

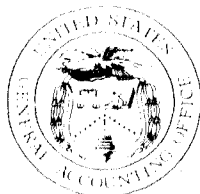
GAO

Report to the Chairman and Ranking
Minority Member, Committee on
Government Operations, House of
Representatives

April 1991

FAA PROCUREMENT

Major Data-Processing
Project Is Now Ready
to Proceed



143835

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**Information Management and
Technology Division**

B-239902

April 10, 1991

The Honorable John Conyers, Jr.
Chairman, Committee on Government
Operations
House of Representatives

The Honorable Frank Horton
Ranking Minority Member
Committee on Government
Operations
House of Representatives

This report responds to your December 10, 1990, request and subsequent discussions with your office for an update on the Federal Aviation Administration's (FAA) Computer Resources Nucleus (CORN) project. Under CORN, FAA plans to phase out its own general-purpose data-processing system and rely instead on computer resources owned and operated by a contractor. In May and June of 1990, we reported that the project had major unresolved problems and recommended that a contract for CORN not be awarded. Following a subsequent review of the project by an independent consultant, FAA cancelled the original solicitation and issued a new request for proposals in December 1990.

In accordance with your request, our objectives were to review: (1) the current status of CORN; (2) the results of the independent consultant's review; (3) actions taken by FAA since we last reported on the project in June 1990; (4) the General Services Administration's (GSA) review of CORN; (5) whether FAA and GSA's actions addressed your concerns regarding the apparent lack of competition for the contract; and (6) any FAA plans to compensate vendors for the cost of preparing proposals submitted in response to the original solicitation. (See app. I for the request letter.) Details on our objectives, scope, and methodology are discussed in appendix II.

Results in Brief

FAA's new CORN request for proposals resolves key technical and procurement-related concerns raised by us, the independent review, and GSA. The project is now ready to proceed through the acquisition phase. The new request for proposals should encourage competition by substantially reducing vendors' risks and removing an unnecessarily restrictive system specification. FAA expects that the revised specifications will result in technical benefits and cost savings to the agency as

well. FAA has also improved the project's management, which should aid in the transition to CORN.

One vendor has asked FAA for reimbursement of costs incurred in preparing a proposal submitted in response to the original solicitation. Nothing disclosed during our review suggests that FAA should reimburse the vendor for such costs.

Background

FAA currently has general-purpose data-processing resources called the Common System, located at 12 of its facilities. This system supports mission and program information management needs in areas such as aviation safety, airspace information (excluding air-traffic control systems), and financial, materiel, and human resources. FAA maintains that it is no longer possible or desirable to upgrade this system, over the long term, to meet the agency's rapidly growing data-processing needs.

FAA plans to replace the Common System with CORN—a single contract for general-purpose computer services. The contractor would be responsible for providing, maintaining, and operating the computer facilities, equipment, system software, and technical support needed to meet FAA's specified requirements. The contractor would be reimbursed on a fixed fee-for-service basis over the 10-year life of the contract. CORN also includes options for handling the data-processing needs of other agencies within the Department of Transportation.

We previously reported that the CORN project had not been properly justified and planned, and contained major unresolved problems.¹ Specifically:

- FAA's claims about the causes of perceived problems with its current system were poorly supported, as was its projection of its future needs, raising fundamental doubts about the project's justification.
- FAA's methodology for evaluating technical and cost aspects of vendors' proposals was seriously flawed.
- FAA had not adequately planned for the conversion of applications software, resulting in major outstanding problems and uncertainties

¹Our three previous reports on the CORN project are: Computer Procurement: FAA's \$1.5-Billion Computer Resources Nucleus Project (GAO/IMTEC-89-44FS, Mar. 31, 1989); FAA Procurement: Major Data-Processing Contract Should Not Be Awarded (GAO/IMTEC-90-38, May 25, 1990); FAA Procurement: Competition for Major Data-Processing Project Was Unjustifiably Limited (GAO/IMTEC-90-71, June 11, 1990).

regarding cost, time frames, and the availability of FAA staff to support the conversion.²

- FAA unjustifiably limited competition by including a computer system architecture requirement that unnecessarily restricted the range of solutions that vendors could offer.³ Moreover, this requirement might not satisfy the agency's expressed needs.

While noting that FAA's concept of contracting for data-processing services on a long-term basis may be acceptable, we concluded that CORN was not ready to be awarded.

Project Status: CORN Is Proceeding After Material Revisions

Following reviews of the project by us, an independent consultant, and GSA, FAA materially revised the original CORN specifications. A new request for proposals, open to all potential competitors, was issued on December 22, 1990. According to the current schedule, vendors' cost and technical proposals are due by June 1991. FAA expects to award the CORN contract early in 1992. The steps leading up to the new request for proposals are discussed in the sections that follow.

Independent Review Recommended Restructuring CORN and Improving FAA's Information Management

In response to our earlier reports on CORN, the FAA Administrator appointed an outside consultant to independently review the project and help determine whether or not—and under what conditions—CORN should proceed. The consultant assembled a panel of top information technology experts to assist in this work. The independent review, performed from May to November 1990, encompassed a detailed assessment of FAA's current Common System, the CORN project, and the agency's ability to manage both CORN and its overall information needs.

While concluding that the CORN approach was FAA's best option for meeting its future needs, the independent review found that CORN was not ready for award. Specifically:

- CORN, as then structured, involved a major cost and technical risk for FAA, particularly in the area of software conversion.
- Project management lacked adequate control, responsibility, and accountability for implementing the program, resulting in "woefully

²Software conversion is the modification/translation (without functional change) of computer programs and data that must occur to permit their use on other data-processing equipment.

³Computer architecture is the organizational structure of a computer system, including hardware and software.

inadequate" planning for CORN's implementation and a "fatally flawed" conversion approach.

- FAA had not adequately planned for integrating CORN with the two other major components of the agency's information architecture: its telecommunications network and office workstation microcomputers.
- Serious deficiencies existed in FAA's information resources management, organization, and leadership that appeared to have led to the original problems with CORN.

The independent review recommended that FAA correct major deficiencies in the request for proposals before proceeding further with the acquisition. In addition, the review recommended that before awarding the contract, FAA correct general weaknesses in its information resources management that could hamper the implementation of CORN. Appendix III contains additional details on the independent review's findings.

FAA Has Restructured CORN and Identified Needed Management Improvements

In response to criticism of the project, FAA revised the CORN request for proposals and strengthened the project's management. FAA also identified actions to improve its overall information resources management, although it has not yet decided on how to proceed with these actions.

CORN Has Been Materially Revised

In a June 1990 briefing to the Administrator, the independent review recommended that the original request for proposals be amended to correct its major deficiencies. Accordingly, the CORN project staff spent the summer of 1990 preparing an amendment, with assistance from the independent review panel. After being briefed on a draft of the amendment in mid-September 1990, the Administrator concluded that the changes incorporated were material and would substantially reduce the technical and financial risks to vendors. He therefore decided to cancel the original solicitation and issue a new one, open to all potential competitors.

Following this decision, FAA further refined the CORN specifications and prepared a new request for proposals, which was completed in December 1990. Among the many improvements, major changes were made in the requirements for software conversion, initial operations, system architecture, and cost evaluation.

Project Management Structure Has Been Improved

As recommended by the independent review, the FAA Administrator established and staffed a Special Projects Office to manage CORN during its acquisition and early operations phases. The office's manager is personally responsible for the success of project and has direct access to the Administrator. The manager is to work closely with a newly established CORN Program Committee, made up of regional and headquarters staff, which plans to meet at least quarterly to review the project's progress.

One of the key tasks of the Special Projects Office will be to complete critical planning tasks for the agency's transition to CORN. Work is also underway to address the independent review's recommendations to (1) define the current and planned architecture for all of the agency's information systems (excluding real-time air traffic control) and (2) provide for the timely integration of CORN into FAA's total data-processing environment.

Other Management Improvements Are Being Considered

In July 1990, FAA established an internal task force to address the independent review's concerns about critical weaknesses in how the agency manages its information resources. The task force's October 1990 report identified major management deficiencies, such as a lack of full-time, empowered leadership for FAA's information management; the absence of viable strategic planning; the lack of information system architecture, policies, standards, and processes; and the lack of an organizational environment conducive to effectively applying information technology.

The task force endorsed the independent review's recommendation calling for the appointment of a Chief Information Officer, who would report directly to the Administrator and have responsibility for leading and advising the agency on all issues concerning information systems and utilization. The task force also recommended improvements in other areas, such as FAA's information resources organization, staffing, training, strategic planning, decision making, and standards setting. At the time we concluded our audit work in February 1990, the Administrator had been briefed on the task force's recommendations, but had not yet decided on a course of action. The independent review recommended that deficiencies in the agency's information resources management be corrected before contract award, currently expected in early 1992.⁴

⁴We expect to issue a report on FAA's management of information resources to the Chairman, Committee on Government Operations, House of Representatives, in mid-1991.

GSA Concludes That Major CORN Issues Have Been Resolved

In September 1990, the Government Operations Committee, Subcommittee on Legislation and National Security, House of Representatives, held a hearing on competitiveness in federal computer procurement. The Subcommittee expressed concern over the apparent lack of competition for the CORN contract and suggested that GSA review the project closely. GSA subsequently suspended the CORN delegation of procurement authority and began a comprehensive review of the project.

From September through November 1990, GSA identified and reviewed key procurement-related issues on the original request for proposals previously raised by us, the independent review, vendors, and GSA's own analysts. The issues involved contract structure, pricing, system architecture requirements, workload characterization, software conversion, and evaluation methodology. By the time GSA's review began, FAA had already addressed several of these issues while revising the request for proposals. GSA therefore focused particular attention on two key issues: the CORN evaluation strategy and software conversion. GSA was generally satisfied with FAA's new evaluation strategy and offered suggestions for improving the software conversion specifications, which FAA adopted. Appendix IV lists the issues reviewed and GSA's final position on them.

After concluding that the major issues were resolved, GSA reinstated the delegation of procurement authority for CORN on November 27, 1990. As part of the reinstatement conditions, FAA must periodically report to GSA on the project's progress, including post-bid and pre-award briefings.

Revised CORN Specifications Should Help Encourage Competition

The Administrator's decision to cancel the original solicitation and issue a new request for proposals has reopened the competition for the CORN contract to all vendors. GSA agrees with these actions because of the significance of the many changes made to correct identified problems. GSA notes that the agency's new request for proposals will provide an opportunity for increasing competition on CORN.

In revising the specifications, FAA removed or modified features that unnecessarily limited or discouraged competition on the original solicitation. For example, FAA eliminated the restrictive requirement mandating that vendors provide a system with a single architecture, and has instead expressed its needs in functional terms. The agency also carefully redefined the tasks involved in converting its current applications software to CORN. In addition, vendors are being given more flexibility in how they can provide a backup capability for the CORN system. FAA believes that revisions such as these will substantially reduce vendors'

risks and costs, and thereby encourage competition for the contract. It also believes that the changes will result in technical benefits and cost savings to the agency.

As with the original solicitation, however, the number of computer service vendors who may consider competing for the CORN contract is likely to be small. CORN's inherent complexity makes the procurement a very challenging one—even for major vendors. Vendors must not only plan a system capable of meeting FAA's specified requirements over 10 years, but must also offer firm-fixed prices for the many services to be provided during this long period.

Compensation of Vendor Not Supported

In a protest filed with FAA against the cancellation of the original CORN solicitation, one vendor who responded to the solicitation has asked FAA to reimburse costs incurred in preparing its offer. The vendor argues that if the solicitation was defective enough to warrant cancellation, these defects were known long before the decision to cancel was made and that FAA basically encouraged the vendor to waste money participating in a procurement that could not be awarded. At the time we concluded our review in February 1991, FAA had not decided on a response to the protest and claim.

The procurement regulations allow a request for proposals to be cancelled when clearly in the government's best interest. As a general matter, issuing a solicitation that the agency later decides to cancel does not entitle a vendor to the costs of preparing its offer, regardless of when the information justifying the cancellation first surfaced. An exception to that rule is if the agency acted in bad faith toward the vendor.

Nothing disclosed during our review suggests that FAA should pay the vendor's claim. FAA attempted in good faith to conduct a procurement to meet its needs, and intended from the outset to award a contract to the successful competitor. An agency's lack of diligence in preparing specifications that ultimately are found to be inadequate or defective and thus require cancellation of the solicitation does not constitute bad faith.

Conclusions

The FAA Administrator took effective action to correct major deficiencies in the original CORN request for proposals. We agree with the independent review and GSA that the project, as restructured, is ready to proceed through the acquisition phase. Further, the new request for

proposals should encourage competition by substantially reducing vendors' risks and removing an unnecessarily restrictive system specification. FAA has also strengthened the CORN project's management, which should help facilitate the transition to CORN.

Regarding the vendor compensation issue, nothing disclosed during our review suggests that FAA should reimburse the vendor for the costs of preparing a proposal in response to the original solicitation.

The views of agency officials were sought during the course of our work and incorporated where appropriate. Unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days after the date of this letter. We will then send copies to interested congressional committees; the Secretary, Department of Transportation; the Administrator, FAA; the Director, Office of Management and Budget; the Administrator of General Services; and other interested parties.

Should you have any questions about this report or require additional information, please contact me at (202) 275-9675. Major contributors to this report are listed in appendix V.



JayEtta Z. Hecker
Director, Resources, Community, and Economic
Development Information Systems

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Abbreviations

CORN	Computer Resources Nucleus
FAA	Federal Aviation Administration
GAO	General Accounting Office
GSA	General Services Administration
IMTEC	Information Management and Technology Division

Congressional Request Letter

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Honorable Charles A. Bowsher
 Comptroller General
 General Accounting Office
 441 G Street, N.W.
 Washington, D.C. 20548

Dear Mr. Bowsher:

We request that the General Accounting Office follow-up on and update the briefing given the Committee on September 4, 1990 on the Federal Aviation Administrations's Computer Resources Nucleus (CORN) project.

Your report to the Committee should include at least the following:

- (1) The current status of the project, including plans for resolicitation, recompetition, or contract award.
- (2) An evaluation of the analysis conducted by the independent CORN review panel established by FAA.
- (3) Any analyses completed or action taken by FAA since GAO completed its reports on CORN.
- (4) Any analyses completed or action taken by the General Services Administration since the Committee's September 13 hearing, including suspension or withdrawal of the delegation of procurement authority.
- (5) A judgment as to whether the actions taken by FAA and GSA are responsive to the concerns raised by the Committee regarding the apparent lack of competition on this multi-million dollar project.
- (6) A review of any plans by FAA to reimburse a vendor or vendors that submitted proposals in response to the original solicitation for proposal preparation costs, including the legality of such plans.

2

We greatly appreciate your assistance in this matter. Your previous work on this issue has resulted in hard-hitting findings of great value to the Congress as well as potential savings to the taxpayers of millions of dollars. Because of the urgency of the issues presented by the CORN project, we request an oral briefing in response to this request no later than January 18, 1991. Questions concerning this request should be directed to Chuck Wheeler of Committee staff at 225-5051.

Sincerely,


JOHN CONYERS, JR.
Chairman


FRANK HORTON
Ranking Minority Member

Objectives, Scope, and Methodology

At the request of the Chairman and Ranking Minority Member of the Committee on Government Operations, House of Representatives, we performed a follow-up review of the CORN project. Our specific objectives were to:

- determine the current status of the project, including plans for resolicitation, recompetition, or contract award;
- review the analysis conducted by the independent CORN review panel established by FAA;
- review analysis completed or actions taken by FAA since we last reported on CORN in June 1990;
- review analysis completed or actions taken by GSA since the Committee's hearing on September 13, 1990, including the suspension or withdrawal of the delegation of procurement authority;
- examine whether the actions taken by FAA and GSA responded to the Committee's concerns regarding the apparent lack of competition for the CORN contract; and
- review any plans by FAA to reimburse proposal preparation costs to a vendor or vendors that submitted proposals in response to the original CORN solicitation, including the legality of such plans.

To address these objectives, we met with FAA project officials to determine the status of CORN and to review documents prepared by the project office between May 1990 and February 1991. These documents included a lengthy draft amendment to the original request for proposals; draft versions of the new request for proposals; conversion planning studies; draft implementation plans; internal memoranda; responses to our and GSA's reviews of CORN; the draft charter and organization of a new Special Projects Office from which CORN is being managed; and an internal report by FAA's Information Resources Management Quality Task Force. We also carefully reviewed the new CORN request for proposals to determine whether it adequately resolved the key problems cited by us, the independent review, and GSA.

We met with Mr. Brett Berlin, president of Brett Berlin Associates, who conducted an independent review of CORN at the request of the FAA Administrator. We discussed his review methodology, including his use of a panel of experts, the basis for the panel's findings, and his views on how adequately FAA responded to the panel's recommendations. In addition, we reviewed briefing materials and analyses prepared by Mr. Berlin and the panel, as well as the draft and final versions of his report to the FAA Administrator. We also met with FAA project officials to determine the status of their responses to the panel's recommendations.

We met with GSA officials and analysts to review the scope, methodology, and results of their review of the CORN project following GSA's September 17, 1990, suspension of the delegation of procurement authority for CORN. We reviewed project documents provided to GSA officials by FAA, GSA's internal status reports, analyses, and memoranda concerning its review of CORN, and its correspondence with FAA on the project.

We also reviewed a vendor protest claiming reimbursement of its costs for preparing a proposal in response to the original CORN request for proposals. We discussed this issue with FAA's Office of General Counsel.

We performed our work between December 1990 and February 1991 at FAA, GSA, and the offices of Brett Berlin Associates in Washington, D.C.; the CORN project office in Arlington, Virginia; and GSA's Office of Technical Assistance in Falls Church, Virginia. We conducted our review in accordance with generally accepted government auditing standards. The views of agency officials were sought during the course of our work and incorporated where appropriate.

Major Recommendations of the CORN Independent Review and FAA's Response

The final report of the independent review of the CORN project made five broad recommendations.¹ These recommendations are summarized below, along with FAA's response as of February 1991.

Recommendation 1: CORN Is Now on Track and Should Proceed

In determining that CORN, as originally structured, represented a major cost and technical risk for FAA, the independent review outlined actions for dealing with the project's critical deficiencies. Following its final assessment of FAA's corrective actions, the review concluded that FAA has genuinely transformed the project into one that serves the best interests of the government.

Recommendation 2: Continue to Strengthen the CORN Special Projects Office

The independent review found that CORN suffered from a poor management structure that: did not give the Program Manager sufficient influence over all of the factors critical to the project's success; had insufficient visibility for a program of this importance; was insular in its relationship to the field and user community; and had no real oversight or accountability.

In response, FAA established a Special Projects Office to manage CORN. The agency is currently providing the office with additional staff to manage the project's work load.

Recommendation 3: Establish an Ongoing CORN Review and Oversight Program

The independent review recommended that FAA's Executive Director for Acquisition appoint an independent CORN Program Review Team to perform a full CORN program review about every 4 months. The chair of the team should be either an FAA senior executive not associated with the Office of Management Systems, or an outside executive.

FAA is responding to this recommendation with a two-pronged approach. The CORN acquisition process will continue to be reviewed periodically by the Transportation Systems Acquisition Review Council, chaired by the Deputy Secretary of the Department of Transportation. In addition, FAA is in the process of chartering a CORN Program Committee. The committee is to meet at least quarterly to review the CORN project's progress

¹Project CORN Independent Review: Report to the FAA Administrator, Brett Berlin Associates, Nov. 30, 1990.

and recommend appropriate actions to the Administrator. The committee will be chaired by the Director of the Office of Management Systems and include representatives of CORN users from headquarters and regional offices.

Recommendation 4: Move Aggressively to Establish a Chief Information Officer

Noting that FAA currently spends over \$3 billion annually on information systems, the independent review found that FAA's information resources management structure is "ill-equipped and structurally impotent to address the broader, agency-wide application, data base, and functional integration issues that will challenge the Agency throughout the life of CORN. . . ." The review therefore recommended that the FAA Administrator appoint a Chief Information Officer to lead and advise the Administrator and agency management concerning all information systems and utilization issues.

FAA's Information Resources Management Quality Task Force, established in July 1990 to assess how the information needs of the agency can best be met, concurred with the recommendation for a Chief Information Officer. The task force also identified other key areas in information management that needed improvement. When we concluded our work in February 1991, the Administrator had not yet decided on what course of action to take concerning the task force's recommendations.

In line with other recommendations by the independent review, FAA concurred that it needs to define both the current and planned architecture for its total information application, software, and hardware systems infrastructure, including all systems except those specifically part of real-time air traffic control systems. FAA has started an architecture definition project and is continuing its ongoing effort to improve data management.

Recommendation 5: Establish a Capacity Management and Planning Project

The independent review found that the capacity planning and management program at FAA's Mike Monroney Aeronautical Center was inadequate to meet the agency's needs, noting that the staff is too small and not supported by sufficiently expert contractor assistance. The review strongly agreed with our previous recommendation that FAA strengthen and monitor this program in order to transition smoothly to CORN. The review determined that with proper management, FAA has sufficient hardware resources to continue current operations during a transition period of 3 to 4 years.

**Appendix III
Major Recommendations of the CORN
Independent Review and FAA's Response**

In response to this recommendation, FAA is taking steps to improve capacity planning and management at the Aeronautical Center, though a more comprehensive program still needs to be defined.

GSA's Review of the CORN Project

The review by GSA's Office of Information Resources Management focused on eight issues identified by us, the independent review, GSA's Office of Federal Systems Integration and Management, and vendors who commented on the project. After determining that FAA had resolved all eight issues, GSA reinstated the delegation of procurement authority for CORN on November 27, 1990.

Issue 1: Single Procurement for Two Levels of Computing

Issue: The requirements for national and regional levels of computing were combined into a single contract to be awarded to one vendor when multiple contracts may have generated more competition.

Resolution: FAA plans to meet single-region requirements using office workstation microcomputers being procured under the agency's new Office Automation Technology and Services contract. CORN will be used mainly for national and multi-region requirements.

Issue 2: Single Architecture Requirement

Issue: FAA's requirement for a system with a single architecture was one of the key factors that limited competition on the CORN acquisition.

Resolution: FAA has removed this requirement from the CORN acquisition and has stated its needs in functional terms.

Issue 3: Bundling of Conversion and Operations

Issue: The conversion of FAA Common System applications and data-processing operations are combined into a single contract. This limited the competition to vendors capable of providing both conversion and operations services.

Resolution: The requirement for a single prime contractor to be responsible for conversion services and operations services is justified because of the inherent difficulties of coordinating the two services and the desirability of shifting this responsibility to a single party.

Issue 4: Contract Options

Issue: The CORN procurement includes options for processing applications for FAA and other Department of Transportation agencies for which no preprocurement planning or justifications have been completed. These options represent about 40 percent of the estimated \$1.5-billion contract value of CORN.

Resolution: A condition of the reinstated delegation of procurement authority is that the Department perform appropriate preprocurement studies before exercising any of these contract options.

Issue 5: Conversion Planning

Issue: The FAA's poor conversion planning and its requirement for a firm-fixed price conversion was a key factor that limited competition on the CORN acquisition.

Resolution: The FAA has totally revised and updated its conversion planning and will provide adequate data for a firm-fixed price offer.

Issue 6: Firm-Fixed Price Conversion

Issue: Some vendors contended that requiring a firm-fixed price for conversion services limited competition because the conversion tasks were poorly defined.

Resolution: Because FAA has now clearly defined which applications are to be converted, when they are to be converted, and has significantly reduced the risk to potential contractors, a firm-fixed price conversion is desirable and reasonable for the government.

Issue 7: Work Load Characterization

Issue: FAA should describe its work load in terms of first-tier statistics (such as number of transactions processed) rather than its method of using second tier statistics (such as central processing unit utilization).

Resolution: There are advantages to both workload descriptions, and the descriptions used by FAA are sufficient to allow vendors to prepare workload estimates and perform appropriate sizing.

Issue 8: Performance Validation

Issue: The lack of a benchmark during the technical and cost evaluations could have major cost and service implications over the life of the CORN contract.

Resolution: FAA developed a benchmark for use during the technical and cost evaluations of the vendors' proposals.

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