

W

March 31, 1999

TO: Y/Associate Administrator for Earth Science

FROM: W/Assistant Inspector General for Auditing

SUBJECT: Final Report on the Audit of the Commercial Remote
Sensing Program Office
Assignment Number A-HA-98-036
Report Number IG-99-023

The subject final report is provided for your use and comments. Please refer to the Executive Summary for the overall audit results. Our evaluation of your response is incorporated into the body of the report. We request that you provide the required comments that specify the corrective actions that are planned, ongoing, and completed by the Agency on or before April 30, 1999. All recommendations will remain undispositioned and open until these comments are received. For those corrective actions that are not complete, please also notify us when action has been taken, including the extent of testing performed to ensure corrective actions are effective.

If you have questions concerning the report, please contact Mr. Daniel J. Samoviski, Audit Program Director, Earth and Space Science Audits, at (301) 286-0497 or Ms. Sandy Massey, Auditor-in-Charge, at (407) 867-4057. We appreciate the courtesies extended to the audit staff. The report distribution is in Appendix D.

[Original signed by]

Russell A. Rau

Enclosure

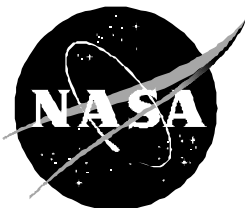
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IG-99-023

**AUDIT
REPORT**

Commercial Remote Sensing Program Office

March 31, 1999



National Aeronautics and
Space Administration

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Acronyms

ARC	Affiliated Research Center
CRSPO	Commercial Remote Sensing Program Office
DBS	Data Broker Service
EOCAP	Earth Observations Commercial Applications Program
ESE	Earth Science Enterprise
MSCI	Mississippi Space Commerce Initiative

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NASA Office of Inspector General

IG-99-023

March 31, 1999

A-HA-98-036

Commercial Remote Sensing Program Office

Executive Summary

Background. NASA officials designated the John C. Stennis Space Center (Stennis) as the Lead Center for commercial remote sensing. The Commercial Remote Sensing Program Office (CRSPO) at Stennis is responsible for developing commercial initiatives to meet Stennis' charter. In addition to internally developed initiatives, the CRSPO administered a congressionally directed program to purchase commercial Earth science data. Congress and the Office of Management and Budget directed NASA to initiate a commercial data buy program that would acquire Earth science data products. NASA's fiscal year 1997 appropriation contained \$50 million to accomplish those purchases. During Phase I of the program, the CRSPO awarded 10 contracts totaling about \$4.3 million. During Phase II, the CRSPO awarded five contracts totaling about \$42.8 million. The program office will expend the data buy funds by September 2001.

Objectives. The specific audit objectives were to determine whether:

- the Commercial Data Buy Program will help achieve Earth Science Enterprise (ESE) goals;
- future congressionally directed data buy programs are warranted; and
- the CRSPO initiatives have resulted in commercial entities that can contribute products to help achieve ESE goals.

Details on the objectives, scope, and methodology are in Appendix A.

Results of Audit. The congressionally directed Commercial Data Buy Program has helped achieve ESE goals. However, additional congressionally directed data buy programs are not warranted. The CRSPO awarded five contracts for commercial remote sensing products. Those five contracts will result in commercial products relating to two Earth science themes: land cover/land use change research and natural hazards research. For example, one of the five awards was for the compilation of two decades of Landsat observations. This product will be valuable to Earth scientists because it will provide a single source of Landsat data. However, the CRSPO should design more specific initiatives to promote the use of commercial remote sensing products. Although initiatives have been successful at developing the commercial

remote sensing industry, the program office has not leveraged¹ this industry to ensure products are provided that meet baseline scientific requirements. As a result, the CRSPO has been unable to fulfill its goal to reduce NASA's costs of remote sensing science and technology programs through competition within the commercial remote sensing industry.

Other Matters of Interest. During the audit, we expressed concern about Agency compliance with the Government Performance and Results Act of 1993 and the need for CRSPO performance measures. Program office officials hired a consulting firm to develop performance measures. Once the program office establishes performance measures, the ESE should be able to comply with the Act's March 2000 reporting requirements. Therefore, we are making no recommendations at this time. Details on this issue are in Appendix B.

Recommendations. We recommend that the ESE publish a baseline of scientific requirements that will foster competition within the commercial remote sensing industry. The program office should use this baseline in initiatives to fulfill ESE scientific requirements at the lowest cost.

Management's Response. Management concurred with the report recommendations. The response is summarized in the body of the report and included in Appendix C.

Evaluation of Management's Response. We considered management's comments responsive, however, both recommendations will remain open until additional comments that describe the planned, ongoing, and completed corrective actions are received.

¹ The CRSPO has not made effective use of NASA's investment in the commercial remote sensing industry.

Introduction

In February 1997, the Acting Associate Administrator for the ESE, the Center Directors for Goddard Space Flight Center and Stennis, and NASA's Chief Technologist signed a memorandum defining Stennis' role as the Lead Center for commercial remote sensing. Stennis' role is to support the development of a commercial remote sensing industry, which can contribute to long-term ESE strategic goals. The CRSPO, located at Stennis, is responsible for carrying out Stennis' charter as the Lead Center for commercial remote sensing. The charter identifies the CRSPO's goals as follows:

- Transfer Mission To Planet Earth² technology and data applications knowledge to industry.
- Accelerate the development of a preeminent U.S. remote sensing industry infrastructure to (1) develop new ways of doing business with U.S. companies that reduce the cost and extend the benefits of NASA remote sensing science and technology programs and (2) promote U.S. industrial leadership in the commercial remote sensing area.

The CRSPO works with industry to promote a broader understanding of commercial applications for remote sensing technology. To meet Stennis' charter, the program office developed several commercial remote sensing initiatives. As the CRSPO meets the charter, it will create new Earth science capabilities, data, and information products at a reduced cost that are useful to both the private sector and NASA's Earth scientists.

The program office expects that partnering on technology development will result in direct cost savings to both the ESE and the private sector. Potential ESE cost savings will be achieved by defining and disseminating a comprehensive set of science requirements, hereafter referred to as a baseline.³ The private sector can then assess how to address the baseline within their business plans and corporate capabilities. Cost savings to ESE science programs will result when the baseline can be accommodated at a low incremental cost to the private sector and at a reduced cost to NASA as compared to the full cost of a mission. In essence, the ESE seeks to buy rather than build whenever feasible.

² The ESE was formerly the Mission To Planet Earth Enterprise.

³ A baseline is a comprehensive set of measurements, including data characterization and calibration specifications, data continuity restrictions, and technology performance parameters. The ESE requires these measurements to answer questions about land, oceans, ice, atmospheric processes, and the interactions among them. For example, a needed scientific measurement for land-cover/land-use change research is multispectral, global coverage of different types of vegetation or other land cover. The data should have sufficient spatial resolution and sufficient frequency (a revisit time on the order of 15 days) to determine seasonal and long-term changes in terrestrial biomass.

In addition to self-directed commercial remote sensing initiatives, the CRSPO administered a \$50 million congressionally directed demonstration program to purchase Earth science products from the private sector. To reduce Agency risks, the program office used a two-phased procurement approach:

- Phase I included a Request for Offers and a 1- to 6-month effort with simulated or prototypical deliverables at the end of the effort.
- Phase II included a letter Request for Offers⁴ for a 1- to 3-year effort with incremental delivery of data or products.

The CRSPO accepted the Phase I products in June 1998 and validated and evaluated them during July and August 1998. On September 3, 1998, we issued audit report IG-98-026,⁵ which addressed our concerns with Phase I of the Commercial Data Buy Program. Also, in September 1998, the CRSPO awarded five Phase II contracts.

⁴ The CRSPO issued a letter Request for Offers to those Phase I companies whose products were validated, accepted, and recommended for Phase II awards by NASA's Earth scientists.

⁵ Audit of the Earth Science Commercial Data Buy Program. (See Appendix A for summary of the report.)

Finding and Recommendations

Leveraging the Private Sector

The CRSPO has not leveraged the commercial remote sensing industry to provide products that meet baseline scientific requirements. This condition exists because ESE officials have not defined a baseline of scientific requirements that would permit industry to competitively provide products tailored to meet Earth science needs. As a result, the CRSPO has been unable to fulfill its goal to reduce NASA's costs of remote sensing science and technology programs through competition within the commercial remote sensing industry.

Congress Directs NASA to Leverage Private Sector

The Commercial Space Act of 1998 states that NASA's Administrator shall "conduct a study to determine the extent to which the baseline scientific requirements of Earth Science can be met by commercial providers" The Act further provides that the CRSPO will execute and administer the acquisition of Earth science products from the private sector.

As stated in the Mission To Planet Earth Commercial Strategy, March 1997, the Enterprise's (now the ESE's) commercial goal is "to support the development and leverage commercial capabilities . . . to cost-effectively meet Mission To Planet Earth science objectives." The ESE expects that cooperation with private industry will lower costs and enhance the performance of NASA systems as well as enable commercial markets to emerge. As commercial markets develop and are able to meet ESE scientific requirements, NASA will achieve cost savings. Stennis' role, as the commercial remote sensing Lead Center, is to achieve cost savings by leveraging private industry infrastructure against baseline ESE requirements.

Leveraging the Commercial Remote Sensing Industry

The CRSPO designed two initiatives, the Affiliated Research Center (ARC) Program and the Mississippi Space Commerce Initiative (MSCI), to promote U.S. leadership and competitiveness in the remote sensing industry. The program office designed three other initiatives, the Commercial Data Buy Program, the Data Broker Service (DBS), and the Earth Observations Commercial Applications Program (EOCAP), to extend the benefits of NASA's technology and reduce remote sensing costs. These initiatives are described below.

ARC Program and MSCI

The objective of the ARC Program is to introduce companies to spatial information technologies, such as remote sensing, geographic information systems, and the global positioning system. The objective of the MSCI is to bring together all the forces necessary to

make Mississippi an ideal location for businesses engaged in selling information products derived from satellites. Under these two initiatives, the CRSPO partners with academia to meet the program office's goal of developing a robust U.S. remote sensing industry.

Commercial Data Buy Program

The solicitation for the Commercial Data Buy Program did not address specific scientific requirements. ESE officials were prepared to solicit four distinct Earth science measurements; however, officials revised the solicitation to allow general-purpose products relating to one of four broad Earth science themes.⁶ Offerors proposed products they deemed supportive of those themes. Because the private sector was unaware of the questions NASA scientists seek to answer, commercial providers could only speculate about the types of products needed by Agency Earth scientists. Including a baseline in the solicitation would have clearly stated NASA's requirements. Broadening the scope of the solicitation supported the development of the commercial remote sensing industry by creating commercial opportunities. However, the resulting products will not replace near-term ESE missions or fulfill specific scientific requirements. For example, one of the five awards was for the compilation of two decades of Landsat observations, some of which are maintained at foreign locations. This product will be valuable to Earth scientists because it will provide a single source of Landsat data (satellite images of Earth.) However, NASA did not have a requirement to compile these data.

DBS

In response to the Agency's Zero Base Review,⁷ the CRSPO developed the DBS. The program office expects the DBS to provide a streamlined approach for acquiring commercial remote sensing data, thus eliminating reliance on NASA's Lear jet to collect the data. Using a baseline, this initiative has the potential to be a cost-effective means for meeting ESE scientific requirements. To date, the CRSPO has issued three delivery orders under the DBS contract. The delivery orders have not yet replaced the Lear jet or other near-term ESE missions. For example, one of the delivery orders was to acquire simulated ocean winds data. ESE scientists intend to use the data as an interim source until the Agency's replacement for the NASA Scatterometer⁸ is launched. The simulated data will augment ESE ocean winds research, but will not replace the NASA Scatterometer.

⁶ The four Earth science themes are:

- Land-Cover/Land-Use Change Research
- Seasonal-to-Interannual Climate Variability and Prediction
- Natural Hazards Research and Applications
- Long-Term Climate: Natural Variability and Change Research

⁷ A Zero Base Review recommendation was to consolidate, at Dryden Flight Research Center, all Agency aircraft not supporting astronaut activities. The CRSPO uses the NASA Lear jet located at Stennis to collect airborne remote sensing data.

⁸ The Japanese Advanced Earth Observing Satellite, which failed on June 30, 1997, was carrying the NASA Scatterometer. The NASA Scatterometer was providing real-time ocean winds data.

EOCAP

The EOCAP develops and validates remote sensing and geographic information system products for commercial markets, and has been very successful in developing the commercial remote sensing industry. The CRSPO has administered five EOCAPs, consisting of 49 agreements with industry and resulting in 40 trademarked products. Of the 40 products, the CRSPO contracted for 2 under the Commercial Data Buy Program and subcontracted for 1 under the DBS. The remaining products primarily satisfy commercial market requirements.

Establishing a Baseline

The CRSPO has been unable to leverage emerging commercial markets because the ESE has not developed a baseline for scientific requirements. The program office needs a baseline to assist Agency scientists in answering questions about the Earth's changing environment. A baseline would permit program officials to target initiatives at the commercial companies capable of providing needed scientific measurements at the lowest cost.

ESE Supports Development of a Baseline

The ESE agreed that while the CRSPO is helping to develop a commercial remote sensing industry, ongoing initiatives are not addressing the Enterprise's scientific requirements. ESE officials further acknowledged that without a scientific baseline, the CRSPO cannot leverage the commercial sector to replace near-term ESE missions. Although the Commercial Strategy references some scientific requirements, those references do not constitute a baseline. The ESE intends to establish a limited set of requirements as a result of post-2002 Earth Observing System mission planning. However, a comprehensive baseline does not currently exist.

Conclusion

CRSPO initiatives have not resulted in commercial products that meet ESE scientific requirements. Until the ESE establishes and disseminates a scientific baseline, the program office cannot meet Agency requirements commercially at less than full mission cost. A baseline will benefit NASA and the remote sensing industry by allowing the CRSPO officials to target initiatives toward commercial companies capable of meeting ESE scientific requirements. In turn, both industry and NASA will benefit as they share developmental expenses and broaden the commercial customer base for remote sensing technology. The remote sensing industry will benefit from NASA's knowledge, and NASA will benefit from lower costs that result from increased competition and demand. Commercial initiatives resulting from a scientific baseline will also assist in (1) developing private sector capabilities and (2) educating the remote sensing industry on ESE scientific requirements.

Recommendations, Management's Response, and Evaluation of Response

- 1. The Associate Administrator for the ESE should publish a baseline of scientific requirements that will foster competition within the commercial remote sensing industry.**
- 2. The Program Manager, CRSPO, should use the ESE's baseline in commercial initiatives to fulfill ESE scientific requirements at the lowest cost.**

Management's Response. Management concurred with the report recommendations, but it does not believe the report adequately reflects the broader context of the ESE and the CRSPO. The ESE Associate Administrator is of the opinion that the current commercial industry is unable to meet Agency Earth science needs, however, there will be significant opportunities for industry in the future, specifically with the next series of Earth Observing System missions. Accordingly, a baseline of scientific requirements will be meaningful for next generation commercial remote sensing systems emerging in the next few years. The complete text of management's comments is in Appendix C.

Evaluation of Management's Response. We consider management's concurrence to the report recommendations a positive step. However, management has not identified planned, ongoing, and completed corrective actions, specifically when the ESE plans to complete a documented baseline, and how the CRSPO plans to use the baseline in future commercial initiatives. We request that management provide additional comments by April 30, 1999, which specify the corrective actions that are planned, ongoing, and completed. All recommendations will remain undispositioned and open until these comments are received.

We agree with management's comments that the commercial remote sensing industry is maturing and that ongoing CRSPO initiatives are making a significant contribution to this industry. We do not agree, however, that Table 1, Appendix A of the Phase I Request for Offers adequately defined EOS measurement sets. The table identifies generic measurements, such as precipitation, and identifies the instrument and satellite currently collecting these types of measurements. It does not identify scientific parameters or characteristics such as those identified in footnote 3 of this report. Further, we did not intend to imply a higher standard for the CRSPO, but rather we measured the program office's performance against the ESE's goals and objectives as established in Stennis' Lead Center charter and in the Enterprise's Commercial Strategy.

Appendix A. Objectives, Scope, and Methodology

Objectives

The objectives of the audit were to determine whether:

- the Commercial Data Buy Program will help achieve ESE goals;
- future directed data buy programs are warranted; and
- the CRSPO initiatives have resulted in commercial entities that contribute products to help achieve ESE goals.

Scope and Methodology

We interviewed program officials from NASA Headquarters, Stennis, and 21 participants from 2 CRSPO initiatives. We reviewed CRSPO draft performance measures for compliance with the Government Performance and Results Act of 1993 (see Appendix B). We also reviewed Office of Management and Budget Circulars, the Federal Acquisition Regulation, and Agency records applicable to the CRSPO initiatives. Specific CRSPO initiatives are described below.

CRSPO INITIATIVES					
INITIATIVE	UNIVERSE PERIOD OF COVERAGE	TOTAL PROJECTS	TOTAL VALUE	SAMPLE PROJECTS	SAMPLE VALUE
ARC Program	1997 - 1998	27	\$800,000	12	\$300,000 (estimated)
MSCI ¹	1998	0	\$3.0 million	0	0
Commercial Data Buy Program (Phase II Only)	1998	5	\$38.3 million	5	\$42.8 million (estimated)
DBS	1997 - 1998	3	\$2.0 million ²	3	\$499,302
EOCAP	1989 - 1997	49	\$21.2 million	9	\$5.3 million
Verification and Validation Program ³					

¹ We performed a limited review of the MSCI because this initiative was still under development.

² The 1997 DBS contract was a firm-fixed-price-requirements contract for an estimated \$1 million. The 1998 DBS contract was an indefinite delivery/indefinite quantity contract with a minimum order quantity of \$1,000 and a maximum quantity of \$1 million.

³ Results of survey did not indicate potential weaknesses with this initiative. Because of low risk, we excluded this initiative from detailed review.

Appendix A

We limited our review of the ARC Program to completed projects. Of the 17 completed ARC projects, we randomly selected 12. We categorized EOCAP awards by year, status, and \$500,000 threshold. We selected the first three awards valued at more than \$500,000 from 1993, 1994, and 1997. We omitted 1989 and 1991 awards due to age and limited access to records. We did not validate either the ARC or EOCAP universe, but relied on CRSPO records.

Management Controls Reviewed

We reviewed controls for the solicitation, evaluation and selection of participants in the following initiatives: the ARC Program, the EOCAP, the Commercial Data Buy Program, and the DBS. For example, we participated in the science evaluations for the Phase II Commercial Data Buy Program awards. We also ensured compliance with the cash on delivery requirement established by the CRSPO. That is, we verified that the program office did not pay for products until accepted. The controls in place were considered adequate.

Audit Field Work

We conducted field work from June 1998 through January 1999 at Stennis and NASA Headquarters. The audit was performed in accordance with generally accepted government auditing standards.

Prior Audit Coverage

Audit of Earth Science Commercial Day Buy Program. We issued a report (IG-98-026) on the audit on September 3, 1998. Congress and the Office of Management and Budget directed NASA to initiate a \$50 million commercial data buy program that would acquire data products needed to meet Earth Science research goals. Overall, the CRSPO properly planned and managed the commercial data buy program. However, 1 of the 10 contracts awarded duplicated NASA's capability to access Spaceborne Imaging Radar-C data through two existing agreements. The CRSPO believed that the contract for an online archive would provide more efficient access to the data. However, excessive download time for the online access resulted in the same method of distribution being used as for both existing NASA agreements. As a result, the CRSPO unnecessarily expended \$295,000 during Phase I of the commercial data buy program. Further, cost projections showed that the CRSPO could spend at least \$576,000 during Phase II for data that were already available at no additional cost to the Agency. Therefore, a total of \$871,000 could be put to better use. We recommended that (1) the imaging data portion of the Phase I data buy contract be terminated, and (2) the CRSPO not award a Phase II contract. Management did not concur with the recommendation

Appendix A

to terminate the Phase I contract because all Phase I products had been delivered and accepted. We agreed with management that contract termination would not have been cost advantageous to the Government. Management agreed with the second recommendation and notified the contractor that NASA would not pursue a Phase II contract.

Appendix B. Other Matters of Interest

CRSPO Performance Measures

The ESE included the CRSPO in its fiscal year 1999 Performance Plan as required by the Government Performance and Results Act of 1993; however, the CRSPO has not formalized its project level performance measures for each commercial initiative. Without such measures, the CRSPO cannot assess the effectiveness of the initiatives. Further, the ESE may not be able to report comparisons of CRSPO performance plan goals to program accomplishments.

Government Performance and Results Act

As of September 30, 1997, the Act requires that each agency head submit, to the Office of Management and Budget, an annual performance plan covering each activity in the agency's budget. The plan should establish measurable quantitative and/or qualitative performance goals for those activities. Beginning on March 31, 2000, each agency head must also submit to the President and the Congress a performance report addressing program performance for the previous fiscal year. Specifically, the report shall include a comparison of goals set forth in the annual performance plan to actual program accomplishments.

ESE Fiscal Year 1999 Performance Plan

The fiscal year 1999 ESE Performance Plan contains the following program objective and performance target:

Objective - Support the development of a robust commercial remote sensing industry

NASA is committed to providing technical assistance and advice to companies developing the commercial remote sensing market opportunities. The performance target is to establish at least 75 commercial partnerships in "value-added" remote sensing product development, an increase of 100 percent from 37 in fiscal year 1997.

According to ESE officials, the CRSPO is responsible for meeting this objective. CRSPO initiatives may increase commercial partnerships by 100 percent. However, without performance measures, the program office cannot assess the effectiveness of the partnerships.

CRSPO Actions

We expressed our concern to the CRSPO Program Manager about Agency compliance with the Government Performance and Results Act and the need for CRSPO performance measures.

Appendix B

He stated that the program office hired a consulting firm to develop performance measures for the EOCAP and the ARC Program. The Program Manager plans to apply the performance measures across all ongoing initiatives. Once the program office establishes performance measures, the ESE should be able to comply with the March 2000 reporting requirements. Therefore, we are making no recommendations at this time.

Appendix C. Management's Response

National Aeronautics and
Space Administration
Headquarters
Washington, DC 20546-0001



MAR 29 1999

Reply to Attn of:

Y

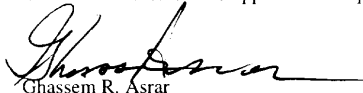
TO: W/Assistant Inspector General for Auditing
FROM: Y/Associated Administrator for Earth Science
SUBJECT: Draft Report on Audit of the Commercial Remote Sensing Program Office

My office has reviewed the February 26, 1999, draft of the subject audit report. I concur with the report's recommendations. However, the surrounding discussion in the draft does not adequately reflect the broader context in which the Earth Science Enterprise (ESE) and the Commercial Remote Sensing Program (CRSP) operate. Thus, the draft would lead an outside reader to a fundamental misconception of the state of our efforts to use commercially provided data to meet science requirements.

Two principal factors define this context. First, there is not in existence today a mature commercial industry of space-based remote sensing data providers who are ready to provide data or products that could meet our requirements. This industry is only now emerging, with some of it (e.g., Orbital Science Corporation's SeaWiFS) benefiting from partnerships with NASA. The first U.S. commercial launches of space-based land imagers are taking place this year. Second, the Enterprise is in the process of deploying the first series of Earth Observing System (EOS) missions, which have been underway since 1991. The most significant opportunities for industry to meet ESE science requirements with commercial data are ahead of us, with the next series of missions.

The recommendation to baseline science requirements for use by the commercial industry is meaningful in the context of preparing for the next generation of commercial remote sensing systems and the demand for new data sources that will emerge in the next few years. It is not particularly meaningful in terms of judging current performance. CRSP has put contracts in place to augment current science data needs with commercial available data derived from science requirements. This effort purchased all the science-quality commercial data potentially available within the contract performance period. CRSP continues to do an excellent job of connecting ESE science with the commercial remote sensing industry, as evidenced by positive comments from industry representatives in a forum hosted by the Rand Corporation earlier this month. Please find attached additional specific comments to the draft report.

ESE has taken significant steps to exploit commercially available science quality data. ESE has also established a policy to document its scientific requirements in its Science Research Implementation and in each Announcement of Opportunity (AO) that it will issue in the future and solicit commercially available sources of such data. ESE is making an explicit statement that it will not build a satellite if required observations are available commercially. NASA, the ESE and CRSP are committed to commercial data purchases that can meet its scientific research and applications requirements.


Ghassem R. Asrar

Enclosure

cc:
Y/Mr. Williams
YB/Ms. Santa
YO/Dr. Maynard
SSC/XA00/Mr. Brannon

***Specific Comments on 2/26/99 Draft IG Report AHA-98-036
Review of the Commercial Remote Sensing Program Office (CRSP)***

Executive Summary

Results of Audit; 2nd sentence: NASA requests clarification to the second sentence which states “However, additional directed data buy programs are not likely warranted.” Does this mean that NASA should not pursue additional data buys?

Footnote 1: this statement reads like a summary judgment on CRSP. If that is the intent, it does not belong in a footnote, even if it were true. If it is intended to be a definition of “leveraged” in the main text, it is ineffective.

It is essential to understand that the statement “the program office has not leveraged this industry to ensure products are provided that meet baseline science requirements” is a non-sequiter. ESE has not expected CRSP to do so in this time frame. The Science Data Buy was clearly characterized in the solicitation as a demonstration effort. Science requirements were incorporated by reference (i.e., the Science Research Plan, and the EOS Reference Handbook for replacement continuity)

Introduction

Footnote 3: (1) “such” should be replaced with “including” (the items in the series are not measurements, but desired features of measurement sets). (2) “(About 10 to 20 meters)” should be deleted. Landsat data has been fulfilling this requirement with 30m data.

Leveraging the Private Sector

Opening paragraph; this paragraph should be deleted—it contains two misleading statements surrounding a false statement (see cover letter). Consider replacing with: “CRSP has a number of initiatives designed to help fulfill its goal of accelerating the development of a pre-eminent U.S. remote sensing industry. Some, such as the Scientific Data Buy program, have proved useful to both industry and the science community in achieving a common understanding of what constitutes science-quality data. Such efforts will be crucial to enable industry to meet selected NASA needs for science data in the future.”

On page 4 under Commercial Data Buy Program, indicates that specific science requirements were not addressed. Within the Phase I Request for Offer under section 5.2 offeror’s were given an opportunity to submit proposals that address the current EOS measurement sets. These measurement sets do have specific requirements associated with them. Please note within the RFO:

“5.2 EOS Measurement Continuity Test Sets

NASA is very interested in buying data from new sensors concurrently with the first EOS series to evaluate whether these new sources of data sets can replace the first series of EOS sensors. The current measurement areas, the instruments that provide key measurements in those areas, and the satellites on which they will fly are provided in Table 1, Appendix A. Further information on these instrument characteristics and detailed descriptions of their data products can be found in the MTPE Reference Handbook.

Generally, the criteria for replacements to existing or planned EOS data sets are as follows:

- In order for a “replacement” data product to be “qualitatively” equivalent to a current measurement, it must meet established requirements for validation, timeliness, and spatial scale, because it will be compared against data sets already well defined by a working science team, possibly involving continuity with a precursor data set.”*

These measurement areas do provide baseline characteristics as described within footnote 3 of the audit report.

Paragraph on “ESE Supports Development of a Baseline”; rewrite the first sentence. CRSPO does not develop a commercial remote sensing industry—the private sector does that, with help from CRSPO.

“Conclusion”; the first two sentences are misleading, implying a higher standard for expectation for CRSP in the period 1997-99 that has been set for it. CRSP initiatives have been very productive in helping scientists and commercial firms understand what constitutes science-quality data, and in identifying the current capabilities of commercial data providers.

Appendix D. Report Distribution

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Program Manager, Commercial Remote Sensing Program Office, John C. Stennis Space Center

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Appendix D

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Deputy Associate Director, Energy and Science Division, Office of Management and Budget
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Associate Director, National Security and International Affairs Division, General Accounting Office
Special Counsel, House Subcommittee on National Security, International Affairs, and Criminal Justice
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House Committee on Government Reform and Oversight
House Committee on Science
House Subcommittee on Space and Aeronautics, Committee on Science

Congressional Member

The Honorable Pete Sessions, U.S. House of Representatives

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