

United States General Accounting Office  
Washington, DC 20548

---

June 7, 2002

The Honorable Christopher Shays  
Chairman, Subcommittee on National Security,  
Veterans' Affairs, and International Relations  
Committee on Government Reform  
House of Representatives

Subject: Space Surveillance Network: New Way Proposed To Support Commercial  
and Foreign Entities

Dear Mr. Chairman:

Government, commercial, and foreign entities rely almost exclusively on information generated by the United States space surveillance network to reduce the risk of space collisions when launching and operating their respective space missions. The network is maintained and operated by the U.S. Space Command within the Department of Defense (DOD);<sup>1</sup> surveillance data is processed and an unclassified portion is sent to the National Aeronautics and Space Administration (NASA) and made available by NASA to users.

The subcommittee expressed concerns about the growing commercial and foreign demand for space surveillance information and asked us to determine how DOD is planning to provide space surveillance information in the future. In summary, we found that DOD has considered several options for providing this support. Currently, the Air Force Space Command is proposing a pilot study that would replace the current NASA arrangement with one using a Federally Funded Research and Development Center (FFRDC).<sup>2</sup> The study would test the FFRDC's ability to support commercial and foreign entities with space surveillance information and to ensure there is sufficient market for this data. The Air Force Space Command proposes to commence the pilot study in about 1 year, if approved by the Air Force and DOD and if authorizing legislation is enacted that includes providing space surveillance support to foreign and commercial entities as part of DOD's mission. In its written comments on a draft of this letter, DOD emphasized that the Air Force must resolve concerns

---

<sup>1</sup> The U.S. Space Command is supported by three component commands: Air Force Space Command (which provides the majority of the support); Navy Space Command; and Army Space Command.

<sup>2</sup> FFRDC activities are sponsored under a broad charter by a government agency for the purpose of performing, analyzing, integrating, supporting, and/or managing basic or applied research and/or development; FFRDCs receive 70 percent or more of their financial support from the government; most or all of the facilities used for FFRDC activities are owned or funded by the government; and the FFRDC has special access to government data, employees, and facilities.

## Report Documentation Page

<b>Report Date</b> 07JUN2002	<b>Report Type</b> N/A	<b>Dates Covered (from... to)</b> -
<b>Title and Subtitle</b> Space Surveillance Network: New Way Proposed To Support Commercial and Foreign Entities	<b>Contract Number</b>	
	<b>Grant Number</b>	
	<b>Program Element Number</b>	
<b>Author(s)</b>	<b>Project Number</b>	
	<b>Task Number</b>	
	<b>Work Unit Number</b>	
<b>Performing Organization Name(s) and Address(es)</b> U.S. General Accounting Office, 441 G Street NW, Room LM Washington, DC 20548	<b>Performing Organization Report Number</b> GAO-02-403r	
<b>Sponsoring/Monitoring Agency Name(s) and Address(es)</b>	<b>Sponsor/Monitor's Acronym(s)</b>	
	<b>Sponsor/Monitor's Report Number(s)</b>	
<b>Distribution/Availability Statement</b> Approved for public release, distribution unlimited		
<b>Supplementary Notes</b>		
<b>Abstract</b> see report		
<b>Subject Terms</b>		
<b>Report Classification</b> unclassified	<b>Classification of this page</b> unclassified	
<b>Classification of Abstract</b> unclassified	<b>Limitation of Abstract</b> SAR	
<b>Number of Pages</b> 7		

expressed by the other services and space agencies related to public release of the space surveillance data and asked the Air Force to provide a formal recommendation and data control plan by September 2002. NASA had no comments on a draft of this letter.

## **Background**

DOD uses the U.S. space surveillance network<sup>3</sup> to track active and inactive satellites and space debris generated from launch vehicles and satellite breakups, and the agency catalogs and provides these data to DOD organizations, U.S. government agencies, and commercial and foreign entities to ensure safe and effective operations. The network has been tracking space objects since 1957, when the former Soviet Union launched Sputnik. DOD also relies on the space surveillance network for warning when a foreign satellite becomes a threat to military operations and for information to support responsive measures.

The network collects and processes the space surveillance data and sends an unclassified portion to NASA's Goddard Space Flight Center. The data sent to NASA are combined with a small amount of NASA's own data and made available to users without charge on a NASA website. NASA provides information at various levels of detail. This ranges from general space surveillance data accessed by recreational space enthusiasts who register for access—which resulted in over 100,000 “hits” to the web site per month in 2001—to much more specific and extensive data accessed only by twenty-one registered “super users.” Some users request even more extensive data and analysis; NASA reviews and forwards these requests to the U.S. Space Command for further analysis. Currently, NASA spends about \$200,000 annually to provide space surveillance support through its Web site.

## **Air Force Space Command Proposes to Pilot Test a New Approach to Disseminating Space Surveillance Data**

DOD has been actively considering changing the mechanism for providing space surveillance data for over two years. Consideration of a new approach began with a January 10, 2000, Deputy Secretary of Defense memorandum that directed the Air Force to coordinate with the other services and space agencies to study alternatives for providing space surveillance support to commercial and foreign entities. Currently, the Air Force Space Command is proposing to pilot test a new process for providing space surveillance data and services using its FFRDC contracts with the Aerospace Corporation and the Massachusetts Institute of Technology/Lincoln Laboratory rather than through NASA. Both companies are already working on-site with space surveillance network data and providing information to DOD and other customers.

---

<sup>3</sup> The space surveillance network is composed of over forty optical and radar sensors, located worldwide, and connected through four command and control facilities. It costs the Air Force about \$60 million a year to operate the space surveillance network.

Air Force Space Command officials believe that using an FFRDC meets DOD objectives in the most timely, stable, and predictable manner. Specifically, Air Force Space Command officials believe that this will help them:

- maintain space situational awareness—a key Air Force responsibility;
- maintain control over processes and data dissemination;
- determine if providing support to a foreign entity is in the best interests of national security; and
- eliminate a layer of management and decrease risk and complexity by having FFRDC representatives already on site.

Since FFRDC personnel possess specialized and technical space surveillance expertise, Air Force Space Command officials believe they could use these capabilities and competencies to explore how to streamline current processes and develop new tools and procedures required to support commercial and foreign entities, to create opportunities for cooperative research arrangements with commercial companies, to recommend policy and organizational changes for commercial and foreign-entity support, and to recommend how best to provide these services. For example, the pilot test is expected to provide knowledge about the technology needed to best analyze the space surveillance data and receive, screen, and disseminate the data to requesting entities.

To test their pilot approach, an Air Force Space Command official estimated that it will cost from \$1.53 million to \$1.84 million per year. Part of the design for the pilot test calls for gathering exact cost data. Although the pilot study cost estimate is higher than current NASA costs, the Air Force Space Command expects that it will be getting additional services from the FFRDC. For example, it expects to receive additional studies and analysis and an assessment of the best way to provide space surveillance support in the future.

The Air Force Space Command must gain Air Force and DOD approval to move forward with this proposal. In September, Air Force headquarters officials plan to review the proposal and then decide whether to present it to DOD for approval. In addition to considering the cost and design aspects presented above, two other key considerations will likely affect the Air Force's decision.

First, the Air Force needs agreement from other U.S. government and DOD agencies before it can move forward with its plan. One DOD intelligence agency expressed concerns with the specifics of the Air Force Space Command's approach. First, this agency believes that the space surveillance data needs to remain under strict government oversight. The Air Force Space Command plan for implementing the pilot study involves sending the raw data to the FFRDC contractor's office rather than bringing the contractors into government facilities to do the work, a move that could affect the government's ability to control the data. The agency also expressed a concern with making space surveillance information publicly available; as a consequence, a description of products available and associated classification information will be coordinated with the services and U.S. government space agencies. Finally, the agency has resource concerns with using an FFRDC to do this work. According to the DOD intelligence agency, the Air Force will need to resolve

these issues with the other services and space agencies before beginning the pilot program. Air Force Space Command officials told us that they are working with the other services and space agencies to resolve these concerns.

Second, if approved, Air Force Space Command officials stated that the pilot could not commence until authorizing legislation is enacted making disseminating space surveillance data to commercial and foreign entities part of their mission. Air Force Space Command officials are currently drafting this legislation in anticipation of an Air Force and DOD decision and estimate that at a minimum, the preparation and enactment of authorizing legislation could take at least a year.

Air Force Space Command officials are recommending that, as part of the authorizing legislation, DOD seek language that will allow it to charge commercial and foreign entities for the support if it is deemed appropriate. While DOD does not charge for space surveillance support or data and the Air Force Space Command has no plans to charge for this information during the pilot test, the Air Force Space Command is including cost recovery language in the legislation they are drafting so that if a decision is made to recover costs in the future, DOD will already have legislative approval. Air Force Space Command officials told us that if a decision is made to recover costs, they would review what it costs to provide the service and what price they would charge the users. Gathering and analyzing this cost and pricing information may occur during the pilot test.

### **Agency Comments**

DOD provided written comments on a draft of this letter. In its comments, DOD pointed out that in response to a tasking from the Deputy Secretary of Defense regarding the Space Control Broad Area Review, the Air Force began building a plan for distribution and control of space surveillance data for commercial and foreign entities. According to DOD, this plan, as yet incomplete, must resolve concerns of the other services and U.S. government space agencies related to public release of the data. The Assistant Secretary of Defense for Command, Control, Communications, and Intelligence requested the Secretary of the Air Force provide a formal recommendation and data control plan by September 2002. DOD also stated in its comments that since the Air Force has not yet completed or submitted a proposal, its views do not represent an established position of the Department of Defense. DOD's comments are included in this report as a separate enclosure.

We also provided NASA with a draft of this letter, but NASA had no comments.

### **Scope and Methodology**

To understand DOD's plans for modernizing the space surveillance network, supporting commercial and foreign entities, implementing a pilot program, and charging commercial and foreign entities, we held discussions with and obtained documentation from DOD officials at the U.S. and Air Force Space Command, Peterson Air Force Base, Colorado Springs, Colorado; the Office of the Secretary of the Air Force, Rosslyn, Virginia; and the Space Programs Directorate, Office of the Assistant Secretary of Defense for Command, Control, Communications, and Intelligence, Arlington, Virginia. We also discussed the Air Force's proposal with a

DOD intelligence agency. In addition, we held discussions with Army and Navy Space Commands to discuss their role in space surveillance.

We obtained and reviewed documents on DOD's and its military components' space policies, the Space Surveillance Task Force preliminary assessment, military components' master plans for space, the space surveillance handbook, space surveillance guidance and instructions, and various Air Force briefing documents on the space surveillance network.

We conducted our work from May 2001 through May 2002 in accordance with generally accepted government auditing standards.

We are sending copies of this letter to the Chairmen and Ranking Minority Members of the Senate Committees on Appropriations, Armed Services, and Governmental Affairs and the House Committees on Appropriations, Armed Services, and Government Reform. We will also send copies to the Secretary of Defense and the Administrator of NASA. We will make copies available to others upon request. In addition, the letter will be available at no charge on the GAO Web page at <http://www.gao.gov>.

If you have any questions or need additional information, please call me at (202) 512-4841. Major contributors to this letter are James Solomon, Marie Ahearn, Cristina Chaplain, Maria Durant, Sigrid McGinty, and Bob Swierczek.

Sincerely yours,

A handwritten signature in black ink that reads "R E Levin". The letters are cursive and connected.

R.E. Levin  
Director  
Acquisition and Sourcing Management

Enclosure(s)

(120119)



**OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE**  
6000 DEFENSE PENTAGON  
WASHINGTON, DC 20301-6000

May 24, 2002

Mr. Robert E. Levin  
Director, Acquisition and Sourcing Management  
U.S. General Accounting Office  
441 G. Street, N.W.  
Washington, DC 20548

Dear Mr. Levin:

This is the Department of Defense (DoD) response to the GAO draft report, "SPACE SURVEILLANCE NETWORK: Air Force Space Command Proposes New Way to Support Commercial and Foreign Entities," dated May 16, 2002 (GAO Code 120119/GAO 02-403R).

The Department acknowledges receipt of the report and requests the GAO insert the following paragraph into the section titled "Agency Comments":

In response to a tasking from the Deputy Secretary of Defense regarding the Space Control Broad Area Review, the Air Force began building a plan for distribution and control of space surveillance data for commercial and foreign entities. This plan, as yet incomplete, must resolve concerns of the other services and US Government space agencies related to public release of the data. The Assistant Secretary of Defense for Command, Control, Communications, and Intelligence requested the Secretary of the Air Force provide a formal recommendation and data control plan by September 2002. The Air Force has not yet completed or submitted a proposal. Therefore, the discussion should not be viewed as stating the position of the Department of Defense.

My action officer for this effort is Major Michael Ward, (703) 607-1064.

Sincerely,

ROGER E. ROBB, Col, USAF  
Acting Director Space Programs



National Aeronautics and  
Space Administration  
**Office of the Administrator**  
Washington, DC 20546-0001



May 9, 2002

Mr. Robert E. Levin  
Director  
Acquisition and Sourcing Management  
United States General Accounting Office  
Washington DC 20548

Dear Mr. Levin:

NASA has reviewed the GAO Draft Report "Space Surveillance Network: Air Force Proposes New Way To Support Commercial and Foreign Entities" (job code 120119), and thanks you for the opportunity to review this report. We do not have any comments.

Cordially,

A handwritten signature in black ink, appearing to read "Daniel R. Mulville".

Daniel R. Mulville  
Associate Deputy Administrator