decentralization, organization, and execution.*
- ***FH2.4*** *Improve flexibility and commonality of our C2 and communications to integrate air, space, and cyberspace effects delivered by different Services or agencies.*
- ***FH2.5*** *Ensure rapid, robust global mobility by developing and maintaining smart and adaptive global and theater distribution networks to ensure the most efficient movement and positioning of materials, and by leveraging advanced design and manufacturing.*
- ***FH2.7*** *Provide resilient installations, infrastructure, and combat support capabilities that enable the Air Force to project power rapidly, effectively, and efficiently.*
- ***GCT.3*** *Execute a broad, balanced, and integrated S&T Program responsive to near-, mid-, and far-term Air Force priorities.*


PURSUE A MULTI-DOMAIN APPROACH TO OUR FIVE CORE MISSIONS (MDA)
HCA
SPA
CA
STA
OTHER
GOAL
The Air Force possesses a multi-domain mindset and suitable processes that maximize agility and provide a wide range of options to perform the Service's five core missions.
NEAR (0-5 YR)
MID (6-10 YR)
FAR (10+ YR)
OBJECTIVE PLACEMENT INDICATES APPROXIMATE TIME OBJECTIVE WILL BE ACHIEVED
LEGEND
XYZ ANNEX OR PRIMARY AGENT
AG#.# AGILITY OBJ
IN#.# INCLUSIVENESS OBJ
DTR.# DETERRENCE OBJ
ISR.# GLOBAL/INTEGRATED ISR OBJ
FH#.# FULL-SPEC HI-END OBJ
MDA.# MULTI-DOMAIN OBJ
GCT.# GAME-CHANGING TECH OBJ

VECTOR: CONTINUE THE PURSUIT OF GAME-CHANGING TECHNOLOGIES

Section Overview. The purpose of this strategic vector is not to identify specific technologies that may become game-changers, but instead outline a strategic approach and the supporting elements necessary to bring forth the next generation of game-changing capabilities. Game-changers do not result solely from technology, but rather from the specific ways in which a technology is applied in an operational capability—and how such capabilities are employed. Key elements necessary to cultivate game-changing capabilities include innovative people, ideas and concepts, experimentation, and an active, engaged leadership:

- **Innovative people are essential for an innovative organization, and these individuals should be discovered and developed to serve on experimentation teams.**
- **Ideas and concepts come from casting a wide net to catch as many good ideas from as many sources as possible and then making many small investments to yield research concepts and prototypes to experiment with in small venues like wargames or exercises to develop operational applications.**
- **Experimentation, through a "campaign of experiments," allows teams to explore new ideas and capability concepts through an iterative process and develop the insights that produce innovative solutions to a problem.**
- **Active, engaged leadership must be willing to take risk in exploring and championing new ideas and allow ourselves to fail cheaply and adapt early.**

Many of these elements exist in the Air Force today. However, we must build upon them to improve our ability to remain at the forefront of harnessing breakthroughs that shape our future.

Fostering Game-Changing Approaches and Technologies. The technological advantage the Air Force has maintained since its inception was not predestined. It was the result of a strategic choice to explore and mature new technologies balanced with an understanding that military problems will never have final or universal solutions. Only through a constant pursuit of science and a rapid adoption of innovation can the security of the Nation be maintained. The story of our Air Force is a prime example of the innovative application of game-changing approaches and technologies. Our history testifies to our ongoing quest to exploit new advances from the jet engine to nuclear weapons, space, stealth, cyberspace operations and remotely-piloted systems in new approaches. We must continue to pursue radical improvements in technology in order to maintain the asymmetric advantage over adversaries. Game-changing capabilities typically result from a technological approach applied to a military problem that radically alters the balance of power between potential adversaries. As mentioned in the Air Force Strategy, hypersonics, nanotechnology, directed energy, unmanned systems, and autonomous systems each offer promising possibilities. However, in the future we will generate new combinations of technologies and domains we cannot yet describe, or even imagine, that will shape the way our Service provides airpower. We will

forge ahead on a path of innovation to achieve strategic agility – breaking paradigms and leveraging technology. The pace of change drives the imperative for agility, which implies anticipation over reaction and shaping over responding.

People. Innovation is the result of insightful, collaborative interactions that occur when exceptional people are brought together in creative environments. We must develop innovation catalysts that leverage creative people throughout the entire Air Force who are passionate about innovation in specific fields and capitalize on their natural interests and talents. Few people are naturally innovative, and the ones who are may be overlooked for opportunities to contribute effectively because they often see things differently than the rest of their organization. This can place them at odds with the organization and stifle their voice. True innovators can be recognized as people who work best in environments where risk, openness, and idea-sharing are the norm; where ideas outrank seniority; where being wrong is not a failure; where learning is recognized as a continual process; and who have a sense of urgency, energy, and optimism. They challenge their own ideas as much as those of others and continually push new ideas and approaches for doing things. A process for discovering and cultivating such people is essential for an innovative organization, and these individuals should be candidates to serve on experimentation teams.

Ideas and Concepts. Innovative organizations actively seek ideas from the broadest possible base. New ideas must be sought out and given an audience, regardless of the originator's position in the organization. We must cast a wide net to catch as many good ideas from as many possible sources while being fully aware that innovation often comes from outside traditional DoD sources. This requires actively seeking ideas from the private sector, including from non-DoD affiliated firms, small businesses, academia, and international communities. Few ideas will represent viable innovations on their own in the form in which they are proposed. However, they may contain a key concept or insight that, when combined with other ideas, can lead to a clearer understanding of what might be possible or provide an entirely new approach to solving a problem. They may even lead to the solution of a completely different problem. Innovations usually do not directly result from the original ideas themselves. Instead, they are the product of putting ideas into an experimentation environment where creative teams of technologists and operators can combine, explore, and develop them to discover any hidden insights. As a result, innovative ideas and concepts should not be constrained by current doctrines or requirements of current solution approaches. Nor should they be assessed by their performance in relation to measures established for completely different solution approaches. Most new ideas will perform worse than accepted solution paths being explored from the current *status quo*. An innovation becomes the preferred solution approach only when it is understood in terms of the new CONOPS in which it will operate and in the context of new measures appropriate for that CONOPS.

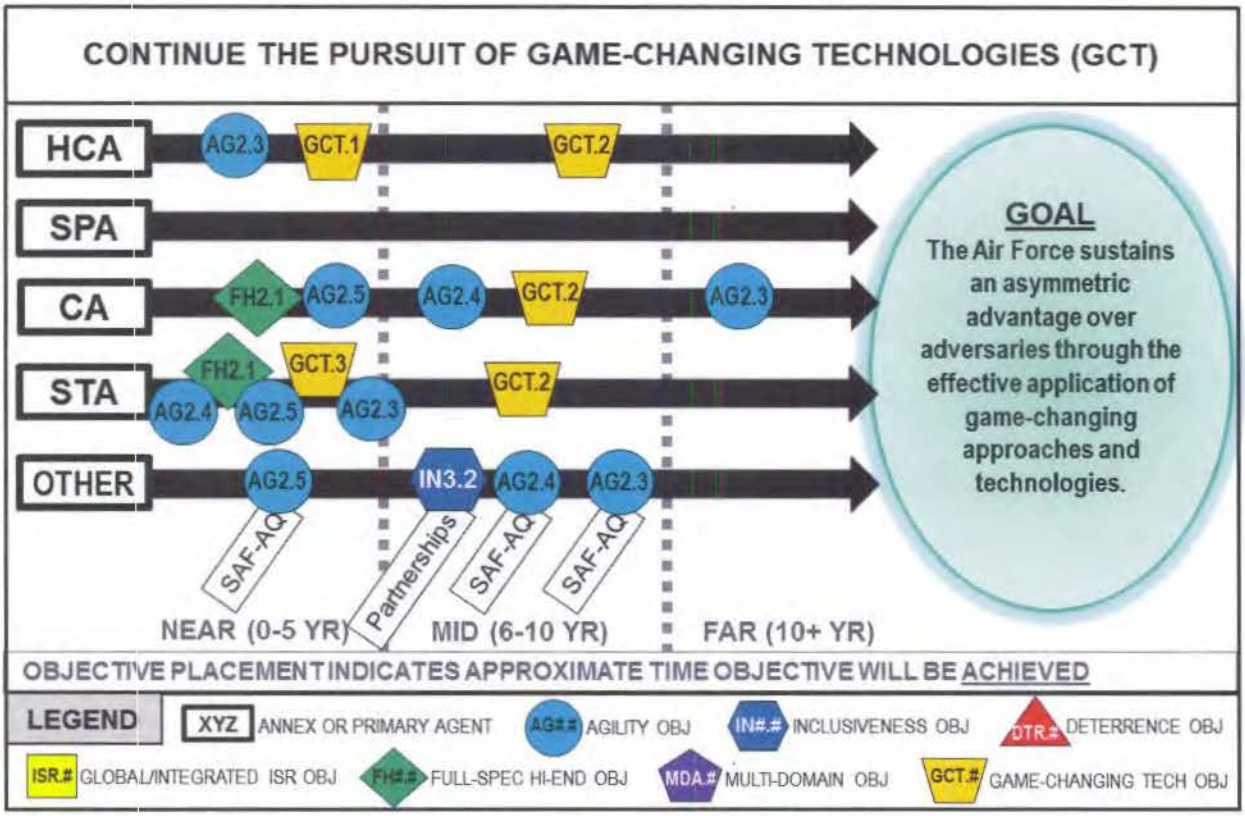
We will mature promising technologies by making many small investments. Through our people and their connections, we will gain access to paradigm-changing capabilities while they are still nascent. This presents an opportunity to either adapt emerging ideas to our purpose or provide a requirement to innovators based on operational needs. This interaction will yield research concepts and prototypes with which we can experiment in small venues like wargames or exercises to develop operational applications. By injecting S&T opportunities into experimentation campaigns and development planning efforts, we will increase the speed of development and assess the utility of new concepts earlier in the process. Although the Air Force will make small investments in many promising technologies, only a small fraction may pay off. This operating methodology is prevalent, proven, and successful in the private sector, and works on the same principle as classic venture capital endeavors. For instance, investors in

Silicon Valley expect in advance that only 10 of 100 startup investments might turn a future profit or return on investment. Of those 10 profitable ventures, one might succeed in a spectacular way in which the investment pays off 10,000 to 1. By exploring innovative concepts and technologies to deepen our knowledge and understanding of their potential, we can make these investments more intelligently.

Experimentation. A "campaign of experiments" is the process by which experimentation teams explore new ideas and capability concepts for the interplay between technologies and CONOPS, develop the insights that produce a deep understanding of potential future environments, and discover combinations that provide innovative solutions to a problem. For any given problem, the campaign is a sequence of challenge-based experiments that progresses from a typically simple initial venue to a final one in which the proposed solution can be understood in an operational context. Frequent experimentation with analysis and sharing of results are keys to achieving system-wide (or multi-system) innovations. Over the course of the campaign, the succession of experiments explores increasingly deeper aspects of the problem to develop a clearer understanding of approaches to potential solutions. This understanding will inform Air Force strategic planning and S&T investments. It will help answer key questions regarding which promising technologies we invest in, given limited resources. It will also provide a greater level of confidence that those investments will ultimately pay off and under what conditions.

Active, Engaged Leadership and Institutional Mindset. An institutional mindset shift is required. The Air Force must be willing to take risk in exploring and championing new ideas, despite the fact that multiple failures may precede success. We must evolve culturally to value the learning outcomes and progress gained from failed attempts. We must allow ourselves to fail cheaply and early to adapt and avoid subsequent catastrophic failure. We must not permit the risks associated with change to overshadow the more detrimental risks of stagnation. The Air Force has the unique opportunity to model this approach, which offers a relatively inexpensive, low-risk way to seize opportunities and pursue game-changing technologies. Leadership should encourage and facilitate interactions among organizations, maintain the momentum of change, and resist any institutional inertia or resistance that clings to narrowly-focused, non-integrated, single-domain solutions and processes at the expense of potentially more promising AF-wide, multi-domain options.

Table 12: Goal and Objectives Supporting Game-Changing Technologies	Action				
	HCA	SPA	CA	STA	Other
GCT. The Air Force sustains an asymmetric advantage over adversaries through the effective application of game-changing approaches and technologies.					
GCT.1 Increase the technical acumen of all Airmen to enable greater innovation and experimentation.	NEAR				
GCT.2 Provide senior leadership with timely S&T options, best matched to the security environment, that maintain or advance asymmetric advantages in air, space, and cyberspace and that inform and accelerate capability development through experimentation campaigns and developmental planning efforts.	MID		MID	MID	
GCT.3 Execute a broad, balanced, and integrated S&T Program responsive to near-, mid-, and far-term Air Force priorities.				NEAR	
GCT Contributing Objectives: • ***AG2.3*** *Develop an "agile acquisition" mindset that challenges bureaucratic inertia, streamlines processes, implements continuous improvement, and reduces risk through prototyping and new engineering development models.* • ***AG2.4*** *Incentivize innovative solutions and improve competition in the defense industrial base by providing transparency and stability in requirements and funding, increasing competitive bids, reducing developmental risks, and encouraging partnering with industry.* • ***AG2.5*** *Establish an agile capability development framework that leverages credible and defendable knowledge resulting from development planning and experimentation activities to inform the strategic planning and programming process decisions.* • ***IN3.2*** *Capitalize on the variety of perspectives and expertise resident within think tanks, academia and industry to enrich our understanding of threats and opportunities.* • ***FH2.1*** *Increase emphasis on RDT&E for capabilities that ensure the ability to find, fix, track, target, engage and assess effects against critical target sets in highly contested environments.*					


CONTINUE THE PURSUIT OF GAME-CHANGING TECHNOLOGIES (GCT)
HCA
AG2.3
GCT.1
GCT.2
SPA
CA
FH2.1
AG2.5
AG2.4
GCT.2
AG2.3
STA
FH2.1
GCT.3
AG2.4
AG2.5
AG2.3
GCT.2
OTHER
AG2.5
IN3.2
AG2.4
AG2.3
SAF-AQ
Partnerships
SAF-AQ
SAF-AQ
NEAR (0-5 YR)
MID (6-10 YR)
FAR (10+ YR)
GOAL
The Air Force sustains an asymmetric advantage over adversaries through the effective application of game-changing approaches and technologies.
OBJECTIVE PLACEMENT INDICATES APPROXIMATE TIME OBJECTIVE WILL BE ACHIEVED
LEGEND
XYZ ANNEX OR PRIMARY AGENT
AG#.# AGILITY OBJ
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GCT.# GAME-CHANGING TECH OBJ

GLOSSARY

AETC	Air Education and Training Command
AFSEA	Air Force Strategic Environment Assessment
AOC	Air Operations Center
ARC	Air Reserve Components
AU	Air University
AG	Prefix for Objectives associated with the Agility imperative
AOR	Area of Responsibility
C2	Command and Control
CA	Capabilities Annex
CAG	Commander's Action Group
CFL	Core Function Lead
CFSP	Core Function Support Plan
CIO	Chief Information Officer [refers to SAF-CIO A6]
CONOPS	Concept of Operations
CONUS	Continental United States
CPI	Continuous Process Improvement
DARPA	Defense Advanced Research Projects Agency
DoD	Department of Defense
DTR	Prefix for Objectives associated with the Vector: Provide effective 21st-century deterrence
FH	Prefix for Objectives associated with the Vector: Ensure a full-spectrum-capable, high-end-focused force
FYDP	Future Years Defense Program
GCT	Prefix for Objectives associated with the Vector: Continue the pursuit of game-changing technologies
HAF	Headquarters Air Force
HCA	Human Capital Annex
HSI	Human Systems Integration
IADS	Integrated Air Defense System
IN	Prefix for Objectives associated with the Inclusiveness imperative
ISR	Intelligence, Surveillance and Reconnaissance

ISR	Prefix for Objectives associated with the Vector: Maintain a robust and flexible global integrated intelligence, surveillance and reconnaissance capability
IST	Initial Skills Training
LVC	Live-Virtual-Constructive
M&S	Modeling and Simulation
MAJCOM	Air Force Major Command
MDA	Prefix for Objectives associated with the Vector: Pursue a multi-domain approach to our five core missions
MILPERS	Military Personnel
MPA	Military Personnel Appropriations
O&M	Operation and Maintenance
OSA	Open Systems Architecture
OT&E	Organize, train, and equip
PCP	Planning Choice Proposal
PED	Processing, Exploitation, and Dissemination
POM	Program Objective Memorandum
RDT&E	Research, Development, Testing, and Evaluation
S&T	Science and Technology
SAF/AQ	Assistant Secretary of the Air Force, Acquisition
SAF/IA	Deputy Under Secretary of the Air Force, International Affairs
SAF/GC	Office of the Secretary of the Air Force, General Council
SAF/LL	Legislative Liaison, Office of the Secretary of the Air Force
SMART	Specific, Measurable, Achievable, Realistic, Time-bound [relates to objectives]
SMP	Strategic Master Plan
SP3	Strategy, Planning, and Programming Process
SPA	Strategic Posture Annex
SPG	Strategic Planning Guidance
STA	Science and Technology Annex
TTP	Tactics, Techniques, and Procedures
WMD	Weapons of Mass Destruction