

STATEMENT FOR THE RECORD

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BEFORE THE COMMITTEE ON

COMMERCE, SCIENCE, AND TRANSPORTATION

UNITED STATES SENATE HEARING

ON MAY 16, 1996

Mr. Chairman and Members of the Committee,

Thank you for the opportunity to appear before this Committee to lend my support, and that of the U.S. Geological Survey, to preserving a strong Mission to Planet Earth (MTPE) program, including a reliable and responsive data and information system capable of serving the needs of a large and diverse user community.

The MTPE program has been promoted primarily on the premise that it will provide the set of tools, particularly through the use of the Earth Observing System (EOS) and Landsat 7, whereby scientists will be able to study the Earth as a unified system. Results from the program will lead to better understandings of the relationships among atmosphere, land, and ocean processes and to the scientific basis needed for making informed policy decisions related to human influence on the changing planetary environment. It also is important to recognize that in addition to the significance of EOS and Landsat 7 in characterizing and better understanding Earth processes, the data from these systems will have many important practical applications throughout the public and private sectors.

For more than two decades now, the U.S. Geological Survey's EROS Data Center (EDC), located near Sioux Falls, South Dakota, has been collecting, processing, archiving, reproducing, and distributing a variety of satellite and airborne remotely sensed data of the Earth to research and operational users. In 1995, the EROS Data Center received more than

100,000 inquiries about its data holdings from a vastly diverse population of potential users, and it filled more than 25,000 orders for those data (380,000 photographic and digital products). Sixty-five percent of those orders went to commercial or individual private users, who utilized the data in a wide range of applications. Such applications include exploration for petroleum and mineral resources in the United States and around the world, transportation and utilities routing, and crop monitoring, to mention just a few. Twenty-three percent of data orders from EDC in 1995 were made by the Federal government in support of research and operational projects, such as forest, cropland, and rangeland vegetation monitoring, fire-fuels mapping of public lands, and geologic mapping to assess our country's mineral resources. Other categories include university researchers and operational users in State and local governments.

Remote sensing data management and distribution functions fit well within the U.S. Geological Survey's mission--to obtain and disseminate objective Earth science data and information--and the Geological Survey strongly endorses NASA's multi-agency design for managing data processing and dissemination for the EOS Data and Information System (EOSDIS).

However, as NASA attempts to re-engineer EOSDIS into a much larger federation of data managers, we believe that this new design must ensure that the fundamental baseline data acquired (these data sets are typically referred to as Level 0) and the first-generation usable products generated from these data (typically referred to as Level 1) are consistently processed and protected. Thus, we support the concept of a federated EOSDIS provided that it is implemented in an evolutionary manner and that the management of the Level 0 and Level 1 data sets are assigned to reliable, long-term institutional facilities.

EOS and Landsat 7 remote sensing instruments will provide new and improved data, in terms of spectral characteristics and spatial resolution, compared to the data provided by today's land remote sensing satellites. Consequently, the expanding applications that industrial and other commercial users have been developing for land remotely sensed data will continue to grow if efficient access to EOS and Landsat 7 data is assured. These data that characterize the oceans and atmosphere will also have other important applications. We can predict, for example, that EOS data will be important to the commercial fishing industry. They will also be

important to the maritime shipping industry, and even to the airline industry as, for example, when major volcanic eruptions spread ash plumes through the sky. We should also recognize that the implementation of a disciplined and effective EOSDIS will provide opportunities that have not been available with any existing or previous data processing and distribution system--that of exploiting the near real-time products for a wide variety of applications.

Healthy debate is currently being waged regarding the degree to which human activity is having adverse effects on the Earth's environment. The truth about the issues which are central to this debate cannot be known without further research and study. Consequently, it seems only reasonable that we could seek diligently, yet cost effectively, to obtain the necessary data and information for all investigators and policymakers.

Such improved understanding requires systematic collection and analysis of various data on a worldwide basis, and space observation is the only practical means for collecting many of these data. The Mission to Planet Earth program, in general, and EOS and Landsat 7 specifically, are critical

elements of the United States' efforts to meet this enormous challenge.

MTPE will provide the space platforms and sensors to collect relevant data; it will include the data and information system to process and distribute data to the science community, and it will incorporate a research program to lead the scientific research and data analysis efforts at answering compelling questions of planetary proportions.

History has shown, however, that poorly implemented ground data management systems that provide access to satellite data can have devastating, long-term impacts on the quality of scientific research and operational uses of remote sensing data.

Mr. Chairman, MTPE data will provide the key for sorting out pressing questions on humanity's impact on our planet; they will also have great potential for addressing many important practical problems throughout the public and private sectors. We believe the integrated ground data processing and distribution system--EOSDIS--must be appropriately designed, funded, and implemented to provide easy, low cost access to MTPE data by the broadest possible community of users. We also believe

that a federation of data managers can work, if allowed to evolve under guidelines that preserve the baseline data and associated processing facilities while allowing competitive opportunities for innovation, creativity and initiative for the development of many new applications. The Department of the Interior and the U.S. Geological Survey will continue to work closely with NASA and other partners, as we have for almost 25 years, to ensure that the scientific goals and practical objectives of Mission to Planet Earth are realized, and that the data from this program are made available to the broadest possible user community, including government researchers, private sector entrepreneurs, and academic centers of research and education.