



SPACE AND MISSILE SYSTEMS CENTER

LEADING MILITARY SPACE DEVELOPMENT INTO THE 21ST CENTURY

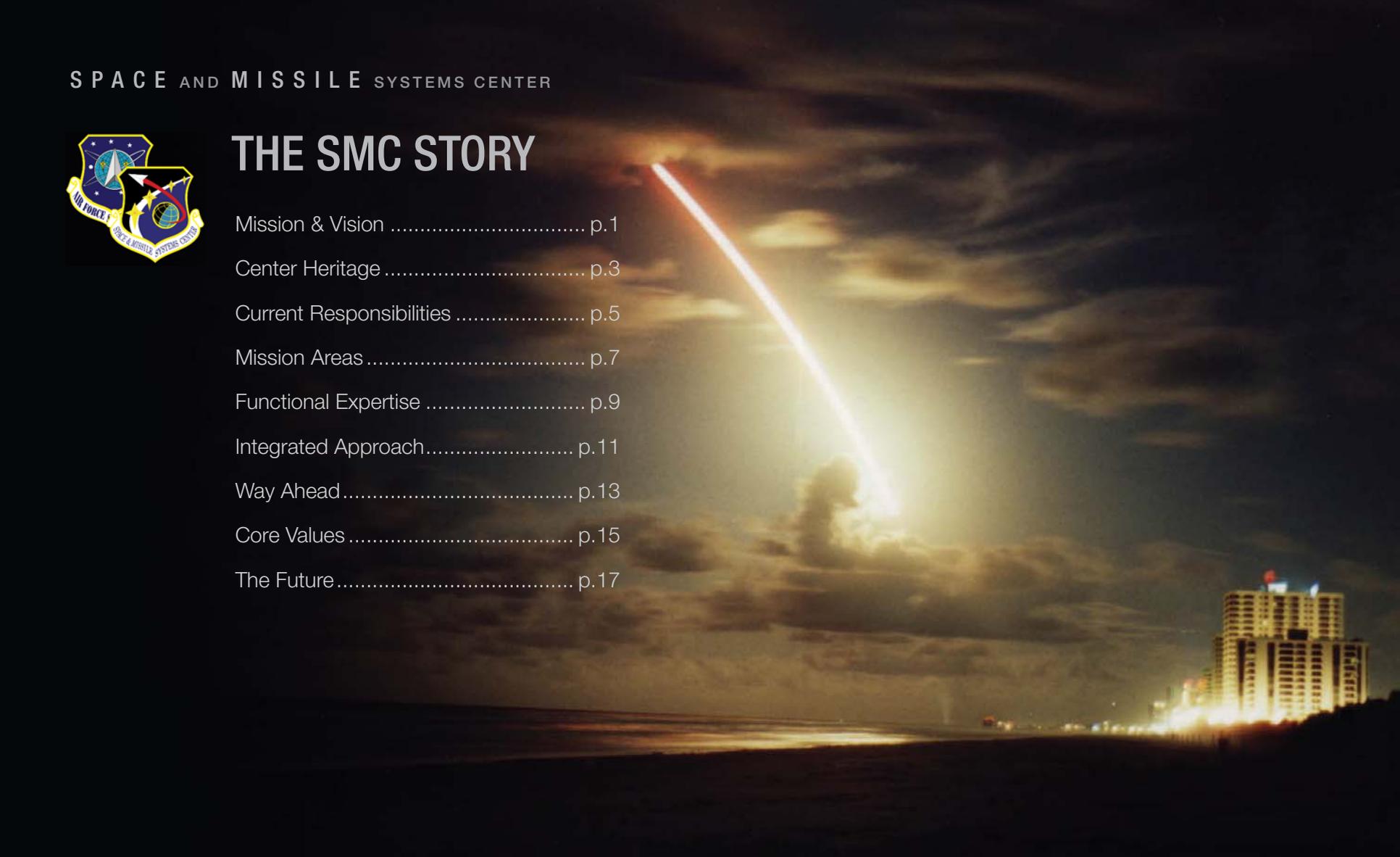






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INTRODUCTION

The Space and Missile Systems Center (SMC) is the Air Force's product center for the development and acquisition of space and missile systems. The Center was established in 1954 and has served as the leader in military space systems development since the earliest days of the space age. Today SMC leads the development, acquisition, fielding, and sustainment of the world's best military space and missile systems. The systems SMC develops and acquires enable Air Force Space Command (AFSPC) to deliver unparalleled capabilities to national decision makers, asymmetric operational advantages to joint warfighters, and economic and technological benefits to the nation. As a widely respected and trusted provider of critical military space and missile systems, SMC supports Air Force Space Command in enhancing national security and shaping how our nation fights and wins its wars.

This document describes SMC's mission, history, organization, responsibilities, management processes, and organizational culture. The document illustrates both how SMC develops and acquires cutting-edge military space and missile systems across a broad spectrum of mission areas, assigned programs, and areas of responsibilities and how SMC plays a role as a major actor in the nation's overall space community. The document begins by defining the core mission and vision of SMC and discussing the Center's evolution to its current organization. It then highlights SMC's responsibilities, mission areas, functional expertise, and integrated management approach. It concludes by looking forward to the priorities and enduring values that will shape the future of the Space and Missile Systems Center and the Air Force's joint space warfighting capabilities.



MISSION & VISION

The Space and Missile Systems Center is responsible for managing cutting-edge space systems across their entire life-cycle, from initial systems concepts and technology development, to systems demonstration and validation, full-scale development and fielding, and sustaining on-orbit and ground capabilities. The Center is responsible for a comprehensive set of military space capabilities across all space mission areas, including force enhancement, space superiority, force projection, and space support. The Center develops and maintains a full range of systems and technical expertise including satellites, payloads, launch vehicles, missiles, ground control systems, user equipment, and ground sensors. These systems provide capabilities such as communications, precision navigation and timing, spacelift, space situational awareness, missile warning, missile defense, weather monitoring, satellite command and control, and land-based nuclear deterrence. By executing these comprehensive mission and lifecycle responsibilities for space and missile systems, SMC provides Air Force Space Command, the joint warfighter, and the nation with unrivaled capabilities twenty-four hours a day, seven days a week, three hundred and sixty-five days a year.

The Commander of SMC is also the Air Force Program Executive Officer for Space (AFPEO-Space) and is responsible and accountable for both directing and executing assigned space development and acquisition programs, as well as developing the processes and expertise to manage these programs and the operation of the Center. To support this role, SMC is organized into line program management organizations and functional management organizations.

The program management organizations – systems wings and groups – are charged with planning and executing major space development and acquisition programs. The systems wings and groups translate operational needs into system requirements and designs, formulate development and acquisition programs to satisfy those needs, and manage and execute programs with industry to develop, produce, field, and sustain space and missile capabilities for user communities. The functional directorates, including engineering, program management, finance, contracting, logistics, and manpower, are charged with developing and maintaining the expertise, processes, and workforce necessary to plan and execute programs today and lead SMC's acquisition enterprise into the future.

SMC employs a robust horizontal integration approach linking multiple programs, functional processes, and management activities together to deliver integrated operational systems that enable joint space warfighting capabilities. SMC is committed to delivering the space systems that AFSPC, the joint warfighter, and the nation require to maintain leadership and security in space.



SMC's mission and vision directly flow from the mission and vision of the Air Force and Air Force Space Command.

The Air Force Mission is to deliver sovereign options for the defense of the United States of America and its global interests - to fly and fight in Air, Space, and Cyberspace.

The Air Force Vision is Global Vigilance, Reach, and Power.

AFSPC's Mission is to deliver space and missile capabilities to America and its warfighting commands.

AFSPC's Vision is be America's space leaders ... delivering responsive, assured, decisive space power.

SMC's Mission is to develop, acquire, field, and sustain the world's best space and missile systems for the joint warfighter and the nation.

SMC's Vision is to be the most recognized, effective, innovative, and respected developer of military space systems.

SMC is a leader in the development and acquisition of military space and missile systems for the Air Force, the Department of Defense, and the nation.

CENTER HERITAGE



The Space and Missile Systems Center has over a half century of unrivaled leadership and achievements in developing and fielding military space and missile systems. Throughout its history, the Center developed a unique organizational culture, development practices, and record of performance. SMC's space development community integrates uniformed military personnel, civil service employees, the Aerospace Corporation (a dedicated Federally Funded Research and Development Center), and technical support contractors. This acquisition workforce is comprised of over 4,500 people with diverse skills and depth of experience in the full range of space development, acquisition, and sustainment. This workforce brings a unique blend of skills to the multifaceted tasks associated with technically complex, high-risk, long-life, high performance space systems. The team continually refines the ingredients and formulas for success in space systems development and acquisition. From its inception, SMC has led the way in systems engineering, concurrent development, systems program management, mission assurance, and risk management.

Birthplace of Military Space

The Space and Missile Systems Center traces its roots to the Western Development Division, activated by Brigadier General Bernard Schriever on July 1, 1954. Its original mission, the development of strategic nuclear missiles for the nation, was soon expanded to include the development, fielding, and operation of the nation's first military satellites and launch vehicles. From the first successful military space launches in the 1950s, rapid progress was made in maturing the technology and know-how to develop and operate reliable and effective systems across a broad array of mission areas. During this period, the Western Development Division underwent multiple reorganizations, until finally being designated in 1992 as the Space and Missile Systems Center.

Creation of Air Force Space Command

On September 1, 1982, Air Force Space Command was established to serve as the Air Force's operational command for military space systems. In the years that followed, the Command gradually assumed operational functions previously performed by SMC field units, including satellite operations, launch ranges, and satellite control networks. SMC maintained its leadership role in the development of space and missile systems in support of the new Air Force Space Command mission but remained part of Air Force Systems Command and subsequently Air Force Materiel Command.



Transformation of Military Space

The end of the Cold War and collapse of the Soviet Union in the early 1990s changed the focus of military space capabilities from strategic to operational and tactical applications and began an unprecedented growth in demand for military space capabilities. Operation Desert Storm demonstrated the far-reaching applications and benefits of space capabilities in joint military operations. At the same time, defense budget reductions, industry consolidation, government and industry workforce reductions, and projected growth in commercial space investment led the national security space community to institute a series of acquisition reforms. Ultimately, these reforms proved to be flawed, and the community experienced a series of launch failures, serious program delays, and cost overruns in the late 1990s. All these factors led to a “perfect storm” within the space enterprise and a call to action to fix systemic problems.

Realignment of the Space and Missile Systems Center

In the early 2000s, a number of studies examined management and organization of the defense space community and space acquisition, including the organizational alignment of the Space and Missile Systems Center. In 2001, the Center was realigned under Air Force Space Command, thus bringing the developers and the operators of military space and missile systems together under one major command. Further, Program Executive Officer (PEO) authority was assigned to the Commander of SMC, consolidating most space development and acquisition responsibilities under a single “dual-hatted” Commander and PEO.

Rebirth of SMC

In the first decade of the new millennium, SMC has aimed to reinvigorate its workforce and its programs to recover from the flaws of the acquisition reforms in the 1990s. SMC has led the “Back to Basics” campaign – an initiative to reestablish rigor and discipline in space systems development. With an intense focus on mission assurance, the Center has rebuilt processes, improved engineering and program management rigor, redeveloped the workforce, reinvigorated partnerships with industry, and implemented engineering and business “best practices.” As part of this initiative, SMC also implemented a “block development” acquisition approach to manage complex systems development. The overall effectiveness of the “Back to Basics” strategy has been demonstrated by the unprecedented level of success in space and missile systems development, launch, and on-orbit performance.



CURRENT RESPONSIBILITIES

Alignment of the Space and Missile Systems Center under Air Force Space Command gives unique responsibilities and opportunities within a single major command to organize, train, and equip space and missile systems in the Air Force from “cradle to grave.” SMC’s responsibilities begin by working with Headquarters Air Force Space Command and the user community to refine operational concepts and requirements; continue with systems definition and program formulation; extend through execution and fielding of systems in concert with industry partners; and ultimately include sustaining systems over their operational lives. To support this full system lifecycle responsibility, SMC develops, manages, and maintains the needed workforce, processes, partnerships, and core competencies to define and execute programs and ensure the Center is ready and able to meet future challenges.



Executing Acquisition Programs

The Commander of the Space and Missile Systems Center is also the Air Force Program Executive Officer for Space (AFPEO-Space) and in this role has overall responsibility, authority, and accountability for executing National Security Space Programs as directed by the Air Force Acquisition Executive. The AFPEO-Space is responsible for executing the full life cycle of activities associated with each of SMC’s programs and does so through specific contracting, financial management, engineering, program management and personnel management authorities and accountabilities, as established by law,

regulations, and policies and as specifically assigned and delegated through the Air Force chain of command and the Department of Defense acquisition management chain.

The first and most important step in systems definition and program formulation is to ensure warfighter requirements and operational concepts are fully understood and translated into system and technical requirements. The SMC Development Planning organization and Space Development and Test Wing develop system concepts, define and advocate system technologies, provide decision-quality analysis, and demonstrate and validate promising new systems that can meet operational requirements in a technically and programmatically effective way. Successful developments, demonstrations, and validations are transitioned into systems wings for operational system development. Program offices are responsible for systems engineering, program management, contract management, and financial

management to ensure successful delivery of required capabilities. During production, testing, and integration, multiple mission stakeholders execute rigorous mission assurance practices, including certification for space launches. Finally, when systems are transitioned into operations, the Center, its systems wings, and its space logistics group manage sustainment for the operational life of each system.

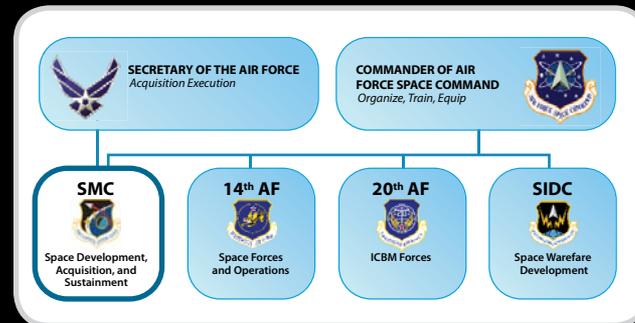
To execute all of these activities, the AFPEO-Space directs and oversees the Space and Missile Systems Center systems wings at Los Angeles Air Force Base, the Space Development and Test Wing at Kirtland Air Force Base, the 526th ICBM Group at Hill Air Force Base, the Space Logistics Group at Peterson Air Force Base, and the 850th Electronic Systems Group at Hanscom Air Force Base.

Leading the Center

The Space and Missile Systems Center is responsible for Los Angeles Air Force Base and organizes, trains, and equips the base and its workforce to ensure successful execution of the space and missile programs in the AFPEO-Space portfolio. In executing these responsibilities, the Center develops and implements critical processes, standards, and capabilities in its core competency areas of program management, systems engineering, development planning, financial management, contracting, mission assurance, and logistics. Maintaining comprehensive and interrelated processes enables SMC to execute programs with high confidence, while supporting and leading others in the space and missile systems development community.

The Center is also responsible for recruiting, training, developing, and retaining a first-class space professional workforce dedicated to excellence in systems development and acquisition and leadership across the space community. The Center provides a wide array of education and training in technical and program management areas and aggressively develops experience and leadership through active career development for all space professionals. SMC also promotes a healthy quality of life by providing a wide variety of services for the SMC workforce, as well as the extended military, dependent, and retired community served by Los Angeles Air Force Base. Additionally, SMC and its 61st Air Base Wing train, deploy, and support military members and families for Air Expeditionary Force deployments and taskings.

Finally, the Center strengthens its partnerships and relationships with key members of the broader space community. To ensure an adequate technology base for space and missile programs, SMC actively pursues comprehensive interaction with industry to develop standards, “best practices,” information sharing, and “benchmarking” with individual companies. To ensure synergy across the full spectrum of the space enterprise, SMC participates in space community forums with partners such as the National Reconnaissance Office, National Aeronautics and Space Administration, National Oceanic and Atmospheric Administration, National Security Agency, and commercial companies. To promote understanding of the military, the Air Force, and the cutting-edge work at SMC, public affairs and outreach organizations work closely with local media and community leaders. All of these activities are aimed at continuing SMC’s leadership of the space and missile systems development community.



MISSION AREAS



The Military Satellite Communications Systems Wing develops, fields, and sustains a full spectrum of space-based global communications capabilities to enable military operations. Communications satellites, such as Milstar, Advanced Extremely High Frequency (AEHF), and Wideband Global SATCOM (WGS), ensure warfighters are always fully connected and able to receive and transmit vital information.



The Global Positioning Systems Wing is a joint service program that develops, fields, and sustains precise, effective, and reliable global positioning and timing systems and services for military, civil, and world-wide users. GPS receivers have been integrated into virtually every piece of military hardware, as well as many civilian systems.



The Launch and Range Systems Wing develops, fields, and sustains expendable launch vehicles and leads launch integration, mission assurance, launch campaigns, and range modernization at the U.S. eastern and western launch ranges. Evolved Expendable Launch Vehicle (EELV) boosters are the latest generation of rockets to place the nation's critical satellite systems into orbit.





The Space Based Infrared Systems Wing develops, fields, and sustains space-based infrared surveillance, tracking, and targeting capabilities for the nation. Space-based global missile warning is vital to both homeland security and missile defense systems.



The Space Superiority Systems Wing develops, fields, and sustains space control capabilities to guarantee space superiority for the nation. Space control systems provide commanders and operational forces with effective space situational awareness, defense, and protection for U.S. and allied space capabilities, as well as offensive counterspace systems to gain and maintain space superiority.



The Space Development and Test Wing develops, tests, and evaluates Air Force space systems, executes advanced space development and demonstration projects, and rapidly transitions capabilities to the warfighter. Groundbreaking efforts developing operationally responsive space capabilities ensure warfighters can continue to rely on a wide range of space assets to accomplish their missions.



The 61st Air Base Wing provides mission and installation support for the Space and Missile Systems Center. The Wing's administrative services, communications support, personnel support, healthcare and fitness facilities, family services, civil engineering, and security forces improve wartime readiness and ensure a healthy quality of life.



In addition to these wings are a number of direct-report groups providing additional systems and integrated mission capabilities. SMC's groups provide weather monitoring systems, satellite control and network systems, missile defense space systems, ICBM systems modernization and sustainment, and lifecycle logistics and sustainment support for a number of organizations.

FUNCTIONAL EXPERTISE

The Space and Missile Systems Center has four core competency areas and strives continuously to improve key processes in each of these areas, as well as develop and retain the necessary skills, experience, and leadership to successfully execute these processes across all programs, mission areas, and activities. SMC applies these processes and skills across the entire system development and sustainment lifecycle.

Program, Financial, and Acquisition Management

SMC supports programs during each of their acquisition phases. At each program's inception, SMC solicits, evaluates, budgets for, and awards contracts which are then managed through the system's lifecycle. During the development phase, SMC establishes and manages each program's baseline, including cost, schedule, performance, and risk parameters. When ready, SMC deploys and transitions systems into operations and sustainment.

Development Planning

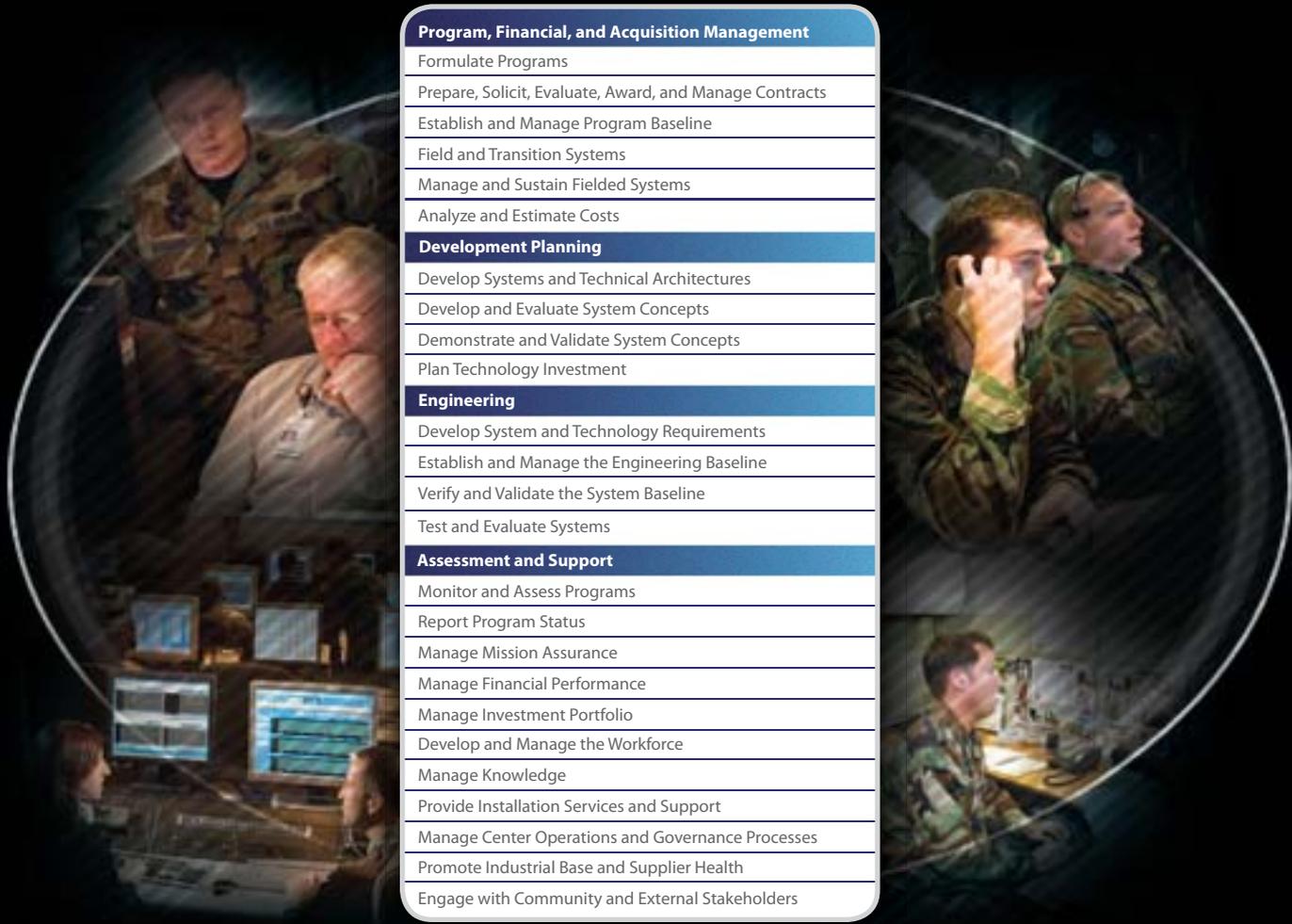
SMC defines, develops, demonstrates, validates, and evaluates system concepts and technologies to prepare them for entry into development and acquisition. SMC also develops coherent technology investment strategies and system architectures to support the Center's capability portfolio. These activities constructively influence decisions affecting future systems.

Engineering

SMC performs systems engineering, technical standards definition and enforcement, and risk management to ensure each system meets its mission capability requirements. The Center establishes, manages, verifies, and validates each system's engineering baseline. SMC also defines and controls each program's system and technical architecture, including establishing and controlling system configuration.

Assessment and Support

SMC provides integrated and independent program monitoring, assessment, and reporting to evaluate each program's progress and deliver 100% mission assurance. To support these and all Center activities, SMC develops its professional workforce, efficiently operates and governs its activities, effectively manages organizational knowledge, and successfully delivers community services to the total base force. SMC also develops relationships with external communities, including industrial suppliers and partners, the local community, decision-makers, media, and the public.



Program, Financial, and Acquisition Management

- Formulate Programs
- Prepare, Solicit, Evaluate, Award, and Manage Contracts
- Establish and Manage Program Baseline
- Field and Transition Systems
- Manage and Sustain Fielded Systems
- Analyze and Estimate Costs

Development Planning

- Develop Systems and Technical Architectures
- Develop and Evaluate System Concepts
- Demonstrate and Validate System Concepts
- Plan Technology Investment

Engineering

- Develop System and Technology Requirements
- Establish and Manage the Engineering Baseline
- Verify and Validate the System Baseline
- Test and Evaluate Systems

Assessment and Support

- Monitor and Assess Programs
- Report Program Status
- Manage Mission Assurance
- Manage Financial Performance
- Manage Investment Portfolio
- Develop and Manage the Workforce
- Manage Knowledge
- Provide Installation Services and Support
- Manage Center Operations and Governance Processes
- Promote Industrial Base and Supplier Health
- Engage with Community and External Stakeholders

INTEGRATED APPROACH

The Space and Missile Systems Center has developed an integrated approach that promotes excellence and meets commitments to deliver effective space capabilities to joint warfighters.



SMC functional directorates support systems wings by maintaining core areas of expertise and ensuring best practices are collected, disseminated, and followed. Organizations such as Program Management and Integration, Contracting, Financial Management, Manpower and Personnel, and Engineering and Architectures work to continually improve processes and performance in executing programs.

To ensure best practices are shared and consistently followed, governance forums bring together functional and system experts. Cross-center forums include the Chief Engineer's Council, the Financial Management Chiefs Council, the Contracting Committee, and the Vice Commander's Forum.





To further integrate the SMC organization, system wings and program offices are staffed with personnel from functional directorates. These individuals are experts in fields such as program and financial execution, contract management, and systems engineering. While they use their expertise to support individual programs or wings, these individuals remain tied to their functional directorates. This ensures they bring the newest policies, developments, and process improvements from the functional directorates into program execution offices.

Delivering on Commitments

As part of an ongoing effort to establish and grow the credibility of the Center, SMC has implemented an annual Center-wide commitments process. This process serves as an important and visible means for identifying and committing to what SMC and its industry partners will accomplish in the coming year. System wings commit to achieving specific major milestones for their programs, and functional organizations identify process improvements they will make. SMC actively tracks ongoing accomplishments against what was identified at the beginning of each year and regularly reports to key stakeholders how SMC is delivering on commitments.



WAY AHEAD

The way ahead for the Space and Missile Systems Center includes both short-term and long-term priorities.

In the next few years, SMC will field a new set of systems to provide dramatically enhanced capabilities to joint warfighters. The Center is maintaining laser focus on delivering systems such as Wideband Global SATCOM, Global Positioning System Block IIF, Advanced Extremely High Frequency (AEHF), Space Based Space Surveillance (SBSS), and Space Based Infrared System Geosynchronous Orbiting Satellite (SBIRS-GEO).



Concurrently, the Center is starting several next generation programs on the right track. Development planning activities will better define emerging capabilities such as next generation infrared surveillance, internet routing in space, conventional strike missile systems, and operationally effective and responsive space-based surveillance and reconnaissance capabilities. Finally, SMC must continue to evolve into an organization with the flexibility to deliver whatever new capabilities the future requires.



SMC PRIORITIES

100% Mission Success. The nation, military, and allies rely on the systems SMC develops each and every day. When SMC launches a satellite into orbit, not only must the launch be a success, but the satellite must work continuously throughout its design life and beyond. Once in operation, systems must be responsive, reliable, and effective. A commitment to 100% mission success ensures warfighters are given every possible advantage on the battlefield.

Program Success. SMC must be a good steward of taxpayer dollars. SMC takes very seriously the responsibility invested in it by Air Force Space Command, the Air Force, and the nation. Working within annual fiscal constraints, SMC must provide warfighters with the systems they need when they need them. SMC must deliver systems on time and on budget.



Organizational Excellence. SMC must be capable of meeting its responsibilities both today and tomorrow. SMC strives to be a flexible, agile organization, capable of providing innovative system solutions to whatever challenges the nation faces. SMC must be agile enough to deliver both operationally responsive space capabilities and assured strategic capabilities. SMC must spearhead new strategic approaches to meeting the requirements for surveillance, launch, communication, position, navigation, timing, and early warning.

Our People. Space and mission support professionals, both in and out of uniform, are the critical enabler for executing SMC's mission. SMC must recruit, develop, and retain a skilled, motivated, and energized workforce. The people at the Space and Missile Systems Center are the foundation that ensures success for SMC's mission, programs, and organization.

CORE VALUES

The Air Force Core Values are integral to the people, the mission, and the daily work of the Space and Missile Systems Center.

Integrity First and **Service Before Self** set the common standard for conduct throughout the Air Force. Living up to those values means everyone goes the extra mile to ensure the highest levels of personal conduct and dedication to meeting the highest standards for mission execution. The Center and its people are committed to serving the nation and the military personnel who depend on the space capabilities SMC provides.

Excellence in All We Do is critical in executing the SMC mission. SMC values and promotes excellence in all areas required to perform its mission. SMC strives to have the right team in place to lead programs forward, valuing excellence in the Center's number one resource – our people.





Key attributes of the unique SMC culture include:

Technical Excellence – performing rigorous systems engineering, mission assurance, and risk management to ensure systems meet or exceed required performance

Critical Thinking – examining ideas at all levels and from multiple viewpoints to seek root causes, challenge assumptions, and welcome diverse reasoning in evaluating issues at hand

Teamwork and Initiative – valuing individual contributions, promoting interdependence and trust, and encouraging and rewarding individual and team initiative

Checks and Balances – empowering and integrating functional experts to provide peer review, seek consensus, and resolve differences in the mission assurance and execution process

Diversity and Respect – valuing the different perspectives and unique insights brought by a workforce spanning multiple career fields, generations of experience, and individual backgrounds

Accountability – accepting and fulfilling individual responsibility to do what is expected of each person on the team, make hard decisions, and put personal and organization reputations on the line to ensure mission and program success

Continuous Improvement – striving always to develop new and innovative approaches to meeting mission needs, never being satisfied with the status quo, and continuously elevating individual and team performance

THE FUTURE

Today space is integrated and employed in virtually every aspect of military planning and operations, from peace through crisis to major theater war. Space critically enables warfare at all levels - strategic, operational, and tactical - and has become integrated into all land, sea, air, and special operations. Tomorrow will see even greater demand and dependence on space for military operations and the nation's security.



The Space and Missile Systems Center must remain a leader in providing critical space capabilities for Air Force Space Command, the Air Force, the Department of Defense, and the nation. Without question, SMC must continue to deliver and sustain dominant space and missile capabilities in what is now a contested regime. Recent events clearly demonstrate that space is no longer a sanctuary. Just as gaining air superiority is the first priority in any joint operation, gaining and maintaining space superiority must become a top priority in peace, crisis, or conflict. SMC must design future systems to be both survivable in the face of increased threats and responsive to operational needs. When delivering these future systems, SMC must never lose laser focus on its unshakable goal: 100% mission success.

The future will no doubt hold the opportunity to address challenges that will face the space community as a whole. The Space and Missile Systems Center must continue to provide leadership in developing and acquiring cutting-edge space capabilities. The Center has a critical future role in continuing to help military commanders and operators understand what systems and capabilities can be developed to meet their operational needs. SMC must continue to develop and deliver the solutions they desire, on-time and on-budget with 100% mission success. To do this SMC must have continuous interaction with the supported warfighters and customers, understand the principles of war and the applications of space in joint warfighting, and develop the people and processes that are capable of delivering responsive and effective operational systems.

The nation is still at an early stage in the development and evolution of military space capabilities, doctrine, and tactics, and there is still much to learn about how best to serve and integrate with air, land, and maritime forces and operations. The men and women of SMC, in support of Air Force Space Command, will be key players in growing and evolving the role of space power in the defense, security, and well-being of the nation. The pioneers that began SMC over 50 years ago did not know where their efforts would lead, but they persevered in the face of failures and tribulations. Their efforts created the culture and systems that today give the nation unrivaled leadership and benefits in daily life, national security, and world affairs. The challenge for SMC, its partners in industry, and the operational commanders and users it serves is to ensure the leadership and advantage the nation has gained in space will be sustained for decades to come.





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SPACE AND MISSILE SYSTEMS CENTER

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