SUBCOMMITTEE ON STRATEGIC FORCES
SENATE ARMED SERVICES COMMITTEE

STATEMENT OF

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COMMANDER

JOINT FUNCTIONAL COMPONENT COMMAND FOR SPACE

BEFORE THE SUBCOMMITTEE ON STRATEGIC FORCES

SENATE ARMED SERVICES COMMITTEE

ON SPACE POSTURE

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Chairman Nelson, Senator Sessions, and members of the Subcommittee, I am honored to appear before you as United States Strategic Command's (USSTRATCOM) Commander of the Joint Functional Component Command for Space (CDR JFCC SPACE). This is my first opportunity to come before you as the Commander for JFCC SPACE and I look forward to working with you to enhance the US standing as a global leader in space.

It's an honor to represent the more than 3,000 Soldiers, Sailors, Airmen and Marines of JFCC SPACE. In addition to our active duty military members, JFCC SPACE has more than 1,000 National Guard, Reserve unit members and Individual Mobilization Augmentees, as well as, exchange officers from Australia, Canada and the United Kingdom. These men and women form a tireless and innovative Joint Force, working hard to provide position, navigation and timing information; missile warning and missile defense; communications; intelligence, surveillance and reconnaissance support; and technical intelligence and personnel recovery to our warfighters 24 hours a day, 365 days a year.

The space environment has become increasingly congested, contested and competitive. Operating within space is correspondingly more uncertain than ever in our past. Addressing the changes in the environment requires strategically rethinking our processes, integrating extra flexibility in our planning, improving our awareness of the space environment and expanding our collaboration with all space faring nations and corporations. Correctly adapting our operations within the space environment before we are required to respond to an unforeseen circumstance will allow JFCC SPACE to continue to provide space capabilities to our Joint force throughout these uncertain times.

One of our premier responsibilities is to deliver space effects to the Joint Force. As the most prevalent space effect delivered by my operators, we have continued to operate and

improve the most widely used space capability on the planet, the GPS constellation. In January we completed the first phase of our "Expandable 24" operation, the largest satellite repositioning effort in GPS program history. This two phase operation repositioned three satellites to optimize GPS coverage for terrain-challenged environments, such as cities and the mountains and valleys of Afghanistan. We also began operations of the newest GPS variant, the GPS IIF, which will add a second civilian safety-of-life signal and provide more robust signal availability for military users.

Our Overhead Persistent Infrared (OPIR) capabilities in space are the stalwart to providing critical ballistic missile warning to field commanders and national leaders. At least 20 nations currently have nuclear, biological or chemical weapons, and the technology to deliver them over long distances. According to intelligence estimates, during the next 10 years, additional countries will develop the technology and capability to launch intercontinental ballistic missiles at the United States. Our detection systems provide both strategic warning for ICBM and space launches as well as tactical warning for shorter range ballistic missile launches. Space based missile warning satellites are able to provide continuous global coverage. These systems are capable of providing missile warning to the Joint Force and coalition partners in the event of a short range ballistic missile attack. In addition, deployed units throughout the world provide Geographic Combatant Commanders the means of receiving missile warning data direct from the DSP constellation for their area of responsibility. Space OPIR continues to ensure missile threats are detected and reported in a timely fashion but the technology continues to advance and we are constantly finding new ways to provide better battlespace awareness and technical intelligence to the ground commanders beyond our foundational ballistic missile warning mission. The Space-Based Infrared System (SBIRS) in its highly elliptical orbit (HEO)

gives significant coverage over the northern hemisphere for infrared detection and technical intelligence gathering. We can now detect and report, in near real-time, natural and man-made infrared events. The quality of data provided by SBIRS HEO is a key part in our ability to characterize launches and predict threats within minutes. Following its operational acceptance, the first SBIRS in its geosynchronous orbit (GEO) will give us the ability to paint a picture for national leadership of new foreign technology development and proliferation information. This capability is so significant that the SBIRS community is developing a pre-certified use plan to get valuable information to the Joint Force as soon as practical.

These space based sensors are only one portion of our missile warning capability. Ground based radars provide warning by detecting, tracking and counting individual objects in a missile attack early in their trajectory. Several of the ground based radars are integrated into the Ballistic Missile Defense System used by the Missile Defense Agency to improve midcourse sensor coverage by providing critical early warning, tracking, object classification and cueing data.

Information technologies have truly revolutionized our capability to operate globally. From combat operations to humanitarian assistance, we use military satellite communications every day. In addition to GPS and OPIR capabilities, JFCC SPACE provides to the Joint Force protected, wideband and narrowband satellite communication capabilities.

Protected communications make possible the ability to command and control forces and support national decision makers in a contested communications environment, including the high end nuclear environment.

Wideband satellite communication provides automatic Digital Network/automatic Secure Voice Communications, Secret Internet Protocol Router Network and Joint Worldwide

Intelligence Communication System access from space. Additionally wideband communications include relays for Defense Message System, Defense Switched Network, Diplomatic Telecommunication Service Communications and real-time Unmanned Aerial Vehicle (UAV) video for ground mobile forces.

In the category of narrowband communications, our UHF satellite system, is the space-based portion of the DoD communication system that enables reliable communications among aircraft, ships, submarines, ground stations and the presidential command network as well as a multitude of Joint and Allied users. UHF satellite communications is a primary enabler for distributed command and control, critical for dispersed maritime operations, and provides critical communications for humanitarian assistance and disaster relief efforts such as the Haitian and Japanese earthquake. DOD provided more than 20 UHF satellite communications channels dedicated for supporting tsunami relief efforts in Japan.

JFCC SPACE is forging ahead in our efforts to provide new, operationally responsive space effects to the Joint Force. We are actively engaged with Air Force Space Command and US Strategic Command in developing the concepts and command relationships that may allow us to quickly transition rapid development capabilities to operational use. For example, the TACSAT-3 satellite has an experimental, hyper-spectral imagery payload that has shown great promise in support for ground troops as well as in disaster relief and recovery operations. We are also working with Service partners to deploy the ORS-1, a small spacecraft that will supply urgently-needed imagery to USCENTCOM.

Day to day, JFCC SPACE tasks our space based assets to provide standard space support to the Joint force. We maintain a close and dedicated relationship with each theater's Space Coordinating Authority (SCA). Through the SCA relationship JFCC SPACE is proactively

postured to rapidly adapt to changing mission requirements based on Combatant Commander's changing needs. JFCC SPACE, through the JSpOC, coordinated specific support to the U.S. response to the March 11 earthquake and tsunami in Japan and ongoing coalition military operations over Libya. These efforts include using data from the hyperspectral sensor on TACSAT-3 to help contain the damage at the Fukushima Daiichi Nuclear Power Plant. In support of NATO's Operation Unified Protector, JFCC SPACE tailors theater missile warning coverage, strike assessment and technical intelligence support for coalition forces protecting Libyan civilians and civilian-populated areas.

Space situational awareness (SSA) is the cornerstone of JFCC SPACE operations and the space surveillance network (SSN) is the workhorse of our SSA. The data provided by the space surveillance network are analyzed at the Joint Space Operations Center (JSpOC) by a collection of military and civilian analysts. These analysts keep track of what satellites are active, predict when pieces of debris or satellites will re-enter the atmosphere or collide, and provide vital information to decision makers about when a payload can be safely launched. Over the past two years we have increased daily conjunction screening at the JSpOC from 110 primary satellites to all active satellites (over 1,100). Due to this increase in number of satellites screened, we have seen conjunction warning notifications increase from five to up to 25 per day, up 46 percent from 2009 and we have had a corresponding increase in our interaction with commercial and foreign government space operators. Information sharing with commercial and foreign entities is now a routine occurrence executed via a formalized process within JFCC SPACE. We currently have data sharing agreements with 23 commercial and foreign partners.

However, we still suffer from an aged and limited sensor network to gather our most important SSA resource: orbital observations. Many of our SSN sensors operate on a one-

object-at-a-time system and a majority of the SSN sensors are not networked with one another. The CONUS-based space fence and our Eglin SSN sensor are currently the only machine-to-machine network between SSN radars. These networked sensors are resulting in 30,000 observations per year that would otherwise go undetected due to sensor limitations with Eglin's space surveillance fence. We could see a huge benefit to our SSA through greater machine-to-machine networking between our SSN sensors. The CONUS-based space fence can detect and observe multiple objects at one time and contributes more observations to our network than any other sensor. Additionally, we have considerable gaps in coverage in the southern hemisphere. Placement of a space fence in the southern hemisphere will improve our coverage considerably. Another sensor that will improve our capability is the Space Based Space Surveillance satellite launched in September. This sensor operates from space, free of boundaries, borders, or atmospheric effects to distort or obscure viewing. With a potential capability to track objects much smaller in size than what our older sensors can track, SBSS will detect significantly more objects in orbit and produce a corresponding increase in the volume of SSA data. Current analytic and processing capacity in the JSpOC is not sufficient to exploit the full capacity of this or other future sensors. This shortfall is driving an urgent need to upgrade JSpOC systems. The JSpOC Mission System (JMS) is the Air Force's program of record for solving this problem and ensuring the JSpOC is properly equipped to handle the mission is part of my service function as commander of 14th Air Force.

The JSpOC Mission System is planned to replace our legacy command and control systems designed in the 1980's and fielded in the 1990's. We are working closely with the acquisition team to prioritize our mission requirements. In the months ahead we intend to employ an early JMS release that will significantly enhance our ability to understand the space

situation with an integrated operating picture, as well as the ability to respond to a dynamic space environment. We will continue to build upon this initial capability to ensure our operators on the JSpOC floor have the tools, and the infrastructure, they need to accomplish the mission.

We cannot properly equip the JSpOC without addressing our current facilities and the need for modern infrastructure to house the state of the art command and control system and the JSpOC personnel. Today the JSpOC performs its operational mission from a converted missile assembly building. Over 50 years old and designed for an entirely different purpose, the building presents significant challenges towards meeting our integrated space operations mission. Successful integration with U.S. and coalition forces, as well as commercial partners will depend upon a future MILCON project for new facilities designed specifically for space command and control.

Space situational awareness is not only an understanding of the physical objects within space but also includes characterizing disruptions to services provided by satellite signals transmitted through space. JFCC SPACE provides the capability to monitor the service quality of U.S. and coalition satellite communications systems in order to detect interference which may ultimately be determined to be either unintentional incidents or purposeful acts. When an interference event is detected, JFCC SPACE receives support from other elements of Strategic Command to geolocate the source of interference. In these efforts, we continue to build on the early successes of current programs leading to the development of new systems to be deployed later this year in order to conduct electromagnetic interference (EMI) detection in different frequencies and different locations throughout the world. These efforts support broader U.S. Government efforts -- in cooperation with civil, commercial, and foreign partners -- to identify,

locate, and attribute sources of radio frequency interference, and take necessary measures to sustain the radiofrequency environment in which critical U.S. space systems operate.

Consistent with the President's National Space Policy and the National Security Space Strategy, we are working with the Department of State to expand our current partnerships and develop new partnerships through transparency and cooperation with partners and allies, including industry partners. The United States will continue to promote safe and responsible space operations both for ourselves and with other space faring nations and industry partners. Our leadership in the development of best practices and bilateral and multilateral transparency and confidence building measures to encourage responsible actions in, and the peaceful use of, space, is of critical importance. As the National Space Policy states, it is the shared interest of all nations to act responsibly in space to help prevent mishaps, misperceptions, and mistrust.

A Combined Space Operations concept is a starting place and we will work with our closest allies to flesh out and mature the concept toward mutually supportive goals. The concept must be expandable and tailorable to allow the flexibility to incorporate partners beyond our own US government agencies and closest Allies.

As resources permit, we plan to continue expanding the SSA information and services we offer. In coordination with the Department of State and civilian departments and agencies, we intend to enter into SSA Sharing agreements with foreign governments and international organizations, and build upon our bilateral space cooperation dialogues with key allies and partners. These dialogues have already resulted in agreements in principle for SSA cooperation between DoD and its counterparts in Australia, Canada, and France. SSA Sharing agreements – combined with ongoing discussions on SSA cooperation with other allies as well as the European

Space Agency and European Union – will put us on a path to improve collective awareness of the space domain and work to preserve its advantages for all.

Space operations continue to evolve rapidly and JFCC SPACE is at the forefront of defending our ability to operate within space. We continue to search out better ways to support Joint Forces around the globe, especially those in harm's way. We will continue to develop and employ systems to enhance our comprehensive space situational awareness. We will strive to strengthen our relationships with allied and industry space partners, ensuring our global capabilities remain available for those requiring them. You can be proud of the Soldiers, Sailors, Airmen and Marines of JFCC SPACE. I thank the Committee for your continued support as we work to preserve and enhance the critical space capabilities of our Nation.