



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

National Security and
International Affairs Division

B-258052

August 11, 1994

Major General William H. Campbell, USA
Program Executive Office,
Command and Control Systems
Fort Monmouth, New Jersey 07703

Dear General Campbell:

We reviewed the Army's efforts to implement the Army Tactical Command and Control System (ATCCS) program. Our specific objective was to evaluate the changes in the program's development and acquisition plans. To date, the Army has bought over \$186 million of common hardware and software (CHS) I equipment. The ATCCS segments are planning to use more capable computers without considering whether to continue to use the existing inventory of CHS I 300 series (330, 350, 375, 380, and 382 models) computers and related equipment as currently configured or in some upgraded version. Our review showed that no plan existed for the effective and efficient use of CHS 300 series equipment. The Army could spend up to \$76 million for replacement computers. Using a combination of existing and upgraded 300 series equipment provides a more cost-effective alternative.

The Army has over 1,600 CHS 300 series computers in its inventory. All current ATCCS users of the CHS 300 series are planning to switch to the CHS 735 model and/or CHS II models. Some ATCCS users have already begun using 735s. An effective strategy to utilize 300 series equipment is needed because upgrade components may not be available after the contract expires in August 1995. The upgraded computers could be used to partially meet the Army's requirement for over 4,800 CHS computers through fiscal year 1999.

We identified some options for using the CHS 300 series computers in a cost-effective manner. Option I is to use the 300 series computers as currently configured.

Finding a use for the CHS 300 series computers is feasible. ATCCS programs do not need equipment with the same performance capabilities at all locations. For example, some existing computers might be used in their present configuration as workstations in a local area network or as training devices, where speed of service is not critical.

Option 2 is to upgrade less capable computers (330, 350, and 375 models) to the most capable 300 series configurations (380/382 models). Less capable equipment can be upgraded to the 380/382 configurations at a fraction of the cost of buying a new 382 model computer and could result in a savings of between 28 and 73 percent, depending on the hardware's original configuration.¹ For example, a new 382 model computer costs \$20,365. Upgrading a 330 or 350 model computer with additional memory and other peripheral equipment to make it the equivalent of a new 382 model costs \$14,626, or 28 percent less than a new 382. The potential savings is even greater when a more capable computer is upgraded. A 375 model computer can be upgraded to a 380, which is similar to a 382, at a cost of \$5,471 representing a 73-percent savings from the cost of a new 382.

Option 3 is to upgrade the present CHS 300 series inventory to the more capable 735 model. While this option will result in upgrading to the most capable hardware, it is less cost-effective than upgrading to the 380/382 models. Upgrading a 300 series computer to the 735 configuration costs \$44,061. A new 735 computer costs \$47,545. Upgrading the present hardware to the 735 model would yield a 7-percent savings, much less than the potential savings for upgrading the equipment to the 380/382 models.

One way to evaluate how to most cost effectively achieve greater computer performance is to consider the amount spent on upgrading each unit. For example, for the cost of upgrading a 330 model to a 735 model, three 330s can be upgraded to a 382 model. For each 375 model upgraded to a 735, eight 375s can be upgraded to a 380 model. Upgrading existing less capable equipment to 380s/382s

¹The cost of upgrading and buying equipment is based on the CHS contract prices.

B-258052

would provide users more equipment for the money than buying new 735s.

The Army could also elect to declare the present inventory of CHS equipment to be excess and start retiring it from the inventory as it begins buying CHS II. This action is not cost effective because the Army would be prematurely retiring equipment that is still usable.

The ATCCS combat service support and air defense segments are potential users of the CHS 300 series equipment. The combat service support segment uses 380/382 models. It is scheduled for an operational test in July/September 1994 and plans to buy CHS equipment beginning in 1995. The combat service support segment has a force package one requirement for 633 computers. The Army's funding plans through the year 1999 provide resources for only 153 computers. This segment's total requirement could be satisfied, at a lower cost, by using existing 300 series equipment. The air defense segment could use CHS 300 series equipment in 1995. This segment plans to buy 56 of the 382 model computers to complete fielding of its lightweight air defense systems. The Army could save \$1.14 million by using existing 382 models for air defense requirements instead of buying new ones.

While retaining multiple hardware versions in the inventory often creates additional logistical concerns, these considerations are not expected to be a factor for CHS. Maintaining a mix of CHS models does not appear to present a formidable task. The Army expects the high reliability of the CHS equipment and the depot's ability to quickly repair the equipment to ease the logistical burden of maintaining several lines of the CHS hardware.

Some of the ATCCS programs have experienced a trend of diminished acquisition resources for computer buys, and these trends do not appear to be changing. Thus, maximizing the use of the CHS 300 series computers in either their present configurations or minimizing the cost of upgrading a unit (by upgrading to the 380/382 models) would be cost-effective. Finding uses for this equipment, either within or outside the ATCCS program, would extend Army procurement resources.

The Army needs a plan for the effective and efficient use of its CHS 300 series equipment. Our review of available

B-258052

options indicates the Army's best benefit would be derived from a strategy that uses a combination of the equipment as currently configured and upgrades the computers to 380/382 models.

At our exit conference you concurred with our findings. You also discussed the concept for using the CHS I 300 series computers with the CHS II equipment. You said that after the CHS II vendor is selected and the Army has experimented with the client/server features of the CHS II equipment, an implementation plan will be developed during 1995. You said the plan would include (1) using the CHS I 300 series computers as client workstations, (2) limiting the resources spent upgrading each unit to the most capable CHS I 300 series model, (3) meeting program requirements with existing models, and (4) identifying stand-alone locations that have lower processing requirements that can use the CHS I 300 series computers. Implementation of this concept would essentially address the issues identified in this letter. We would appreciate being advised of any actions you take on these matters.

- - - -

We conducted our review between November 1993 and June 1994 in accordance with generally accepted government auditing standards. We interviewed officials of the Program Executive Office, Command and Control Systems, and Communications Electronics Command, Fort Monmouth, New Jersey; ATCCS program officials at Fort Monmouth, New Jersey; Fort Belvoir, Virginia, and Huntsville, Alabama; Army Materiel Systems Analysis Activity, Aberdeen, Maryland; and private contractors. We also obtained and reviewed documents from these activities.

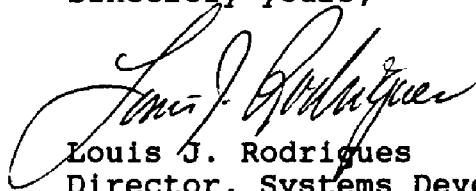
We are sending copies of this letter to the Chairmen, Senate and House Subcommittees on Defense, Committees on Appropriations; the Secretary of the Army; and other interested parties. We will also make copies available to others on request.

Please contact me at (202) 512-4841 if you or your staff have any questions concerning this report. Major contributors to this report were William L. Wright,

B-258052

Assistant Director, Paul A. Puchalik, Evaluator-in-Charge, and Robert G. Perasso, Evaluator.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "Louis J. Rodrigues".

Louis J. Rodrigues
Director, Systems Development
and Production Issues

(707039)