AIR FORCE SPACE COMMAND

STRATEGIC MASTER PLAN FY04 and Beyond

Strategic Master Plan FY04 and Beyond

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FOREWORD

Precision weapons guided to their targets by space-based navigation -- instant global communications for commanders and their forces -- enemy weapons of mass destruction held at risk by a ready force of intercontinental ballistic missiles – adversary ballistic missiles detected within seconds of launch. This is not a vision of the future. This is Space today! AFSPC provides the space and missile capabilities upon which our warfighters have come to depend.

But we can and must do more to fully exploit space, to not only maintain our current military advantage, but also to enable the Chief's vision of achieving "asymmetric advantage through a capabilities-based air and space force." This Strategic Master Plan outlines our plan to achieve this advantage.

Our space team is building capabilities that provide the President with a range of space power options to discourage aggression or any form of coercion against the United States, our allies, and our friends. Our innovative space experts are integrating our current force-multiplying capabilities into virtually all joint military operations. We are working to transform warfighting through robust and pervasive space contributions like the ability to track terrestrial moving targets. We are developing capabilities to control space and maintain our Space Superiority.

AFSPC is a *force provider*, operating our Nation's ICBM force, and a *force enabler* for conventional military forces. Our strategy is to maintain and increase the advantages of our force enabling capabilities while expanding our role as a full-spectrum force provider with new capabilities to deny the advantages of space to our adversaries. Our strategy will enable us to transform space power to provide our Nation with diverse options to globally apply force in, from, and through space with modern ICBMs, offensive counterspace, and new conventional prompt global strike capabilities.

We may not be able to do everything we want to do in space. Technology, budgets and other challenges will limit us, but we will strive to overcome these challenges and limitations. Despite the challenges, we will provide our joint forces with unparalleled space capabilities that will give our forces that "asymmetric advantage." As Guardians of the High Frontier, Air Force Space Command has the vision and the people to ensure the United States achieves Space Superiority today and in the future.

LANCE W. LORD
General, USAF
Commander

28 Oct 02

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1. Introduction

1.1. PURPOSE

Air Force Space Command (AFSPC) creates the Strategic Master Plan (SMP) as the capstone to its two-year Integrated Planning Process (IPP). The SMP presents the AFSPC vision; outlines a strategy to implement this vision; and defines a 25-year plan, integrated across the AFSPC mission areas, to provide the space capabilities required to achieve the vision.

During the IPP, AFSPC works to ensure the SMP is both fiscally and technologically feasible and develops products to provide programming and budgeting guidance for AFSPC and Air Force Materiel Command product centers and research laboratories. The SMP also serves as the foundation for our inputs to Air Staff planning and programming activities.

The SMP presents the AFSPC vision, outlines a strategy to implement this vision, and defines a 25-year plan ... to achieve the vision.

1.2. BACKGROUND

Our space systems and capabilities have become key to our nation's military effectiveness. Without them, our military forces would not enjoy many of the advantages we currently have over our adversaries. Air Force Doctrine Document (AFDD) 2-2, "Space Operations", emphasizes the importance of space. Consider the following words extracted from AFDD 2-2:

> *Just as the advent of airpower greatly enhanced military operations of the time, space forces, likewise, greatly enhance modern military operations across the spectrum of conflict.*
>
> *Air Force doctrine views air, space, and information as key ingredients for dominating the battlespace and ensuring superiority.*
>
> *Effective use of space-based resources provides a continual and global presence over key areas of the world … satellites permanently "forward deployed" add another dimension to the capability of our force's ability to quickly position themselves for employment.*
>
> *Military forces have always viewed the "high ground" position as one of dominance and warfare advantage. With rare exception, whoever owned the high ground owned the fight.*
>
> *This capability (Space) is the ultimate high ground of US military operations.*
>
> *Today, control of this high ground means superiority in information and significant force enhancement. Tomorrow, ownership may mean instant engagement anywhere in the world.*
>
> *Planners should consider integrating future development capabilities, such as the capability to deliver attacks from space, into the campaign plan when determining how best to strike adversary Centers of Gravity (COG). Space force application systems would have the advantages of rapid global access and the ability to effectively bypass adversary defenses.*

It is AFSPC's responsibility to organize, train and equip our forces by developing, acquiring, fielding, and sustaining space systems and capabilities to exploit and control the high ground of

space. AFSPC already has significant space capabilities and a large supporting infrastructure in operation. To help understand these systems and their complexities and to facilitate its train and equip role, AFSPC has organized these capabilities based on the functions they perform into four mission areas and Mission Support as highlighted in Figure 1-1. These mission areas will be used throughout the SMP to present AFSPC's plan to more fully exploit and control space.

Space Force Enhancement
- focuses on capabilities that contribute to maximize the effectiveness of military air, land, sea and space operations

Counterspace
- focuses on capabilities to attain and maintain a desired degree of space superiority by allowing friendly forces to exploit space capabilities while negating an adversary's ability to do the same

Space Force Application
- focuses on missions carried out by weapons systems operating from or through space for holding terrestrial targets at risk

Space Support
- focuses on providing the critical launch and satellite control infrastructure, capabilities and technologies that enable the other mission areas to effectively perform their missions

Mission Support
- functional areas that cut across all of our mission areas and provide the required infrastructure

Figure 1-1: AFSPC Mission Areas and Mission Support

While this SMP has organized AFSPC's force modernization plan into the above mission areas, we also are engaged in the Air Force initiative to define needed capabilities into the seven task forces identified in Figure 1-2. This plan is based on warfighter needs identified prior to the development of these task forces. However, because of the degree of commonality between the two sets of needs, we believe this plan addresses the capabilities required by the task forces. Future versions of the SMP will be based on the set of capabilities required by the task force concepts of operations (CONOPs).

Global Strike
Homeland Security
Global Mobility
S&C4ISR (Space and Command, Control, Communication, Computers, Intelligence, Surveillance, and Reconnaissance)
Global Response
Nuclear Response
Air and Space Expeditionary

Figure 1-2: Air Force Task Forces

1.3. SMP OVERVIEW

In the next chapter, the SMP presents AFSPC's vision by briefly describing AFSPC today, where AFSPC wants to be in 25 years, the basic strategy to get there, and our major thrusts to sustain, modernize, and transform our capabilities. Chapter 3 then presents AFSPC's plan to implement its vision, while the last chapter describes the way ahead and some of the implementation challenges AFSPC may face.

2. AFSPC Vision

Air Force Vision 2020 presents the Air Force's vision to provide *Global Vigilance, Reach, and Power* using the Air Force core competencies as building blocks. To help the Air Force achieve its vision, the AFSPC vision looks 25 years into the future and is summed up as follows:

> **Space warfighting forces providing continuous deterrence and prompt global engagement for America and its allies ... through the control and exploitation of space**

Space warfighting forces are our people, weapon systems and other capabilities that operate and employ space power in, from and through space. When fully and seamlessly integrated with other warfighting forces, space forces extend the reach, precision and intensity of U.S. military power and operations. *Continuous deterrence* and *prompt global engagement* ensures the ability to apply space forces when and where we need them and that our adversary understands the advantage we possess from these forces. We will also provide space support to US warfighters as well as our Allies and ensure our space systems are integrated and usable by coalition forces. *Control and exploitation of space* implies that we can use our space capabilities at our discretion while at the same time denying our adversaries access to space assets at their disposal.

Implementation of this vision requires an understanding of where AFSPC is today as well as a look at how the military environment may change in the future. With this understanding we can envision how AFSPC's future force can contribute to the nation's warfighting team. This future vision will, in turn, allow us to make wise sustainment, modernization, and transformation decisions to achieve that desired end state.

2.1. AFSPC TODAY

Today, AFSPC serves as a **force provider**, operating the Intercontinental Ballistic Missile (ICBM) portion of the Nation's strategic nuclear deterrent forces and as a **force enabler** to conventional forces. Our ICBMs underpin our deterrence posture—we are modernizing them to provide greater capabilities within the New Triad of non-nuclear and nuclear strike capabilities. We are exploring ways to transform our global strike capabilities through the use of new types of responsive launch systems and non-nuclear munitions. From Desert Storm to recent operations in Afghanistan, military operations depend increasingly on space capabilities as force multipliers. Many of our space systems that are critical to the warfighter fall largely within the Force Enhancement mission area, primarily filling supporting roles with communications, positioning and timing, missile warning, and environment monitoring integrated into all aspects of military operations. Information collected from and disseminated through space, as well as the timely and tailored presentation of intelligence from and for space systems, is crucial to monitoring situations and status of forces worldwide, developing courses of action, and determining and engaging targets. AFSPC's space capabilities also are integral to our ability to accomplish precision attacks from standoff locations.

Space capabilities have become **essential** to military operations ... and everyday life.

Space capabilities have become essential to military operations, worldwide commerce and everyday life. Under a constant deluge of evolving technologies, traditional military, civil and commercial capabilities in space are

rapidly converging. Today, space capabilities previously accessible only to military and government users are available to almost anyone able to purchase them. As an example, our Global Positioning System (GPS) has been integrated into military, civil and commercial applications ranging from precision weapons to rental cars. Also, satellite communications continue to experience growth dominated by the commercial sector. This growth is placing increased demands on military launch resources, satellite operations and space situation awareness assets to effectively deploy, manage and protect these capabilities as well as understand the threats posed by potential adversaries.

2.2. CHANGING ENVIRONMENT

Our ability to provide these supporting space capabilities to the warfighter is dependent on our ability to control space. To date, our access to space has been unchallenged, and we enjoy control of space by default. Additionally, our ICBMs and other elements of the strategic Triad will continue to provide the deterrent underpinnings so important to our Nation's National Security Strategy.

While the US does not expect to face a global military peer in the next several decades, the Nuclear Posture Review (NPR) postulates rogue states or "states of concern" could provide a challenge to classical Cold-War deterrence. In addition, we must contend with non-state actors and terrorists who may acquire a "loose nuke" or a so-called "dirty bomb." To deter aggression in this new security environment, the US must possess credible capabilities to project military power and conduct rapid combat operations with a high probability of success across the spectrum of conflict.

A viable prompt global strike capability, whether nuclear or non-nuclear, will allow the US to rapidly strike high-payoff, difficult-to-defeat targets from stand-off ranges and produce the desired effect. This capability provides the US with the flexibility to employ innovative strategies to counter adversary anti-access and area denial strategies. Such a capability will provide warfighting commanders the ability to rapidly deny, delay, deceive, disrupt, destroy, exploit and neutralize targets in hours/minutes rather than weeks/days even when US and allied forces have a limited forward presence. Thus, prompt global strike space capabilities will provide the President and warfighting commanders with flexible options to deter or defeat most threats in a dynamic security environment.

Of equal importance, we also cannot expect to continue to have unchallenged access to our space capabilities. We must be prepared to protect our access to and operations in space. Additionally, the convergence of military, civil and commercial space generates new challenges to protecting our space systems, to capitalize on potential efficiencies in space capabilities, and to create new partnerships. Also, space capabilities are proliferating internationally, a trend that can reduce the advantages we currently enjoy. For example, the European Galileo network of navigation satellites will provide capabilities comparable to our GPS network; however, we will have no control over who has access to the Galileo signal or the accuracies provided.

The benefits we derive from space assets are so commonplace that we depend on space capabilities often without realizing it. Our increasing reliance and dependency also create vulnerabilities. US space dependency is not lost on our adversaries, making us vulnerable to threats that could, in turn, affect our capabilities.

A 1998 National Air Intelligence Center report, *Threats to US Military Access to Space*, provided three key judgments that lend insight to the future access to and threats in space:

- The US military depends on national and commercial space systems of both domestic and foreign (or international consortia) origin. Offensive operations to disrupt or deny access to these systems could seriously affect US warfighting capabilities.
- Space systems are potentially susceptible to offensive counterspace operations.
- Potential adversaries could challenge US access to space by taking advantage of a range of offensive counterspace capabilities within their technological means. These offensive capabilities could include: denial and deception, ground station attack and sabotage, electronic attack, and direct attack on the satellites themselves.

International spectrum allocation is another challenge to our ability to control space. In particular, our satellite communications (SATCOM) systems must have sufficient access to the radio frequency spectrum to support our warfighters. However, the high-value portions of the spectrum have become extremely crowded, and there have been multiple successful efforts to reallocate formerly military-dedicated bands to commercial uses. Increased competition for the available spectrum, together with a high potential for interference from the growing number of commercial emitters, will complicate future satellite design and ground station planning.

Finally, commercial space capabilities exist in many areas that are also useful to the military. Purchasing commercial services to support some of our mission areas may well be the most cost-effective and responsive approach in the future. Understanding the available commercial capabilities and determining which space capabilities must be retained by the military are key to the effective integration of commercial capabilities into military support. Core capabilities must remain as military capabilities while some needs may be satisfied through the purchase of services or partnering with civil and commercial entities. Effective military use of civil and commercial space capabilities will require new partnerships and understanding of commercial and consortia capabilities and operating constraints. These may lead to new policies for sharing civil and commercial space information.

2.3. AFSPC TOMORROW

As we implement our vision to fully exploit space, AFSPC will become a significant **force provider** of counterspace and non-nuclear and nuclear prompt global strike capabilities with even greater **force enabler** capabilities. As depicted in Figure 2-1, our space capabilities are built upon a structure where the uppermost portions of Force Enhancement and Force Application are dependent on a solid foundation. While our ultimate goals are truly to “exploit” space through Space Force Enhancement and Space Force Application missions, as with other mediums, we cannot fully “exploit” that medium until we first “control” it. The needed foundation, therefore, consists of the space access and infrastructure provided by the Space Support and Mission Support areas along with the Counterspace capabilities (Space Situation Awareness, Defensive Counterspace, and Offensive Counterspace) required to control space and ensure Space Superiority.

We cannot fully **exploit** space until we **control** it

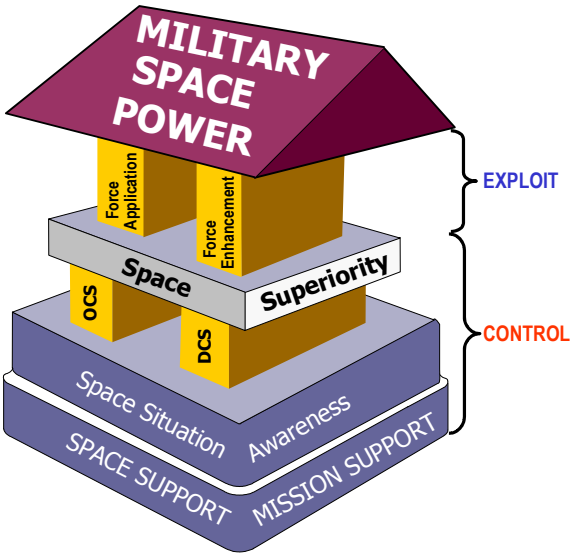

Figure 2-1: Pillar of Space Capabilities

To date, our use and control of space has essentially gone unchallenged allowing us to focus largely on Force Enhancement to support the warfighter. This "default space control" will not continue in the future as potential adversaries come to better understand the great advantages our space capabilities provide us and recognize how our increasing dependence on space represents a vulnerability they may be able to exploit.

Our challenge as we move to the future is to strengthen the base of the pillar with robust launch, satellite control, Space Situation Awareness (SSA), and infrastructure along with the supporting elements of Offensive and Defensive Counterspace (OCS and DCS) to ensure continued control of space, which will enable us to more fully exploit space through improved Force Enhancement and Force Application capabilities.

2.4. STRATEGY AND OBJECTIVES

As we look to the future, our basic strategy is to **modernize** and **transform** our existing capabilities while we work to develop revolutionary new capabilities to hold an asymmetrical advantage over any adversary. To do so, the following objectives guide our efforts:

- Fully integrate space systems into the warfighter's package to enable rapid, effective engagement of adversary forces worldwide.
- Provide real-time, global situation awareness to combatant commanders through space-based systems.
- Modernize ICBMs and develop non-nuclear prompt global strike capabilities to provide adaptable deterrence and coercive space power.
- Transform space from being focused on Force Enhancement to also providing a range of Force Application capabilities beyond ICBMs in, from and through space.
- When challenged, pursue superiority in space through robust space situation awareness, and defensive and offensive counterspace capabilities.
- Define and execute an affordable space system acquisition strategy that balances current system sustainment and modernization with transformation.
- Achieve acquisition excellence by conceiving and developing space systems that are responsive to the warfighter's needs/concepts of operation and fully integrated into land, sea, air, and space warfighting systems.
- Pursue integration of national (e.g., national technical means), civil (e.g., NOAA/DMSP, etc.) and commercial (e.g., IKONOS, SPOT Image) space operations practices and capabilities where beneficial to military operations.
- Develop partnerships with other Services and Agencies focused on technology development, understanding of space requirements, and, where appropriate, cooperative space systems developments.

2.5. MAJOR THRUSTS

AFSPC will emphasize four major areas to meet tomorrow's challenges.

First, AFSPC will continue to provide a formidable, modern nuclear deterrent capability . . . one that is robust and adaptable to meet the threats of a dynamic security environment. AFSPC will also work to develop and expand its prompt global strike capabilities. Leveraging the technologies of our modern deterrence forces, we will develop other responsive space strike capabilities that, with strong defenses and highly responsive infrastructure, will afford the Nation a range of options to address any current or future threat.

Second, AFSPC will increase space support to the warfighter. Afghanistan, like previous conflicts, has shown we need increased SATCOM capacity to support the warfighter, especially with the increasing need to "reach back" to capabilities and resources not forward deployed. This increased need ranges from passing ever more targeting and battle damage assessment information among the various theater warfighters to enabling a commander to plan, direct, coordinate and control his forces in an increasingly integrated, high operations tempo environment. An improved GPS capability is needed to ensure US and Allied combatants continue to receive reliable, secure navigation data despite hostile attempts to jam navigation signals. Improved tactical missile warning is needed to provide timely notification of potential threats from rapidly deployed, easily hidden tactical missiles. Finally, a space-based ground moving target indicator (GMTI) capability to detect and track targets will fill a void when aircraft are denied access to a particular region or there is a need for a wider viewing area to complement aircraft systems.

Third, AFSPC will ensure our nation maintains space superiority. Historically, the US has enjoyed an advantage in employing space capabilities. However, future adversaries will understand this advantage and may develop capabilities to disrupt or destroy our space capabilities. We must be able to protect ourselves in space and strike back if necessary. The first step prior to any action is to be aware of the adversary's intent including direct support through "intelligence for space". Therefore, SSA must be a top priority as it is the foundation for all counterspace actions. As the battlefield extends into space, defensive and offensive countermeasures must be developed to ensure the US can control space, the ultimate high ground.

Finally, AFSPC will explore more responsive systems for access to space to support evolving satellite responsiveness requirements. These will include launch capabilities with the potential to reduce launch costs by an order of magnitude or more. Robust, responsive launch systems will improve support to the warfighter and likely will become essential in future counterspace operations. Responsive payloads must complement responsive launch systems with the ability for rapid payload initialization to realize an operational capability in support of war, crisis or contingency.

THRUSTS

Provide Nuclear Deterrence While Modernizing and Pursuing Transformational Prompt Global Strike Capabilities

Integrate Space Capabilities in Joint Military Operations

- More SATCOM capacity
- Secure/reliable navigation; NAVWAR
- Tactical missile detection and warning
- GMTI

Continued Space Superiority

- Improved SSA (space/terrestrial)
- DCS capabilities to protect our critical assets
- OCS capabilities to deny adversaries

Assured Space Access

- Robust, responsive launch
- Responsive payloads with rapid initialization

3. Implementing the Vision

3.1. PROCESS

AFSPC employs the two-year Integrated Planning Process to develop and update its 25-year, capabilities-based, investment strategy for correcting current shortfalls, modernizing its capabilities, and achieving its long-term vision. During the IPP, AFSPC performs 1) a strategy-to-task assessment to define the operational tasks it is expected to perform over the next 25 years, 2) a needs analysis to identify shortfalls as well as the new capabilities it will require, 3) a solution analysis of potential capabilities to satisfy those needs, and 4) an investment analysis to develop a fiscally-constrained, technologically-achievable, integrated capabilities investment strategy for the future. The results of the IPP are documented here in the SMP.

A Mission Area Team (MAT) performs the IPP for each of the mission areas while HQ AFSPC/XPX facilitates integration across the mission areas.

The plan outlined below represents the output from the IPP concluded in 2001. Constraints and assumptions used include:

- Cost-constrained the plan to approximately 3% per year real growth (beyond inflation) in Total Obligation Authority (TOA)
- Increased mission support investments 3% per year
- Applied a 5% “infrastructure support cost” for planned future systems to serve as an investment wedge for anticipated, but as yet unknown, life cycle costs
- Mandated follow-ons must be funded and in place to ensure no gaps in current capabilities (e.g., must have Advanced EHF operational before Milstar end of life)

3.2. THE PLAN

Though the IPP results in a plan integrated across the mission areas, we present the plan here by mission area to better show the progression from current to future capabilities. Figure 3-1 lists the mission areas and their related sub-missions along with the Mission Support functional areas.

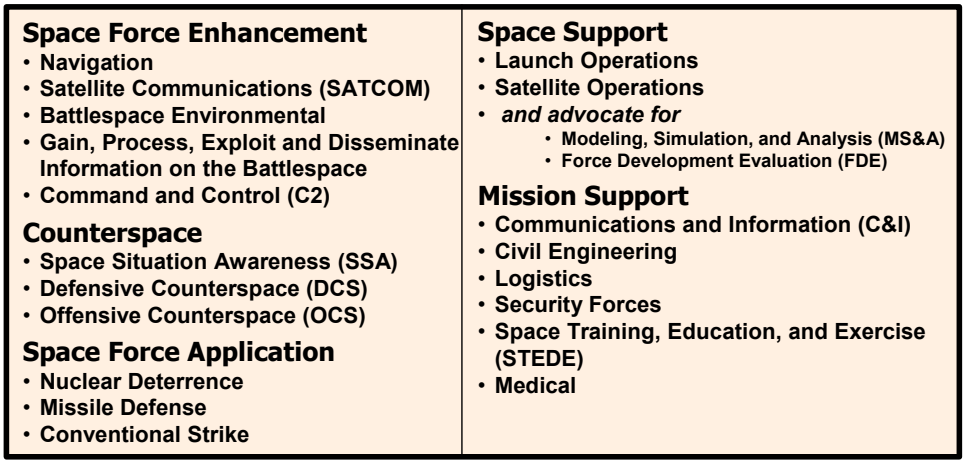

Figure 3-1: Mission and Sub-mission Areas

For each mission area we briefly outline current capabilities and then present a rolled-up investment roadmap highlighting our plan to *sustain* and *modernize* these capabilities while we work to *transform* space capabilities to achieve our vision. We also provide a top-level assessment of how well the plan satisfies the needs identified for the mission area and the Task Forces. (Refer to the appropriate Mission Area Plan – MAP – for a full list of defined needs, and a higher-fidelity roadmap than presented here.)

Space Force Enhancement

Current Capabilities

Space Force Enhancement currently provides the capabilities to gather and disseminate timely, highly accurate information that enables situation awareness and effective command and control (C2) for commanders and joint forces at all levels. The US military has become extremely reliant on our Space Force Enhancement capabilities. For example, our current space-based navigation system, GPS, provides precision positioning and timing information that has become integral to the full spectrum of military operations, from basic navigation and synchronization of communications to basing, targeting, and terminal guidance of precision weapons. Our SATCOM networks (e.g., Defense Satellite Communications System – DSCS, Global Broadcast System – GBS, and Milstar) provide military forces with the near-global, high-capacity voice, data and video communications links essential to successful military operations. Weather satellites, including Defense Meteorological Satellite Program (DMSP) satellites, along with terrestrial and space environment sensors, provide battlespace environment forecasts vital to operational planners. And our current surveillance capabilities provided by the Gain, Process, Exploit, and Disseminate sub-mission area consist of satellites (Defense Support Program – DSP) and ground stations that warn us of missile attacks.

Plan Objectives

Figure 3-2 highlights AFSPC's time-phased roadmap for the Space Force Enhancement mission area. One of AFSPC's top near-term goals is to maintain and improve our Space Force Enhancement capabilities through the near- and mid-terms to ensure uninterrupted support to our joint military forces. Additionally, we will work to develop revolutionary advancements in our ability to gain, process, and exploit targeting information and to disseminate this information to our military forces.

Sustain and Modernize

AFSPC will *sustain* its current navigation and timing, communications, missile warning, environmental monitoring, and C2 systems supporting our military forces. Since many of our systems are aging, we will also work through the near and mid-term to *modernize* these capabilities by replacing and upgrading our current systems to provide even better support to our warfighters while making our systems more efficient, easier to maintain, and more survivable. The following are examples of this evolutionary approach:

- Gain, Process, Exploit, and Disseminate Information – In the near-term AFSPC will sustain the DSP program and field the Space-Based Infrared System (SBIRS) program to modernize and ensure an uninterrupted and improved missile launch warning capability.
- Battlespace Environment – The transition from the DMSP to the joint DoD, National Oceanic and Atmospheric Administration (NOAA), and NASA National Polar-orbiting Operational Environmental Satellite System (NPOESS) and its follow-on systems maintains and improves our ability to monitor the terrestrial environment to meet global and theater weather forecasting needs.

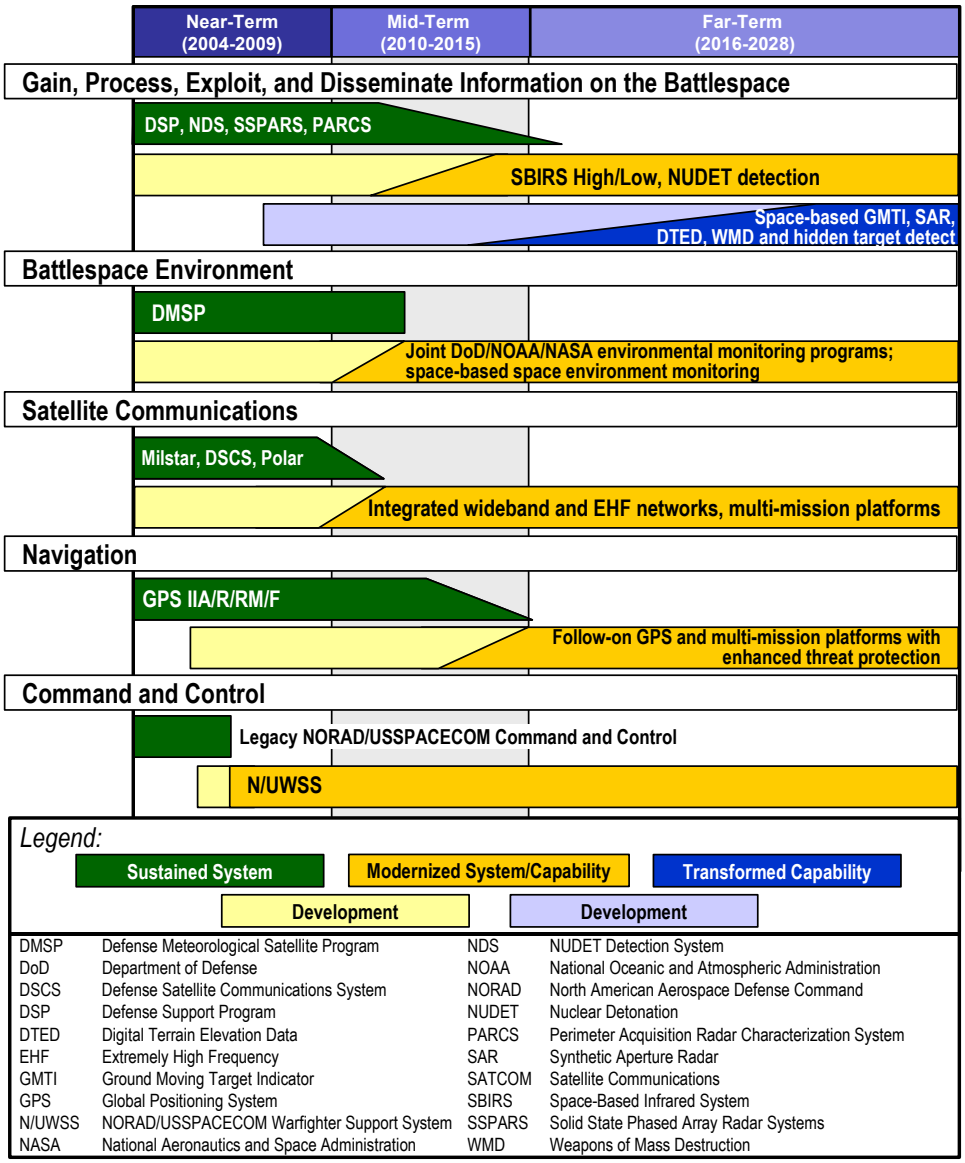

Figure 3-2: Space Force Enhancement Roadmap

- SATCOM – The need for SATCOM already exceeds the capabilities of our current architecture. The transition from DSCS and Milstar to an integrated system-of-systems approach for follow-on wideband and EHF networks will significantly increase the capacity and data rates of the current networks. AFSPC, the National Reconnaissance Office (NRO), and NASA are working together to develop a comprehensive SATCOM capability called the Transformation Communications Enterprise (TCE). TCE integrates multiple planned intelligence, military, and civil space communications systems to vastly improve combined capabilities.
- Navigation – GPS IIA and IIR satellites will be replaced with follow-on systems to sustain current capabilities and to add improvements such as a Navigation Warfare (NAVWAR) capability to protect GPS use by the US and its allies while denying use to our enemies.
- Command and Control – The evolutionary development of the NORAD/USSPACECOM Warfighter Support System (N/UWSS) will integrate the C2 for all the current and

projected missions of NORAD and USSTRATCOM into a single functional system rather than the current mission-unique, "stove-piped", collection of systems.

Transform

In addition to this evolutionary approach, we will also begin working to transform some of our Space Force Enhancement capabilities to provide greatly enhanced support to our military forces. Most notably, we will develop:

- An initial space-based GMTI capability in the mid-term to provide our global strike forces with the ability to identify and track moving targets anywhere on the surface of the earth
- A far-term capability to detect, locate, identify, and track a wide range of strategic and tactical targets we currently have minimal ability to detect, such as nuclear, biological, and chemical weapons and activities; hidden targets; and air moving targets

Plan Assessment

This plan provides significantly improved and some new Force Enhancement capabilities by the far-term. We are able to maintain and evolve our critical surveillance, SATCOM, navigation, and C2 capabilities to keep pace with growing requirements. The plan also calls for us to develop new capabilities to detect and track targets from space that currently can only be done from terrestrial-based systems that are unable to exploit the vantage point that space provides or cannot be done at all. However, as detailed in the Space Force Enhancement MAP, the plan does leave some needs unfulfilled. These include the inability to globally detect and track airborne targets and only a partial ability to satisfactorily monitor and forecast the terrestrial and space environments.

By improving our Force Enhancement capabilities as outlined in this plan, we will significantly enhance our support to all the Task Forces, and specifically to the Global Strike and S&C4ISR Task Forces. Enhanced detection of hidden or moving targets, and the ability to pass that knowledge to any warfighter requiring it, are just two examples of how AFSPC will support these Task Forces.

Counterspace

Current Capabilities

AFSPC's Counterspace capabilities are limited. AFSPC employs the Space Surveillance Network (SSN) consisting of a combination of ground-based radars, telemetry monitoring stations, and optical sensors to perform the space surveillance portion of Space Situation Awareness. Our SSN systems detect, identify, characterize, track, and catalog high interest space objects; however, they cannot consistently detect small debris; have limited capability to detect, track, and characterize objects in high-altitude orbits; do not meet all our timeliness requirements; and have gaps in coverage.

Though protective (survivability) countermeasures have been added on a case-by-case basis to US and allied satellite systems for protection against jamming, signal interception, and nuclear detonation, AFSPC currently has no active DCS systems. Likewise, AFSPC has limited abilities to detect, characterize, locate, and assess attacks or intrusions into friendly space operations, or to negate counterspace systems; limited ability to prevent an adversary from exploiting some AFSPC systems; and the Air Force has no current OCS capability to negate an adversary's use of space, short of a conventional munitions attack on a terrestrial node.

Plan Objectives

Figure 3-3 highlights AFSPC's time-phased roadmap for the Counterspace mission area. In the near-term, AFSPC will work to enhance its SSA capabilities and field initial DCS and OCS capabilities. In the mid-term, we will continue to field additional DCS systems in a layered architecture from terrestrial to low earth orbit (LEO), medium earth orbit (MEO), and geosynchronous orbit (GEO) based systems. As we do so, we will work with the NRO to ensure all of our nation's critical space-based capabilities are protected. In the far-term, the maturation of the SSA architecture and technology development for DCS and OCS systems will result in AFSPC's ability to provide near real-time assessments of the entire space environment and provide a full spectrum of DCS and OCS capabilities against a wide range of space and missile threats.

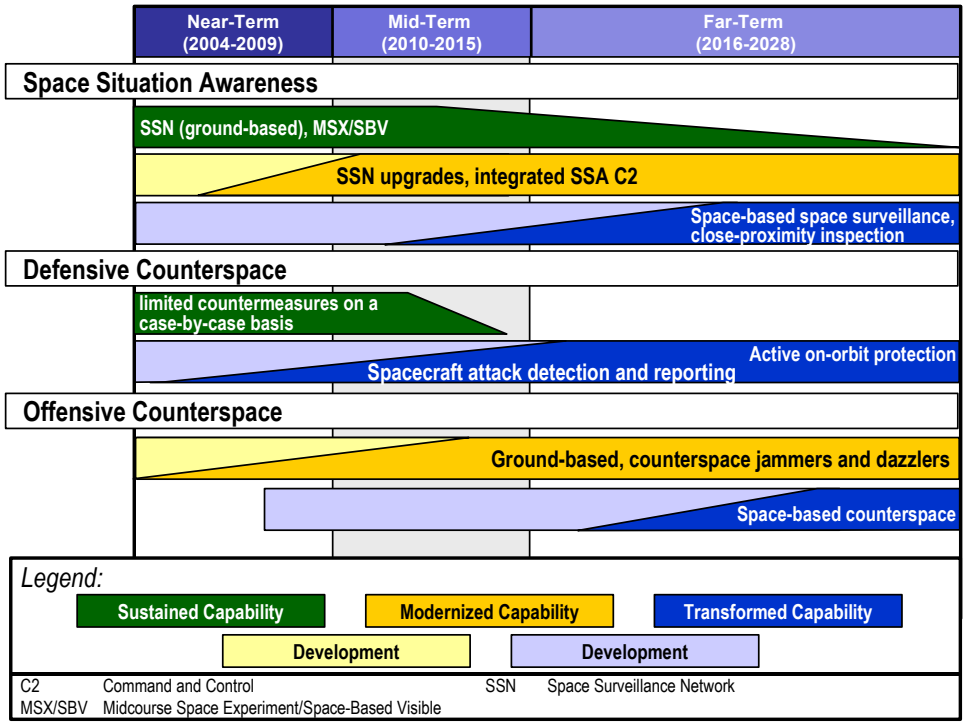

Figure 3-3: Counterspace Roadmap

Sustain and Modernize

AFSPC will *sustain* its current space surveillance capabilities through a variety of Service Life Extension Programs (SLEPs) and other modifications to systems such as the Eglin Radar, GLOBUS II, and the Ground-based Electro-Optical Deepspace Surveillance System (GEODSS). AFSPC will also strive to *modernize* by enhancing its SSA capabilities and developing initial ground-based DCS and OCS capabilities. Examples include:

- SSA – AFSPC will augment the SSN with an upgrade to the Haystack radar and a new ground-based X-band phased array radar network to improve detection of small objects. AFSPC will also develop an integrated SSA C2 architecture based on concepts such as the SSA Core System (SSACS).
- DCS – AFSPC will enhance spacecraft survivability by improving tactics, techniques, and procedures and ensuring future spacecraft incorporate survivability measures.

- OCS – In the near- and mid-term, AFSPC will field initial ground-based OCS capabilities such as the mobile Counter-Communications (jams uplinks/downlinks), Counter-ISR (blinds optical sensors), and Counter-Navigation (prevents adversaries from using space-based navigation signals) systems.

Transform

AFSPC will also work to *transform* its Counterspace capabilities by fielding revolutionary space-based capabilities through the mid- and far-term. Examples include:

- Space-based space surveillance systems including close-proximity inspectors that are capable of providing details of space objects unattainable by ground-based systems
- An attack detection and reporting architecture based on the Rapid Attack Identification, Detection, and Reporting System (RAIDRS) concept capable of detecting, characterizing (identify and geo-locate), and reporting attacks on space systems, and assessing the resulting mission impacts
- Active on-board and/or on-orbit capabilities to protect our space systems from man-made or environmental threats
- Full spectrum, space-based OCS systems capable of preventing unauthorized use of friendly space services and negating adversarial space capabilities from LEO to GEO altitudes

Plan Assessment

Space superiority is essential to our vision of controlling and fully exploiting space to provide our military with an asymmetric advantage over our adversaries. This plan goes a long way towards establishing and maintaining US space superiority. It greatly improves on AFSPC's current space surveillance capabilities by providing robust SSA as well as a full spectrum of DCS and OCS capabilities by the far-term. However, should threats to our space systems or from adversary space systems increase significantly in the near-and mid-terms, we may need to accelerate our plans to field counterspace capabilities.

This portion of our plan is key to the success of every Task Force. Our ability to prevent disruption of navigation and timing signals will be critical to the precision strike capability required by the Global Strike, Air and Space Expeditionary, and Global Response Task Forces. Protecting our lines of communication is critical to passing weather data and other information required to support the airlift capabilities required by the Global Mobility Task Force. And denying our adversaries' ability to gain information on CONUS-based locations will play a key role in the Homeland Security Task Force.

Space Force Application

Current Capabilities

Today's Space Force Application capabilities focus on nuclear deterrence, which is provided by nuclear-armed Minuteman III and Peacekeeper ICBMs and the infrastructure to maintain and protect them. The December 2001 Nuclear Posture Review (NPR), directs the Air Force to "extend the life of Minuteman (MM) III until 2020, while beginning the requirements process for the next-generation ICBM". We are aggressively modernizing our existing nuclear forces while developing an advanced, flexible and responsive, global deterrent force. However, AFSPC currently has no options for conventional, low-risk prompt global strike, which would provide a range of selective lethality. Likewise, AFSPC has no Target and Engagement (T&E) capability to fulfill Force Application's portion of the Missile Defense mission.

Plan Objectives

Figure 3-4 highlights AFSPC's time-phased roadmap for the Space Force Application mission area. Nuclear deterrence has been one of our nation's highest priorities and will continue to be a top priority for AFSPC through the far-term. In the near-term, several MM III life extension programs currently underway will provide for a "capable, reliable, and fully supportable Minuteman III missile over the next two decades". We will also proceed with developing a conventional prompt global strike capability to be fielded in the mid-term. Finally, we will continue to explore options for providing a T&E capability in the far-term to support Missile Defense.

Sustain and Modernize

Though Peacekeeper will be deactivated in the near-term, we will *sustain* Minuteman III with life extension programs through 2020 and *modernize* with a follow-on ICBM. Additionally, we will sustain and modernize the Minuteman infrastructure (e.g., communications networks, command center, and security programs) to maintain a vital nuclear deterrence through the far-term.

Transform

Conventional, non-nuclear prompt global strike from and through space and space-based T&E for missile defense will *transform* AFSPC Space Force Application capabilities. Most notably, a conventional strike capability, possibly in the form of a Common Aero Vehicle (CAV) launched by a ballistic missile, air launch system, or a space launch system, will provide the President and the Secretary of Defense with a range of space power options for deterrence and flexible response when time is absolutely critical, risks associated with other options are too high, or when no other courses of action are available.

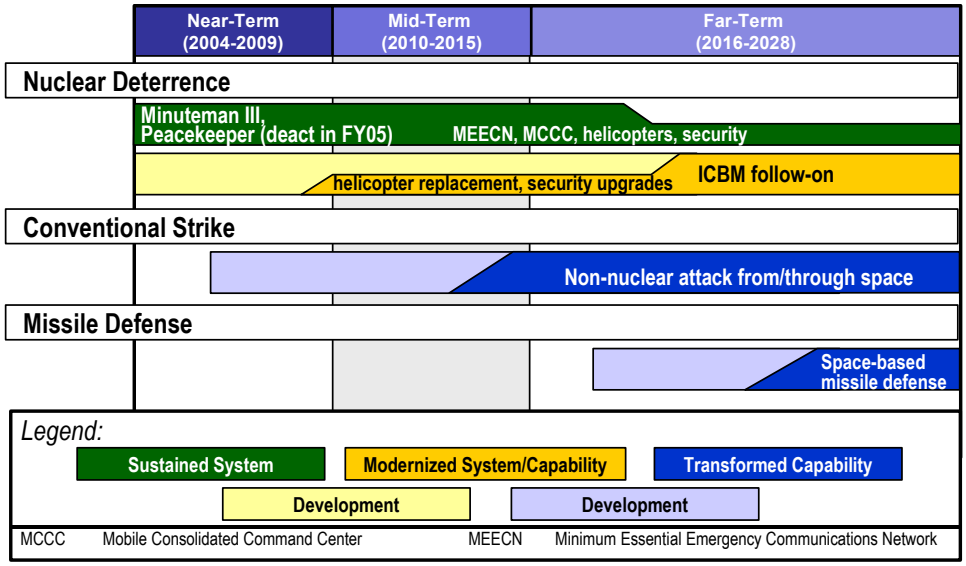

Figure 3-4: Space Force Application Roadmap

Plan Assessment

The Space Force Application mission area's top priority is to sustain a credible nuclear deterrence. This plan meets this priority while also providing new, non-nuclear options in the mid- and far-terms. The plan, however, does not provide for a T&E capability for missile defense until the far-term. Should global missile threats increase more rapidly, the US may need AFSPC to provide this capability sooner than planned.

Our ability to implement this portion of the plan will be key to the success of the Air and Space Expeditionary, Global Response, and Nuclear Response Task Forces. A credible, viable nuclear deterrent force forms the cornerstone of the Nuclear Response Task Force. This plan provides for the sustainment and modernization required to ensure that deterrent force remains viable and credible. And the precision conventional prompt global strike capability we are planning for will provide critical support to the Global Strike and Air and Space Expeditionary Task Forces.

Space Support

Current Capabilities

AFSPC employs the Air Force Satellite Control Network (AFSCN), comprised of worldwide common user and program-unique ground stations, to monitor and control its satellites and their payloads. AFSPC's current fleet of launch systems is comprised of a mix of medium- and heavy-lift expendable boosters. To launch these boosters, AFSPC maintains the Launch and Test Range System (LTRS) consisting of the Eastern Range controlled from Cape Canaveral AFS, FL, and the Western Range controlled from Vandenberg AFB, CA.

Space Support is also the advocate for the command's Modeling, Simulation, and Analysis (MS&A) and Force Development Evaluation (FDE) efforts. Minimal MS&A capabilities currently exist for quantifying the military value of space systems, particularly mission and campaign warfighting contributions. Models such as GUARDIAN and LIGHTNING support Military Utility Analysis, and recent developments in THUNDER and System Effectiveness Analysis Simulation (SEAS) allow some analyses of operating constraints and resource allocation of space assets across multiple theaters.

AFSPC conducts FDE over the life of fielded systems to evaluate the operational effectiveness and suitability of AFSPC systems. Unfortunately, many space systems are placed into operations without undergoing a thorough test and evaluation program, and current FDE capabilities are ad hoc and mission-unique.

Plan Objectives

Figure 3-5 highlights AFSPC's time-phased roadmap for the Space Support mission area. The objective for Satellite Operations is on-demand operations execution of any US government space asset to support the full spectrum of worldwide military operations. In Launch Operations, AFSPC will strive to provide robust and responsive spacelift to support both routine and time-sensitive military operations and to develop capabilities to reposition, recover, and service assets on orbit. We will also develop an FDE infrastructure for evaluating space systems prior to declaring them operational. The resulting FDE infrastructure, combined with institutionalized and integrated MS&A capabilities, will be used to evaluate existing and emerging space concepts, strategy, doctrine, tactics, and utility.

Sustain and Modernize

AFSPC will *sustain* and *modernize* its current Satellite and Launch Operations into the far-term when it will transition to advanced capabilities. Examples of this approach include:

- Satellite Operations – AFSPC will sustain the AFSCN through the Satellite Control Network Sustainment and Modernization (SCNSM) program and implement a robust operational training capability. In the far-term, AFSPC will transition the AFSCN to an integrated satellite control client/server-type network with global connectively providing on-demand satellite control operations. This network will be shared by all US

government space organizations to support primarily launch, early orbit, and anomaly resolution operations at low data rate.

- Launch Operations – Early in the near-term, AFSPC will complete the transition from its current fleet of expendable medium- and heavy-lift launch vehicles (Atlas, Delta, and Titan) to the Evolved Expendable Launch Vehicle (EELV) family. AFSPC will sustain the EELV into the far-term when advanced launch systems and upper stages will be fielded to provide routine launch that is robust and responsive. Additionally, AFSPC will continue to explore launch systems with the potential of providing one or more orders of magnitude reductions in costs to enhance our space access and responsiveness.
- MS&A/FDE – AFSPC recently created the AFSPC Space Analysis Center (ASAC) to be its *Center of Excellence* for MS&A. The establishment of the ASAC consolidated dispersed analysis capabilities and will help establish a robust toolset for the command. AFSPC will also establish the Space Test, Training, Exercise, and Evaluation Range to improve its FDE capabilities and to ensure AFSPC systems are properly evaluated prior to being fielded. The Space Warfare Center 595th Space Group, the 576th Flight Test Squadron, and the 17th Test Squadron are the primary units tasked to execute the FDE mission.

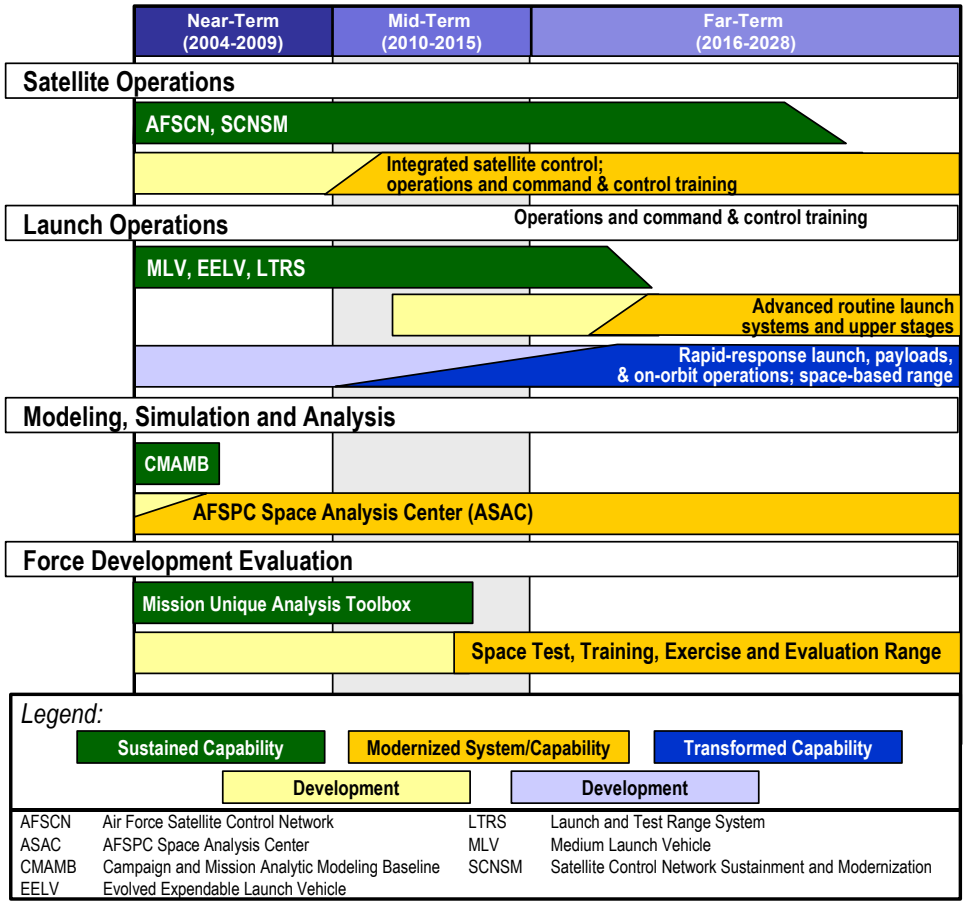

Figure 3-5: Space Support Roadmap

Transform

AFSPC will begin working in the near-term to field several *transformed* Space Support capabilities in the mid- and far-terms. Examples include:

- Robust and responsive space lift and rapid satellite initialization providing, quick-turn, on-demand, assured space access for time-sensitive military operations
- Orbital transfer vehicles to reposition or boost on-orbit assets
- Space-based elements of the launch and test range to increase coverage while reducing operations and maintenance costs associated with the ground-based infrastructure

Plan Assessment

The plan satisfies nearly all the Space Support needs by the far-term. An exception is the need for increased launch vehicle throw weight, which this plan does not fulfill. AFSPC will evolve the AFSCN into a national resource that is integrated, robust, responsive, and able to support faster spacecraft initialization times to provide on-demand operations execution. For routine launch operations, EELV adequately covers our medium and heavy payload needs, but a mid-term assessment of EELV affordability will be required to determine the future direction of routine spacelift. The plan also supports the development of robust and responsive launch systems for on-demand launch operations focused on affordability, rapid response, and payload capacity for warfighter operations. Also, space-based launch and test ranges provide the increased capacity, greater launch coverage, and concurrent operations that new responsive launch systems will require.

Our Space Support plans will have the greatest impact on the Global Strike, Global Mobility, S&C4ISR, Global Response and Air and Space Expeditionary Task Forces. A responsive launch and on-orbit checkout capability will allow us to quickly enhance our ISR coverage of a new area of interest or expand our lines of communications to support Global Strike, S&C4ISR, and Global Mobility. And as the “kick down the door” phase transitions to a more protracted conflict, responsive launch, combined with responsive payloads, will enable us to support the Air and Space Expeditionary Force through sustainment and replenishment of our space assets

Mission Support

Responsibilities and Functional Areas

The AFSPC Mission Support functional areas provide the infrastructure, sustainment, security and trained personnel needed to perform our missions around the globe. They cut across all four mission areas to ensure effective and efficient operations.

- ***Communications and Information (C&I) Infostructure*** provides and sustains information assurance, positive command and control of strike resources, management, transport capabilities, and the communications and computer hardware and software resources for our forces worldwide.
- ***Civil Engineering*** provides, operates, maintains and restores installations, facilities housing and environment needed to support our space and missile forces.
- ***Logistics*** provides the organizations, systems and processes needed to maintain the mission readiness of AFSPC’s fielded systems.
- ***Security Forces*** provides policy guidance, specialized training and personnel to maintain our physical security of nuclear ICBMs, spacelift facilities, space system ground assets, C2 and other facilities.

- ***Space Training, Education, and Exercise (STEDE)*** ensures that all our mission forces are trained and exercised in the technologies they find on the job and that all command levels are "space-educated."
- ***Medical*** ensures a fit and vital military force, operates the TRICARE managed care system, and provides health care to deployed forces and to all other beneficiaries.

Plan Highlights

Our ability to develop and maintain 21st Century air and space warriors and infrastructure is just as crucial to the success of the our vision as employing new technologies and advanced concepts. Improvements in Mission Support effectiveness and efficiency enhance the ability of the mission areas to meet their goals and objectives. Planned Mission Support improvements are detailed in the Mission Support Plan, but some of the objectives are highlighted here:

- The C&I Infostructure will transform to provide seamless information accessibility and sharing to support all operations, C2, and mission support functions.
- Civil Engineering, Logistics, Security Forces, and Medical functional areas will continue to evolve to satisfy new infrastructure, security, and personnel needs.
- STEDE capabilities of the future will transform to provide a virtual, global, synthetic battlespace in which space forces, fully integrated with other US and allied forces, will not only train but also rehearse missions.

4. The Way Ahead

4.1. CHALLENGES

Achieving our vision of fully exploiting the advantages of space while ensuring space superiority will not be easy. We will face many challenges, a few of which are summarized here.

People

As previously stated, the US military enjoys a degree of potential asymmetric advantage via our space capabilities that is not widely understood. Space is deeply imbedded in our warfighting capabilities, and we have come to rely on our space capabilities almost as a fact-of-life utility. But much more awaits us. Training and education are crucial in fostering a cultural change as we move from an air force to an integrated air and space force. We must help commanders and the forces they command become confident and competent users of space capabilities. Likewise, we must help our space people better understand air, land, and sea operations to become better force enablers and eventually force providers. Additionally, AFSPC must ensure the proper mix of reserve, guard, active duty, civilians and contractors to develop and provide the space capabilities called for by our vision. AFSPC must guide the development of space professionals capable of developing new doctrine and concepts of operations for space launch, offensive and defensive space operations, power projection in, from and through space, and other military uses of space while operating some of the most complex systems ever built and deployed.

Partners

The need for space systems is growing and a more open flow of ideas and cross-link of capabilities is essential. We can achieve our vision only if we work together with other organizations toward a unified goal. We must continue to establish and maintain key partnerships with the NRO, NASA, NOAA, Defense Advanced Research Projects Agency (DARPA), Missile Defense Agency (MDA), industry, other Major Commands (MAJCOMs) and Services, and applicable international agencies.

Funding

Funding is one of our biggest challenges. We must continually expend the vast majority of our budget to sustain and modestly modernize our current capabilities, leaving little to develop our planned transformational capabilities. Even though this plan is based on an assumed real growth in TOA of 3% per year, we still must delay the development of many of our desired advanced capabilities to later in the planning horizon or leave them out of the plan altogether. Should this real growth in TOA not materialize, the best we may be able to do is sustain our current capabilities, failing to develop the capabilities we need to fully control and exploit space.

While a larger budget is needed for our space forces, more space Science and Technology (S&T) dollars also are needed for key mission-enabling technologies. The focus must be on finding the most cost-effective and mission-enabling mix of air and space capabilities. We also must evaluate divestiture options. As additional capabilities migrate to space, some of our older ground-based systems must be divested. Also, some of our existing capabilities may be better supplied through other competitive sources.

Industrial Base and Technology Linkage

A strong US industrial base is essential to help provide us with the technology, people, acquisition, and logistics bases we need to support the development our envisioned space

capabilities. Traditionally, Air Force Materiel Command has been our agent for acquisition and industrial base issues and has represented our needs to the labs. However, the Secretary of Defense directed HQ AFSPC to prioritize, oversee and direct space-related lab work.

Along with overseeing the acquisition base, we'll use the Command's IPP products to establish near-, mid- and far-term priorities for S&T. We also will interface with the NRO and NASA to create a comprehensive space S&T program.

S&T is integral to our planning process. Most of the future concepts and solutions included in this plan depend on the development of new technologies and the maturation of existing technologies. In some cases, needs are addressed by partial concepts or solutions, or not satisfied until the far-term. Our S&T programs should continue to pursue revolutionary concepts and next generation capabilities to address these shortfalls.

Additionally, the Space Warfare Center (SWC) plays a critical role in leveraging current national, military, and commercial technologies to address warfighter requirements. SWC divisions like the Space Battlelab, Air Force Tactical Exploitation of National Capabilities (TENCAP), Fusion Center, Space Application and Integration Facility (SPAIF), and others routinely partner with private industry, military labs, agencies, commands, commanders, and national organizations to bring rapid solutions to address warfighter requirements.

Policy/Treaty

To fully develop and exploit potential Counterspace and space-based Space Force Application capabilities, some US policies and international treaties may need to be reviewed and modified.

Counterspace

There are presently no formal US policies preventing development or deployment of Counterspace capabilities. In actuality, the President's National Space Policy, the DoD Space Policy, and the Secretary of Defense's policy on Counterspace all require development of "negation" capabilities and deployment as needed to ensure freedom of access and operations in space. However, President and/or the Secretary of Defense approval will be required for any employment of force against enemy space assets, including ground and link segments of space systems. The major question in fielding OCS systems is the political will to do so.

Conventional Strike

Our vision calls for prompt global strike space systems with the capability to directly apply force from or through space against terrestrial targets. International treaties and laws do not prohibit the use or presence of conventional weapons in space. Policy makers are working to create conditions for a New Triad that includes non-nuclear global strike weapons. Non-nuclear prompt global strike space capabilities are being studied. Our Nation will decide whether or not to pursue the development and deployment of conventional, space-based systems for global strike to fully exploit the advantages of space.

Strategic Deterrence

As part of US-Russia initiatives to further reduce their respective nuclear arsenals, the US will continue to reduce its nuclear forces. The US has reviewed its nuclear strategy and force structure and developed a prudent drawdown schedule to insure we maintain our national security needs. In keeping with our international obligations, as well as our national security requirements, all three legs of the nuclear triad will undoubtedly see further reductions. The latest nuclear posture review (NPR) speaks of the need to maintain enough capabilities to

provide both a credible and adaptable deterrence posture. The NPR cautions that the "United States should prepare for deterrence failure even as it strives to deter." Thus, our deterrence capabilities should be responsive to and adaptable in a dynamic security environment. Therefore, we remain committed to ensuring our ICBM arsenal is modernized to maintain an effective force and deterrent posture while pursuing a new generation of responsive prompt global strike capabilities.

4.2. CONCLUSIONS

With each military conflict and crisis, the contribution of space systems to the joint warfighter continues to grow. These systems with, their ultimate "high ground" access, their ability to rapidly forward deploy with a minimal logistics tail, and their relative immunity from threats are invaluable assets to the land, sea, and air warfighters. This SMP describes AFSPC's strategy to maintain and increase the "force multiplier" advantage these systems provide while expanding the role of space in future conflicts as a significant force provider. This is being done through a carefully considered blend of sustainment, modernization and transformation and is accomplished within AFSPC's mission area construct (Force Enhancement, Force Application, Counterspace, Space Support and Mission Support). In the near future, this plan will be transformed to be compatible with Air Force's capability-based task force structure.

No matter how it is structured, the end result is a fiscally reasonable and technologically achievable plan--one that produces a fully integrated Air and Space Force that is persuasive in peace, decisive in war and preeminent in any form of conflict.

APPENDIX A: REFERENCES

America's Air Force Vision 2020, 2002

National Space Policy, September 1996

Nuclear Posture Review, December 2001

Air Force Executive Guidance, January 1996

USAF Scientific Advisory Board Study, "A Space Roadmap for the 21st Century Aerospace Force," November 1998

DoD Directive 3100.1, Space Policy, July 1999

DoD Instruction 3100.15, January 2001

Joint Vision 2020, July 2001

USSPACECOM Vision for 2020, 1997

AFSPC Space Force Enhancement Mission Area Plan, FY 04 and Beyond

AFSPC Space Support Mission Area Plan, FY 04 and Beyond

AFSPC Space Force Application Mission Area Plan, FY 04 and Beyond

AFSPC Counterspace Mission Area Plan, FY 04 and Beyond

AFSPC Mission Support Plan, FY 04 and Beyond

AFSPC 2002 Strategic Master Plan (SMP), February 2000

AF Annual Planning and Programming Guidance (APPG), 1999

NORAD Vision 2010, December 1999

The Report of the Commission to Assess United States National Security Space Management and Organization (or The Rumsfeld Space Commission Report), January 2002

APPENDIX B: ACRONYMS AND ABBREVIATIONS

A

ABM	Anti-Ballistic Missile
AFB	Air Force Base
AFDD	Air Force Doctrine Document
AFS	Air Force Station
AFSCN	Air Force Satellite Control Network
AFSPC	Air Force Space Command
APPG	Annual Planning and Programming Guidance
ASAC	AFSPC Space Analysis Center

C

C&I	Communications and Information
C2	Command and Control
CAV	Common Aero Vehicle
CMAMB	Campaign and Mission Analytic Modeling Baseline
CONOPS	Concept of Operations
CONUS	Continental United States

D

DARPA	Defense Advanced Research Projects Agency
DCS	Defensive Counterspace
DMSP	Defense Meteorological Satellite Program
DoD	Department of Defense
DSCS	Defense Satellite Communications System
DSP	Defense Support Program
DTED	Digital Terrain Elevation Data

E

EELV	Evolved Expendable Launch Vehicle
EHF	Extremely High Frequency

F

FDE	Force Development Evaluation

G

GBS	Global Broadcast System
GEO	Geosynchronous Orbit
GEODSS	Ground-based Electro-Optical Deepspace Surveillance System
GMTI	Ground Moving Target Indicator
GPS	Global Positioning System

H

HQ	Headquarters

I

ICBM	Intercontinental Ballistic Missile
IPP	Integrated Planning Process
IPT	Integrated Product Team
ISR	Intelligence, Surveillance and Reconnaissance

L

LEO	Low Earth Orbit
LTRS	Launch and Test Range System

M

MAJCOM	Major Command
MAP	Mission Area Plan
MAT	Mission Area Team
MCCC	Mobile Consolidated Command Center
MDA	Missile Defense Agency
MEO	Medium Earth Orbit
MEECN	Minimum Essential Emergency Communications Network
MLV	Medium Launch Vehicle
MM	Minuteman
MS&A	Modeling, Simulation, and Analysis
MSX/SBV	Midcourse Space Experiment/ Space-Based Visible

N

N/UWSS	NORAD/USSPACECOM Warfighting Support System
NASA	National Aeronautics and Space Administration
NAVWAR	Navigation Warfare
NDS	NUDET Detection System
NOAA	National Oceanic and Atmospheric Administration
NORAD	North American Aerospace Defense Command
NPOESS	National Polar-orbiting Operational Environmental Satellite System
NPR	Nuclear Posture Review
NRO	National Reconnaissance Office
NUDET	Nuclear Detonation

O

OCS	Offensive Counterspace

P

PARCS	Perimeter Acquisition Radar Characterization System

R

R&D	Research and Development
RAIDRS	Rapid Attack Identification, Detection, and Reporting System

S

S&C4ISR	Space and Command, Control, Communication, Computers, Intelligence Surveillance & Reconnaissance
S&T	Science and Technology
SATCOM	Satellite Communications
SAR	Synthetic Aperture Radar
SBIRS	Space-Based Infrared System
SCNSM	Satellite Control Network Sustainment and Modernization
SEAS	System Effectiveness Analysis Simulation
SLEP	Service Life Extension Program
SMP	Strategic Master Plan
SPAIF	Space Application and Integration Facility
SSA	Space Situation Awareness
SSACS	Space Situation Awareness Core System
SSN	Space Surveillance Network
SSPARS	Solid State Phased Array Radar Systems
STEDE	Space Training, Education, and Exercise
SWC	Space Warfare Center

T

T&E	Target and Engagement
TCE	Transformation Communications Enterprise
TENCAP	Tactical Exploitation of National Capabilities
TOA	Total Obligation Authority

U

US	United States
USSPACECOM	United States Space Command

W

WMD	Weapons of Mass Destruction