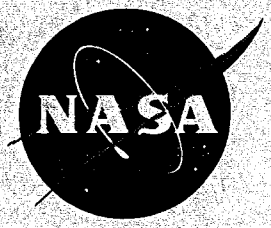
IG-97-023

FINAL REPORT

RAPID ACTION

PROPOSED REMOTE GROUND TERMINAL IN GUAM

JUNE 10, 1997



National Aeronautics and Space Administration

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

JUN 10 1997

Reply to Attn of: W

TO: M/Associate Administrator for Space Flight

FROM: W/Acting Assistant Inspector General for Auditing

SUBJECT: Rapid Action Report on Proposed Remote Ground Terminal in Guam
Assignment No. A-GO-96-012
Report No. IG-97-023

The NASA Office of Inspector General is conducting an audit of NASA's proposal to establish a remote Tracking and Data Relay Satellite System (TDRSS) ground terminal in the U.S. Territory of Guam. The audit showed that expected reimbursable commitments that will pay the operating cost of the Guam Remote Ground Terminal (GRGT) have not materialized. NASA expects the GRGT to be complete and ready for operation in July 1998. If NASA does not obtain reimbursable funds, plans include potentially inactivating and mothballing the new, $21.4 million terminal. We recommend that NASA delay establishing the GRGT until funding for its operation is assured.

We issued a draft report on March 18, 1997. The agency's initial written response was received April 9, 1997. On May 13, 1997, the agency provided an amended response. We have summarized these two responses in the attached report, and included them in their entirety as Appendix A. The actions taken and planned are considered responsive to the intent of the recommendation.

In accordance with NASA Management Instruction 9910.1B, we request to be included in the concurrence cycle for closure of this recommendation. If you have any questions, please call Kevin J. Carson, Acting Program Director, MTPE and Communications at 301-286-0498; Daniel J. Samoviski, Acting Director, Audit Division-A, or me at 202-358-1232.

Robert J. Wesolowski

Robert J. Wesolowski

Enclosure

cc:
201/J. Clark, GSFC
W/Carson, GSFC
AT/Mott
JMC/Myles

BACKGROUND

The NASA Deputy Associate Administrator for Space Flight (Space Communications) in the Office of Space Flight has overall responsibility for the Tracking and Data Relay Satellite System (TDRSS) program. The Goddard Space Flight Center (GSFC), Mission Operations and Data Systems Directorate, has implementation responsibility for the Guam Remote Ground Terminal (GRGT).

The GRGT will provide communications support to NASA's (1) Space Transportation System (STS), (2) International Space Station (ISS), (3) Compton Gamma Ray Observatory (GRO), and (4) potential reimbursable customers. The GRGT will replace an existing remote terminal that NASA established in Australia in 1993. The Australian system primarily supports the GRO mission with limited support provided to the STS.

NASA's former Office of Space Communications proposed the GRGT. The Space Operations Council approved the GRGT proposal on May 28, 1996. NASA included the proposal in a July 3, 1996 funds reprogramming notice to the Chairman of the Committee on Commerce, Science and Transportation, U.S. Senate, and the Chairman of the Committee on Science, U.S. House of Representatives. The reprogramming notice stated that NASA would fund the $21.4 million cost of establishing the GRGT from (1) balances remaining from completed projects within the Space Network funding availability, and (2) receipt of reimbursable funds greater than originally anticipated.

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OBJECTIVES, SCOPE, AND METHODOLOGY

OBJECTIVES

The audit objectives are to (1) assess the cost-effectiveness and requirements for the proposed GRGT, and (2) determine if alternatives have been considered to meet NASA's needs.

SCOPE AND METHODOLOGY

We reviewed the (1) policies and procedures applicable to the approval of new TDRSS capability, (2) GRGT proposal background, justification and approval documentation, (3) final cost estimate, and (4) GSFC/NASA Headquarters implementation agreement. We also discussed the GRGT requirements and approval process with NASA Headquarters, GSFC and Johnson Space Center personnel.

AUDIT FIELD WORK

We conducted audit field work from October 1996 to February 1997. The audit was performed in accordance with generally accepted government auditing standards.

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OBSERVATION AND RECOMMENDATION

NASA SHOULD DELAY ESTABLISHMENT OF THE GRGT

The audit showed that NASA has not obtained long term commitments from expected reimbursable customers to pay for the annual operating cost of the GRGT. If these commitments do not materialize, NASA will inactivate and "mothball" the new $21.4 million ground terminal. Accordingly, NASA should delay establishing the GRGT until funding for operation is assured.

REIMBURSABLE REVENUE OF $9.4 MILLION PER YEAR WAS PROJECTED

The Office of Space Communication's proposal to the Space Operations Council detailed how establishing the GRGT would generate a projected $9.4 million per year in new reimbursable revenues for NASA (See Exhibit I). The expected reimbursable revenues would fund the GRGT's estimated $2.6 million annual operating cost (See Exhibit II) and quickly provide a return on NASA's $21.4 million investment.

GRGT MAY BE MOTHBALLED AFTER COMPLETION

NASA is establishing the GRGT to (1) increase its reimbursable customer base, (2) more fully use TDRSS capability, and (3) augment support to the STS and ISS programs. However, reimbursable customers that NASA expects to fund the GRGT's operating cost and provide a return on NASA's investment, have not materialized. Specifically, no firm commitments or agreements from reimbursable customers have been completed at this time. Work to establish GRGT is currently progressing toward a readiness date of July 1998, to augment support to the second ISS launch. NASA officials stated that the STS and ISS programs will not pay the GRGT's operating cost. Further, they will inactivate and "mothball" the GRGT after completion if sufficient reimbursable customers are not available to pay the terminal's operating cost.

NASA COULD SPEND MORE THAN $21.4 MILLION FOR A GROUND TERMINAL THAT MAY NOT BE USED

Mothballing the GRGT after completion would result in NASA spending $21.4 million for a ground terminal that may never be used. In addition, if the GRGT is completed and not used, NASA would bear the added cost of (1) maintaining the GRGT in an inactive state, and (2) reactivating the existing remote terminal in Australia.

RECOMMENDATION 1

NASA should delay establishing the GRGT until long term commitments from reimbursable customers are made to fund the operating cost.

MANAGEMENT'S RESPONSE

Concur. We are in negotiations with reimbursable customers that rely on the global coverage made possible by the GRGT. As indicated in the GRGT Project Commitment Document (PCD), funds from these customers will help defray NASA costs of operations and maintenance of the Space Network. However, we are not dependent on these reimbursable customers to totally fund the operations of the GRGT, and we believe that we are on a sound basis for pursuing the project.

The GRGT will significantly increase the TDRSS System capability to support NASA's users when it begins operations in July 1998. Funding for the GRGT operations will be assured from the overall space operations budget. The PCD will be updated to reflect NASA's need and commitment to operate the GRGT.

EVALUATION OF MANAGEMENT'S RESPONSE

The actions taken and planned are considered responsive to the intent of the recommendation. Specifically, Management has assured funding for GRGT operations in the overall space operations budget. In addition, during discussions with NASA Headquarters Officials, they assured us that they would notify the Space Operations Council of this change in the funding arrangement. We will remain in the concurrence cycle for closure of this recommendation to ensure that the PCD is updated to reflect NASA's need and commitment to operate the GRGT, and that the Space Operations Council is notified.

MU&DSD DIRECTORATE
CODE 500

GRGT Revenue Projection

Name	P Prob.	Service Category	T Use Time Min/yr or No. of BFs	R Fee Rate $/Min. or $/BF	PTR Exp. Revenue (Weighted) ($/yr)
NOAA	0.8	RAMA	1	350,000	280,000
NRAD	0.5	RAMA	3	350,000	525,000
NSWC	0.5	RAMA	2	350,000	350,000
Joint Comm Unit	0.5	MAF, MAR	1000,000	10	500,000
18th Airborne Ft Bragg	0.5	MAR, MAR	1000,000	10	500,000
USTRANSCOM	0.5	RAMA	1	350,000	175,000
BMDO	0.1	SA			0
SPAWAR	0.5	RAMA	2	350,000	350,000
ARMY Ft Gordon	0.1				0
DOD Special Ops	0.5	RAMA	2	350,000	350,000
DOD Search & Rescue	0.2	RAMA	10	350,000	700,000
DOD Direct PC/GBS Order	0.5	RAMA	5	350,000	875,000
Los Alamos	0.5	RAMA	3	350,000	525,000
USSOUTHCOM	0.1				0
Colorado Springs	0.5	SA/MAF, MAR	86,400	30	1,296,000
Misc.	0.5	RAMA	5	350,000	875,000
Misc. Classified	0.5	SA	36,500	100	1,825,000
DOD MASINT like	0.5	DASA			0
ELV Support	0.5	HPSA	2,400	250	3000,000
				Total	9,426,000

NEW CLASSES OF SERVICE

RAMA Random Access MA (Multiple Access): Dedicated Beam Former (BF) and receivers

DASA Delayed Access SA (Single Access): Short duration dumps of high rate data

HPSA High Priority SA (Single Access): For launch support, long duration

METHODOLOGY

Potential Customer is weighted by a probability P expressing confidence in outcome. Credit is given to entire expected service if initiation is dependent on availability of Global Coverage. Otherwise service time is estimate of Guam station only. Expected NASA users, chiefly STS and ISS are not included.

840-36STGT96/Tab.1

EXHIBIT I

FOR GOVERNMENT USE ONLY

GUAM REMOTE GROUND TERMINAL (GRGT)
ANNUAL RECURRING COST ESTIMATE

	COST ($K)
NMOS COSTS:	
NMOS STAFF (Includes COLA) (14 x $70K)	980.0
SPARES	125.0
LOGISTICS TRANSPORT	100.0
NMOS SUBTOTAL	1,205.0
NASCOM COSTS:	900.0
NASCOM SUBTOTAL	900.0
NAVY COSTS:	
FACILITIES MAINTENANCE (1000 hrs x $50)	50.0
ANTENNA MAINTENANCE (60 hrs x $80)	4.8
TECHNICAL & UTILITY POWER (270 KVA x $0.10/KWH)	236.5
CHILLED WATER (for 500 gal/min, 130 KVA x$0.10/KWH)	113.9
FIRE PROTECTION	N/C
MAIL	N/C
TRANSPORTATON (GOVT. VEHICLE) (7500 miles x $0.25)	1.9
TRASH REMOVAL (52 weeks x twice/week x $20)	2.1
SPECIAL HANDLING EQUIP. (CRANE, FORKLIFT, ETC.) (60 hrs x $50)	3.0
EMERGENCY MEDICAL	1.0
PMEL	10.0
PIECE PARTS & CONSUMABLES	75.0
NAVY SUBTOTAL	498.2
RECURRING COST TOTAL ($K)	**2,603.2**

National Aeronautics and
Space Administration

Headquarters
Washington, DC 20546-0001

APR 9 1997

Reply to Attn of: M-3

TO: W/Acting Assistant Inspector General for Auditing

FROM: M/Associate Administrator for Space Flight

SUBJECT: Draft Rapid Action Report on Audit of Proposed Remote Ground Terminal in Guam, Assignment No. A-GO-96-012

The draft report recommends delaying implementation of the Guam Remote Ground Terminal (GRGT) until NASA obtains long-term commitments from expected reimbursable customers. The recommendation is based on a premise that NASA will mothball the station after construction if these reimbursable customers do not materialize to totally cover the annual cost of operations. However, the GRGT Project Commitment Document (PCD) requires a "consideration" of mothballing the facility. It is presently NASA's position that the gains from continuing with the GRGT implementation and proposed operation is cost effective for the Agency. We intend for the cost of operations of the GRGT to be covered by the overall operations budget for the network, mitigated in part by the phase out of the Australian station and the addition of reimbursable customers. Any delay in implementation would be substantially more costly due to the need to rebuild the skilled personnel now on hand to perform the implementation.

The GRGT was proposed for several reasons, only one of which was to accommodate more reimbursable customers. These drivers are delineated in the presentations leading to the Space Operations Management Council's approval of the GRGT station. A key purpose for the station is to improve the efficiency of the Space Network resource for all customers. The GRGT will provide greater flexibility in use of the Tracking and Data Relay Satellite (TDRS)-3 spacecraft, thereby affording additional overall TDRS System availability and more contact opportunities to Shuttle, International Space Station (ISS), Hubble Space Telescope, and other missions while minimizing conflicts with our classified support. This will also permit longer storage of the in-orbit spares and attendant programmatic savings when ISS support activity begins to build up.

We are in negotiations with reimbursable customers that rely on the global coverage made possible by the GRGT. As indicated in the GRGT PCD, funds from these customers will help defray NASA costs of operations and maintenance of the Space Network. However, we are not dependent on these reimbursable customers to totally fund the operations of the GRGT, and we believe that we are on a sound basis for pursuing the project.

We trust this resolves your concerns addressed in your draft report regarding the GRGT, and leads to a conclusion that continuing the implementation is in the best interests of the Agency and the Nation.

Wilbur C. Trafton

cc:
JM/Ms. M. Myles
JSC/TA/Mr. J. O'Neill

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

Reply to Attn of: M-3

MAY 13 1997

TO: W/Acting Assistant Inspector General for Auditing

FROM: M/Associate Administrator for Space Flight

SUBJECT: Draft Rapid Action Report on Audit of Proposed Remote Ground Terminal in Guam, Assignment No. A-GO-96-012

This response amends my letter to you dated April 9, 1997, on the same subject.

The draft report recommends delaying implementation of the Guam Remote Ground Terminal (GRGT) until NASA obtains long-term commitments from expected reimbursable customers. The recommendation is based on a premise that NASA will mothball the station after construction if these reimbursable customers do not materialize to totally cover the annual cost of operations. However, the GRGT Project Commitment Document (PCD) requires a "consideration" of mothballing the facility. It is presently NASA's position that the gains from continuing with the GRGT implementation and proposed operation is cost effective for the Agency. We plan for the cost of operations of the GRGT to be covered by the overall operations budget for the network, mitigated in part by the phase out of the Australian station and the addition of reimbursable customers. Any delay in implementation would be substantially more costly due to the need to rebuild the skilled personnel now on hand to perform the implementation.

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2.

In summary, the GRGT will significantly increase the TDRS System capability to support NASA's users when it begins operations in July 1998. Funding for the GRGT operations will be assured from the overall space operations budget. The PCD will be updated to reflect NASA's need and commitment to operate the GRGT. We trust this resolves your concerns addressed in your draft report regarding the GRGT, and leads to a conclusion that continuing the implementation is in the best interests of the Agency and the Nation.

Richard J. Wisniewski for
Wilbur C. Trafton

cc:
JM/Ms. M. Myles
JSC/TA/Mr. J. O'Neill

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