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**Congressional Hearing Testimony**

**for the  
Under Secretary of the Air Force**

The Honorable Peter B. Teets

INTRODUCTION:

It is my distinct honor to appear before the Committee today representing the world's greatest air and space force, and to join my operational counterpart regarding space activities, Admiral James Ellis, Commander, US Strategic Command. You have previously heard from the Secretary of the Air Force and the Chief of Staff about the state of affairs of the Air Force as a whole. The "Top 4" of the Air Force – the Secretary, the Chief of Staff, the Vice Chief and I – are of one mind regarding our collective vision of a total air and space force providing global reconnaissance and strike across the full spectrum of operations in the service of this great nation. Given the focus of this committee, and my role in overseeing National Security Space activities as Under Secretary of the Air Force and Director of the National Reconnaissance Office (NRO), I will concentrate my remarks today on the eight priorities I have set for our National Security Space efforts for 2003. These priorities serve to shape the FY04 budget for our space programs, and as they are all important to our space efforts they do not have any particular ranked order. They are (1) ensure mission success in space operations, (2) fully integrate space capabilities for warfighting and national intelligence, (3) get space acquisition programs on track, (4) pursue operationally responsive assured access to space, (5) develop a team of space

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professionals, (6) pursue innovative capabilities for national intelligence and defense priorities, (7) enhance space control capabilities, and (8) focus space science and technology resources and programs.

### **SECTION 1C Ensure Mission Success in Space Operations:**

Our space assets now are more important to warfighters, more important to the intelligence community, and more important to our ability to win current and future conflicts, than they ever have been before. Space capabilities are integral to modern warfighting forces. They provide critical surveillance and reconnaissance information, especially over areas of high risk or denied access for airborne platforms. They provide weather and other space and earth-observation data, global communications, missile warning, precision navigation, and guidance to troops on the ground, ships at sea, aircraft in flight, and weapons en route to targets. All of these space capabilities enable the tremendous success our joint warfighters achieve during combat operations.

To support these critical national security activities, ensuring mission success in space operations is of vital importance and we anticipate a very busy year for national security space operations. We have 12 national security space launches scheduled for 2003, compared to only one conducted in 2002. In addition to activities at launch bases, this increased launch rate leads to a heightened state of readiness at our ground stations, additional initial on-orbit checkout and housekeeping functions, and greater challenges to integrate those 12 new spacecraft into existing constellations. These

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launch operations include actions to sustain military satellite communications with one Milstar and two Defense Satellite Communications Systems (DSCS) launches this year.

**The first of the two DSCS satellites was just launched this past Monday evening on board a Delta 4 EELV.** We conducted a successful launch of a GPS IIR in January. We have **two** more IIR launches scheduled in 2003, **and summer 2004 we will launch the first modernized GPS IIR-M.** This new IIR-M will add new civil and military capabilities and is the first step towards improving GPS services to both the military and civil users. We also have a projected launch for the Defense Meteorological Satellite Program (DMSP) **this summer as well as a Defense Support Program (DSP) satellite early next year,** and, in addition to these launch activities, we continue to actively modernize and upgrade our launch and test ranges on both coasts. Concurrent with all of these activities is the critical need to keep on-orbit capabilities at peak performance. All of these events are vital to national security, and we will make every effort to ensure their success.

### **SECTION 2C Fully Integrate Space Capabilities for Warfighting and National Intelligence:**

There is a commonality between our intelligence collection activities and our warfighting needs. A good example is the Air Force's Space Based Infrared System High (SBIRS High) satellite in development, which will replace the veteran DSP platform. It will perform the missile early warning mission, and also provide extremely valuable additional capabilities. SBIRS High will have two very highly capable infrared sensors capable of collecting large amounts of information useful to

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the intelligence community. In addition, it will significantly contribute to the Theater Ballistic Missile warning mission.

There is also a significant amount of information our constellations of NRO satellites collect on a daily basis that is crucial to warfighting operations. We have made great progress over the decades in expanding the range of those exploiting these space capabilities from a small set of strategic users to multiple government agencies and virtually the entire warfighting force. But we need to do more. Our goals for improved integration include providing communications, environmental sensing, and precise position and timing information to support a **Common Operational Picture** of the battlespace, and facilitating cross-platform command, control, and communications.

One way we will accomplish this is through programs like the **Combatant Commanders Integrated Command and Control (CCIC2S) Target System Architecture** in Cheyenne Mountain, which will provide an integrated battle management system delivering a fused battlespace picture to strategic and theater decision-makers.

### **SECTION 3C Get Space Acquisition Programs On Track**

Our goal is to create an acquisition process that is both credible and agile. We have made progress in this direction with our new 03-01 space acquisition policy, which I signed into interim guidance this month. This new process recognizes the inherent differences of space systems. It allows us to reduce our timeline, while maintaining the required depth of review. It enables us to manage risk by looking for challenges early on. It eliminates program management bureaucracy, giving our

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program managers the responsibility and the resources to manage their programs. We expect there will be some continuing risk in our programs. Our job is to manage those risks by giving our people the necessary tools and ability to do so.

One tool we can give them is a world-class independent cost estimation capability. Our vision is to form a National Security Space Cost Assessment Team to provide a useful, accurate and timely independent cost estimate with common methodology in support of space acquisition. The team would consist of experts knowledgeable on the unique challenges facing space programs. The Director of OSD CAIG and I are working together to accomplish this task. He has also agreed to lead the National Security Space Cost Estimating Team.

Another valuable resource to reduce program risk is management reserve. We want to give our program managers the flexibility to meet the unknown challenges that arise in virtually every program. Such resources are not intended to meet unforeseen requirements, but to address technical challenges. This will enable us to provide greater stability in our programs, reducing risk and increasing our ability to deliver on time and on budget. Further, a dedicated, fenced reserve does not just help one program -- it helps our entire portfolio of programs. Currently, we pull money from a stable program to solve problems in an unstable program, and then we ask for more money to fix the initially stable program. In other words, we will break one program just to fix another. This is not how a good business runs; we must make these changes or we will continue to experience delays, overruns, and instability in our acquisition programs.

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We have been successful in getting our major space programs back on track. The SBIRS High program successfully completed its rebaselining in January 2003. In that program, stronger government oversight has replaced Total System Performance Responsibility (TSPR), and Earned Value Management System (EVMS) enhancements have combined industry best practices with increased program office supervision. I personally chair a quarterly meeting with General Lance Lord (AFSPC/CC) and company presidents, ensuring consistent leadership involvement in the program. We have introduced contract improvements to more effectively reward positive performance, and added numerous new incentives for effective management, systems engineering, timely delivery of capabilities, and cost performance. While challenges still remain, I have much more confidence in SBIRS High than I did a year ago.

### **SECTION 4C Pursue Operationally Responsive Assured Access to Space:**

Last year was a pivotal year for space launch -- both of our new Evolved Expendable Launch Vehicles (EELV), the Atlas family and the Delta family, had their first successful launches in 2002. While I am encouraged by their success, each of our launch providers is suffering due to the current weakness in the commercial launch marketplace. Since maintaining two launch providers is critical to assuring access to space for our national security programs, we will continue to grow our EELV capability for near term assured access. The government has four EELV launches scheduled for CY03. We have budgeted \$163.9M for assured access initiatives in FY04, \$538.8M across the FYDP, including (1) *infrastructure sustainment*, which

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covers facilities, critical skills, maintenance, leases and supplier readiness; (2) *critical component engineering*, which improves reliability of critical components from common suppliers or components that have been historically problem or risk areas, (3) *pre-post mission engineering*, which provides new capabilities tools or resources to increase effectiveness of EELV practices and processes, and (4) *RL-10 engine producibility*, which involves investment to increase the producibility and reliability of the RL-10 engine, common to both the Atlas V and Delta IV vehicles.

Our EELVs are the best expendable launch vehicles the world has ever seen, but they still lack the responsiveness necessary to ensure our ability to rapidly replenish critical on-orbit capabilities. Today we still talk about time on the launch pad in terms of weeks, perhaps months, to prepare a satellite for launch. If we intend to have operationally responsive assured access to space, we need to find ways to bring that cycle time from weeks and months down to hours and days. One way is to pursue simpler, lower-cost small expendable launch systems. Accordingly, we are pursuing \$24.4M for Operationally Responsive Spacelift in FY04, \$233.8M across the FYDP, and are planning a lower-cost responsive spacelift technology demonstrator in FY07.

The other aspect of operationally responsive assured access to space comes in the form of reusable spacecraft, or reusable launch systems. I believe the nation needs to embark on a course to an eventual fully reusable Single-Stage-to-Orbit launch capability. The capability may be a long way off, and there will certainly be intermediate steps, but we need to begin to chart the path now. I plan to engage NASA, the Defense Advanced Research Projects Agency, other DoD laboratories, and

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the broader space community in developing a technology roadmap to do just that. This roadmap will guide investing in a portfolio of research projects and technology demonstrations in propulsion, materials and structures, with increased funding beginning in FY05.

### **SECTION 5C Develop a Team of Space Professionals:**

I know that General Lance Lord considers developing the space workforce a high priority item at Air Force Space Command, and he is putting the finishing touches right now on his space professional strategy. I am confident we will see some excellent ideas, plans, and resources brought to bear on this issue.

In the meantime, we have taken a number of steps within the Air Force to attract and retain top talent. We introduced a Critical Skills Retention Bonus for scientists and engineers, similar to the bonuses we offer pilots, to increase retention in those career fields. We are establishing new requirements for advanced education, including courses for all space professionals and advanced space training for specific mission areas. We are also using the Naval Postgraduate School and the Air Force Institute of Technology to build a joint program using the particular strengths of each school to allow space professionals to receive a graduate education spanning a broad spectrum of space activities.

I also recognize these efforts are not and must not be limited to just Air Force personnel. We will need space professionals in *all* services and agencies **B** and in our civilian and industry workforce **B** to exploit space effectively in the interests of national

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security. I will encourage the other services and agencies to join us as we begin to build this initial Aspace cadre.® In doing so, we will actively engage with all the services to meet their mission and development needs.

### **SECTION 6C Pursue Innovative Capabilities for National Intelligence and Defense**

#### **Priorities:**

One focus of this priority is on the development of breakthrough technologies that would produce new sources and methods for collecting intelligence. Our goal is transparency **B** we want the ability to see everything and know everything, while simultaneously denying our adversaries both the ability to do the same, and the knowledge that such capabilities are being used against them. We want to always be one step, or more, ahead of our adversaries **B** to be first to see, first to understand, and first to act. To achieve this ambitious goal, we look to technological advances to preserve our asymmetric advantage in information superiority against the full spectrum of threats and adversaries.

In addition to the push for new sources and methods, we have two other very innovative, creative, technology-pushing initiatives underway. The first is the Transformational Communications Architecture (TCA). TCA will combine upcoming spaceborne communications systems (AEHF, Wideband Gapfiller Satellite) with future systems (Transformational Satellite, or T-SAT) that will leverage new technologies such as laser communications and internet-based protocols to dynamically distribute communications amongst users. The ultimate goal is to remove SATCOM

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bandwidth and access as constraints on the warfighter. We anticipate this new architecture will increase available bandwidth from 10 to 100 times existing capacity B all of which will be essential to persistent ISR such as Space Based Radar (SBR) and advanced Unmanned Aerial Vehicles (UAVs). The President's budget includes \$439M for TCA in FY04, \$12.5B across the FYDP, with a T-SAT first launch targeted for CY09/FY10.

The second initiative is the SBR program, which will give warfighters the ability to surveil as well as reconnoiter deep into denied areas, day or night. SBR will be part of a larger mix of air, space, and ground ISR assets, all of which together have the potential to revolutionize warfighter command and control. In the budget, the \$274.1M for SBR in FY04 continues technology risk reduction activities while completing concept definition, with \$4.4B across the FYDP in pursuit of a FY12 first launch.

### **SECTION 7C Enhance Space Control Capabilities:**

I described earlier how our space systems give our warfighters and intelligence analysts a very significant capability advantage. There is little doubt in my mind that our potential adversaries have taken note of this, and that, in the future, our space capabilities may be threatened by them. We must prepare to protect our advantage in space by developing space control capabilities.

The first ingredient for successful control of space is *awareness* of the space environment: natural phenomena, spacecraft Atraffic,@ and potential threats (whether

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natural or manmade) to our space systems. We have taken steps to increase our space situation awareness capabilities, including the standup of a Space Situation Awareness Integration Office in Air Force Space Command, and significant funding for space surveillance assets over the next five years. An example is our Space Based Space Surveillance (SBSS) satellite program, which will augment ground-based space surveillance capabilities. The first launch of SBSS is planned for FY06, accelerated four years earlier than in the FY03 PB. We have also budgeted \$134.8M for the Air Force Spacetrack modernization program in FY04, with \$1.5B over the FYDP.

Effective space control also requires *protection* of our space capabilities, a mission area we call Defensive Counterspace (DCS). An example of our efforts in this area is the Rapid Attack, Identification, Detection, and Reporting System (RAIDRS), planned for initial operational capability (IOC) in FY08. RAIDRS will enable detection, reporting, identification, location, and classification of attacks against valuable space assets.

Achieving effective space control also requires us to think about *denying* the high ground to our adversaries through Offensive Counterspace (OCS). With the integration of space capabilities across the spectrum of our own warfighting operations, we have been paving the road of 21st century warfare, and others, cognizant of the asymmetric advantages our space systems give us, will soon follow. We currently have two OCS projects underway. The first is the Counter Communication System (CCS), a capability intended to disrupt satellite-based communications used by an enemy for military C3, and scheduled for first delivery in FY04. The second is the Counter

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Surveillance Reconnaissance System (CSRS), intended to impair an enemy's ability to obtain targeting, battle damage assessment, and information by denying their use of satellite imagery with reversible, non-damaging effects. CSRS is currently in the initial design phase, with operational units scheduled by FY07. Our commitment to DCS and OCS is \$91.4M in FY04, and approximately \$635M over the FYDP.

### **SECTION 8C Focus Space Science and Technology Resources and Programs:**

If we are to truly transform our warfighting and intelligence operations, we must continue to invest in and focus our space Science and Technology (S&T) efforts. Much of what we have accomplished in National Security Space to date stems from past S&T investment and development. Sometimes apportioning resources to S&T development can be difficult—such development requires stable long-term investment and typically does not provide immediate benefits to current programs. But we remain committed to investing today for our future capabilities. We must push the technology envelope.

Investment alone will not ensure that the United States military and intelligence community has preeminent future space capabilities. We must improve our S&T planning to ensure we: (1) encourage an operational pull that conveys to the S&T community a clear vision of the capabilities we need for the future; (2) address the full spectrum of future needs in a balanced and well-thought out manner; and (3) determine ways to demonstrate and spin-off promising technologies to programs.

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Another ingredient critical to effective S&T development is collaboration. We have a number of outstanding organizations contributing to space science and technology development, including the Air Force Research Laboratory, the Naval Research Laboratory, and the NRO's Advanced Science and Technology directorate. By bringing these organizations together, and working with other agencies such as DARPA and NASA, we can move forward faster without duplicating effort.

### **CONCLUSION:**

Space capabilities are vital to the current and future warfighting force structure, and to our national intelligence collection efforts. They are inherently global and uniquely capable of supporting our global interests and responsibilities. Likewise, as the world changes, our ability to understand events, to shape security relationships, to project power, and to deter and/or compel adversaries will increasingly depend on space. These circumstances collectively present us all with a tremendous responsibility **B** a responsibility to do the right thing for the future of space, and to ensure those critical capabilities are there, and on-time. It is our commitment to effectively and decisively deliver these capabilities for the good of the nation.