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United States General Accounting Office

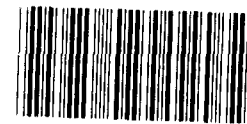
GAO

Report to Congressional Requesters

January 1988

# INFORMATION SYSTEMS

## Veterans Administration Information Resources Management Is Improving



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

Information Management and  
Technology Division

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January 27, 1988

The Honorable Alan Cranston  
Chairman  
Committee on Veterans' Affairs  
United States Senate

The Honorable G. V. (Sonny) Montgomery  
Chairman  
Committee on Veterans' Affairs  
House of Representatives

The Honorable Frank H. Murkowski  
Ranking Minority Member  
Committee on Veterans' Affairs  
United States Senate

This report responds to your request that we evaluate aspects of the Veterans Administration's (VA) management of information resources. Specifically, you asked that we address VA's progress in (1) overseeing systems development; (2) reducing data duplication and increasing data sharing; (3) upgrading its telecommunications system; and (4) training users of automated data processing (ADP) systems.

Shortly after we began our audit, the Administrator of Veterans Affairs appointed the Associate Deputy Administrator for Management as the agency's senior official responsible for the management of information resources. During the course of our review, we discussed with the senior official our observation that critical information resources management activities had been proceeding without the attention needed to ensure that VA achieved its objectives in the most efficient and economical manner. By the time we completed our audit, VA had initiated several actions to improve the management of information resources.

We found that VA (1) had pursued in-house development projects that had not been justified on the basis of required cost/benefit analyses and alternative strategies; (2) had not achieved goals for eliminating duplicate data and increasing data sharing between agency departments; (3) was proceeding with an agency-wide telecommunications network procurement without an updated assessment of the quantitative and qualitative effects of major ADP system redesigns; and (4) had not adequately explored opportunities for expanding the centralization of ADP training.

At the conclusion of our work, the senior official described the following actions VA had initiated as a result of our review:

- the drafting of a user guide to clarify systems development responsibilities, instituting a requirement to designate systems managers who will be responsible for analyzing project alternatives and the cost/benefit of alternatives, and initiating the development of a plan to recover system development costs from system users;
- the approval of a project to improve data administration by creating a data directory<sup>1</sup> and the formation of a management board to identify data sharing opportunities among systems;
- the use of a "utility"<sup>2</sup> approach in acquiring its replacement telecommunications network. VA has started revalidating requirements resulting from major ADP systems redesigns before soliciting vendor proposals; and
- the preparation of a report on the potential for more cost-effective ADP training by reducing the number of locally developed training programs and expanding development at the national level.

At the time we finished our audit, the agency's progress regarding the above actions was limited. VA also continues to develop cost/benefit and alternatives analyses in response to recommendations from two of our earlier reports.<sup>3</sup> We believe that VA's actions are important steps toward improving management oversight of critical information resources management activities. In view of the early stage of VA's corrective actions, we are not making recommendations at this time.

VA's use of information resources is important in accomplishing its mission. VA relies on more than 70 automated information systems to provide veterans and their dependents with health care and benefits such as compensation, pensions, insurance, and home loan guarantees. In fiscal year 1988, VA plans to spend about \$424 million for information resources, and is planning major information systems modernization programs costing up to \$1.25 billion between fiscal years 1987 and 1992.

<sup>1</sup>VA's data directory is expected to reduce data redundancy and promote data sharing through centralizing information such as standard definitions, data sources, and systems using the data.

<sup>2</sup>VA's planned "utility" approach to telecommunications involves providing the capabilities of an agency-wide network as a service to user systems throughout the agency. The network is planned to have the flexibility necessary to satisfy changing data communication needs as they arise.

<sup>3</sup>Hospital ADP Systems: VA Needs to Better Manage Its Decentralized System Before Expansion (GAO/IMTEC-87-28, July 24, 1987), and ADP Systems: Department of Veterans Benefits Modernization Program (GAO/IMTEC-88-3, Oct. 30, 1987).

We conducted our audit work between August 1986 and August 1987. We reviewed documents and interviewed agency officials at VA's headquarters in Washington, D.C., eight regional offices, eight medical centers, and the three data processing centers. Our review was conducted in accordance with generally accepted government auditing standards. The appendix provides details on our objectives, scope, and methodology.

## Steps Initiated by VA to Improve Adherence to Systems Development Guidance

The in-house development of systems requires VA funds and significant staff. Proper justification and analyses are required for in-house development projects to reduce the risk of delays and failure to meet user needs. Oversight ensures adherence with agency policy and federal guidance on justifying systems development and acquisition.

We found that VA's latest draft and predecessor policies on performing analyses to justify development projects did not incorporate oversight and enforcement provisions. As a result, VA departments had funded and staffed development projects that had not been justified on the basis of required analyses of costs, benefits, and alternative strategies. At the conclusion of our work, the senior official told us he had initiated actions that he believes address oversight and enforcement of the policy.

Alternatives and cost/benefit analyses are crucial activities in justifying the allocation of resources to systems development projects. Federal Information Processing Standards Publication 64 and Federal Information Resources Management Regulation 201-30 recommend analysis of the costs and benefits of alternative solutions to determine which will provide the optimal return on investment. VA's latest draft policy states that such analyses must be done for projects valued at over \$1 million, "to ensure decisionmakers are provided with information on the degree of effectiveness and operational economy of practical alternatives." Although the policy is clear that cost/benefit and alternatives analyses are necessary in justifying projects, neither it, nor the predecessor policy, require the senior official, or other independent official, to review users' justifications for these projects. VA's latest draft policy places responsibility for reviewing and approving project requests with the departments.

We found that neither the senior official nor the central VA development office was ensuring adherence to the requirement that cost/benefit and alternatives analyses be completed, both stating this was the responsibility of the system users who initiate projects. Department officials,

however, said that they had not adhered to the policy that users justify projects because there was insufficient time for such analyses. VA officials said the lack of oversight resulted in systems development projects being staffed and funded, even though they had not been justified on the basis of cost/benefit and alternatives analyses. An example of VA's lack of oversight is its justification plan for its \$6 million automation effort for loan guaranty activities. The justification identified hardware and software purchase costs of one alternative, but failed to define in-house programming and testing staff costs, site preparation, and training needed to implement the project, or provide comparative data on other alternatives.

In discussions with the senior official regarding the oversight of in-house systems development projects, he agreed that clearer policy and better justifications are needed. Because of this need, he initiated several actions regarding the oversight and enforcement of the policy. These actions include (1) the development of guidelines for software development procedures to clarify existing policy and responsibilities, (2) the establishment of system managers within the departments who are responsible for analyzing, among other things, the adequacy of cost/benefit and alternatives analyses for all major systems development efforts, and (3) planning a billing system to charge users for services, thereby increasing user incentive to justify all software projects.

## **New VA Review Board May Improve Automated Data Administration**

The generally accepted practice for efficient and effective management of data is making data available to those who need it and reducing the amount of unnecessarily duplicative data. While VA has successfully implemented one data sharing project, which could save the agency \$750,000 annually, the agency has made little progress in eliminating duplicate data and meeting other agency data sharing needs. Two data sharing projects have not been completed because the agency has not accorded high priority to such data improvements. As a result, agency projections for savings from reduced staff time have not been realized and overpayments of benefits for deceased veterans still occur. In recognition of the need to improve data administration, the senior official has approved funding for the development of a data directory and established a Systems Integration Review Board to facilitate data administration and data sharing projects.

Although VA has recognized the need to reduce data duplication and improve the efficiency of its automated data since 1979, it has not translated this recognition into practice during major redesigns of systems,

such as its compensation and pension system and its master veteran file locator data base. VA consultants have found that the data in these systems unnecessarily duplicate data in other systems. While the agency planned improvements in data administration and began developing a data dictionary<sup>4</sup> during the redesign of the compensation and pension system in 1979 (now called the Target system), it did not achieve these improvements because software development and hardware acquisitions took priority over data improvements.<sup>5</sup> While VA still plans to achieve these data improvements, the improvements had been postponed from the scheduled 1983 implementation until the late 1980's, when the Target system is scheduled for another redesign.

Similarly, during the redesign of the master veteran data base, begun in 1983, VA did not achieve the elimination of duplicate data elements, 41 percent of which exist in other VA files, nor the planned automation of some data elements to make this system more useful to potential users. The project manager said these improvements should have been made concurrent with the redesign of the data base software. These changes were not made because the agency, at that time, did not recognize the importance of such data efficiency improvements.

VA has had limited success exploiting opportunities to share data among different user groups because projects have not been completed as planned. In 1984, VA identified strategies that evolved into three projects to share veteran eligibility and medical data between its major departments. One project was initiated to provide medical centers in the Department of Medicine and Surgery with on-line access to veteran benefit eligibility data. This data resides in systems used by the Department of Veterans Benefits. Previous to this automated query capability, medical center inquiries were made through the mail or by telephone. A VA official stated that over 152,000 inquiries were made in June 1987. The automated query capability, called the Hospital Inquiry, was implemented in August 1987. Because of a reduction in the number of forms that must be filled out and mailed between the Department of Veterans Benefits and the medical facilities, and a reduction in the number of telephone inquiries, the Department of Veterans Benefits saves as much as 1200 staff hours per week and VA avoids costs of as much as \$750,000 per year.

<sup>4</sup>A data dictionary describes data in a system, including the names of the data elements and the related data structure.

<sup>5</sup>Computer Systems: VA's Target Project Never Achieved Redesign of its Processing Software (GAO/IMTEC-86-30BR, Aug. 21, 1986).

In the second project, VA planned to achieve staff time savings by providing the Department of Veterans Benefits with automated access to medical center data needed in processing benefits cases. However, staff time savings have not materialized since access to information is still being accomplished manually. A VA planning staff member stated that the necessary medical form has not been automated by the Department of Medicine and Surgery. Consequently, system development cannot proceed. In the third project, the Department of Memorial Affairs was to automate the transfer of death notice information to the Department of Veterans Benefits. An official from the Department of Memorial Affairs told us that since the department often receives notice of death within 2 to 3 days, automated sharing of this information with the Department of Veterans Benefits could avoid overpayments of \$4.6 million annually to deceased veterans and their dependents. This official also said the automated link had not been developed because the project was not given priority by the central software development office. This resulted in the project not being staffed.

In discussing our concerns with the senior official, he concurred that data administration has not been a high priority in the past and that progress has been lacking. To promote the more efficient use of automated data, he recently (1) approved funding for a project that will develop a directory of data available in agency systems, (2) asked the recently created review board to look into opportunities to share data, and (3) directed the completion of the memorial affairs data sharing project.

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## Steps Being Initiated to Improve VA's Telecommunications Planning

VA plans to competitively acquire a major telecommunications network, the Integrated Data Communications Utility, which it has estimated may cost up to \$330 million over a 10-year contract life. Although VA anticipates that the new system will replace its current system, the Veterans Administration Data Transmission System, and encompass other agency telecommunications needs, the agency has not completed necessary analyses to plan a project of the Integrated Data Communications Utility's magnitude. The senior official, however, has recently initiated steps to improve the agency's planning for the system by requiring more analysis of data communications needs prior to soliciting vendor proposals.

VA's telecommunications planning efforts point toward the Integrated Data Communications Utility as the next step in the agency's evolution toward an agency-wide network. In replacing the Data Transmission



System, VA intends to provide better network management information, additional network capacity, and other data communications capabilities. The agency's telecommunications strategy will provide for the Integrated Data Communications Utility to satisfy the agency's ever-changing data communications requirements by offering network users a flexible range of capabilities as their needs are being defined and before new or replacement automated systems are developed.

The Federal Information Resources Management Regulations, in Section 201-38.010, require agency analysis of data communications requirements to justify the acquisition of telecommunications resources. Additionally, since May 1986, Office of Management and Budget (OMB) Circular A-11 specifies that agencies must prepare cost/benefit analyses for information technology initiatives as part of the annual budget process. Such analyses are to include a set of at least three technically feasible alternatives to the recommended approach, including a minimum "baseline" approach and a scaled-down approach. OMB specifically directed VA to prepare a cost/benefit analysis for the Integrated Data Communications Utility as part of VA's fiscal year 1989 budget documentation.

Although VA has been planning its Integrated Data Communications Utility for several years, and in 1988 intends to request vendor proposals, its efforts to date in analyzing data communications requirements and costs and benefits of alternatives have been incomplete. In November 1986, VA issued a request for comments on the utility to identify vendor interest in the project and to solicit vendor comments on the agency's approach. The project manager stated that although the request for comments documented VA's most current analysis of telecommunications requirements, the projections of the data communications workload were only estimates included for evaluation purposes so that vendor comments would be based on a consistent set of assumptions. A program official acknowledged the need to develop more definitive data communication workload estimates and stated that VA would be including revised estimates in the request for proposals on which vendors will base their bids.

Current and former program officials identified several reasons why required analyses and justifications had not been completed. The official formerly responsible for the project said that, in his opinion, formal analysis to justify the Integrated Data Communications Utility was inappropriate. He stated that regulations requiring alternatives analysis are out of date with current telecommunications networking technology.

This same official stated that it is inappropriate to do a cost/benefit analysis for the utility because, under VA's strategy, the benefits of the utility are the benefits which accrue to the ADP systems that will use it. However, as we reported earlier,<sup>6</sup> the initial cost/benefit analyses of the ADP systems did not include telecommunications costs and benefits.

In discussing our concern about the lack of justification and analysis for the Integrated Data Communications Utility with the senior official, he stated that he recognizes the need for more requirements analysis. While he believes VA has a good understanding of its current data communications workload, he agreed that future requirements are not well defined. However, he believes that the strategy to proceed with the procurement is appropriate because VA needs to recompute the existing contract to maintain current capabilities, and this procurement will allow time for the agency to do necessary analyses and justification of future needs before exercising contract options. The senior official said VA will structure the acquisition so that requirements that are not yet well defined because of ADP systems redesigns will only be satisfied after the agency conducts additional analyses. By doing this, he believes that VA can ensure that its telecommunications needs are met in a cost-effective manner.

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## Centrally Prepared ADP User Training Could Improve Efficiency

Although there are similarities in training requirements for information systems used throughout VA, the development of training programs for systems users has been decentralized, with offices developing or obtaining their own training resources. While this approach allows locations to tailor ADP training, VA consultants who studied medical center ADP training and regional office ADP training have suggested that other methods may be more effective and efficient.

The consultants reported that standardized training, supported with centrally prepared training materials tailored to meet agency-wide program needs, could be more efficient than the current approach to training and could contribute to standardization within and among systems. Among the advantages cited by the consultants for centrally developed training are savings of time to prepare training materials, more effective and professionally prepared materials, and enhancement of efforts to assure uniform interpretation of guidelines by all offices.

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<sup>6</sup>Hospital ADP Systems: VA Needs to Better Manage Its Decentralized System Before Expansion (GAO/IMTEC-87-28, July 24, 1987), and ADP Systems: Department of Veterans Benefits Modernization Program (GAO/IMTEC-88-3, Oct. 30, 1987).

VA currently has an information technology center that develops and oversees the presentation of training on microcomputer use. The agency is considering expanding this center's charter to include the development and presentation of other ADP training. A VA training official estimated that the cost to expand the center to develop office automation training courses for presentation at field locations might be one-half that currently being paid to the equipment manufacturer for similar training.

In discussing the potential for expanding the role of the central training unit with VA's senior official, he said he has asked the information technology center to prepare a report that addresses opportunities for the centralized development of training materials and to review user training for agency-wide systems.

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## Conclusions

Because VA is investing heavily in modernizing its information systems, management attention is vital if systems are to efficiently provide improved services to veterans. Effective management reduces the risks involved in implementing systems and helps ensure that economical systems are developed to meet the agency's needs. Initiatives being undertaken by VA at the close of our review are important steps toward improving management oversight of critical information resources activities. The agency's initiatives related to (1) increasing oversight of in-house systems development, (2) expanding data sharing and eliminating duplication, (3) acknowledging the need to conduct required analyses and justification of future telecommunications needs, and (4) assessing central preparation of some training materials are indicative of the intent to begin correcting the problems we identified. In view of the early stage of VA's corrective actions, we are not making recommendations at this time.

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## Agency Comments

In commenting on a draft of this report, the senior official agreed with our findings and conclusions. In addition, he noted that the agency is continuing to make progress as evidenced by (1) the recent issuance of a user service request handbook, (2) initiation of cost/benefit and alternatives analyses for VA's telecommunications network, and (3) finalization of the policy on information systems planning and development.

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We are sending copies of this report to the appropriate House and Senate committees; the Administrator of Veterans Affairs; the Director, Office of Management and Budget; and other interested parties.

*Dan White*  
for Ralph V. Carlone  
Director



# Objectives, Scope, and Methodology

The House and Senate Veterans' Affairs Committees requested that we review the management of information resources at the Veterans Administration (VA). Our overall objective of this review was to determine how effectively the agency was improving the management of information resources agency-wide, as directed in the Paperwork Reduction Act. Subsequently, in January 1987, the committees asked us to review VA's \$153 million, 6-year modernization program for the Department of Veterans Benefits automation. We issued a report on the modernization program in October 1987 and continued working on our report on the agency's management of information resources. In further meetings with the requesters, we were asked to specifically focus on VA's progress in overseeing systems development, improving data administration and increasing data sharing, upgrading the agency-wide telecommunications system, and training users of ADP systems.

To assess whether VA is overseeing and enforcing systems development requirements, we reviewed past GAO reports and current automated data processing (ADP) development projects for evidence of required justification and review. We also reviewed a recent General Services Administration assessment of VA's enforcement of federal and VA systems development requirements.

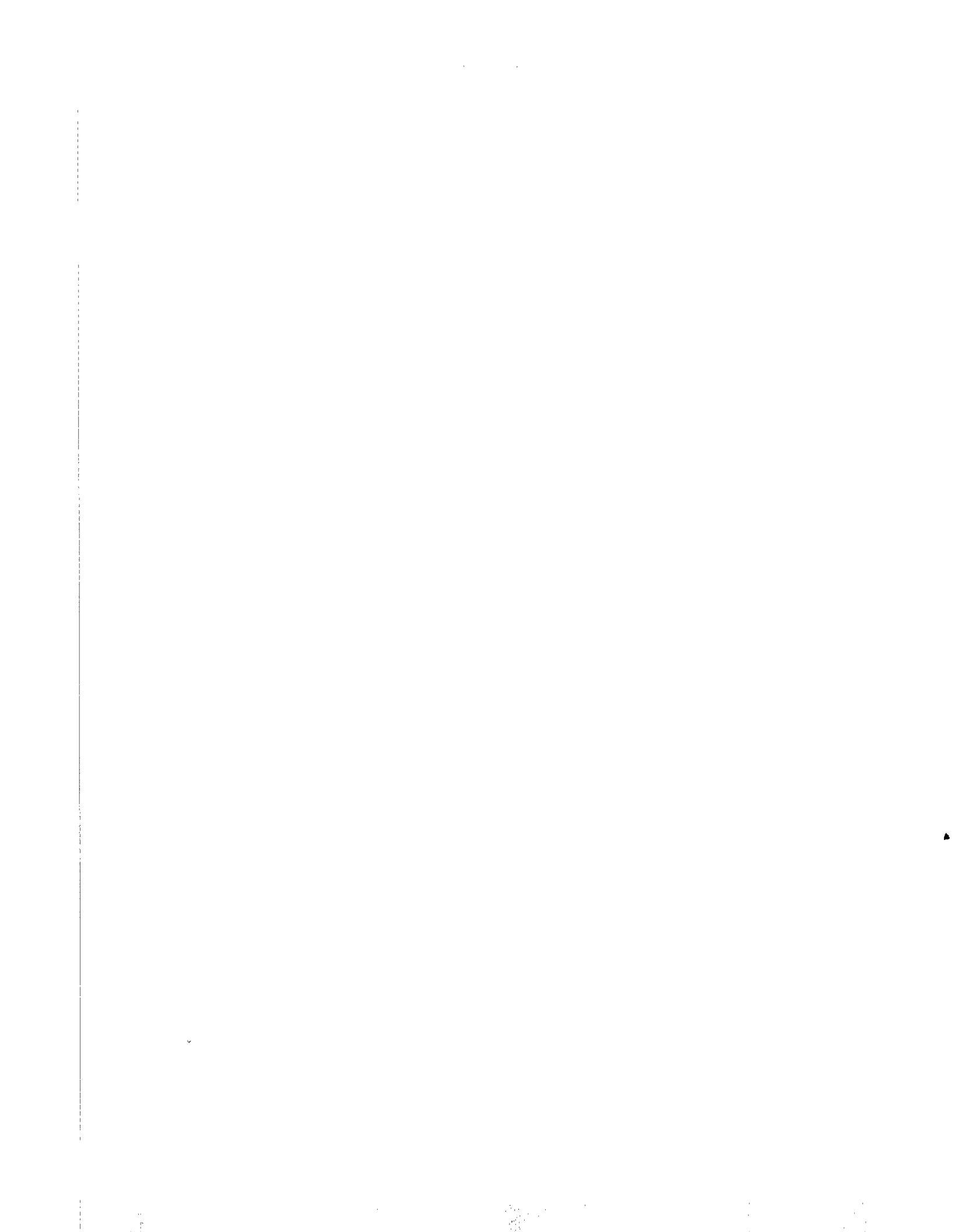
We reviewed reports prepared by consultants, policies prescribed by VA, and goals established by the administrator, and discussed ongoing projects with project managers and system users to assess VA's management of data.

To assess whether VA is properly planning for and effectively managing its telecommunications resources to ensure that future agency telecommunications needs will be efficiently and economically met, we focused on VA's major initiative to replace the VA Data Transmission System with the Integrated Data Communications Utility. Because the utility project is relatively new, we limited our work to reviewing VA's planning, analysis, and pre-procurement activities. We examined federal information resources management regulations and policies and compared VA's actions to them.

We interviewed officials and reviewed the training resources within the agency, each office's charter, its staffing, and accomplishments to assess whether the agency is efficiently providing ADP user training to support the programs envisioned in VA plans. We also examined a Maximus, Inc., report on regional office operations and training, and the Price

**Waterhouse and SysteMetrics, Inc., final report on training related to the Decentralized Hospital Computer Program.**

To assess VA's overall information resources management, we interviewed department and VA managers from both end-user and ADP organizations in the VA Central Office in Washington, D.C., and the Data Processing Centers in Austin, Tex.; Chicago, Ill.; and Philadelphia, Pa.; and evaluated VA's information systems support including office automation at 8 regional offices in Albuquerque, New Mex.; Chicago, Ill.; Houston and Waco, Tex.; New Orleans, La.; Milwaukee, Wis.; St. Paul, Minn.; and Washington, D.C. Additionally, we assessed management of information resources at 8 VA medical centers in Hines, Ill.; Minneapolis, Minn.; Dallas, Houston, San Antonio, and Temple, Tex.; Madison, Wis.; and Washington, D.C. To obtain information on overall conditions throughout the agency, we interviewed representatives of McManis Associates, Inc., and reviewed the Maximus, Inc., Inter Systems Inc., Calculon Inc., Arawak Inc., and Price Waterhouse and SysteMetrics Inc., consultant studies of VA systems, operations, telecommunications needs, and cost/benefit analyses of projects.





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