United States General Accounting Office

GAO

Report to the Chairmen, U.S. Senate and House of Representatives Armed Services Committees

March 1988

MEDICAL ADP SYSTEMS

Composite Health Care System Acquisition—Fair, Reasonable, Supported

AO/IMTEC-88-26

GAO

United States
General Accounting Office
Washington, D.C. 20548

Comptroller General
of the United States

B-220732

March 4, 1988

The Honorable Sam Nunn
Chairman, Committee on Armed Services
United States Senate

The Honorable Les Aspin
Chairman, Committee on Armed Services
House of Representatives

This report on the Department of Defense's acquisition of the Composite Health Care System (CHCS) -- a state-of-the-art medical information system being acquired for use in military hospitals, medical centers, and clinics worldwide -- is required by the National Defense Authorization Act for fiscal years 1988 and 1989 (Public Law 100-180, Section 733(b)). It presents our description and evaluation of the results of Defense's testing of competing vendors' proposed medical information systems and the process Defense followed in selecting a contractor for the next phase of the acquisition--operational test and evaluation--scheduled to begin in March 1988.[1]

At the completion of the testing and selection processes, Defense had the option of choosing up to two vendors for the operational test and evaluation phase. Defense chose only one of the three competing vendors, concluding that (1) the gap between the winning and second-place competitor could not be closed through continued competition and (2) the third-place vendor was far less competitive than the other two. Defense believes that any benefit from retaining two vendors through operational test and evaluation is minimal and would not justify the additional cost.

On the basis of the tests we observed, review of test data, and evaluation of Defense's selection process, we believe Defense's decision was fair, reasonable, and supported. Our basis for this conclusion is that: (1) test plans were reasonable and properly reflected Defense's requirements, (2) test procedures were followed consistently across the three competing vendors, (3) test results were documented accurately, (4) Defense's selection process, plans, and procedures were sound and appropriate,

---

[1]We provided staff of the Armed Services Committees with information on the results of our work prior to publication of this report. Appendix I includes the information provided as well as information on Defense's specific selection decision which--until it was announced publicly today--was procurement sensitive and therefore had to be excluded from our earlier information.

and (5) evaluation of vendors' technical and cost proposals, test results and performance during the demonstration test phase of the acquisition were appropriately documented and considered throughout the selection process. Thus, we found no basis from an audit standpoint to question Defense's decision.

OBJECTIVES, SCOPE AND METHODOLOGY

The Defense Authorization Acts required GAO to report on: (a) the results of testing required by Defense's Authorization Act for 1987, and (b) the competitive process that Defense followed in selecting contractors for the operational test and evaluation phase of the acquisition. Our approach to do this was to determine whether Defense's testing and selection processes were planned, conducted, and documented in an appropriate, consistent, and equitable manner. We (1) reviewed the plans, procedures, and workbooks that document the CHCS testing and selection processes, (2) directly observed how tests were conducted, (3) reviewed the documentation of daily test results in test workbooks, (4) traced evaluation results recorded by individual team members through consolidation and reporting of the results, and (5) discussed various aspects of the test and evaluation processes with Defense officials. During these processes, we checked for the recurrence of evaluation, documentation, and support problems identified in our earlier report on CHCS development contracts,[2] to determine whether Defense implemented corrective actions as promised. Although we obtained and evaluated all test and selection process documents and results, we did not attend the meetings at which results were formulated. We agreed to this condition because it was necessary to prevent our evaluation from influencing the test and selection processes. Our work was performed during the 10 month period ending February 1988.

We did not get Department of Defense comments on a draft of our proposed report. However, we worked closely with program management officials throughout our evaluation and briefed senior program management officials on the results of our work. Their views are incorporated where appropriate. Our review was conducted in accordance with generally accepted government auditing standards. (See appendix II for more details.)

SYSTEM TESTING AN IMPORTANT FACTOR IN MAJOR ACQUISITIONS

The Office of Management and Budget's Circular A-109 provides guidelines instructing federal agencies on how to conduct a major system acquisition and minimize risks of inadequate systems performance and excessive cost. The circular addresses all aspects of the acquisition process from needs analysis and requirements definition in the early stages, through system design, demonstration and full scale testing, to the

---

[2]ADP Systems: Concerns About DOD's Composite Health Care System Development Contracts, GAO/IMTEC-87-25, June 8, 1987.

eventual deployment and support of the system. Under the A-109 strategy, tests of competing systems provide the government with system performance information, allow for timely design and engineering changes, and increase assurances that the system will operate as expected, before substantial acquisition costs are incurred.

Defense's procurement of the CHCS is a major acquisition with projected life cycle costs of over $1 billion. Demonstration testing, one of the processes established by Circular A-109, was conducted from early September through mid-December 1987. The testing included (1) an extended benchmark test to determine to what extent proposed systems met Defense's functional and work load requirements, and (2) a limited operational test, which provided an indication of how each vendor's system would perform in a medium-to-large hospital.

The benchmark test, which was conducted under laboratory conditions, has two components. The requirements demonstration component tests the extent to which proposed systems meet Defense's technical and functional requirements. The capacity demonstration component is used to determine whether proposed systems would perform required work loads while being responsive to user requirements. The limited operational test -- conducted in military hospitals -- provided Defense with an indication of each vendor's ability to deploy, operate, maintain, and train users of their respective systems.[3] All tests were structured to provide data necessary for selecting the vendor that would continue in the next phase of the acquisition.

We found that Defense's test plans and procedures were comprehensive in nature, properly reflected Defense's requirements, and were implemented consistently for all three[4] vendors throughout the testing process. Test workbooks were structured to permit thorough documentation of test results for the thousands of requirements being evaluated. During the test, vendors' proposed systems were evaluated by 64 test personnel. Over 60,000 pages of test results documentation were developed for evaluation during the selection process.

---

[3]Defense's 1987 Authorization Act required a 9 to 12 month test of how major portions of the system would perform in a realistic environment. In April 1987, Defense deferred compliance with this requirement until the operational test and evaluation stage of the acquisition. Defense obtained approval of this change in acquisition strategy from the General Services Administration and informed cognizant oversight and appropriations Committees as well.

[4]Defense initially selected four vendors to participate in the testing process, but one vendor withdrew because of a limitation of funds.

DEFENSE'S SELECTION PROCESS SOUND AND APPROPRIATE

During the selection process, Defense evaluated the three vendors' technical and cost proposals, data on the vendors' performance through the demonstration test phase of the acquisition, and data generated from the testing process for the three vendors. The technical and cost proposals detail how and at what cost each vendor would conduct the operational test and evaluation and deploy its system if selected. These proposals were the focal point in the selection process. Defense evaluated them against the requirements in the request for proposals to which the vendors responded. Test data and vendor performance through the end of the test phase were considered where appropriate.

Test data, vendors' cost and technical proposals, and vendor performance data were evaluated in a three-tier selection process. A Source Selection Evaluation Board, consisting of 46 government employees representing various functional and technical occupations,[5] conducted an in-depth review and evaluation of all available data. The board's job was to evaluate each vendor's proposal against the government's requirements for the operational test and evaluation phase of the acquisition, considering demonstration test and vendor performance data where appropriate. Board members and the evaluation data were organized into five separate evaluation areas: health care functions[6] (17 members), technical approach (12), deployment (8), management (4), and cost (5). These five areas had been identified as criteria for award of the operational test and evaluation phase contract in Defense's request for proposals and were included in Defense's source selection plan. By entrusting the evaluation to functional and technical personnel--people who will ultimately use, operate, and maintain the system--Defense hoped to obtain as fair and honest an evaluation as possible. The evaluation board submitted a report summarizing the results of its work in each of the five areas to the Source Selection Advisory Council--the second tier in the process.

The advisory council was comprised of 11 Defense officials, both within and outside Defense's Health Affairs organization (the unit sponsoring the CHCS acquisition), and supported by legal counsel and a contract specialist. It guided the selection process and reviewed the evaluation board's report. The council conducted comparative analyses,

---

[5]The functional occupations include doctors, nurses, pharmacists, and other hospital personnel who will ultimately be the end users of the system. The technical board members are people who will operate, maintain, and support the system once it is installed in hospitals.

[6]Health care functionality pertains to the specific hospital functions the system will perform. Admitting a patient, scheduling lab tests, reporting results, are examples of functions performed by the system and referred to as functionality.

ranked vendor proposals using predetermined criteria in the five evaluation areas, and made recommendations to the Source Selection Authority -- the third tier in the process.

The Assistant Secretary of Defense for Health Affairs is the selection authority for the CHCS acquisition. The selection authority appointed the chair and members of the advisory council. Ultimately, he was responsible for selecting the vendor to continue onto the operational test and evaluation phase.

Defense's three-tier selection process is not unique to the CHCS. It was adopted for use in the CHCS acquisition at the suggestion of the Air Force's Associate Director of Contracting and Manufacturing Policy, who served on the CHCS Source Selection Advisory Council. The Air Force has used this process for major source selections over the past 12 years. It has also been used in several major computer acquisitions. In our opinion, the process appears fundamentally sound, and we believe its use for the CHCS acquisition was appropriate.

Selection Process Results
Fair, Reasonable, Supported

The report of the Source Selection Evaluation Board showed that Science Applications International Corp. was clearly superior to its competitors. This vendor developed more health care functionality, offered the only completely integrated system,[7] received slightly better ratings than its nearest competitor in management, and slightly lower ratings than the highest-rated competitor in deployment. In addition, its proposed system cost is significantly less than the nearest competitor's system.

The advisory council's comparative analysis of the board's evaluation results for each vendor across the five evaluation areas led to Science Applications International Corp. being ranked above its competitors. The ranking appears appropriate because cost, health care functions, and technical approach were the more critical of the evaluation areas in the predetermined ranking criteria. The council recommended selection of this vendor for the operational test and evaluation phase of the acquisition because its proposal is technically superior and is significantly lower in total life cycle costs. On February 10, 1988, the Assistant Secretary of Defense for Health Affairs selected Science Applications International Corp., concluding that this vendor should be the sole winner of the operational test and evaluation phase contract.

---

[7]In an integrated system, hospital departments share a common data base, which enables them to share information. For example, in an integrated system, once a patient is registered, the registration data may be accessed by other departments such as pharmacy or radiology.

We tracked results documented by individual evaluation board members through to summary results reported to the advisory council. We found that the evaluation board's documentation of results was complete and that the results had been consolidated and summarized accurately. We found a few exceptions to Defense's documentation requirements, but they were isolated and insignificant. On the basis of our review of the evaluation board's workbooks and its report to the advisory council, Defense corrected the evaluation, documentation, and support problems we observed during our prior evaluation of its systems development contractor selection process.

Regarding the advisory council's comparative analysis and ranking of vendors, we found them consistent with the results reported by the evaluation board. We found that the council's assessment of the differences among the competing vendors was fair, accurate, and consistent with the evaluation board's results; that the selecting authority's decision was supported by the evaluation board's results and the advisory council's analyses. On the basis of the evaluation results, the winning vendor was a reasonable choice.

In conclusion, Defense's decision is supported by systems testing data that parallel source selection evaluation results. In addition, test plans and source selection procedures were implemented appropriately and consistently for each vendor and between vendors, and results documented as required. On the basis of our observation of the tests, review of test and selection process results, and evaluation of Defense's analysis of those results, we believe the test and selection processes were fair, reasonable, and supported.

Ralph V. Carlone for

Charles A. Bowsher
Comptroller General
of the United States

Appendix I

INFORMATION FOR THE SENATE AND HOUSE ARMED SERVICES COMMITTEES' STAFFS

ACQUISITION AND TESTING OF THE COMPOSITE HEALTH CARE SYSTEM (CHCS)

U. S. General Accounting Office

Appendix I

Requirements of the National Defense Authorization Act for Fiscal Years 1988 and 1989 (Public Law 100-180, Dec. 4, 1987)

Sec. 733 (b) requires that

(1) Defense evaluate competing medical information systems based on the results of testing required by Defense's Authorization Act for 1987 (i.e., extended benchmark and operational testing).

(2) Defense submit to the Armed Services Committees a report on such evaluation (submitted Feb. 2, 1988).

(3) GAO--not later than the end of the 30-day period beginning on the date that the Armed Services Committees receive Defense's report--submit a report to the same committees describing

   (A) the results of testing required by Defense's Authorization Act for 1987, and

   (B) the competitive process that Defense is following in selecting contractors for the operational test and evaluation phase of the acquisition.

(4) Defense and GAO report to the Armed Services Committees upon completion of the operational test and evaluation phase.

GAO CIRCULAR A-109 ACQUISITION PROCESS GUIDES THE COMPOSITE HEALTH CARE SYSTEM ACQUISITION

Appendix 1

Appendix I

CIRCULAR A-109 ACQUISITION PROCESS GUIDES THE COMPOSITE HEALTH CARE SYSTEM ACQUISITION

CIRCULAR A-109

- Office of Management and Budget Circular A-109 instructs federal agencies on how to conduct a major system acquisition and is intended to improve the management process and minimize risks of inadequate system performance and excessive cost. The circular specifies certain key decisions and outlines the logical sequence of activities in the major system acquisition process.

PERFORM MISSION NEEDS ANALYSIS

- Identify mission needs and convert to functional requirements.

DOCUMENT VALIDATED FUNCTIONAL REQUIREMENTS

- Have user community validate functional requirements.

PREPARE AND RELEASE REQUEST FOR PROPOSALS

- Incorporate validated functional requirements, operating environment specifications, and selection evaluation criteria.

DESIGN SYSTEM PER REQUIREMENTS IN REQUEST FOR PROPOSALS

- Vendors propose systems according to specifications in request for proposals.

PERFORM DEMONSTRATION TEST

- Vendors demonstrate ability to meet a portion of requirements in request for proposals and submit cost to deploy and support production system.

PERFORM FULL-SCALE SYSTEM TEST

- Prior to deployment, vendor with the best technical and cost solutions conducts a full-scale prototype test of a system in the environment in which it will operate.

DEPLOY AND SUPPORT PRODUCTION SYSTEM

- System deployed after successful conclusion of the prototype test.

CHCS ACQUISITION

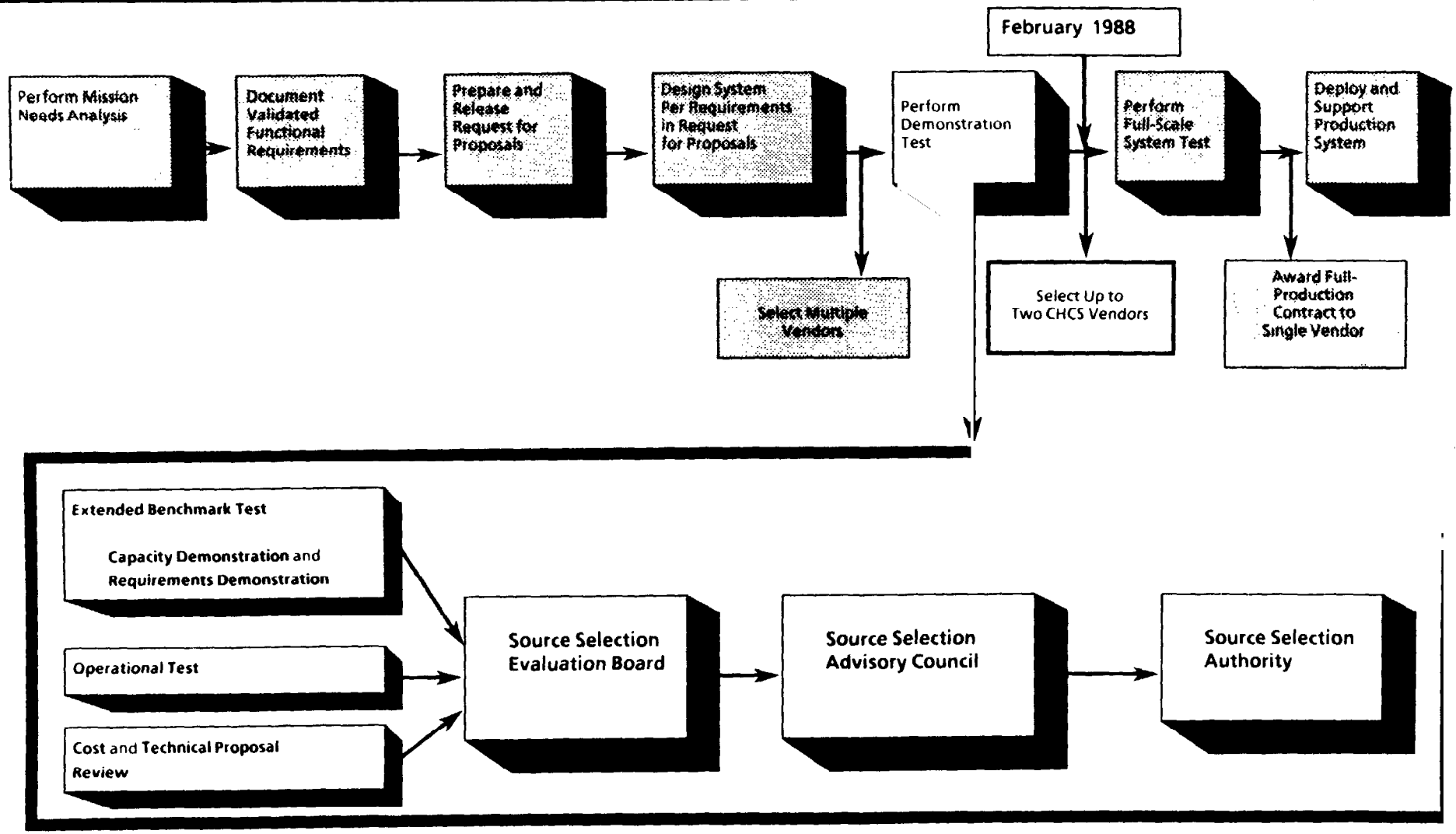
APPLICABILITY OF A-109

- In response to congressional concerns about the risks associated with acquiring complex and costly medical ADP systems, the Assistant Secretary of Defense (Comptroller), in 1979, directed program management to follow acquisition guidelines specified in Circular A-109.

STATUS

- In September 1986, Defense awarded system development contracts for demonstration tests to four vendors:
  - -- Baxter Healthcare International, Inc.
  - -- McDonnell Douglas Health Information Corp.
  - -- Science Applications International Corp.
  - -- Technicon Data Systems Corp.
- In February 1988, at the conclusion of the demonstration test phase, Defense decided to award a contract for a full-scale system test to Science Applications International Corp.

GAO DEMONSTRATION TEST ELEMENTS OF THE COMPOSITE HEALTH CARE SYSTEM ACQUISITION



Appendix 1

Appendix I

DEMONSTRATION TEST ELEMENTS OF THE CHCS ACQUISITION

TEST PHASE OVERVIEW

- Demonstration test phase began September 1986 and concluded with a decision by the Source Selection Authority in February 1988.
- Defense conducted extended benchmark and operational tests at which it gave vendors the opportunity to demonstrate their ability to meet the requirements in the request for proposals. In addition, vendors submitted cost and technical proposals which detailed their plans to deploy and support a production system and the estimated costs.
- Defense evaluated test data, performance data, and cost and technical proposals using a three-tier selection process prior to making its decision.
- Defense terminated for convenience Technicon Data Systems Corporation in September 1987, after the vendor elected to withdraw from the competition due to the limitation of funds. Defense is currently negotiating termination costs with this vendor. The three remaining vendors continued with the demonstration tests.

EXTENDED BENCHMARK TESTS

- Began September 1987, and concluded December 1987.
- **Requirements Demonstration Test**: Determined the extent to which contractors' proposed systems satisfied CHCS technical and functional requirements, and whether contractors' software modules were acceptable for installation at the operational test sites.
- **Capacity Demonstration Test**: Evaluated the capability of the contractors' proposed configurations to handle the required work load while being responsive to user requirements.

OPERATIONAL TESTS

- Began November 1987, and concluded December 1987.
- Validated, to a limited extent, functional/technical requirements and the system design demonstrated during benchmark testing.
- Evaluated the contractors' ability to deploy, operate, maintain, and train users of their respective systems at medical treatment facilities.

COST AND TECHNICAL PROPOSAL REVIEWS

- Began September 1987, and concluded January 1988.
- Evaluated competing contractors' proposals against Defense's requirements.
- Reviewed each contractor's cost proposal to ensure that costs presented were complete, trackable, realistic, reasonable, and affordable.

Appendix I

SOURCE SELECTION EVALUATION BOARD

- Evaluated technical and cost proposals of each competing system along with results of testing and performance, using data from benchmark and operational tests where appropriate.
- Reported the evaluation findings to the Source Selection Advisory Council.

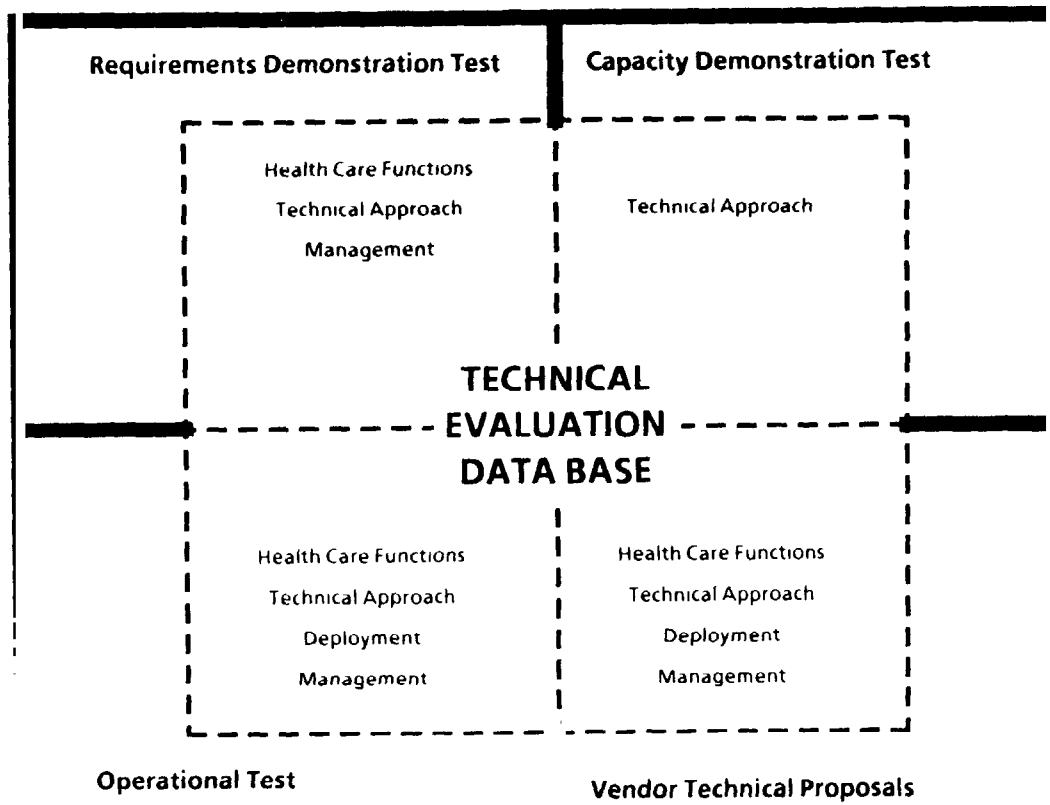
SOURCE SELECTION ADVISORY COUNCIL

- Designated chairperson, members, and advisors of the evaluation board.
- Advised on the conduct of the source selection process.
- Reviewed the findings of the evaluation board, ranked the proposals, and prepared conclusions and recommendations for the selection authority.

SOURCE SELECTION AUTHORITY

- Appointed the chairperson and members of the advisory council.
- Selected the winning proposal considering the conclusions and recommendations of the council.

GAO ACTIVITIES AND DATA DEVELOPED FOR THE EVALUATION PROCESS



COST EVALUATION DATA BASE

Vendor Cost Proposals

Appendix 1

ACTIVITIES AND DATA DEVELOPED FOR THE EVALUATION PROCESS

OVERVIEW

- Defense's evaluation process included--requirements demonstration test, capacity demonstration test, operational test, technical proposal review, and cost proposal review.
- Across all tests and reviews, Defense:

  Conducted tests by using functional/technical experts.

  Tested a total of 23,500 sample scenarios.

  Tested more than 8,700 requirements across three vendors.

  Recorded test data on more than 60,000 workbook pages.

REQUIREMENTS DEMONSTRATIONS

- Began September 1987, and concluded October 1987.
- Conducted at five sites located in McLean and Reston, Va.; Chevy Chase, Md.; Hazelwood, Mo.; and La Jolla, Calif.
- Included a separate team of functional and technical representatives for each of eight software development modules.
- Collected data on each vendor's ability to fulfill Defense's functional requirements within each module.

CAPACITY DEMONSTRATIONS

- Began November 1987, and concluded December 1987.
- Conducted at three test sites located in Franklin, Mass.; Poughkeepsie, N.Y.; and Santa Clara, Calif.
- Included a Defense test team at each site comprised of functional and technical representatives.
- Collected performance data during 13 system tests relating to hardware, software, data base, and communication segments of each system

OPERATIONAL TESTS

- Began November 1987, and concluded December 1987.
- Conducted at three Defense hospitals located in Camp LeJeune, N.C.; Fort Knox, Ky.; and Sheppard AFB, Tex.
- Included three Defense functional/technical test teams and one evaluation board team.
- Collected data pertaining to functional requirements, system installation, performance, user training, and user satisfaction.

TECHNICAL PROPOSAL REVIEWS

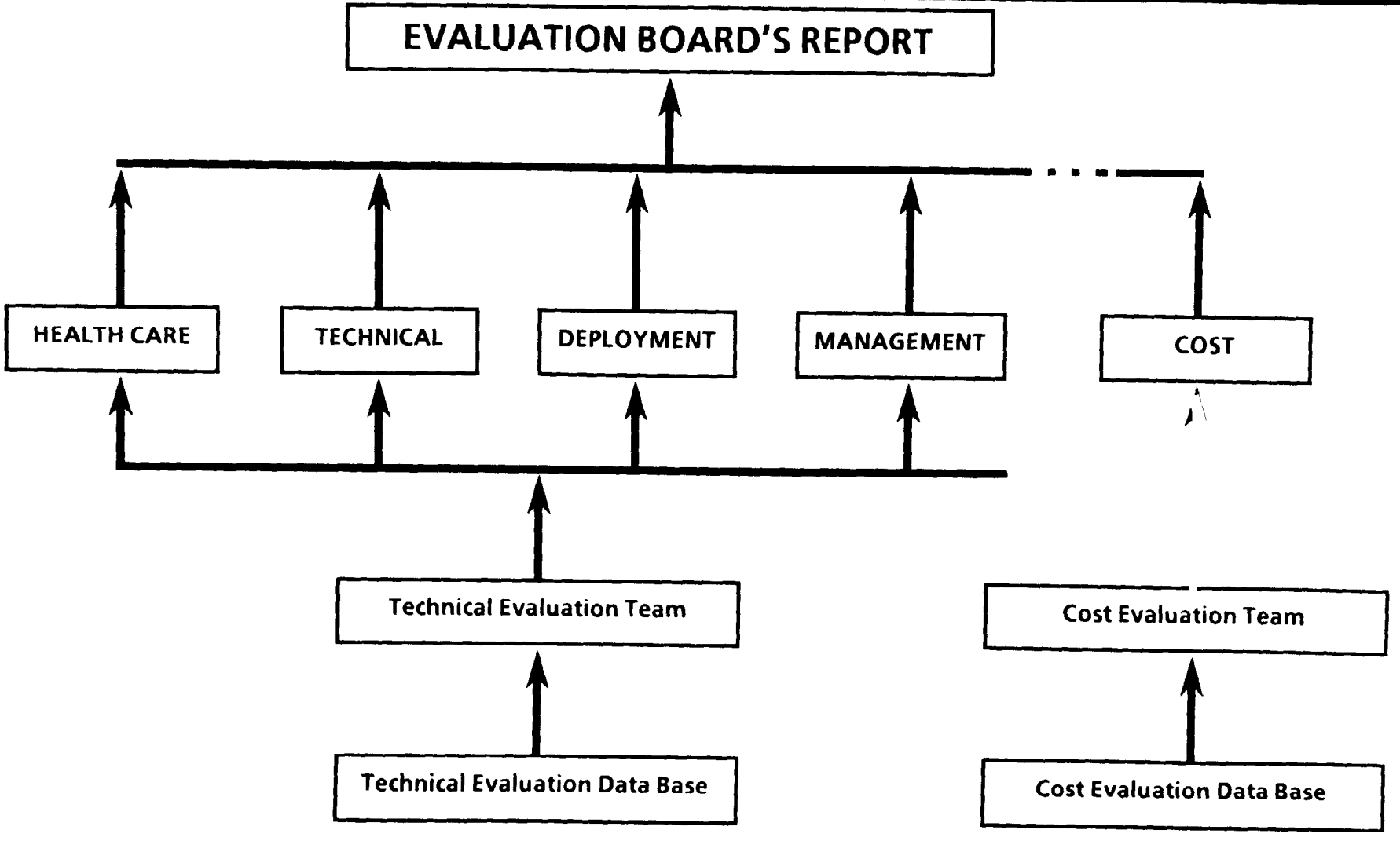
- Began September 1987, and concluded January 1988.
- Performed at Defense's offices in Bethesda, Md.
- Conducted by 41 technical evaluation team members.
- Conducted a detailed analysis to determine (1) whether proposals addressed all of Defense's requirements and (2) the quality of the vendors' proposed systems.

COST PROPOSAL REVIEWS

- Began October 1987, and concluded January 1988.
- Performed at Defense's offices in Bethesda, Md.
- Conducted by five cost evaluation team members.
- Conducted a detailed analysis of each vendor's proposed cost and pricing data and participated in contract cost negotiations.

Note: Members of Defense's test and evaluation teams came from functional or technical occupations. The functional occupations include doctors, nurses, pharmacists, and other hospital personnel who will ultimately be the end users of the system. The technical members are people who will operate, maintain, and support the system once it is installed in military hospitals.

GAO SOURCE SELECTION EVALUATION PROCESS



SOURCE SELECTION EVALUATION PROCESS

TECHNICAL EVALUATION TEAM

- Reviewed data collected during the demonstration test phase and evaluated the quality of vendors' performance and proposed technical solutions against Defense's requirements in the areas of health care functions, technical approach, deployment, and management--as specified in the request for proposals and the source selection plan.

COST EVALUATION TEAM

- Using its detailed cost analysis, the team considered all associated costs and each vendor's negotiated cost proposal and prepared a final cost evaluation report.

BOTH TEAMS

- At the conclusion of its evaluation, the board prepared and submitted to the advisory council a report including separate technical and cost narrative summaries of each vendor's standing in terms of the components of five evaluation areas.

GAO GAO'S SUMMARY OF EVALUATION BOARD RESULTS BY VENDOR

ADVISORY COUNCIL

EVALUATION RESULTS

AREA	SCIENCE APPLICATIONS	McDONNELL DOUGLAS	BAXTER
HEALTH CARE FUNCTIONS	Few Weaknesses	Several Weaknesses	Many Weaknesses
TECHNICAL APPROACH	Complete Integration	Incomplete Integration	Extensive Lack of Integration
DEPLOYMENT	Acceptable (with weakness)	Acceptable (with strength)	Unacceptable
MANAGEMENT	Effective	Capable	Ineffective
COST	Lower	Higher	Higher

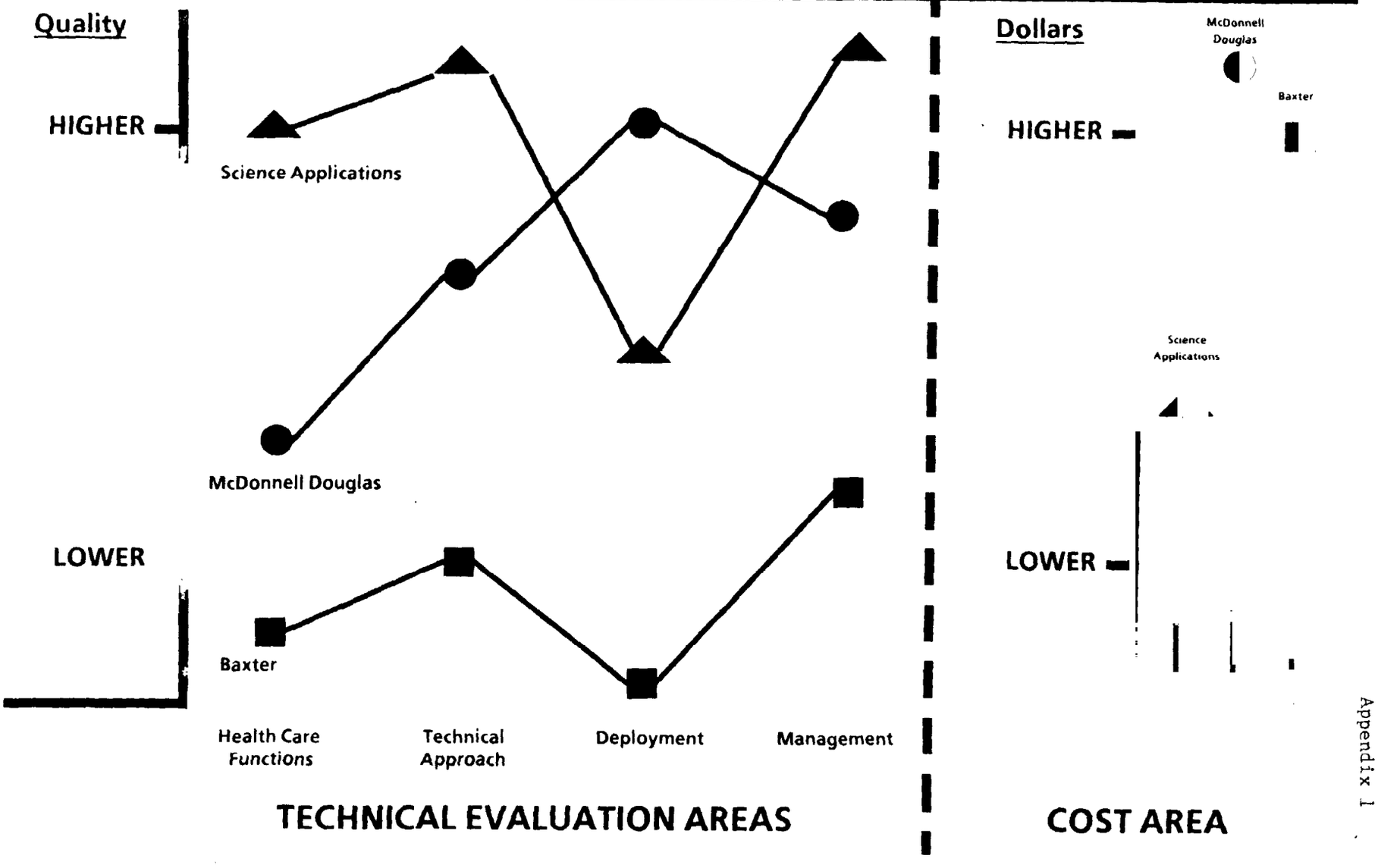
GAO'S SUMMARY OF EVALUATION BOARD RESULTS BY VENDOR

The purpose of this table is to portray--at a high level--relative differences among competing vendors. GAO distilled the information in the evaluation board's report into summary assessments for each area.

GAO's overall observations:

- Science Applications out-performed the other vendors in the health care functions, technical approach, management, and cost areas.
- McDonnell Douglas was stronger in the deployment area.
- Baxter was weak in all areas.

GAO'S COMPARISON OF TECHNICAL AND COST EVALUATION RESULTS BY VENDOR



Appendix I

GAO'S COMPARISON OF TECHNICAL AND COST EVALUATION RESULTS BY VENDOR

GAO developed this graphic to portray--at a high level--relative differences among vendors and across major evaluation areas without disclosing procurement sensitive data. The scale GAO used in this graphic is not the same scale which Defense used in its selection process. The terms HIGHER and LOWER do not correlate directly with terms in Defense's selection process. However, the graphic does show the technical evaluation areas in the order of importance--left to right--prescribed by Defense.

The graphic shows that:

- Science Applications received a higher quality assessment in three of the four areas, while proposing a lower cost alternative.
- McDonnell Douglas received a higher quality assessment in one of the three areas, while proposing a higher cost alternative.
- Baxter received a lower quality assessment in all areas, while proposing a higher cost alternative.

GAO ADVISORY COUNCIL CONCLUSIONS AND RECOMMENDATIONS TO THE SELECTION AUTHORITY

SELECTION AUTHORITY

ADVISORY COUNCIL RECOMMENDATIONS

- Award a single contract to Science Applications International.
- Remove McDonnell Douglas' and Baxter's systems from current operational test sites as soon as possible. Phasing to be determined by local hospital commander.

ADVISORY COUNCIL CONCLUSIONS

- Science Applications' proposal is technically superior and is significantly lower in total life cycle costs.
- McDonnell Douglas' proposal is technically acceptable, but additional funds will be required to repair an already non-competitive bid.
- Baxter's proposal represents unacceptable technical risk.

The superiority of Science Applications' proposal offers minimal cost and technical risk precluding the need for further competition. The difference between Science Applications' and McDonnell Douglas' proposals is so substantial as to offer no further reduction in cost and technical risk.

Appendix 1

Appendix I

ADVISORY COUNCIL CONCLUSIONS AND RECOMMENDATIONS TO THE SELECTION AUTHORITY

- In arriving at these conclusions and recommendations, the advisory council (1) used the final evaluation board report, and (2) recognized that the cost of Science Applications' proposed system is substantially less than the $1.1 billion (FY 86 constant dollars) congressional cap of life cycle costs. It should be recognized, however, that the total cost to perform a full-scale system test and subsequently deploy and support a CHCS full-production system would include the proposed contract cost as well as Defense's costs to manage the project. At this point in the acquisition, it is not possible to determine with precision whether the sum of government and contractor costs will remain within the congressional cap. Though a contractor has been selected, there is still uncertainty over whether it will be able to deliver its system at the promised cost. In addition, the government's contribution to life cycle costs has not been established. Both contractor and government costs are to be better determined during the operational test and evaluation phase.

- McDonnell Douglas' and Baxter's systems will be removed from their respective operational test sites--the military hospitals at Camp LeJeune, N.C., and Sheppard Air Force Base, Tex.

GAO THE SELECTION AUTHORITY'S DECISION

"I concur with both Source Selection Advisory Council recommendations to award [an operational test and evaluation phase] contract to Science Applications International Corporation and to remove the systems installed at the other two contractors' operational test sites as soon as possible."

Assistant Secretary of Defense,
Health Affairs

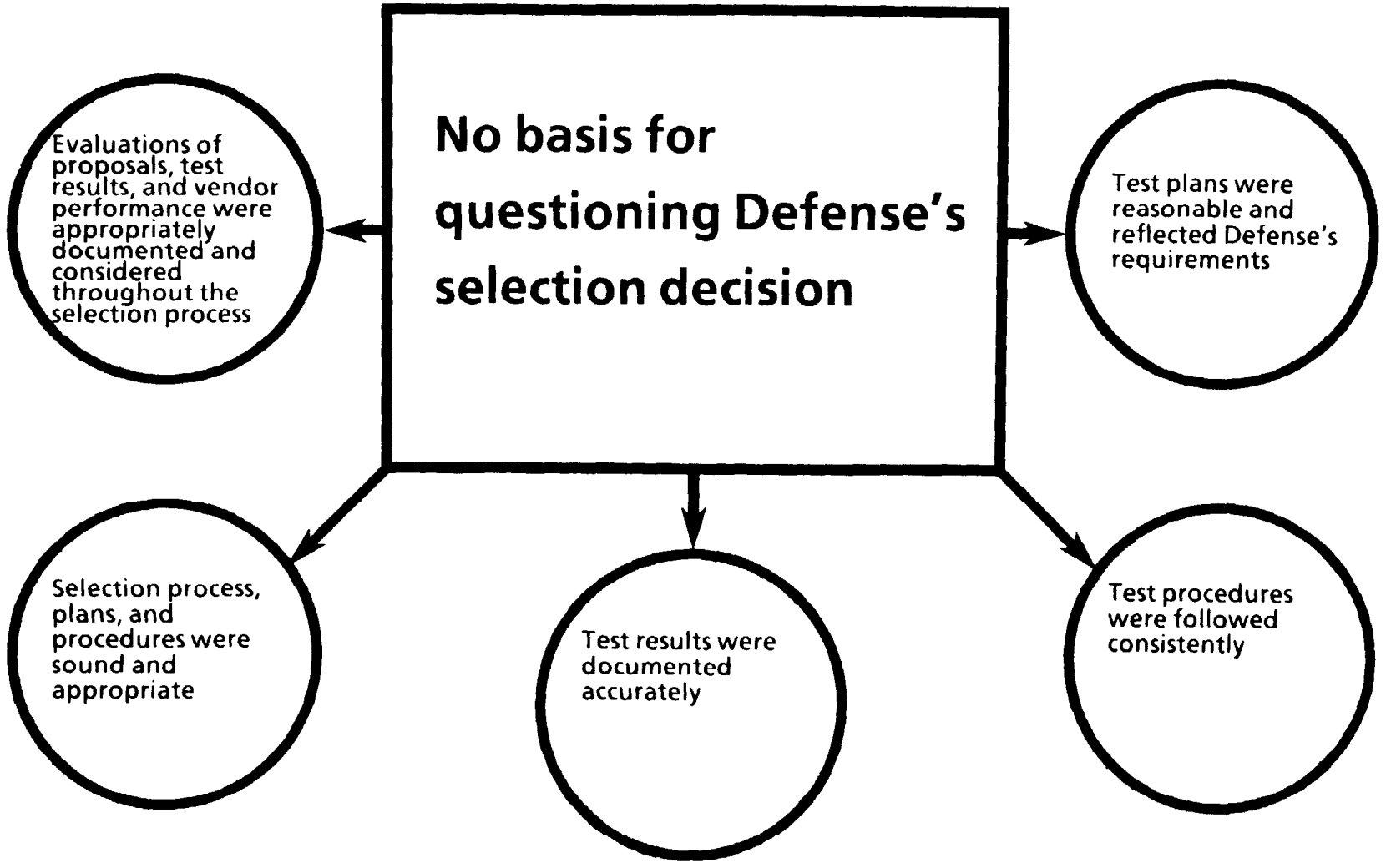
Appendix I

Appendix I

THE SELECTION AUTHORITY'S DECISION

- Assistant Secretary of Defense--Health Affairs.
- The decision to select Science Applications International Corp. was made on the basis of the advisory council's report conclusions and recommendations.

GAO BASIS FOR GAO's CONCLUSIONS



Appendix 1

Appendix I

BASIS FOR GAO'S CONCLUSIONS

- Comparisons of Defense test and selection plans and procedures against its requirements and applicable regulations, guidelines, and directives.
- Verification that test plans were implemented following established procedures.
- On-site verification of daily test results to ensure that Defense accurately documented test results.
- Verification that data considered by Defense's evaluation board reflected data reported by the CHCS test teams.
- Reconciliation of differences between test data and evaluation results.
- Verification of the consistency between consensus and individual evaluation board member scores.
- Verification of the consistency between the evaluation board's final report and underlying results.
- Verification that evaluation board results support advisory council analyses.
- Analyses of advisory council rankings against contract award criteria specified in Defense's source selection plan.
- Verification that the advisory council's recommendation was consistent with underlying analyses and evaluation board results.
- Verification that the selection authority's decision was supported by advisory council analyses and evaluation board results.
- Verification that the test and selection process was applied appropriately and consistently among vendors.

Appendix II

OBJECTIVES, SCOPE AND METHODOLOGY

The National Defense Authorization Acts for Fiscal Years 1988 and 1989 required GAO to report on: (a) the results of testing required by Defense's Authorization Act of 1987, and (b) the competition process that Defense followed in selecting contractors for the operational test and evaluation phase of the acquisition. Our approach to this was to determine whether Defense's testing and selection processes were planned, conducted, and documented in an appropriate, consistent, and equitable manner. Our review of Defense's test and selection processes began with analyses of plans and procedures. Next, we focused on how plans and procedures were implemented. Last, we evaluated how results were documented, carried forward through the process, and analyzed by management. Our methodology for addressing the overall objective was as follows:

-- To determine whether Defense's test plans and procedures were reasonable, we evaluated the extent to which they addressed requirements specified in Defense's request for proposals.

-- To determine whether Defense's selection process plans and procedures were reasonable, we evaluated the extent to which they were consistent with applicable regulations, guidelines, and directives.

-- To determine whether tests were conducted as planned, we directly observed about two-thirds of the testing to verify that test procedures were followed consistently. Relative to Defense's operational tests, we visited the three operational test sites to see the initial installation and user training development efforts. We did not visit these sites during the test teams' visits; however, we reviewed the data the teams collected during their visits.

-- To determine whether test results were appropriately documented, we verified that daily test results--including problems and deficiencies--were documented as required.

-- To determine whether test results were accurately carried forward to the selection process, we compared the data we compiled from the actual tests to the data provided to the Source Selection Evaluation Board.

-- To determine the extent to which test data were considered in the evaluation process, we reviewed the evaluation board's scores in areas of known problems or deficiencies and its report discussing those areas. In addition, we verified that evaluation board results were consolidated accurately and checked that individual board member and group scores were consistent with the evaluation board's reported results.

-- To determine whether the advisory council's comparative analysis of competing vendors was reasonable, we traced the council's analysis back to results reported by the evaluation board.

-- To determine the accuracy of the advisory council's ranking of competing vendors, we compared the evaluation board's results against the criteria employed by the advisory council and specified in Defense's source selection plan.

Appendix II

-- To determine whether the advisory council's recommendation to the source selection authority was reasonable, we verified that it was consistent with underlying comparative analyses and evaluation board results.

-- To determine whether the selection authority's decision was reasonable, we verified that it was supported by underlying advisory council analyses and evaluation board results.

-- To determine whether the testing and selection processes were fair, we verified that they were applied appropriately and consistently between vendors.

Throughout this process, we checked for the recurrence of evaluation, documentation, and support problems identified in our earlier report, ADP Systems: Concerns About DOD's Composite Health Care System Development Contracts, GAO/IMTEC-87-25, June 8, 1987.

This review, which is a continuation of our legislatively-mandated evaluation of the CHCS acquisition, was performed during the 10 month period ending in February 1988. It was conducted at the Defense Medical Systems Support Center, the Tri-Service Medical Information Systems program office, and the U. S. Army Information Systems Selection and Acquisition Activity in the Washington, D. C. area. In addition, we conducted work at vendor demonstration sites located in Chevy Chase, Md.; Hazelwood Mo.; McLean and Reston, Va.; La Jolla and Santa Clara, Calif.; Franklin, Mass.; and Poughkeepsie, N.Y. We also visited the military hospitals on Camp LeJeune, N.C.; Ft. Knox, Ky.; and Sheppard Air Force Base, Tex.

We did not obtain Department of Defense comments on a draft of our proposed report. However, we worked closely with program management officials throughout our evaluation and briefed senior program management officials on the results of our work. Their views are incorporated in this report where appropriate. Our evaluation was conducted in accordance with generally accepted government auditing standards.

(510222)

Requests for copies of GAO reports should be sent to:

U.S. General Accounting Office
Post Office Box 6015
Gaithersburg, Maryland 20877

Telephone 202-275-6241

The first five copies of each report are free. Additional copies are $2.00 each.

There is a 25% discount on orders for 100 or more copies mailed to a single address.

Orders must be prepaid by cash or by check or money order made out to the Superintendent of Documents.

United States
General Accounting Office
Washington, D.C. 20548

Official Business
Penalty for Private Use $300

First-Class Mail
Postage & Fees Paid
GAO
Permit No. G100