

GAO

United States General Accounting Office

Report to the Chairman, Subcommittee
on Defense, Committee on
Appropriations, House of
Representatives

November 1989

ADP BUDGET

Potential Reductions to Army Automation Initiatives



**Information Management and
Technology Division**

B-236967

November 20, 1989

The Honorable John P. Murtha
Chairman, Subcommittee on Defense
Committee on Appropriations
House of Representatives

Dear Chairman:

On October 19, 1988, your predecessor asked us to review the Army automation initiatives that support base operations. On May 11, 1989, we briefed your office on the results of our work and agreed to provide information to support your Subcommittee's review of the Army's fiscal year 1990 budget request. Specifically, this report discusses the:

- \$144 million automated data processing (ADP) budget request for the Training and Doctrine Command (TRADOC) and Forces Command (FORSCOM),
- \$53 million budget request to modernize/redesign six standard Army software systems and the potential impact on the planned replacement of the \$1 billion Army Standard Information Management System (ASIMS), and
- \$107 million budget request to purchase microcomputers from Indefinite Delivery/Indefinite Quantity Contracts.

Our work on each of the requests has shown that the Army has not fully complied with its program for identifying and validating information resource requirements. As a result, we have concerns about the validity of the requirements supporting the Army's fiscal year 1990 budget request for automation initiatives. Our concerns are summarized in the following paragraphs, and appendixes I, II, and III discuss each request in detail.

**TRADOC and
FORSCOM ADP
Planning and
Budgeting**

In March 1986, the Army established a program that provides a common way for all Army activities to plan and budget for information resources, including computer equipment and software. This program is intended to ensure that: all information requirements are identified, validated, and prioritized; unnecessarily redundant information systems are eliminated; and an orderly transition from the present to the future

information systems is planned. To accomplish these objectives, the program requires each Army activity to (1) conduct an information requirements study; (2) develop an information architecture; and (3) prepare a plan of prioritized initiatives.

We found, however, that TRADOC and FORSCOM have not fully complied with the information resources management program. Specifically, neither command has updated requirements studies completed six to nine years ago, or prepared information architectures. According to Army policy, information system initiatives should be based on the results of these activities. Until TRADOC and FORSCOM comply with the provisions of the information resources program, we believe the validity of the requirements for the \$1.4 billion in information system initiatives identified in their plans is questionable. Given this concern, the Committee may want to consider deferring fiscal year 1990 funding for TRADOC and FORSCOM information systems initiatives until the Army certifies that the commands have fully complied with the provisions of the information resources management program.

Army Standard Software Systems and the ASIMS Replacement

We also found that the Army has not completed a plan for the replacement of its \$1 billion base operations hardware system—ASIMS. The contract for the present system expires in 1992, and the Army currently expects to conduct a full and open competition for its replacement. The Army has been studying the alternatives for nearly 2 years, but as of September 1989, it had not prepared a strategy for the replacement.

In the absence of an overall strategy for the future ASIMS environment, Army activities are modernizing six standard software systems in a manner that could limit the options for a replacement. All six of the standard software systems are being modernized to run on the present hardware system. Additionally, five of the systems are being modernized with data base management systems that will only operate on the current system or compatible equipment. Thus, if the Army selects non-compatible computer equipment to replace the existing hardware system, major conversions of the standard software systems, particularly those using data base management systems, may be required.

Since such conversions could likely involve substantial costs and be required shortly after the software systems are fielded, the use of non-compatible equipment for the ASIMS replacement system may become infeasible. This could constrain the replacement to a compatibility limited competition. Based on these concerns, the Committee may want to

consider deferring fiscal year 1990 funding for the modernization/re-design of the standard software systems until the Army certifies that a strategy for the ASIMS environment has been completed.

Indefinite Delivery/ Indefinite Quantity Contracts

We are also concerned about the validity of the Army's requirements for its fiscal year 1990 budget request of \$107 million for microcomputer purchases from indefinite delivery/indefinite quantity contracts. Although federal acquisition regulations permit agencies to establish indefinite delivery/indefinite quantity contracts prior to defining firm requirements and delivery times, such definition is necessary before ordering from these contracts. As we noted previously, the Army's information resources management program requires all activities to conduct information requirements studies and prepare information architectures prior to acquiring computer equipment or software. Among other things, these provisions are intended to ensure that all information initiatives are based on valid requirements, and that they will work with, not duplicate, other systems.

Our work has shown that major commands that can order microcomputers from the contracts have not updated requirements studies or prepared information architectures. As a result, the Army's fiscal year 1990 budget request for microcomputer purchases from indefinite delivery/indefinite quantity contracts may not be fully supported by valid requirements. Given this concern, the Committee may want to consider deferring fiscal year 1990 funding for microcomputer purchases from indefinite delivery/indefinite quantity contracts, until potential users of the contracts have fully complied with the provisions of the Army's information resources management program.

We conducted our work between December 1988 and September 1989. As requested by your office, we did not obtain official agency comments on this report. We discussed the issues in this report with officials from the Department of Defense and the Department of the Army, and have included their comments where appropriate. Appendix IV details the objectives, scope, and methodology of our work.

We are providing copies of this report to the Chairmen, House and Senate Committees on Appropriations; Chairmen, House and Senate Committees on Armed Services; Chairman, House Committee on Government Operations, Chairman, Senate Committee on Governmental Affairs; the

Secretaries of Defense and the Army; and the Director, Office of Management and Budget. We also will make copies available to others upon request.

This report was prepared under the direction of Samuel W. Bowlin Director, Defense and Security Information Systems, who can be reached at (202) 275-4649. Other major contributors are listed in appendix V.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Ralph V. Carlone". The signature is fluid and cursive, with a large initial "R" and "C".

Ralph V. Carlone
Assistant Comptroller General

Contents

Letter		1
<hr/>		
Appendix I		8
Training and Doctrine Command (TRADOC) and Forces Command (FORSCOM)	Background	8
	Areas of Concern	9
	TRADOC and FORSCOM Have Not Fully Complied With Army Policy	9
Automation Planning and Budgeting		
<hr/>		
Appendix II		11
Standard Software Systems Supported by the Army Standard Information Management System (ASIMS)	Background	11
	Areas of Concern	11
	Post-1992 ASIMS Environment Is Uncertain	12
	Local Applications Duplicate Several Standard Systems	13
<hr/>		
Appendix III		15
Army ADP Indefinite Delivery/Indefinite-Quantity Contracts	Background	15
	Areas of Concern	15
	The Army Needs to Identify Its Information Requirements	15
	The Installations' Architecture Requirements May Change	16
<hr/>		
Appendix IV		18
Objectives, Scope, and Methodology		
<hr/>		
Appendix V		20
Major Contributors to This Report.	Information Management and Technology Division, Washington, D.C.	20
	Cincinnati Regional Office	20
	Kansas City Regional Office	20
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Atlanta Regional Office	20
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Tables

Table I.1: TRADOC and FORSCOM ADP Budget	8
Table I.2: Comparison of Requested and Actual Operations and Maintenance, Army Funding for Fiscal Year 1988	9

Abbreviations

ADP	automated data processing
ASIMS	Army Standard Information Management System
FORSCOM	Forces Command
GAO	General Accounting Office
GSA	General Service Administration
IMTEC	Information Management and Technology Division
TRADOC	Training and Doctrine Command

Training and Doctrine Command (TRADOC) and Forces Command (FORSCOM) Automation Planning and Budgeting

Background

The Training and Doctrine Command (TRADOC) and Forces Command (FORSCOM) are two of the Army's major commands. TRADOC is responsible for training all soldiers and establishing doctrine on how the Army will be organized and equipped. FORSCOM is responsible for the operations and readiness of all active and reserve Army units in the continental United States, as well as Alaska, Puerto Rico, the Virgin Islands, and Panama.

Both commands make extensive use of computer hardware, software, and telecommunications systems to support their missions. For fiscal year 1990, the Army is requesting over \$143 million to support the commands' automation programs. The following table lists by appropriation TRADOC and FORSCOM ADP budget data for fiscal years 1988 through 1991.

Table I.1: TRADOC and FORSCOM ADP Budget

Dollars in thousands

Command/Appropriation	1988 Actual	Fiscal Year Funding		
		1989 Estimate	1990 (Requested)	1991 (Requested)
TRADOC				
Operation and Maintenance, Army	\$106,266	\$77,135	\$70,870	\$68,762
Other Procurement, Army	1,016	465	5,636	2,674
Research Development Test and Evaluation	603	707	1,307	667
Subtotal	\$107,885	\$78,307	\$77,813	\$72,103
FORSCOM				
Operation and Maintenance, Army	\$59,260	\$45,475	\$53,420	\$54,750
Other Procurement, Army	7,326	0	0	0
Operation and Maintenance, Army Reserve	9,402	11,069	12,548	14,276
Subtotal	\$75,988	\$56,544	\$65,968	\$69,026
Total	\$183,873	\$134,851	\$143,781	\$141,129

Although the figures for fiscal year 1990 represent the requested amounts, the actual obligations may be different because the commands have reprogrammed funds to meet their priorities. For example, TRADOC and FORSCOM's actual obligations for Operations and Maintenance funds exceeded the requested amounts for fiscal year 1988, as shown in the following table.

**Appendix I
Training and Doctrine Command (TRADOC)
and Forces Command (FORSCOM)
Automation Planning and Budgeting**

Table I.2: Comparison of Requested and Actual Operations and Maintenance Army Funding for Fiscal Year 1988

Dollars in thousands		
	TRADOC	FORSCOM
Request	\$88,911	\$50,167
Actual obligation	106,266	59,260
Increased amount	17,355	9,093
Increased percent	19.5	18.1

Areas of Concern

TRADOC and FORSCOM have not updated the required information requirements studies or developed information architectures needed to validate and prioritize information systems initiatives and establish an ADP transition plan for the command. Therefore, although TRADOC and FORSCOM have developed plans of prioritized information systems initiatives, the validity of the requirements for these initiatives is questionable.

Consequently, the Committee may want to consider deferring funding for TRADOC and FORSCOM information initiatives until the Army certifies that the commands have (1) validated the requirements and identified the funding requested for all new TRADOC and FORSCOM initiatives, modifications, and upgrades; and (2) prepared the required information architectures and transition plans.

TRADOC and FORSCOM Have Not Fully Complied With Army Policy

The Army manages automation and telecommunications resources under its Information Resources Management Program, which is specified in Army Regulation 25-1. The program provides a systematic approach for identifying and validating information resource requirements, and acquiring needed resources. Under this program, each activity must (1) conduct requirements studies to identify users' information needs; (2) develop an architecture to further define the activity's information requirements and identify relationships among the data, software, and hardware resources to meet them; and (3) prepare a plan of prioritized initiatives, based on valid requirements, to show the transition from the current to the future environment.

TRADOC and FORSCOM have not fully implemented the provisions of the Army's Information Resources Management Program. Neither command has updated its information requirements studies. TRADOC has not performed a comprehensive update of its February 1980 requirements study, and many of its installations either have not prepared requirements studies or have not updated previous studies as recommended by

**Appendix I
Training and Doctrine Command (TRADOC)
and Forces Command (FORSCOM)
Automation Planning and Budgeting**

recent Army Audit Agency reports. FORSCOM has not updated its 1983 information requirements study even though the command has recently received new missions. Additionally, TRADOC and FORSCOM have not developed the required information architectures.

Even though the commands have not updated the required studies or prepared architectures, both commands have prepared plans, with a prioritized listing of information systems initiatives. According to the commands' 1989 Information Management Plans, the total estimated cost of these initiatives is \$1.4 billion. Without comprehensive requirements studies and architectures, we believe the commands lack assurance that the information systems initiatives identified in their plans and included in the Army budget request (1) are needed or will fully satisfy user requirements, (2) will work effectively with other systems, and (3) do not duplicate other initiatives. The commands also lack assurance that the funded initiatives will provide a logical progression from the current to the future information systems environment, required by the Information Resources Management Program.

Standard Software Systems Supported by the Army Standard Information Management System (ASIMS)

Background

The Army is currently modernizing a number of its standard software systems to improve automated support for financial, personnel, and logistics management. The Army's standard software systems are centrally designed, developed, and maintained to support information processing at multiple locations. For fiscal year 1990, the Army plans to spend over \$53 million to support the design/modernization of the following standard software systems:

- Standard Finance System—Redesign,
- Standard Army Civilian Payroll System-Redesign,
- Standard Army Financial Inventory Accounting And Reporting System—Modernization,
- Standard Installation/Division Personnel System-3,
- Standard Army Retail Supply System, and
- The Army Authorization Documents System—Redesign.

Estimated total costs for these systems from 1990 through 1992 exceed \$120 million. The Army plans to field the modernized/redesigned systems between fiscal years 1989 and 1993 to replace standard systems that run on the present Army Standard Information Management System (ASIMS).

ASIMS, is a government-owned/contractor-operated computer hardware system that supports worldwide processing of standard and locally developed software systems for such functions as financial, personnel, and logistics management. Through five regional data centers, this computer hardware system processes information for 47 Army installations in the continental United States. With additional computer equipment, this system also supports 14 sites outside of the continental United States.

The contract for the current system was awarded in April 1982 on a 1 year, firm-fixed-price basis, with annual renewal options through 1992. The estimated total life cycle cost for this contract is over \$1 billion. As of September 1989, the Army planned to conduct a full and open competition to replace the system and was analyzing alternatives for the post-1992 ASIMS environment.

Areas of Concern

Although the ASIMS contract expires in August 1992, the Army, as of September 1989, has not completed a plan for the system's replacement. The Army has been analyzing its options for the post-1992 environment for about 2 years, but has not developed an approved course of action.

As a result, the Army has yet to define the post-1992 ASIMS information architecture and operating environment. Given this uncertainty, we are concerned that if the Army continues to design/modernize standard software systems to operate in the current computer environment, it may have to incur significant costs to convert the systems if the replacement environment is not compatible. Converting computer applications from one computer environment to a noncompatible one may be very costly. This significant conversion cost could constrain the Army's contracting options for the ASIMS replacement to a compatibility-limited competition.

Additionally, TRADOC has developed applications for local use that duplicate the functions, data, and processes of several standard systems. The Army is concerned about the proliferation of duplicate systems because potentially excessive resources may be needed to design and maintain them and has tasked the Information Systems Command to resolve the problem of duplicate systems.

Given these concerns, the Committee may want to consider withholding funding for the six systems being modernized/redesigned until the Army can demonstrate that it has completed the following activities, required by Department of Defense policy and Army regulations, for the post-1992 ASIMS environment:

- Defined the future information architecture and operating environment to replace the current ASIMS computer network, and
- Developed a transition plan for moving from the present to the future base operations ADP environment that addresses the ASIMS replacement system, the interim modernization of Army standard software systems, and the role of local systems.

Post-1992 ASIMS Environment Is Uncertain

As of September 1989, the Army had not (1) defined the future information architecture or operating environment to replace the present ASIMS network, and (2) developed a transition plan for moving to the future architecture/operating environment. According to Army policy, these two activities are to precede the acquisition or development of information systems initiatives. Further, the Army has not developed any of the ASIMS replacement system acquisition documentation (i.e. acquisition strategy, draft request for proposals, etc.) or begun negotiating with the General Services Administration on the required procurement authority for the replacement system. The Army had started working on these

tasks more than 3 years before the contract for the current system was awarded.

Standard Systems Modernization Could Limit Competition for the ASIMS Replacement

We also found that the six standard application systems are being modernized in a manner that could limit the Army's options for replacing ASIMS. In the absence of an overall strategy for the replacement, Army activities are modernizing the standard software systems to run on the present ASIMS computer hardware system. Additionally, five of the systems are being modernized with data base management systems that will only operate on the current vendor's or compatible equipment. Thus, if the Army selects noncompatible computer equipment to replace the current computer hardware system, major conversions to the standard systems, particularly those using data base management systems, may be required.

Since such conversions could likely involve substantial costs and be required shortly after the software systems are fielded, the use of non-compatible equipment for the replacement system may become infeasible. This could constrain the ASIMS replacement to a compatibility-limited competition.

Local Applications Duplicate Several Standard Systems

The Training and Doctrine Command (TRADOC) has developed a number of applications that duplicate many of the functions, processes, and data in several of the Army's standard software systems. For example, TRADOC initiated the development of installation support modules to permit users interactive access financial, logistics and personnel information processed in the standard software systems and to permit data sharing at the installation and command levels. We found, however, that the support module applications duplicate the functions, data, and processes of the Standard Finance System, Standard Installation/ Division Personnel System, and the Installation, Total Army Authorization Documentation System.

TRADOC has also developed a microcomputer based application for Army authorization documents, which duplicates a major portion of a standard system under development called The Army Authorization Documents System—Redesign. According to TRADOC officials, they developed the system in 1988 and plan to work with other major commands to augment the capabilities of their system, thereby duplicating all of the functions planned for the modernized standard system. These officials said they were pursuing this course of action, because the Army has been

**Appendix II
Standard Software Systems Supported by the
Army Standard Information Management
System (ASIMS)**

attempting to field a modernized system for its authorization documents process for 10 years, and they are concerned that the standard system will not be fielded in a timely manner.

The Army is concerned about the management of information systems, and in December 1987, its senior ADP officials gathered for a Combined Systems Functional Review. During the review, these officials, among other things, concluded that there was a need to reduce redundant versions of the same functional system and tasked the Information Systems Command to resolve the problem of duplicate systems. In an April 1989, status memorandum, the Army indicated that the Standard Army Management Information System Modernization team, an Information Systems Command subordinate organization, was performing key analyses to plan the reduction or elimination of duplicate systems.

Army ADP Indefinite Delivery/Indefinite-Quantity Contracts

Background

For fiscal year 1990, the Army has requested more than \$107 million to acquire 19,000 stand-alone and 1,200 multi-user microcomputers from indefinite delivery/indefinite quantity contracts. The microcomputers are intended for use at the Army's Major Commands and installations. As we reported in January 1989,¹ federal acquisition regulations indicate that this type of contract may be used when exact times and quantities of future deliveries are not known at contract award.

Areas of Concern

The Army is proceeding with the acquisition of these microcomputers even though its major commands and installations have not completed information requirements studies or developed architectures, as required by Army regulations. Also, the Army is currently redefining its installations' mission, and developing a new installation management and organization doctrine. Until these tasks are completed, the Army lacks assurance that the microcomputers are needed or that they will not be used to implement duplicate systems. Given this concern, the Committee may wish to consider deferring the fiscal year 1990 request for \$107 million to procure the microcomputer systems until the Army completes information requirements studies and develops information architectures relating the planned procurements to validated and updated mission requirements.

The Army Needs to Identify Its Information Requirements

Army Major Commands and installations are required by Army regulations to conduct an information requirements study and develop an information architecture that further defines the activity's information requirements; identifies relationships among the data, software, and hardware resources to meet those needs; and includes a transition plan of prioritized initiatives. According to Army regulations, approved automation initiatives should be based on the results of the major commands' and installations' information requirements studies and architectures.

Army Audit Agency² and Department of Defense Inspector General³ reports, as well as our work, show that Army Major Commands and installations have not performed information requirements studies, or

¹Army Needs to Correct Budget Disclosure Deficiencies, (GAO/IMTEC-89-13, Jan. 1989).

²The Information Planning Process For the Sustaining Base, United States Army Audit Agency (Report No. WE 88-A1, Aug. 29, 1988).

³Report on Information Resources Management (IRM) Within DOD, Inspector General, Department of Defense (Report No. 89-INS-03, Feb. 1989).

developed information architectures required by Army regulations. In an August 1988 report, the Army Audit Agency stated that information requirements studies and the resulting architectures were not being prepared as a basis for Information Management Plan initiatives. As a result, the Army Audit Agency concluded that the validity of \$12.3 billion in approved Army initiatives was questionable.

At the U.S. Army Training and Doctrine Command and Forces Command, we found that both commands had neither updated their required information requirements studies nor developed information architectures, but both had developed prioritized listings of ADP initiatives. Without the requirements studies and architectures, however, the validity of these initiatives is questionable.

In October 1987, the Army Director of Information Systems instructed all activities to prepare the required information requirements studies and architectures. However, the information requirements studies were not scheduled for completion until September 30, 1989, and development of the information architectures is not scheduled for completion until March 31, 1990.

The Installations' Architecture Requirements May Change

In 1988, the Army completed a worldwide study of installation management, which noted that although installations have a role in the Army's wartime operations, that role has not been fully clarified. Further, the study stated that the installation organizational structure needed to be modified to ensure implementation of integrated information systems for better decision making and conserving resources. The results of this study were validated by Army commanders in December 1988 and the Army is (1) redefining Army installations' mission with emphasis on defining their wartime mission and (2) developing a new doctrine on how installations should be organized and managed.

The Army has tasked the Deputy Chief of Staff for Operations to define the installation mission and the Training and Doctrine Command to develop a management doctrine for all Army installations. The Deputy Chief of Staff for Operations was scheduled to define the installation mission in January 1989, but it has not completed this activity yet. The Army initially expected TRADOC to complete the first draft of the revised installation doctrine in August 1989. However, as of September 1989, the command had not started work on the revised doctrine, due to funding constraints. Since an organization's information requirements are driven by its mission and organization, adjustments resulting from the

mission or doctrine initiatives may require changes to the commands' and installations' information requirements.

Objectives, Scope, and Methodology

Our objectives were to review the Army's information systems initiatives, which support the base operations environment and provide information on selected initiatives to the Subcommittee to assist it in determining whether or not the initiatives should be funded in the amounts requested for fiscal year 1990. On May 11, 1989, we briefed the Subcommittee on our work to date. As a result, we agreed to provide information to the Subcommittee on: the Army's Standard Information Management System (ASIMS) and the modernization of the standard software systems that it supports; automated data processing (ADP) planning and budgeting activities at Training and Doctrine Command and Forces Command; and, the Army's use of indefinite delivery/indefinite quantity contracts for microcomputers. We performed our work in the Washington, D.C. area; Fort Huachuca, Arizona; Fort Monroe, Virginia.; Fort Sill, Oklahoma; Fort McPherson, Georgia.; Fort Riley, Kansas; Fort Leavenworth, Kansas; Fort Leonard Wood, Missouri; and Fort Drum, New York; between December 1988 and September 1989.

To obtain budget request information, we examined the Department of the Army's Information Technology Systems Budget (this document contains exhibits 43A-E) and documents used to prepare the information technology systems budget and the automated data processing portions of the Army's procurement and operation and maintenance budgets.

We met with officials from the Army's Directorate of Command, Control, Communications, and Computers, Information Systems Command, Training and Doctrine Command, and Forces Command to discuss:

- Army Standard Information Management System replacement system planning,
- The modernization/redesign of the standard software systems that the ASIMS supports,
- ADP planning and budgeting at Training and Doctrine Command and Forces Command, and
- The Army's use of Indefinite Delivery/Indefinite Quantity Contracts for microcomputers.

We also reviewed pertinent Department of Defense/Army policies for ADP strategic planning, requirements determination and procurement. Further, we reviewed Department of Defense Inspector General, Army Inspector General, Army Audit Agency, and prior General Accounting Office (GAO) reports pertaining to activities included in the Army's base operations environment.

We discussed issues covered in this report with officials from the Department of Defense Office of the Inspector General; the Office of the Comptroller of the Department of Defense; Department of the Army, Directorate of Command, Control, Communications, and Computers; and Army's Information Systems Command, Training and Doctrine Command, and Forces Command. As you requested, we did not obtain agency comments on a draft of this report. We conducted our work in accordance with generally accepted government audit standards.

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