

# SPACE



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# AND THE NATION'S SECURITY



WINTER FOCUS

*The explosion in the use of Space assets has resulted in the unparalleled access to information for the U.S. Army and the nation's leaders. As the transformation of the military progresses, Space will be embedded in virtually all Army formations and systems. Space will be a principal enabler of the characteristics of the Army "future force" needed to support the joint concept of operations (CONOPS). The Army and joint force of the future cannot perform across the full range of operations without leveraging current Space-based capabilities and maximizing their technological potential for future Space activities.*

*The cost and complexity of building, maintaining and operating these critical systems are staggering. The involvement of multiple stakeholders in procuring and using the information provided by these Space systems serves as the impetus to bring these diverse interests to the table.*

*The Army is the largest user of Space products and services and must remain engaged with the Space community to ensure that Army priorities for support from Space are included in all future Space system requirements. The Army must continue working Space issues within the context of Army and joint doctrine, drawing on experiences and lessons learned from currently deployed forces. The Army must remain engaged to ensure its requirements are known as new Space capabilities are developed.*

*Fully integrating Space capabilities into the Army's land operations is critical. For the bridge to be built from current capabilities to the interdependent*

*network-centric warfare envisioned in the future joint fight, fully networked battle command capabilities must be embedded in the future force. The Army must leverage Space assets to achieve sustained connectivity and interoperability to support Soldiers on the future battlefield.*

*The Army Space Master Plan articulates a vision for the future of the Army in Space. Army Space policy supports the future force and the focus areas identified by the Chief of Staff.*

*Architectures set the strategic direction and are used to ensure interoperability and to effect procurement. The Army's current uses and its future requirements of Space must be synchronized by the Army leadership.*

*When developing architectures, the Army must consider innovative approaches in applying new technologies and in devising CONOPS. It is critical that the Army maintain a professional Space cadre in the right places as part of the joint Space team. Every Army Soldier must have a fundamental understanding of Space and how it supports his or her mission. Space professionals are the link between what Space can provide and what the warfighter needs.*

*The capabilities of Space provide a reach across all mission areas and play a vital role in Army transformation. Clearly articulating requirements is the key to ensuring the capabilities that are fielded meet the needs of the Army in executing its core missions and its support to joint operations.*

# SPACE — SERVING THE NATION'S NEEDS

**T**he capabilities that Space brings are critical to the Army and the nation. These capabilities allow American policymakers to know more about the world situation, global issues and crisis situations than any set of leaders before them. Military Space systems have allowed American military commanders to know more about their adversaries, see the battlefield more clearly and strike more quickly and precisely than any military leaders in the history of the world. Space systems are inextricably woven into the fabric of America's national security.

The nation's Space capabilities serve a wide variety of military, intelligence and other government customers. That is, they are national security Space capabilities, not strictly military or strictly intelligence. The players in "national security Space" are not just the defense and intelligence communities; but also varied groups whose interactions are complicated. Valuable contributions for national security Space also come from a variety of federal and commercial organizations. Additionally, Space capabilities are becoming more interrelated and linkages among Space and terrestrial capabilities are becoming more complex. This complexity is both technological in terms of how the systems are designed and built, and organizational in terms of how the systems are employed, controlled and tasked, and how the products are developed and delivered.

## **National Security Space Perspective**

Because of these complex interrelationships, it no longer makes any sense to develop a "new Space enabled" capability without ensuring that all community stakeholders are involved. In 2004 the Under Secretary of the Air Force and Department of Defense's (DoDs) Executive Agent for Space, Peter B. Teets, stated the priorities for our Space forces:

- Achieve mission success in operations and acquisition.

- Develop and maintain a team of Space professionals.
- Integrate Space capabilities for national intelligence and warfighting.
- Produce innovative solutions for the most challenging national security problems.
- Ensure freedom of action in Space.

Because there are many organizations pursuing these priorities, the Army must remain engaged with the Space community to ensure Army priorities for support from Space are included in all future Space system requirements. The Army must continue working Space issues within the context of Army and joint doctrine, drawing on experiences and lessons learned from currently deployed forces. The Army must remain involved to ensure its requirements are known as new Space capabilities are developed.

Fully integrating Space capabilities into the Army's land operations is critical. For the bridge to be built from current capabilities to the interdependent network-centric warfare envisioned in the future joint fight, fully networked battle command capabilities must be embedded in the future force. The Army must maximize leveraging Space to achieve sustained connectivity and interoperability to support the future battlefield.

## **Army Perspective**

Today, Space enables virtually everything the Army does: commanding and controlling forces deployed around the world using Space-based long-haul communications; understanding the battlespace as a result of intelligence and weather satellite data; knowing our position and other friendly force positions, maneuvering rapidly and engaging with precision as a result of our global positioning system constellation; tracking critical supplies and enabling complex logistical operations in near real time with Space-based systems such as OMNI-TRACs; detecting missile launches and broadcast warn-

## The Army must:

- Incorporate Space operations, Space control and Space systems into all land operations.
- Leverage current Space-based capabilities and maximize potential future Space activities.
- Clearly articulate requirements to ensure fielded capabilities meet the needs of the Army.
- Have a credible “Space cadre” to be accepted for full membership on the joint team.
- Determine where and how to exert influence in the national security Space community to achieve its vision.
- Leverage Space capabilities in order to be relevant and ready.

**The nature of warfare is changing and a key to success for Army transformation is Space!**

ing information in order to intercept them and deal with the effects if necessary. The ability to move and exploit large amounts of data electronically takes on an increasingly significant role in modern warfare. The global society, U.S. economy and military forces rely on advanced information networks.

An excellent example of Space support to a mission area is the use of Space capabilities to successfully execute the missile defense mission. A time-phased anatomy of a threat missile event highlights this fact. Space support to missile defense begins well before an actual missile launch. During the preboost phase, Space-based systems support the activities aimed at preventing or negating an enemy’s ability to launch a missile. Measurement and signature intelligence (MASINT), signals intelligence (SIGINT) and imagery intelligence (IMINT) are continuously building the intelligence and defense communities’ knowledge of potential hostile capabilities and intents. Should an adversary launch a threat missile, the time-critical command and control, notifications, decisions and actions required to intercept the missile are all enabled by Space-based assets.

Today’s Defense Support Program’s (DSP’s) overhead non-imaging infrared (ONIR) systems provide the launch detection and characterization that is critical to the missile defense mission area. Future systems, such as the Space-based infrared system (SBIRS) and the Space tracking and surveillance system (STSS) will significantly enhance our ability to engage and destroy ballistic missiles around the globe. Throughout the phases of a threat missile’s flight, numerous Space systems provide key information to our nation’s decision makers and warfighters. The support that Space systems provide across the missile defense continuum must be developed to support future Army requirements in other mission areas.

Each service has a role and a responsibility to come to identify requirements and to work joint concepts in order to achieve sustained interoperability. Even though the Air Force is the Executive Agent for Space, the Army has some key responsibilities as a major user of Space. The Army Space Policy articulates a vision for the future of the Army in Space. This policy supports

the “way ahead” and the focus areas identified by the Chief of Staff. The Army must determine where and how to exert influence in the national security Space community to achieve its vision.

Some of the critical questions that the Army faces in the drive to execute its Space policy are:

- What is most important to the Army in terms of Space-based capabilities?
- What should be the top Army Space priority for the upcoming year’s program objective memorandum (POM)?
- What benefits are there to the Army as a result of DoD’s large investment in the unclassified Space budget?
- What is the Army currently spending on Space capabilities and how much is it investing in Space for the future?
- Is the Army satisfied with the trade-off analysis between Space-based capabilities and airborne or ground-based platforms to deliver a desired capability?
- How does the Army want to use Space to further enhance its capabilities as a member of the joint team?

### The Role of Architectures

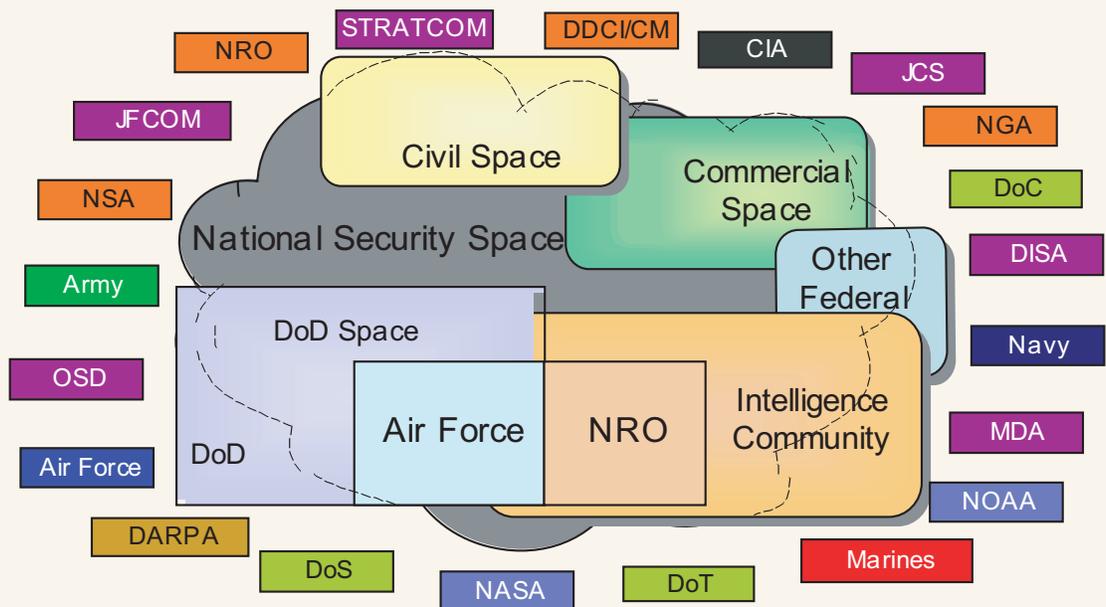
Architectures are a cornerstone to enable a relevant and ready force and to achieve the Army way ahead. The Army’s current uses and its future requirements of Space must be worked in a synchronized fashion by the Army leadership. The importance of this synchronization plays out in every architecture that is developed.

To successfully develop architectures, a pool of very talented people with innovative ideas is required. The skills and vision of the architecture development teams are critical to the establishment of long-range goals for future Space capabilities. The Army must not just look to in-house contractor support, but also to those who build future capabilities as well.

Innovative approaches in applying new technologies and in devising concepts of operations (CONOPS) must be considered when developing architectures. Inputs from the national security Space community and industry for solving the most dif-

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## National Security Space Community



STRATCOM U.S. Strategic Command  
 CIA Central Intelligence Agency  
 NGA National Geospatial-Intelligence Agency  
 DISA Defense Information Systems Agency  
 MDA Missile Defense Association  
 Marines U.S. Marine Corps  
 NASA National Aeronautics & Space Administration  
 DARPA Defense Advanced Research Projects Agency  
 OSD Office of the Secretary of Defense  
 NSA National Security Agency  
 NRO National Reconnaissance Office

DDCI/CM Deputy Director of Central Intelligence for Community Management  
 DoC Department of Commerce  
 Navy U.S. Navy  
 NOAA National Oceanic & Atmospheric Administration  
 DoT Department of Transportation  
 DoS Department of State  
 Air Force U.S. Air Force  
 Army U.S. Army  
 JFCOM Joint Forces Command  
 JCS Joint Chiefs of Staff

difficult problems must be captured in these architectures.

### **The Army Space Bench**

It is critical that the Army maintains a professional Space cadre in the right places as part of the joint “Space” team. Army Space professionals are placed in key positions in the acquisition community, Army staff and the warfighting units. Space isn’t just a job for Functional Area 40s (FA40s).

Every Army officer must have a fundamental understanding of Space and how it supports their mission. Soldiers having earned the 3Y special skill identifier, DoD and Department of the Army civilians and many others have a tremendous impact on the Army and Space.

Space is inherently “joint” to include the intelligence community and other government agencies. To be indispensable members of the joint team, the Army must play a more active role in providing resources that features assigning officers to key positions. The Army must have a credible “Space cadre” to be accepted as full members of the joint team. As is the case in many other facets of the military, if you don’t participate, you don’t get a vote.

The FA40 provides a career path for Army officers to specialize in Space operations. These professionals are the link between what Space can provide and what the warfighters need. For example, FA40s assigned to the National Reconnaissance Office leverage national technical means to conduct Space reconnaissance operations for deployed forces.

The Army must continue to grow and sustain a “bench” of Space professionals to be able to articulate Army requirements, work joint CONOPS, work within the national security Space community and support the Executive Agent for Space.

### **What Must Be Done**

The bottom line is the nature of warfare is changing and the success of transformation depends on Space. The reality

of today’s world situation demands that the nation provide new means, processes and concepts to exploit the Space medium to help solve the toughest military and intelligence problems. The capabilities that Space provides reach across all mission areas. A day without Space would be devastating to warfighters. Clearly articulating requirements is the key to ensuring the capabilities that are fielded meet the needs of the Army. Architectures set the strategic direction and are used to ensure interoperability and to effect procurement. The Army must ensure that the capabilities it desires are captured in the architectures to successfully execute its core missions and joint support roles.

To support the joint warfighter, the Army’s future force will incorporate Space operations and Space systems into all its land operations. Joint interdependency, network-centric warfare and actionable intelligence, in particular, are critical for the Army way ahead. The Army and joint force of the future cannot perform across the full range of operations without leveraging current Space-based capabilities and maximizing their technological potential for future Space activities.

### **Torchbearer Message**

In 2003, the Army Chief of Staff outlined the Army Vision. Understanding and leveraging the nation’s Space assets are keys in achieving this vision and is necessary for the Army, as a key member of the joint team, to remain strategically dominant across the full spectrum of operations. The bottom line is that the nature of warfare is changing and much of the success of transformation depends on Space. The reality of today’s world situation demands that the nation provide new means, processes and concepts to exploit the Space medium to help solve the toughest military and intelligence problems.

The unique set of core competencies and capabilities the Army brings to the table are enabled by Space. Equipping Soldiers with technologies that leverage our nation’s Space assets allow smaller

units to be more lethal. The Army must recognize how Space can best be used now and as it expands its capabilities to successfully transform to the future force. Space plays a crucial role in how the Army fights in close combat, holds key assets and terrain, decisively ends conflict, controls the movement of people, protects resource flows and maintains post-conflict stability. It is vital as the Army trains Soldiers and leaders that it has knowledge of Space systems and the capabilities they bring to the fight.

The joint team depends on Space capabilities to execute its mission. The Army and joint force of the future cannot perform across the full range of operations without leveraging current Space-based capabilities and maximizing their technological potential for future Space activities.

To deliver relevant and ready land combat power to combatant commanders and the joint team, the Army future force will incorporate Space operations and Space systems into all its land operations. To conduct interdependent, network-centric warfare successfully, the complementary use of Space capabilities by all members of the joint team is necessary. Space enables the Army to retain dominance on land by providing information that leads to enhanced agility, versatility and strategically responsive forces completely integrated and synchronized with other members of the joint and interagency team and with our coalition partners.

The Army needs Space capabilities in order to be relevant and ready.

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