G A O
Accountability * Integrity * Reliability

United States General Accounting Office
Washington, DC 20548

Resources, Community, and
Economic Development Division

B-284396

September 6, 2000

The Honorable Richard C. Shelby
Chairman, Subcommittee on Transportation
and Related Agencies
Committee on Appropriations
United States Senate

Subject: Aviation Infrastructure: Feasibility of Using Alternate Means to Satisfy Requirements of Alaska National Airspace System Interfacility Communications System (ANICS) Phase II

Dear Mr. Chairman:

In the early 1990s, the Congress authorized a satellite-based communications network, now known as ANICS, to conduct voice and data transmissions for the Federal Aviation Administration's (FAA) air traffic control operations in Alaska. ANICS supports critical, essential, and routine services, including terminal and en route air traffic control, navigation, flight service, and weather operations. In July 1993, FAA competitively awarded a $140 million contract to the Harris Corporation. The ANICS contract was split into two distinct phases:

- In Phase I, 52 dual satellite-earth stations (also referred to as sites) were constructed throughout Alaska. These stations provide critical and essential services with 99.99 percent availability—an equivalent downtime of about 52 minutes per site per year.

- Phase II is to build additional single satellite-earth stations. These stations are designed to provide essential and routine services with 99.9 percent availability—an equivalent downtime of about 9 hours per site per year.

The Conference Report on the Department of Transportation Appropriations Act for Fiscal Year 1999 (H. Rpt. 105-825) directed FAA to look at alternatives to its current contract to satisfy the requirements of Phase II. No funding would be made available until FAA had reported on alternatives to provide these services. FAA compared the cost estimates and other information for the needed services it received from AT&T Alascom (AT&T) and General Communications, Inc. (GCI)—two commercial telecommunications service providers—to the cost of ordering additional sites from the Harris Corporation. In an April 1999 report to the Congress, FAA concluded that

the Harris Corporation could provide the needed telecommunications services at less cost than obtaining the same services from AT&T or GCI and recommended that the agency be authorized to order ANICS Phase II sites from Harris. You expressed concern that FAA's report may contain numerous factual errors and that it may lack supporting data or analyses. You therefore asked that we examine the report to determine if FAA's findings were properly supported.

Generally, our review indicated that, given FAA's assumptions and the circumstances of the study, the agency's findings and conclusions were supported by the information available. FAA's analyses were consistently applied to each of the alternatives and performed in accordance with standard economic and engineering methods of calculation. However, the findings and conclusions of its study could have been strengthened if FAA had held more in-depth discussions with AT&T and GCI about the assumptions and the adjustments it made to the data the vendors provided, since the results were influenced by these assumptions. We briefed your staff, and this letter summarizes the information discussed with them. (See encl. I.)

- - - - -

In conducting our review, we discussed with and obtained information from FAA officials in headquarters and the Alaska regional office; ANICS contract administration officials of the Defense Information Technology Contracting Organization, Alaska field office; AT&T local representatives; and officials from GCI, the Harris Corporation, and New Horizons Telecom, Inc. (another Harris Corporation subcontractor working on ANICS). FAA identified AT&T and GCI as the only other commercial contractors in Alaska potentially capable of fulfilling FAA's requirements for ANICS Phase II. In addition, we requested that FAA perform additional economic analysis beyond what it had initially done; this analysis came to conclusions similar to those of FAA's initial analysis. We did not validate the pricing information provided by AT&T and GCI or the resulting adjustments FAA made to this information; however, we reviewed in detail FAA's analysis of this information. We performed our work from November 1999 through August 2000 in accordance with generally accepted government auditing standards.

We provided a draft of this report to the Department of Transportation, AT&T, the Harris Corporation, and GCI. The Department of Transportation and AT&T generally agreed with the facts presented and provided us with technical and clarifying comments, which we included in the report as appropriate. Harris Corporation did not provide comments.

GCI disagreed with our conclusion. We stand by our conclusion that, FAA's evaluation, in general, was objective and reasonable for the cost and system requirements of the ANICS Phase II alternatives. This conclusion is based on our review of FAA's original economic analysis as well as additional analysis that FAA conducted at our request. GCI also asserted that, during the course of FAA's and our review, it was not provided with an opportunity to validate or substantiate the information on the system's cost or availability that it had provided to FAA. Our report notes that FAA did not hold in-depth discussions with AT&T and GCI about

the accuracy of the assumptions and the technical basis FAA had used to adjust and interpret the information the vendors provided. As a result, FAA's final evaluation did not benefit from the feedback, clarification, and greater accuracy that could have been obtained from better communications. However, during the course of our review, we held discussions with GCI officials about the information that they provided to FAA and also provided them with a statement of facts for review. GCI officials provided comments on our statement of facts, which we incorporated into the draft as appropriate.

We are sending copies of this letter to the Honorable Rodney Slater, Secretary of Transportation, and the Honorable Jane F. Garvey, Administrator, Federal Aviation Administration. We also will make copies available to other interested parties upon request.

If you or your staff have questions about this report, please contact me at (202) 512-2834. Major contributors to this report were Charles Bausell, Sandra Cantler, Sharon Dyer, David Hooper, Richard Hung, Ralph Lamoreaux, and Belva Martin.

Sincerely yours,

Gerald L. Dillingham, Ph.D.
Associate Director, Transportation Issues

Enclosure

GAO
Accountability * Integrity * Reliability

Resources, Community, and Economic Development Division

Feasibility of Using Alternate Means to Satisfy Requirements of Alaska National Airspace System Interfacility Communications System (ANICS) Phase II

GAO
Accountability * Integrity * Reliability

Background

- In the early 1990s, the Congress authorized a satellite-based communications network (ANICS) to conduct voice and data transmissions for FAA's air traffic control operations in the Alaska region.

- In July 1993, the $140 million ANICS contract was competitively awarded to the Harris Corporation. The 5-year contract, plus five 1-year options, is due to expire in 2003. A decision to proceed with the 8th year, or third 1-year option, was made in May 2000.

GAO
Accountability * Integrity * Reliability

Background

- The ANICS contract involves two types of earth stations:
  - Phase I dual satellite-earth stations were established at 52 locations to provide critical and essential services with 99.99 percent availability--an equivalent downtime of about 52 minutes per site per year.
  - Phase II single satellite-earth stations are to provide essential and routine services with 99.9 percent availability--an equivalent downtime of about 9 hours per site per year.
- The Conference Report on the Department of Transportation Appropriations Act for Fiscal Year 1999 (H. Rpt. 105-825) directed FAA to report by March 31, 1999, on alternatives to the current contract for meeting ANICS Phase II requirements.

GAO
Accountability * Integrity * Reliability

Background

- In April 1999, FAA reported to the Congress that neither AT&T Alascom (AT&T) nor General Communications, Inc. (GCI)--the commercial telecommunications service providers in Alaska from which FAA had requested information--met the performance capabilities and availability level required for ANICS Phase II.

- FAA also reported that in order to obtain the required level of availability from commercially leased telecommunications vendors (outside the framework of the existing contract), it would have to invest considerable money to upgrade AT&T's and GCI's equipment and sites.

- FAA recommended that it be authorized to proceed with ANICS Phase II at 29 sites. According to FAA, this authorization would enable it to provide significantly safer, more reliable telecommunications services at lower risk than would be possible by leasing and upgrading services from commercial vendors.

GAO
Accountability * Integrity * Reliability

Research Questions

- What information did FAA provide to AT&T and GCI, and was that information sufficient to develop approaches for satisfying the requirements?
- What information did AT&T and GCI provide to FAA, and did FAA properly compare this information?
- How did FAA adjust AT&T's and GCI's proposed pricing, and were those adjustments justified and reasonable?
- To what extent was FAA's evaluation objective and reasonable with regard to cost, requirements, and responsiveness?
- Overall, to what extent was FAA's conclusion--to continue its contract with the Harris Corporation--supported by the available information?

GAO
Accountability * Integrity * Reliability

Methods

- Spoke with and obtained relevant documentation from officials in FAA's headquarters and its Alaska field office, Defense Information Technology Contracting Organization, AT&T, and GCI.
- Examined FAA's decision-making process and its underlying analyses.
- Requested and obtained additional economic analysis from FAA.
- Did not validate FAA's cost data or the cost data provided to FAA by AT&T and GCI.

GAO
Accountability * Integrity * Reliability

Methods

- Interviewed officials of the Harris Corporation and New Horizons (a Harris Corporation subcontractor); both companies are responsible for constructing ANICS' earth stations.

- Conducted our work from November 1999 through August 2000 in accordance with generally accepted government auditing standards.

What information did FAA provide to AT&T and GCI, and was that information sufficient to develop approaches for satisfying the requirements?

- The lack of documentation and divergent recollections among the principals precludes a definitive assessment of the sufficiency of the information provided for developing approaches to satisfy the requirements. Therefore, we had to rely on oral statements.

  According to FAA, the information it provided included the following:

  - a statement that the agency was responding to a congressional request for information about alternative means of providing the Phase II capabilities of the ANICS program,
  - 67 proposed ANICS Phase II locations,*
  - a stipulation that the availability level must be 99.9 percent, and
  - a request that the vendor provide an estimate of “rough” costs incurred to meet the required 99.9 percent requirement.

* FAA’s original analysis was based on 67 proposed sites. In subsequent analysis, FAA reduced the number of sites to 60.

What information did FAA provide to AT&T and GCI, and was that information sufficient to develop approaches for satisfying the requirements?(cont.)

- According to AT&T, FAA requested an estimate of costs from AT&T but did not give availability specifications or a complete site listing. FAA's request was only for the cost between specific ANICS sites and not the costs for tail circuits and other miscellaneous items.

- GCI officials told us that they sought clarification from FAA on several issues, including the availability specifications.

- FAA officials told us that they did not hear of any concerns regarding the sufficiency of the information they provided to either AT&T or GCI.

What information did AT&T and GCI provide to FAA, and did FAA properly compare this information?

- AT&T did not prepare a formal written response to FAA's inquiry. Instead, AT&T's local representatives gave information to FAA and referred FAA to the company's public list of charges, known as its tariff, for satellite communications services.

- GCI's written response included cost estimates for
    - 27 sites where it would use existing earth stations in its network,
    - 36 sites where it would construct earth stations, and
    - 4 sites where it would use earth stations to interface with satellites to send date to remote areas.

- GCI assured FAA that its design would meet the 99.9 percent availability requirement.

What information did AT&T and GCI provide to FAA, and did FAA properly compare this information?(cont.)

- AT&T's local representatives said that they were not familiar with the assumptions FAA had used and therefore could not judge the reasonableness of FAA's adjustments to the information provided by its tariff.

- GCI officials told us that FAA improperly interpreted the information they had provided. They claim that FAA evaluated GCI's submission and capabilities as they currently existed rather than looking at GCI's future ability to meet the needed system's requirements.

What information did AT&T and GCI provide to FAA and did FAA properly compare this information?(cont.)

- On the basis of our evaluation, we believe that FAA made the appropriate comparisons.

  FAA's comparative analysis included
  - the cost estimates and other information received from AT&T and GCI,
  - the existing costs of leasing commercial communications services at the proposed ANICS Phase II sites, and
  - the costs of constructing ANICS Phase II earth stations under the current ANICS contract.

- FAA said that the submission and information it received were evaluated at face value. AT&T, in essence, proposed "current" capabilities. GCI's response demonstrated the "feasibility of providing an industry solution."

How did FAA adjust AT&T's and GCI's proposed pricing, and were those adjustments justified and reasonable?

- FAA adjusted AT&T's costs--on the basis of historical costs incurred with the ANICS Phase I contract and other cost data--by $200,000 per site. This is the amount FAA expected to incur to upgrade existing equipment or add redundant equipment at AT&T earth stations in order to meet the 99.9 percent availability requirement.

- At GAO's request, AT&T provided a budgetary cost estimate to provide 99.9 percent availability, which was based on a survey of 23 ANICS sites, 2 of which did not require any additional equipment. AT&T's cost estimates were $64,000 less per station than FAA had estimated.

- According to FAA, the adjustment of $200,000 per site is an estimate and is not based on detailed costs for specific equipment at each of the vendors' sites.

How did FAA adjust AT&T's and GCI's proposed pricing, and were those adjustments justified and reasonable?(cont.)

- AT&T's local representatives said that they were not familiar with the assumptions FAA had used and therefore could not judge the reasonableness of FAA's adjustments to the information provided by AT&T's tariff. However, they believed that there might have been internal FAA costs and other costs that were added by FAA to AT&T's tariff information that they were not familiar with.

- For GCI's proposed pricing, FAA added $200,000 per site to GCI's cost estimate to upgrade each AT&T earth station. It took this action because it determined that GCI relied on AT&T earth stations at 20 proposed ANICS Phase II locations that did not meet the 99.9 percent requirement.

How did FAA adjust AT&T's and GCI's proposed pricing, and were those adjustments justified and reasonable?(cont.)

- According to GCI officials, the cost adjustments FAA made were unjustified because FAA discounted GCI's submission that the upgraded facilities would meet availability requirements and adjusted the pricing upward to compensate for an unsubstantiated deficiency.

- According to FAA officials, neither AT&T nor GCI was informed of the amount of the adjustments for upgrading sites to meet the 99.9 percent requirement.

How did FAA adjust AT&T's and GCI's proposed pricing, and were those adjustments justified and reasonable?(cont.)

- Our review of FAA's economic analysis, which included the present value of cost, indicated that, given the values that FAA expected for major cost parameters, ANICS Phase II (as now under contract with the Harris Corporation) was the least costly option among the following four options that were considered: leasing communications services as was currently being done; Phase II, as it was to be constructed under the ANICS contract; AT&T; and GCI.

- FAA appeared to have a reasonable basis for its adjustments to the pricing information and the values applied to the various options. The adjustments appeared to us to have been made fairly and consistently.

To what extent was FAA's evaluation objective and reasonable with regard to cost, requirements, and responsiveness?

- Generally, FAA's evaluation was objective and reasonable for the cost and the requirements of the ANICS Phase II alternatives. FAA did not request, nor did AT&T and GCI provide, information on responsiveness (i.e., restoration of services).

- FAA--through its own research--determined that neither company could meet the 99.9 percent availability requirement. FAA made certain adjustments to the costs submitted by both AT&T and GCI for the facilities, equipment, and other upgrades that it thought would be necessary to ensure that the 99.9 percent requirement was met during ANICS Phase II.

To what extent was FAA's evaluation objective and reasonable with regard to cost, requirements, and responsiveness?(cont.)

- However, FAA did not discuss with AT&T or GCI how it determined that neither company met the 99.9 percent availability requirement; nor did it discuss the way it adjusted the cost to meet the availability requirements in its comparative or net present value analyses.

- Consequently, FAA's final evaluation did not benefit from the feedback, clarification, and greater accuracy that could have been obtained from better communication with AT&T and GCI.

Overall, to what extent was FAA's conclusion--to continue its contract with the Harris Corporation supported by available information?

- Given FAA's set of assumptions and the circumstances of its study, FAA's conclusions were supported by the available information. It consistently applied its analytical framework to each of the alternatives and conducted its analyses in accordance with standard economic and engineering methods of calculation.

- However, FAA's findings and conclusions could have been strengthened with more in-depth discussions with vendors. Because the results of FAA's analyses depend heavily on assumed values for key cost parameters, FAA could have benefited from discussions with AT&T and GCI about the accuracy of key assumptions and the technical basis it used to adjust and interpret the information the vendors provided.

(348200)