

REPORT DOCUMENTATION PAGE

1a. REI U		1b. RESTRICTIVE MARKINGS	
2a. SE AD-A206 701		3. DISTRIBUTION / AVAILABILITY OF REPORT "A" Approved for public release; distribution unlimited.	
2b. DE			
4. PERFORMING ORGANIZATION REPORT NUMBER(S) LMI-PL804R1		5. MONITORING ORGANIZATION REPORT NUMBER(S)	
6a. NAME OF PERFORMING ORGANIZATION Logistics Management Institute	6b. OFFICE SYMBOL (if applicable)	7a. NAME OF MONITORING ORGANIZATION	
6c. ADDRESS (City, State, and ZIP Code) 6400 Goldsboro Road Bethesda, Maryland 20817-5886		7b. ADDRESS (City, State, and ZIP Code)	
8a. NAME OF FUNDING / SPONSORING ORGANIZATION ASD(P&L)	8b. OFFICE SYMBOL (if applicable) P(CP&A)	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER MDA903-85-C-0139	
8c. ADDRESS (City, State, and ZIP Code) The Pentagon, Room 3E808 Washington, DC 20301-8000		10. SOURCE OF FUNDING NUMBERS	
		PROGRAM ELEMENT NO.	PROJECT NO.
		TASK NO.	WORK UNIT ACCESSION NO.
11. TITLE (Include Security Classification) Greater Buyer Effectiveness Through Automation			
12. PERSONAL AUTHOR(S) Daniel J. Drake			
13a. TYPE OF REPORT Final	13b. TIME COVERED FROM _____ TO _____	14. DATE OF REPORT (Year, Month, Day) January 1989	15. PAGE COUNT 152
16. SUPPLEMENTARY NOTATION			
17. COSATI CODES		18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)	
FIELD	GROUP	SUB-GROUP	
19. ABSTRACT (Continue on reverse if necessary and identify by block number)			
Computer and information technologies can improve the procurement process in DoD through reduced lead times, smarter decisions, and better selection of supplies and services. Many existing systems have demonstrated improved management reporting and contract instrument generation. However, greater benefits are possible through application of paperless processes, expert systems, and electronic interfaces. DoD procurement automation should not be directed at just paper efficiencies but at improving buyer effectiveness. This report reviews the current state of procurement automation in DoD and recommends strategic direction and objective for DoD to take advantage of technology's potential. Nine major systems are reviewed in depth while all significant automated procurement systems are listed.			
20. DISTRIBUTION / AVAILABILITY OF ABSTRACT ☒ UNCLASSIFIED/UNLIMITED ☐ SAME AS RPT. ☐ DTIC USERS		21. ABSTRACT SECURITY CLASSIFICATION	
22a. NAME OF RESPONSIBLE INDIVIDUAL		22b. TELEPHONE (Include Area Code)	22c. OFFICE SYMBOL

GREATER BUYER EFFECTIVENESS THROUGH AUTOMATION

Report PL804R1



January 1989

Daniel J. Drake

Accession For	
NTIS GRA&I	☒
DTIC TAB	☐
Unannounced	☐
Justification	
By	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
A-1	

Prepared pursuant to Department of Defense Contract MDA903-85-C-0139.
The views expressed here are those of the Logistics Management Institute at
the time of issue but not necessarily those of the Department of Defense.
Permission to quote or reproduce any part must – except for Government
purposes – be obtained from the Logistics Management Institute.

LOGISTICS MANAGEMENT INSTITUTE
6400 Goldsboro Road
Bethesda, Maryland 20817-5886

89 3 31 078

Executive Summary

GREATER BUYER EFFECTIVENESS THROUGH AUTOMATION

New computer and information technologies will soon be available to unburden contracting officers from a sea of paperwork. With them, buyers and contract administrators can share information rapidly and inexpensively among themselves and with offerors and contractors. Buying can at once become more efficient and more effective.

Over the past two decades, DoD has automated many procurement functions in an attempt to reduce administrative leadtime and associated costs. However, its automation projects are usually local or command-level initiatives that support unique requirements. While they increase procurement automation, they do so in isolation and thus neither benefit from previous experience nor share their capabilities with others.

To avoid past shortfalls and to help realize the full potential of the new technologies, the Assistant Secretary of Defense (Production and Logistics) should take the following actions:

- Through the Defense Interdepartmental Procurement Automation Committee (DIPAC), reach a consensus among procurement executives on DoD's objectives in automating procurement.
- Require DIPAC to focus development efforts on technologies that provide buyers paperless processes, decision support, and information sharing at automated workstations.
- Request a Deputy Secretary of Defense memorandum requiring the Services and agencies to use standard electronic data interchange formats when dealing with industry.
- Direct the Defense Acquisition Regulatory Council to establish a standing committee to act on policy issues and new regulations required for operations in a paperless, electronic procurement environment.
- Sponsor technology innovation projects to meet DoD objectives by obtaining Productivity Improvement Funds tied to specific technology objectives.

- Sponsor DoD-wide procurement automation conferences to foster lateral communication among functional analysts and systems analysts.
- Require that training on automated procurement systems be integrated with procurement training.

CONTENTS

	<u>Page</u>
Executive Summary	iii
List of Tables	vii
List of Figures	ix
Chapter 1. The Role of Automation in Procurement	1- 1
Automating Procurement: An Evolving Process	1- 1
DoD and Automated Procurement	1- 2
Strategic Direction and Objectives	1- 3
Report Organization	1- 7
Chapter 2. Findings and Recommendations	2- 1
Introduction	2- 1
Findings	2- 1
Recommendations	2- 8
Chapter 3. General Assessment of Automated Procurement Systems	3- 1
General Assessment of Major DoD Procurement Automation Projects	3- 2
Types of Contracting Supported	3- 5
Air Force Procurement Automation	3- 7
Army Procurement Automation	3- 9
Defense Logistics Agency Procurement Automation	3-11
Navy Procurement Automation	3-13
Chapter 4. Detailed Functional Assessments of Major Systems	4- 1
Buying Activity Model Automated Procurement System	4- 1
Acquisition Management Information System	4- 9
Automation of Procurement and Accounting Data Entry	4-13
Base Contracting Automated System	4-16
Contract Data Management System	4-19
DLA Preaward Contracting System	4-23
Integrated Procurement System	4-26

CONTENTS (Continued)

	<u>Page</u>
Chapter 4. Detailed Functional Assessments of Major Systems (Continued)	
Mechanization of Contract Administration Services	4-30
Procurement Early Development	4-32
Standard Army Automated Contracting System	4-35
Glossary	Gloss. 1-9
Appendix Directory of Automated Procurement Systems and Projects in the Department of Defense	A-1 - A-60

TABLES

	<u>Page</u>
2- 1. Small Purchase Automation Productivity Improvement	2- 2
2- 2. Contractor Performance Systems	2- 5
3- 1. Major Systems Studied	3- 1
3- 2. Types of Contracting Supported	3- 6
3- 3. Air Force Automated Procurement and Contract Administration Systems	3- 7
3- 4. Army Automated Procurement Systems	3- 9
3- 5. DLA Automated Procurement Systems	3-12
3- 6. Navy Automated Procurement Systems	3-13
4- 1. Major Systems Studied	4- 1
4- 2. Operational Contracting	4- 4
4- 3. Central Supply Contracting	4- 5
4- 4. Weapon System Contracting	4- 6
4- 5. Acquisition Management Information System	4-10
4- 6. Automation of Accounting and Procurement Data Entry	4-15
4- 7. Base Contracting Automated System	4-17
4- 8. DLA Preaward Contracting System	4-25
4- 9. Integrated Procurement System	4-27
4-10. Standard Army Automated Contracting System	4-36

FIGURES

	<u>Page</u>
4-1. Electronic Contracting Process	4- 3
4-2. BCAS Interoperability	4-18
4-3. CDMS System Interconnectivity	4-22
4-4. SAMMS/DPACS Multi-Tier Architecture	4-24
4-5. ACO Workstation Inquiry Menus	4-32

CHAPTER 1

THE ROLE OF AUTOMATION IN PROCUREMENT

In many respects, procurement is an information processing business. Requirement information is the raw input material, the internal processes are defined by law and regulation, and processed information in the form of a contract award is the output product. Because procurement is information processing, many of the associated actions and decisions can benefit from computer automation of information systems.

Automation's role is to speed information flow through direct computer-to-computer interchange, to improve information quality, to make more information readily available through on-line queries, to assist buyer decisions, and to produce quality contracts. Automation of procurement is not to produce paper faster; it is to help buyers buy better.

AUTOMATING PROCUREMENT: AN EVOLVING PROCESS

The typical automated procurement system today is computer-based software that aids in the processing and controlling of contractual hard copy documents. These systems parallel the procurement process from receipt of the requirement through contract award and eventual contract file retirement. They are usually word processing systems that automate the contract writing process. Or they can be simple milestone-tracking systems that enable management to gauge workload, leadtime, and output.

As technology influences the automation of procurement, integrated systems are evolving that not only track contract actions but receive and validate requirements electronically; manage preaward processes through paperless, electronic interfaces with legal, finance, and small business offices, etc.; generate solicitation and award documents through menu-driven clause selection and text processing; and transmit electronic contract abstracts to update the automated contract administration systems for both DoD and its contractors. These more advanced applications are evolving into electronic contracting systems where optical disk storage, artificial intelligence (AI), electronic data interchange (EDI), electronic

mail, fourth generation programming languages (4GL), multi-tier system architectures, and micro/minicomputer technologies come together on the buyer's desk as an electronic workstation. Electronic contracting is the next step in the development of contracting automation that emphasizes this integration of paperless procurement processes, electronic interfaces, and expert systems in the buyers workstation. Electronic contracting through buyer workstations will streamline procurement and greatly improve buyer effectiveness.

DoD AND AUTOMATED PROCUREMENT

Automated information technologies have great potential to improve the Department of Defense procurement process through reduced leadtimes, smarter decisions, and better selection of supplies and services. Many of the existing automated systems have improved procurement status reporting and generation of contract instruments. Even greater benefits are possible through the application of emerging technologies in paperless processes, decision support, and information sharing.

Although several automated procurement systems have been successfully fielded, they tend to improve only small purchasing (less than \$25,000) and require development of large contracting systems. Also, several others under development are far from completion and risk being terminated, delayed, or scaled down.

The application of emerging technologies to procurement automation needs DoD attention. Some design teams are not aware of these new technologies or are reluctant to exploit their potential. Such teams produce outmoded, less capable systems.

Current automation projects are directed to Command or Service objectives and not DoD objectives. The development effort is fragmented with little coordination among design teams resulting in duplicate projects and unshared experience.

The benefits promised by data sharing technologies are not being realized. Data definitions are not standardized among automated systems; therefore, data can rarely be shared across systems, Commands, or Services. EDI technology will permit access to dissimilar systems but common data definitions have not been established. EDI technology will permit data interchanges with contractor systems, but standard formats are needed.

Procurement automation training is separate from DoD's professional procurement courses; not all buyers and managers are prepared for automation. A cultural change is necessary before the futuristic capabilities of electronic contracting can be realized.

Progress is being made in DoD procurement automation and major improvements in purchasing productivity and quality are in the offing. Serious problems will develop with the move towards electronic contracting if action is not taken to better manage technology, resolve procurement policy issues, and prepare the work force for change.

STRATEGIC DIRECTION AND OBJECTIVES

OSD's role is to establish the direction and lay the ground rules for the transition from today's procurement automation to tomorrow's electronic contracting or risk development of less capable, unaccepted, stand-alone systems. DoD needs guidance on OSD's procurement automation goals for the 1990s. OSD needs to establish the overall objectives and to provide specific guidance on how emerging technologies are to be developed, how procurement policy issues are to be resolved, how procurement automation training relates to required procurement courses, and how the necessary data sharing standards are to be implemented.

OSD should raise the stature of the Defense Interdepartmental Procurement Automation Committee (DIPAC) as a consensus building forum among DoD's procurement and information systems executives to give direction to procurement automation based on overall needs and the capabilities of emerging technology.

OSD should emphasize, through the DIPAC, improved buyer performance through integration of computer and information systems technologies using a desktop workstation. This is not a call for standardization of hardware or software but expansion of capabilities within the information system plans of each Service and agency.

DoD's procurement automation initiatives should be shaped by the needs of its acquisition mission and by the capabilities of current and emerging information technologies. DoD's numerous automation efforts require a strategic direction to act as a beacon for individual projects to be directed towards. Overall objectives are needed to ensure that fundamental capabilities are developed. The purpose of

strategic direction and objectives is not to tell program managers how or what to manage but to guide their planning.

Strategic Direction

The strategic direction of DoD's procurement automation initiatives should be to *improve buyer and contract administrator effectiveness through integration of automation and information technologies into electronic workstations*. The goal is to move information to the person who makes the decision and to help with that decision. Information and how to use it is the key to better buying.

Initial efforts at procurement automation in DoD stressed clerical efficiency by word processing of contract instruments and automation of reports but not buying quality. There should now be a shift towards improving the quality of buying by providing the buyer with a better selection of products, contractors, and pricing alternatives. This is not to say that efforts to reduce administrative leadtime should not be pursued but only that there should be a better balance between efficiency and effectiveness.

Current technology can bring information and decision support to the professional and improve buying and contract administration. Instead of being dependent on mainframe processes, the buyer can now have information and support at the desktop workstation. Workstation technology integrates various computer and information processes and provides the buyer with more timely and relevant information, decision aids to better analyze the information, and less paper. DoD procurement automation initiatives should improve data sharing through networking technologies such as intelligent gateway networks (IGNs) and messaging technologies such as EDI and electronic mail. Decisions should be improved through help programs/screens, computer-aided instruction (CAI), and AI integrated into the workstation's processes. Microcomputer-based word processing, database management, and spreadsheets would be bundled into the workstation processes. And lastly, buyer workstations should have access to archival technologies such as optical disk storage to reduce paper files.

With buying effectiveness through workstation technologies as the strategic direction of DoD's procurement automation initiatives, all projects will have to ask questions like these:

- What does this planned action do for the buyer?
- Does the buyer have to leaf through hundreds of pages to find relevant information or can the workstation bring the required list to the screen immediately?
- Is information available on remote databases that can be brought to the buyer so he or she is better informed?
- How does this planned action improve timeliness and quality of information at the point of decision?
- How does this improve the quality of the buy?

Strategic Objectives

The various procurement automation initiatives should all work towards several common, departmental objectives. OSD should not attempt to tell the individual Services and agencies how to automate their procurement functions. However, OSD should require that certain generic capabilities be included in any system. The following strategic objectives are recommended.

Paperless Processes

Automated procurement systems should be designed to reduce paper purchase requests (PRs), listings, reports, files, etc. The systems should focus on bringing information, not paper, to the buyer. However, print-on-demand capability should also be available to produce hard copies when needed. Electronic archival storage of procurement files and contractual documents should be considered.

Horizontal Integration

All DoD automated procurement systems should be designed to externally share relevant data with other automated procurement systems. The objective is to provide buyers with information that could, for example, aid in selecting sources, pricing items, or increasing small business participation. Each of the various automated procurement systems stores information that should be shared with other buyers dealing with the same company or pricing the same item. If such information

is available in an automated system somewhere within DoD, it should be made available to other buyers. The technology exists to share data among buyers across Services, Commands, and systems.

Vertical Integration

All DoD automated procurement systems should be designed to share data with the automated systems of other functions that interface with procurement. The objective is to reduce telephone calls, written correspondence, and manual entry of data. A prime example is a data interface between an automated requirement system and an automated procurement system to pass PR data to the buyer and to provide PR and contract status back to the customer. Many other interfaces are possible. Coordination of requirements, acquisition plans, solicitations, and award documents can all be accomplished through electronic interfaces with item/program managers, engineers, safety monitors, small business specialists, judge advocates, Government property administrators, security managers, packaging specialists, or transportation managers. Fund certification, recording of obligations, and reporting of payments can be electronically accomplished between the accounting and finance system and the procurement system. Information management concepts such as source data automation and single point data entry tied with networking technology should be used to achieve this internal data sharing.

Regulatory Responsiveness

Automated procurement systems need to be able to modify programs as procurement laws and regulations change. This is especially true for reporting requirements such as the Individual Contracting Action Report (DD Form 350). As procurement offices become more dependent on automation, systems must respond when new regulations change contract clauses, forms, or procedures.

Surge or Mobilization Capability

Critical automated procurement systems should be designed to operate at the high volumes and long periods expected during crisis or mobilization. As procurement offices become more dependent on automated systems, systems must be able to operate beyond the peacetime routine. If mobilization planning envisages round-the-clock buying, automated procurement systems must be designed for

sustained operations. Manual backup procedures are required if the disk drive or central processing unit fails and repair is delayed.

Management Access to Information

In addition to the DD Form 350 and DD Form 1057 (Monthly Contracting Summary of Actions \$25,000 or Less) reporting requirements, all automated procurement systems should be designed to meet minimum management information requirements. For example, all automated procurement systems should be able to identify:

- Number and type of contracts awarded
- Workload by buyer, office, activity
- Procurement administrative leadtime (PALT) by action, buyer, office, activity
- Sources and contractors by size and socioeconomic categories: large, small, disadvantaged, woman-owned
- Contracts by weapon system supported
- Undefined contract actions and their status, schedule, and value
- Physically complete contracts and their unliquidated obligation value
- Contract actions containing warranty provisions.

Management visibility over the procurement process requires near real-time access to information. Managers will manage from their workstations.

Security of Sensitive Data

All automated procurement systems should support source selection or bid evaluation processes. However, future requirement and budget data, source selection evaluation details and results, and bid/offer details and abstracts must be protected from unauthorized internal or external access.

REPORT ORGANIZATION

We present our specific findings and recommendations in the next chapter. They are based on an assessment of the current and future state of DoD procurement automation. This assessment is contained in Chapters 3 and 4. Chapter 3 is a

general assessment of procurement automation in each Service and the Defense Logistics Agency (DLA). Chapter 4 looks at the more significant DoD procurement automation projects. And, finally, the Appendix contains an inventory of the majority of procurement automation projects in DoD.

CHAPTER 2

FINDINGS AND RECOMMENDATIONS

INTRODUCTION

This chapter lists the findings and recommendations of our study. The detailed supporting data and analyses of DoD's existing and planned automated procurement systems upon which these conclusions are based are presented in Chapters 3 and 4.

FINDINGS

Automated Procurement Productivity Improvement

The most noticeable improvement in productivity has occurred as a result of the automation of the high-volume, low-dollar value operational-level small purchasing following implementation of Air Force's Base Contracting Automated System (BCAS), Army's Standard Army Automated Contracting System (SAACONS), and Navy's Automation of Procurement and Accounting Data Entry (APADE). SAACONS and APADE are replacing manual systems or locally developed microcomputer-based programs. BCAS replaced the Customer Integrated Automated Purchasing System (CIAPS), an early procurement automation project that required large numbers of data entry clerks. Table 2-1 illustrates the increased productivity at operational level contracting that these new systems provide.

When DLA introduced the DLA Preaward Contracting System (DPACS) for central supply contracting, the DPACS prototype buying office at Defense Industrial Supply Center (DISC) reduced its PALT by 43 days.

Air Force Systems Command (AFSC) weapon system contracting improved productivity with its automated contract writing system, Distributed Processing for Contractual Input (DPCI), that replaced magnetic card typewriters and word processing systems. AFSC estimates that DPCI reduced PALT by at least 3 days.

Army Materiel Command (AMC) has reduced the number of hard copy procurement reports from 114 to 12 by providing its purchasing offices with dedicated minicomputers. Instead of requesting batch-processed reports from the

TABLE 2-1

SMALL PURCHASE AUTOMATION PRODUCTIVITY IMPROVEMENT

SAACONS	The Army's Western Command (WESCOM) in Hawaii reduced its work backlog by 60 percent and reduced small purchase PALT from 31 days to 13 days while eliminating overtime. Fort Bragg, the SAACONS prototype test site, reduced small purchase PALT to 10 days from 22 days.
BCAS	Air Force eliminated 120 data entry clerk positions because of BCAS data entry design improvements. Air Force Logistics Command estimates PALT reduction of 3 days and paperwork reduction of 70 percent over previous automated purchasing system.
APADE	At Naval Supply Center (NSC) Norfolk, the APADE prototype test site, the following improvements have been noted: • Small purchase PALT reduced 10 percent • Administrative staff reduced by 16 positions because of automation of typing of procurement requests • Excess capacity on network allowed work transfer from Puget Sound Naval Shipyard to NSC Norfolk.

central mainframe computer, AMC has downloaded procurement files onto a minicomputer that contains a database management system (DBMS), enabling immediate access to information. Not only is the same information more readily available, but buyers and managers can tailor queries and reports to their immediate needs. This saves time because previously special reports required lengthy programming effort by computer specialists.

Procurement Automation Potential

Procurement automation offers the promise of evolving from automated contract writing systems into electronic buyer workstations using technologies such as EDI, AI, CAI, optical disk storage, and electronic mail. Through the buyer's electronic workstation, all the information, decision support, automated aids, and interfaces needed to do the job come together in a powerful tool to improve buyer effectiveness.

Varying degrees of electronic contracting are being developed in Air Force Logistics Command's (AFLC's) Contract Data Management System (CDMS), AMC's

Integrated Procurement System (IPS), DLA's DPACS, and Naval Supply Systems Command's (NAVSUP's) Uniform Inventory Control Program (UICP) Procurement Early Development (PED) projects. Each of these systems will support centralized contracting of supplies through highly integrated logistics information systems. Each system will present information needed to perform the procurement function on the buyer's workstation terminal. The purchase requirement will be electronically edited and validated before it is assigned to the buyer for action. Information on sources and previous buy and price histories will be available automatically. As requirements or specifications change, the integrated system will alert the buyer. Opportunities for consolidation, substitution, or cancellation will be displayed. The buyer can electronically coordinate acquisition approaches or questions with supporting personnel in technical data, transportation, packaging, inventory, etc. This fusion of information at the screen permits not only rapid processing of actions but a better informed buyer who can make better decisions.

Both DPACs and PED can currently demonstrate such capabilities. After prototype testing, DPACS is now being implemented throughout DLA. PED is in operational testing in buying offices with full deployment expected in 1989.

More importantly, these new procurement automation systems will permit the insertion of new technologies or procedures to improve contracting. For example, on-line access from the buyer's workstation to automated parts catalogs could be used to search for alternative parts and sources with better prices or availability. Also, when buyers need assistance or advice, AI technology could provide specially programmed processes that help the buyer write warranty provisions or help evaluate bids that contain varying prices, quantities, specifications, or transportation arrangements.

Commercial purchasing has demonstrated that electronic purchase order processing can provide considerable cost savings. Similar results are possible within DoD contracting. The most notable example is the Paperless Order Placement System (POPS) developed by Defense General Supply Center (DGSC) and now used between DGSC, DISC, and Defense Construction Supply Center (DCSC) and 28 contractors. Not only has POPS improved order placement but it has significantly changed the way DoD manages inventories of certain supplies since funds are no longer invested in inventories for storage and distribution from DoD

depots. Electronic purchase orders become an extension of the supply requisition system and contractors now maintain and distribute the inventory.

Strategic Direction

Most procurement automation projects are Command-level initiatives that may not be consistent with Service/DoD needs. For example, local need for reduced PALTs may not be as important as DoD's requirement for qualitatively better awards. DoD procurement automation projects currently are not necessarily consistent with any OSD objectives such as paperless contracting, system interconnectivity, regulatory responsiveness, mobilization surge capability, or better buyer support.

Some systems evaluated are very capable at moving paper but are very limited in other areas. The lack of strategic direction has resulted in systems that provide clerical support for award processing, but minimum support for buyers. Additionally, some systems are vertical or "stove pipe" systems that support only procurement with no interconnectivity to other systems. Data sharing then is not possible and wasteful; error-prone manual data entry is required to move data between systems.

Project Coordination

Development is redundant with the same feature or capability being developed by independent project teams. Experience is rarely shared because few project teams are aware of parallel efforts. Because there is little coordination, duplicative efforts abound.

For example, there are several contractor performance data systems existing or being developed within DoD (see Table 2-2). Although these systems generally serve different procurement communities, the functional and system analysts attempting to solve similar problems should coordinate their work. If the contractor performance systems serve the same community, a common database or data sharing between systems should be required. DLA's Contractor Profile Data System (CPDS) is a possible candidate for a DoD-wide contractor performance system but it must serve all of DoD and consider previous systems experiences.

TABLE 2-2
CONTRACTOR PERFORMANCE SYSTEMS

System	Service/agency/Command
Architect-Engineers Contract Administration Support System	Army Corps of Engineers
Contractor Evaluation System	Naval Sea Systems Command
Contractor Performance Assessment Reporting	Air Force Systems Command
Contractor Profile System	Office of Naval Research
Contractor Profile Data System	Defense Logistics Agency
Construction Contractor Appraisal Support Contractor	Army Corps of Engineers

Innovative Solutions

Central design activities, whose forte has been the development of centrally managed and maintained data systems on mainframe computers, continue to program in older, labor intensive languages. They are resisting initiatives by procurement personnel to move procurement data off the mainframe and down to mini or microcomputers using 4GL and relational database management systems (RDBMSs).

Some of the most promising innovations using AI and EDI technologies have not been approved initially by higher level information resource management. Because these innovative approaches lack funding or higher level sponsorship, development must continue at a slower pace or not at all.

Policy Guidance

Developers of automated procurement systems need policy guidance on the acceptability of electronic signature, electronic records, paperless contracts, etc. Few DoD procurement analysts are prepared by education or experience to decide these issues.

Policy changes to the Federal Acquisition Regulation (FAR) and the Department of Defense Federal Acquisition Regulation Supplements (DFARS) are needed to make electronic contracting a reality. For example, can a contractor transmit an electronic Material Inspection and Receiving Report (MIRR) directly to

the Government without mailing a signed hard copy form? If such a document is stored electronically, does it still comply with the General Accounting Office (GAO) access to records provisions?

Electronic contracting offers ways of improving procurement. Fundamental changes to the solicitation process are possible through messaging and network technology. Without regulatory, or possibly statutory authority, to post solicitations on an electronic bulletin board, one of the most promising means of shortening the solicitation/bid cycle may never be tested. Another issue that needs resolution is the impact of EDI technology on small contractors.

Training Requirements

Procurement automation training tends to be one-time implementation training that is not integrated into the ongoing DoD procurement training program. Most procurement automation training is limited to input/output procedures, not how information that is accessed through on-line, real-time media can produce better buys.

The advent of desktop computing using personal computers to access databases can revolutionize buying offices. Entry-level buyers, who tend to be computer literate, have adjusted well to this technology. However, entry-level procurement training does not address procurement automation. With electronic contracting systems on the horizon, current procurement training does not integrate procurement concepts and regulations with the automated tools built into the buyer's electronic workstation.

Many procurement managers are less comfortable with computers than their employees and are therefore less prepared for electronic contracting. Many Services and agencies offer personal computer applications courses that are gradually improving computer knowledge among managers. However, advanced procurement courses and seminars are not preparing management for the cultural changes electronic contracting will require of them.

Sharing Procurement Data

Automated procurement systems are not designed to interface or to share data. Buyers are making decisions without source, price history, buy history, or contractor performance information known to their counterparts elsewhere in DoD.

For example, base-level contracting activities are regularly granted local purchase authority for high-priority requisitions that are backordered at the inventory control point (ICP). Unfortunately, when the local purchase authority is granted electronically in the supply requisition system, the local buyer is not provided with the ICP buyer's procurement and price history file. Although such information resides on an automated system somewhere in DoD and the technology exists to either send it to the buyer or permit the buyer to access the relevant file, neither of these is happening.

Standardized Procurement Data Definitions

Except for the standards contained in the DFARS's Uniform Procurement Instrument Identification Numbering System (DFARS 4.70) and Uniform Contract Line Item Numbering System (DFARS 4.71) there are no universal definitions of procurement-related data. The Military Standard Contract Administration Procedures (MILSCAP), contained in DoD Manual 4000.25-5-M, do not apply to all DoD contracting. Without standard data definitions, including data element structure syntax, information cannot be easily shared across systems and between Services.

For example, the sharing of source information would be hindered if bidder mailing lists or source databases did not categorize contractors as large, small, disadvantaged, or woman owned. Even though there may be a contractor size data element, without standard definitions, source information cannot be shared. For data systems to share contractor size information, standard codes are necessary. The systems would not have to use the same codes for the size categories because EDI software can convert to the corresponding code if it is supplied with the definition.

Electronic Data Interchange Format Standards

Although on 24 May 1988 the Deputy Secretary of Defense directed the use of American National Standards Institute (ANSI) X.12 EDI standard for all business-related data exchanges between DoD and contractors, there are many different

formats and procedures in use or being developed for data exchanges. This lack of standard formats and procedures means contractors must be prepared to exchange data in various ways.

For example, DoD purchasing offices routinely ask offerors to submit price proposals in electronic spreadsheet formats for ease of use by price evaluators. Currently, there is no standard price proposal format [although Defense Contract Administration Service Region (DCASR) Philadelphia is developing one] and contractors complain about each Government buying activity's unique requirements.

With greater use of EDI between DoD and industry without standard formats there are bound to be additional problems. Submission of the Material Inspection and Receiving Report (DD Form 250) electronically is a likely area for DoD-industry EDI. But what standard should be used? Several contract administration activities had developed non-ANSI X.12 DD Form 250 formats before the 24 May 1988 Deputy Secretary of Defense memorandum entitled Electronic Data Interchange of Business-Related Transactions.

The ANSI X.12 EDI standards contain formats for purchase orders, invoices, and shipment notices but lack formats for more sophisticated contract actions, clauses, change proposals, etc. The ability of DoD to enter true paperless contracting will be hampered without EDI format standardization.

RECOMMENDATIONS

To take full advantage of the capabilities of emerging computer and information systems technologies to improve DoD procurement, we recommend that the Assistant Secretary of Defense (Production and Logistics) [ASD(P&L)] take the following actions.

Procurement Automation Committee

Establish a committee composed of procurement specialists with both procurement and automation experience under the guidance of the Defense Acquisition Regulatory Council to explore ways to modify procurement regulation to take advantage of automation. The automation of procurement has been limited to performing existing procedures with computers; it has not changed or influenced the procedures themselves. Electronic interfaces and paperless processes raise questions

about electronic record retention, adequacy of electronic or facsimile signatures, and even paperless contract documents and forms made available through EDI and electronic mail technologies.

Procurement Data Element Dictionary

Require development of a data dictionary to specify data element name and meaning. For example, information on contractor past performance can be compared if all systems contain data elements to identify the contractor, the contract, the item acquired, the time frame, and the performance. This will allow data sharing across dissimilar procurement systems through EDI or intelligent gateway technologies. We recommend that the dictionary be managed by the Modernization of Defense Logistics Standard Systems (MODELS) project team at Defense Logistics Standards Systems Office (DLSSO) but with DIPAC oversight.

Standard Electronic Data Interchange Formats

Coordinate with the Deputy Assistant Secretary of Defense for Information Resource Management to require the Services and agencies to use one set of EDI contract formats within the ANSI X.12 standard. This will permit contractors to maintain only one transmission format for each function: price proposals, shipment notices, priced spare parts lists, etc. OSD needs to centrally manage the development of these EDI contract format standards to ensure only DoD approved standards are established.

Procurement Information Sharing

Sponsor procurement information sharing, e.g., vendor/source data, buy/price history, contractor socioeconomic status, contractor performance data, and debarred and suspended lists among automated procurement systems. The objective is to improve the availability of information to buyers so they can make informed decisions. There are two alternative approaches to meet this requirement using either an IGN linking DoD procurement databases or a commercial on-line database containing DoD-provided information.

An IGN demonstration project by the Defense Applied Information Technology Center (DAITC) could connect, via Defense Data Network (DDN), the diverse Service and Command systems such as AFSC's Acquisition Management Information System (AMIS), AFLC's CDMS, Navy's UICP-Purchase

Resystemization, Army's Commodity Command Standard System (CCSS), and DLA's Standard Automated Materiel Management System (SAMMS). The problem with this alternative is one of timing. The IGN technology may not be mature enough and, more importantly, several of the procurement systems are several years from implementation. If OSD wants to wait for implementation of the procurement databases, a demonstration project at the DAITC could prove the concept, permit the technology to mature, and await arrival of all the databases.

The other approach is to competitively award a contract to provide on-line database access via a toll-free 800 number to all relevant procurement information that needs to be shared. Several companies are currently providing such information to buying activities on an individual basis. Offerors may be motivated to provide the on-line service at a very low price or to provide value-added services, e.g., automated catalogs, FAR on-line, a *Commerce Business Daily* (CBD) on-line database, or a DD Form 350 on-line database, in exchange for the Government providing raw procurement data. An inducement to any potential offeror would be the right to sell the information to other parties. This commercial off-the-shelf approach holds little technological risk since many companies are currently providing similar on-line services without DoD facilitating the flow of raw information. Additionally, this approach could be implemented without waiting for DoD's new procurement databases to become available. The commercial sources will provide the database and telecommunications processing as long as DoD can provide raw data.

Technology Innovation Projects

Use productivity improvement funds (PIF) to demonstrate any promising technology with procurement applications. Such projects should promise solutions to problems, reduce implementation risks, demonstrate improved efficiency and effectiveness, and help the diffusion of proven technology throughout DoD. PIF projects would permit automated procurement system users with bright ideas to innovate with little bureaucratic constraint.

The use of PIF to provide seed money for promising approaches has been used successfully to foster use of AI in logistics systems. A similar approach is recommended, but one directed towards improving buyer decisions by providing the buyer with access to more information or to expert systems.

Lateral Communications

Sponsor DoD-wide Procurement Automation Conferences to bring design teams together for presentations on their procurement automation projects. The conference would foster communications among functional and systems analysts about their design approaches and experiences. Lateral communications among project teams will spread good ideas and avoid duplicate efforts.

Additionally, the DAITC's work with optical storage technology, gateway technology, and information networks should be made known to procurement automation analysts. DoD-wide Procurement Automation Conferences on where DAITC sees technology going in the 1990s would be very beneficial to procurement automation planners.

Procurement Automation Training

Revise procurement training programs to include procurement automation training. Buyers and managers need to understand how the capabilities designed into buyer workstations fit together with procurement concepts and regulations. The Navy's APADE program has integrated automation training with acquisition training under the auspices of Navy Acquisition Management Training Office (NAMTO). The APADE/NAMTO approach is called procurement competency based certification. It blends relevant automation skills with procurement concepts to ensure that buyers can perform. The Curriculum Advisory Council of the Defense Career Acquisition and Contracting Management Board should adopt the APADE/NAMTO automated procurement training approach DoD wide.

Also, executive-level procurement courses need to prepare procurement managers for the changes in procurement that electronic contracting procedures will bring. Paper files will be replaced by electronic files, fewer clerks will be needed, information will be more readily available, decisions will be assisted, and most importantly, mistakes will be more visible. Managers need to adjust to these realities and education will help their transition.

CHAPTER 3

GENERAL ASSESSMENT OF AUTOMATED PROCUREMENT SYSTEMS

During their 1987 review of procurement automation, the DIPAC identified major automated procurement systems in the Military Services and DLA. We have chosen nine systems as most representative of the current state of DoD procurement automation. These nine systems support different types of contracting and are at different stages of development. Table 3-1 identifies the nine systems and their developers.

TABLE 3-1
MAJOR SYSTEMS STUDIED

Type of contracting	System	Service/ agency
Operational contracting (base/regional)	BCAS	Air Force
	SAACONS	Army
	APADE	Navy
Central supply (wholesale)	CDMS	Air Force
	IPS	Army
	DPACS	DLA
	PED	Navy
Weapon system	AMIS	Air Force
	IPS	Army
Contract administration	AMIS	Air Force
	MOCAS	DLA

Note: MOCAS = Mechanization of Contract Administration Services.

We have evaluated each system's capabilities to determine current status, planned enhancements, and ideas with merit for wider dissemination to the various procurement automation design teams. To make the most meaningful comparisons,

the systems have been divided into groups by type of contracting supported. The systems are compared in a series of tables in Chapter 4.

GENERAL ASSESSMENT OF MAJOR DoD PROCUREMENT AUTOMATION PROJECTS

DoD procurement and contract administration automation is making progress. Almost all contracting offices have some form of automated contract writing or procurement action tracking and a growing number of activities possess systems with broader capabilities. However, these automation projects are generally not Service-wide or agency-wide systems but local or Command initiatives aligned to the type of contracting supported. These uncoordinated efforts neither benefit from previous experience nor share development information with each other.

Although more advanced systems exist, most of the advancements are still to come. If for some reason these developing projects could not be completed, there would be a considerable shortfall in capabilities. OSD should be aware that the procurement modernization initiatives listed below are subject to a certain degree of risk because of budget, program, or technical difficulties:

- AMIS is a mature deployed system that has been migrated to larger computer hardware, its communications have been improved, and development plans include better integration of its diverse subsystems while moving to a fourth generation DBMS.
- APADE is a recently deployed small purchase system with impressive data sharing capabilities that is being expanded to include a large purchase/contract writing system.
- BCAS is a recently deployed small purchase system to which a large purchase/contract writing system, a DBMS, and a 4GL are being added.
- CDMS is being developed with impressive capabilities, but it is a relatively expensive system of lesser priority within AFLC's total logistics modernization plans.
- DPACS is a recently deployed system that is being migrated to a larger minicomputer and additional capabilities are being developed for the system.
- IPS, still in the concept stage, has impressive capabilities that are several years away from deployment.
- Mechanization of Contract Administration Services (MOCAS) is a mature deployed system that is being modified to on-line processing and moved to

larger computer hardware, but its very promising Administrative Contracting Officer (ACO) Workstation feature is still in development and evaluation.

- PED is in development with a Phase I small purchase prototype being tested, but large purchase capabilities require further development.
- SAACONS is a recently deployed vertically integrated but very capable system that requires development of system interfaces with other functions.

The Army's SAACONS is the only attempt to create a Service-wide automated procurement system and even this system has not been adopted by the AMC that has its own highly integrated logistics contracting system. Any generic system that meets Service-wide contracting automation needs would be at a disadvantage when compared to a system optimized for a specific application. If standardization is pursued, it should be within a specialized type of contracting so performance can be optimized. Since few such standardization opportunities are currently available, emphasis must be placed on interoperability between existing, nonstandard systems.

Air Force, Army, and Navy have all developed and deployed their own operational or installation-level contracting systems. Only DLA lacks a modernized installation-level contracting system and any proposed system would have to interface with other DLA functions within its overall information system plan. Marine Corps and Defense Mapping Agency (DMA) both currently use BCAS but are looking for a replacement system with better large purchase capabilities.

In central supply contracting, Air Force, Army, DLA, and Navy are all pursuing modernization of their central logistics system. Any standard procurement system to be effective would have to meet the interface requirements of the logistics system. Because there is no standard DoD-wide automated logistics system, interoperability of logistics contracting must be pursued.

The organizational differences of the Services create differences in weapon system contracting. The Air Force has separate organizations for weapon system and central supply contracting, AFSC and AFLC, and each has a different automated procurement system. The Army combines both types of contracting within AMC under one central contracting system. The Navy has separate hardware systems commands that procure weapon systems, each with different automated contracting systems. NAVSUP manages supply contracting with two automated procurement systems – APADE at Naval Supply Centers (NSCs) and

UICP-Purchase at Aviation Supply Office (ASO) and Ship Parts Control Center (SPCC). Unless one standard DoD organizational arrangement for weapon system acquisition and central supply contracting were to be established, the development of standard automated systems is doubtful.

In contract administration automation there has been a slight move toward standardization with the Army's acceptance of MOCAS for its three Army Plant Representative Offices (ARPROs). If there was a single DoD contract administration service, a single automation contract administration system would be available. As long as Air Force and Navy have plant cognizance over certain defense production facilities, a standard automated system can not be expected. However, the ACO Workstation of MOCAS merits Air Force and Navy consideration as a possible means of improving ACO access to information.

Emphasis on future development should not be placed on system standardization but system integration. Contracting systems could be made to interface with automated systems of other functions and with other contracting systems, including contractor systems. Common data elements are the key to system integration between the various Service, agency, and Command-level systems.

Within military installations, the central logistics commands, and weapon system acquisition commands automated procurement systems need to be integrated with the other functional systems. System integration would eliminate duplicate entry of data into related systems or the need for telephonic status checks. The central supply systems tend to be well integrated with their parent system. However, integration is currently lacking for AMIS and SAACONS.

AMIS has improved its internal integration with its procurement management, contract writing, and contract administration/disbursement systems, but needs to emphasize external integration with the program management, logistics, financial, configuration management, and data management systems that support individual weapon system program offices. This deficiency is the result of both independent development efforts of system program office (SPO) automated support systems and Command information system plans that did not account for existing procurement systems. Efforts are now being taken to overcome

communications barriers between SPO and division support systems and the command procurement system.

SAACONS was developed and deployed as a vertical procurement system with no interfaces to supply, finance, etc. Local initiatives are providing customer terminal access to SAACONS. Enhancements are being developed by the SAACONS contractor to interface with Army standard logistics and finance system.

TYPES OF CONTRACTING SUPPORTED

The requirements for automated procurement systems vary with the needs of the type of contracting. Automation of the procurement process is influenced by the type of service or supply being acquired and the interface requirements with other systems or activities. A system developed to support an installation or a region would be designed for the high-volume, low-dollar purchase order nature of operational-level contracting. Its interface requirements are generally limited to the supply, receiving, and finance systems at the base. Conversely, an automated procurement system supporting major weapon system contracting requires large purchase capabilities with solicitation/contract writing, clause selection, and source selection processes. Its interface requirements are very broad, including program management, logistics, data, safety, finance, and engineering. The system must define the requirement, evaluate proposals, and manage the postaward process. Additionally, contract administration and payment responsibilities of major weapon system contracts are generally delegated to the contract administration service that has cognizance over the selected contractor's plant. This creates an additional interface requirement with contract administration systems.

The diverse contracting environments that must be supported by a standard automated system are shown in Table 3-2. Five general contracting areas are described by type of contracting, kind of contracts issued, functions supported, information interface requirements, and the Services/agencies and Commands involved.

The different types of contracting, contractor communities, interface requirements, and contract administration relationships illustrate the diverse nature of DoD contracting. Developing a DoD standard automated procurement system across all of DoD contracting is not a realistic goal given the specialized procedures, the organizational differences, and the complex internal and external

TABLE 3-2

TYPES OF CONTRACTING SUPPORTED

	Type of contracting	Kind of contracts	Function supported	Interfaces	Services/agencies/ Commands
Operational (base/ regional)	Small local purchase with administration and payment retained	Purchase/delivery orders for supplies and services, base support construction	Installation support	Internal supply, finance, receiving, and disbursement systems	Air Force, Army, DLA, and Marine Corps installations; Navy Regional Contracting Centers and Supply Centers
Basic and applied research	Large purchase, primarily universities and research institutes with administration delegated to ONRR but payment retained	Task orders and R&D grants/contracts for basic and applied research	Knowledge in science and technology	Internal research program management, finance, and disbursement systems	Air Force Office of Scientific Research, Office of Naval Research, Army Research Office and Laboratory Commands
Weapon system	Large purchase, primarily major systems and components, with administration and payment delegated	Research and engineering development, systems acquisition contracts	Weapon system development, source selection, acquisition, and deployment	Local program management, finance, and configuration management systems and external contract administration and disbursement systems	Air Force Systems Command, Army Materiel Command, various Naval system commands
Central supply and services	Small and large purchase, primarily spare parts and components, some maintenance services with contract administration and payment delegated	Purchase/delivery orders for supplies and services	Spare parts/components supply and maintenance services	Highly integrated logistics management systems and external contract administration and disbursement systems	Air Force Logistics Command, Army Materiel Command, Defense Logistics Agency, Naval Supply Systems Command
Major construction	Large purchase with contract administration and payment retained	Some task orders but primarily large construction contracts	Acquisition of major construction projects	Internal construction management, contract administration, and disbursement systems	Army Corps of Engineers, Naval Facility Engineering Command

Note: ONRR = Office of Naval Research Residency.

interfaces within each contracting area. Developing standard systems tailored to the peculiarities of each specialized contracting environment appears more attainable and desirable.

AIR FORCE PROCUREMENT AUTOMATION

Air Force procurement is supported by the three systems listed in Table 3-3. BCAS, AMIS, and AFLC's replacement system CDMS are described in Chapter 4.

TABLE 3-3

AIR FORCE AUTOMATED PROCUREMENT AND CONTRACT ADMINISTRATION SYSTEMS

Type of contracting	System	Activities	Status
Operational (base support)	BCAS	Base contracting offices Air Force wide	Operational
Central (supplies and services)	Current: ACPS ADIS/J041 APS/J023 CIDS/J018 MBLS/J014 E841 UCAMS Future: CDMS	Buying offices at Air Logistics Centers	Operational but to be replaced by CDMS Developmental
Weapon system (acquisition and R&D) and contract administration	AMIS	AFSC buying activities and AFPROs	Operational

Note: ACPS = Automated Contract Preparation System; ADIS/J041 = Acquisition and Due-In System; AFPROs = Air Force Plant Representative Offices; APS/J023 = Automated Purchase System; CIDS/J018 = Contracting Information Data System; E841 = Manpower Management System; MBLS/J014 = Mechanized Bidder's List System; UCAMS = Undefined Contract Action Management System.

The Air Force divides contracting into three areas:

- Operational contracting in support of Air Force base missions
- Central contracting in support of centrally managed supplies and services by AFLC
- System contracting in support of weapon system research, development, and production by AFSC.

Air Force operational contracting had been automated in the early 1970s with CIAPS. CIAPS accepted PRs from customers supported by the base contracting office and generated automatic delivery/purchase orders and solicitations. It also maintained vendor, price, performance history files but provided only batch report access. Although a state of the art system in its day, the labor intensive automatic data processing (ADP) card data entry requirements of CIAPS were eliminated in the BCAS.

The seven AFLC automated procurement systems are being replaced by CDMS as part of a complete redesign of AFLC's logistics systems. These seven subsystems comprise the current procurement system:

- *Automated Contract Preparation System (ACPS)*. A minicomputer-based contract writing system with broad capabilities that are limited by tape interfaces with the obsolete requirement and procurement history systems. Many ACPS capabilities may be retained by CDMS.
- *Acquisition and Due-In System (ADIS/J041)*. A mainframe-based collection of batch-processed data files that provide buyers with PR status, contract history, stock number buy/price history, and line item due-in status. Technically obsolete but its data files have been downloaded via a tape interface to a relational database on a minicomputer (CIDS/J018) for improved buyer access. Eventually, this interim arrangement for accessing ADIS/J041 data will be replaced by CDMS.
- *Automated Purchase System (APS/J023)*. A mainframe-based, batch-processed small purchase order and solicitation generating system that will be replaced by CDMS.
- *Contracting Information Data System (CIDS/J018)*. A minicomputer-based DBMS with an ad hoc query capability that is periodically updated with ADIS/J041 data via tape interface. Will be replaced by CDMS.
- *Mechanized Bidder's List System (MBLS/J014)*. A mainframe-based, batch processed bidder mailing list system that mechanically produces printed mailing labels for solicitation packages. Will be replaced by CDMS.
- *Manpower Management System (E841)*. A workload management system hosted on the CIDS/J018 minicomputer for better access but whose data is provided via tape interfaces with ADIS/J041. Will be replaced by CDMS.
- *Undefinitized Contract Action Management System (UCAMS)*. A tracking system also hosted on the CIDS/J018 minicomputer for greater visibility and access. Relies on ADIS/J041 derived data. Will be replaced by CDMS.

The AFSC's AMIS controls weapon system and research and development contracting. AMIS is unique because it combines preaward, contract administration, and disbursement data in one integrated system. Although originally designed to support MILSCAP data exchange requirements with other DoD activities and the contract administration and disbursement functions of Air Force Contract Management Division (AFCMD), AMIS has in recent years been augmented to provide considerable contract writing and buying activity support.

ARMY PROCUREMENT AUTOMATION

Army procurement and contract administration are currently supported by the automated systems listed in Table 3-4. SAACONS is gradually replacing a variety of nonstandard local systems. AMC is planning to gradually replace the procurement processes within its CCSS with IPS. The Army has decided not to develop its own automated contract administration system but has chosen DLA's MOCAS. The three ARPROs are included in the DCASR St. Louis MOCAS system. SAACONS and IPS are described in Chapter 4.

TABLE 3-4

ARMY AUTOMATED PROCUREMENT SYSTEMS

Type of contracting	System	Activities	Status
Installation/operational	SAACONS	Post, camp, hospital, and depot installation contracting offices	Operational
Central supply and weapon system	Current: CCSS and PADDs Future: IPS	AMC's major subordinate commands	Operational Conceptual
Construction	SAACONS	COE contracting offices	Operational
Contract administration	MOCAS	ARPROs	Operational

Note: COE = Corp of Engineers; PADDs = Procurement Automated Data and Document System.

The Army has made significant progress in both procurement automation and in system standardization. Until implementation of SAACONS, Army activities had a collection of locally developed or borrowed systems of varying capabilities. SAACONS provides the Army with a standard system for installation, depot, and

construction contracting activities. Procurement training and procedures can be uniform throughout Army contracting except for centrally managed hardware procurement within AMC.

CCSS is the central logistics system in AMC. Since the early 1970s it has evolved into an extremely complex integrated logistics system that combines weapon system acquisition with spare parts and maintenance services contracting. The current procurement subsystem consists of the following six modules with over 36 separate applications that are integrated with the CCSS supply, inventory, financial, transportation functions, etc:

- *Preaward.* Receives the requirement, builds a procurement work directive (PWD) with an item description and buy history, consolidates the requirement with unawarded PWDs for the same items, and then tracks manual coordination of the PWD with packaging, safety, technical data, transportation, small business, and breakout functions. The redesigned Material Acquisition and Requirements Validation System (MARVS) permits on-line entry of requirements and generates the PWD within the preaward module of CCSS.
- *Standard Automated Bidder's List (SABL).* Provides service and supply sources by generating a bidder's mailing list with adhesive labels. Bidder's mailing list is maintained via terminal inputs.
- *Procurement Automated Data and Document System (PADDS).* Provides on-line, interactive procurement document preparation including clause selection via terminal inputs. PADDS produces all solicitation documents [invitation for bids (IFBs), request for proposals (RFPs), and request for quotations (RFQs)], Award/Contract documents (SF26), Orders for Supplies or Services/Request for Quotation (DD Form 1155), Amendment of Solicitation/Modification of Contract (SF30), and DD Form 350.
- *Postaward.* Receives data from PADDS and builds a MILSCAP file and Procurement History file for reports and queries.
- *MILSCAP.* A DoD-standard application which abstracts newly awarded contracts based on PADDS inputs, establishes due-in items, and notifies Defense Contract Administration Service (DCAS) of the award by transmitting the contract, line item, delivery schedule, and accounting details contained in the abstract. Additionally, MILSCAP receives shipment performance and contract closeout data from DCAS and passes this data to other CCSS processes.
- *Procurement Automated Manpower Utilization and Projection System (PAMUPS).* Provides a standardized database for recording completed

actions and hours required based on a time standard. The database is used for workload and manpower projection.

IPS is being developed to provide an electronic contracting environment in which requirement receipt and coordination and procurement planning are totally paperless. The solicitation and contract preparation processes currently contained in PADDS will be retained but modernized by IPS. IPS will be integrated with other AMC logistics processes via CCSS to ensure that all logistics functions are sharing the same information thereby reducing data entry duplication and errors. When IPS is fully implemented in the early 1990s, AMC will have a completely electronic contracting system with buyer workstations and data sharing among logistics functions.

DEFENSE LOGISTICS AGENCY PROCUREMENT AUTOMATION

DLA procurement is supported by eight automated systems as indicated in Table 3-5. DPACS and MOCAS and its ACO Workstation are described in detail in Chapter 4.

SAMMS is the central logistics system at DLA. It was implemented in 1968 and is technically obsolete, but functionally comprehensive. SAMMS is a batch-oriented transaction processing system which supports all logistics functions within DLA except for fuels, subsistence, and industrial plant equipment. SAMMS is, among other things, the requirement generator to the DLA's central supply procurement function. All PRs, bidder's lists, price histories, technical data, and quality histories are provided to DPACS by a download of SAMMS data. For buyers to prepare a contract action, SAMMS required manual research through computer printouts. DPACS will provide all information required for purchases to the buyer's microcomputer for on-line retrieval.

The future automated procurement system will be developed as part of DLA's planned information system modernization effort, the Logistics System Modernization Program (LSMP). However, at this time LSMP is a concept without firm functional descriptions or prototype systems to evaluate. LSMP will replace the obsolete SAMMS with new hardware and system architecture. It will also be used to conduct information engineering analysis to reassess all data needs and to eliminate redundant data elements in a central relational database. The first LSMP project will be the development of CPDS.

TABLE 3-5

DLA AUTOMATED PROCUREMENT SYSTEMS

Type of contracting	System	Status
Installation	BOSS	Operational
Central supply		
Small purchase \$2,500 or less	SASPS I	Operational
Small purchase \$25,000 or less	SASPS II	Operational
Large and small purchases on any dollar amount	DPACS	Operational
Specialized		
Fuels	DFAMS	Operational
Plant equipment	DIPEC II AMS	Operational
Subsistence	DISMS	Operational
Contract administration	MOCAS	Operational
	MOCAS's ACO Workstation	Developmental

Note: BOSS = Base Operations Support System; DFAMS = Defense Fuels Automated Management System; DIPEC II AMS = Defense Industrial Plant Equipment Center Acquisition Management Subsystem; DISMS = Defense Integrated Subsistence Management System; SASPS I = SAMMS Automated Small Purchase System I; SASPS II = SAMMS Automated Small Purchase System II.

Currently, the two most tangible initiatives are DPACS and the MOCAS ACO Workstation. Data normally stored on either the SAMMS or MOCAS mainframe computers are downloaded to micro/minicomputers for direct access by contracting personnel. Both of these initiatives represent a form of distributed processing in which the mainframe computer runs nightly batch programs to process transactions, to update master files, to exchange data with other systems, and to download selected data to mini/micro systems located in the contracting office for specialized functional reports and updates. The great advantage of such architecture is that data moves to specialized application computers where functional users have immediate access to their information and are not dependent on the availability of the general purpose computer system. Functional data will be within the control of the users who can use it to perform their immediate jobs.

NAVY PROCUREMENT AUTOMATION

The Navy has numerous automated procurement systems as indicated in Table 3-6. However, this table does not include projects at local activities and smaller commands. The Navy's two major systems, APADE and PED, are described in detail in Chapter 4.

TABLE 3-6
NAVY AUTOMATED PROCUREMENT SYSTEMS

Type of contracting	System	Command/ activities	Status
Small and large activities/base support	APADE	NFCS (large) shipyards, supply depots and centers, regional contracting centers, laboratories, air stations	Operational
Basic research	CAMIS	ONR	Operational
Construction	AMALGAMAN	NAVFACENG	Operational
Contract administration	CASAI5	NAVAIR/NAVPROs	Operational
	PROLANS	NAVAIR/NAVPROs	Developmental
Weapon system	Procurement automation	NAVAIR	Operational
	CONDIRAIS	NAVSEA	Developmental
	CDMIS	NAVSPAWAR	Operational
Central supply	UICP-Purchase	NAVSUP	Operational
	UICP-PED		Developmental
	UICP-Resystemization		Conceptual

Note: AMALGAMAN = Amalgamated Management System; CAMIS = Contract Administrative Management Information System; CASAI5 = Contract Administration System Automated Information System; CDMIS = Contract Directorate Management Information System; CONDIRAIS = Contract Directorate Automated Information System; NAVFACENG = Naval Facilities Engineering Command; NAVPRO = Navy Plant Representative Office; NAVSEA = Naval Sea Systems Command; NAVSPAWAR = Naval Space and Warfare Command; NFCS = Navy Field Contracting System; ONR = Office of Naval Research; PROLANS = Plant Representative Office Local Area Network System.

The large number of diverse automated procurement systems in the Navy is a function of its decentralized procurement structure. Each hardware systems command has its own automated procurement system. Several of these systems are worthy examples where procurement automation is leading.

One initiative is a Naval Air Systems Command (NAVAIR) attempt to develop a modern acquisition information system with the help of DAITC. For the long term, NAVAIR and DAITC are evaluating optical disk storage and networking technologies to share and store information. As an interim capability, NAVAIR is evaluating off-the-shelf contract writing software, e.g., Compusearch's FAR

Automated (FARA), for example, that can be adapted to its organization and procedures.

Also, Naval Sea Systems Command (NAVSEA) is ready to deploy the Contract Directorate Automated Information System (CONDIRAIS) in its weapon system procurement offices. It will provide electronic PR transfer, electronic procurement files, electronic mail coordination, and contract writing capabilities via office minicomputers, desktop microcomputers, and local area networks (LANs). Since Naval Space and Warfare Command (NAVSPAWAR) is currently working with Naval Data Automation Command (NAVDAC) to develop a replacement procurement system, they should consider NAVSEA's CONDIRAIS, NAVAIR's DAITC efforts, or even the Army's SAACONS.

NAVSUP's modernization of its central logistics system UICP consists of two phases. The first phase, PED, is a paperless small purchase system. The second phase will replace the UICP-Purchase system with a large purchase system as part of the UICP Resystemization program. The PED project is currently being tested at both SPCC and ASO.

Of all systems and agencies reviewed, the Navy would benefit the most from procurement automation conferences and workshops to learn not only what is available from other services but what is available within the Navy. Likewise, the other Services need to hear about the Navy's initiatives and experiences.

CHAPTER 4

DETAILED FUNCTIONAL ASSESSMENTS OF MAJOR SYSTEMS

Nine major automated procurement and contract administration systems have been evaluated to determine current and planned capabilities. Seven of the systems are designed for buying activities. One system supports only contract administration offices and one system supports both. The evaluated systems are shown in Table 4-1 and their evaluation details are listed in the tables that follow.

TABLE 4-1

MAJOR SYSTEMS STUDIED

Type of contracting	System	Service/ agency	Phase	Sites planned	Design activity
Operational contracting (base/regional)	BCAS	Air Force	Operational	130 +	AFSSDO
	SAACONS	Army	Operational	256	CACI, Inc.
	APADE	Navy	Operational	35	FMSO
Central supply (wholesale)	CDMS	AFLC	Developmental	5	AFLC and contractors
	IPS	AMC	Conceptual	6	CSDA
	DPACS	DLA	Operational	5	DSAC
	PED	NAVSUP	Developmental	2	FMSO
Weapon system	AMIS	AFSC	Operational	11	AFSC/PKQ
	IPS	AMC	Conceptual	6	CSDA
Contract administration	AMIS	AFCMD	Operational	27	AFSC/PKQ
	MOCAS	DCAS	Operational	95	DSAC

Note: AFSSDO = Air Force Standard System Design Office; CSDA = Central System Design Activity; DSAC = Defense Systems Automation Center; FMSO = Fleet Material Support Office; PKQ = Directorate of Contracting Systems.

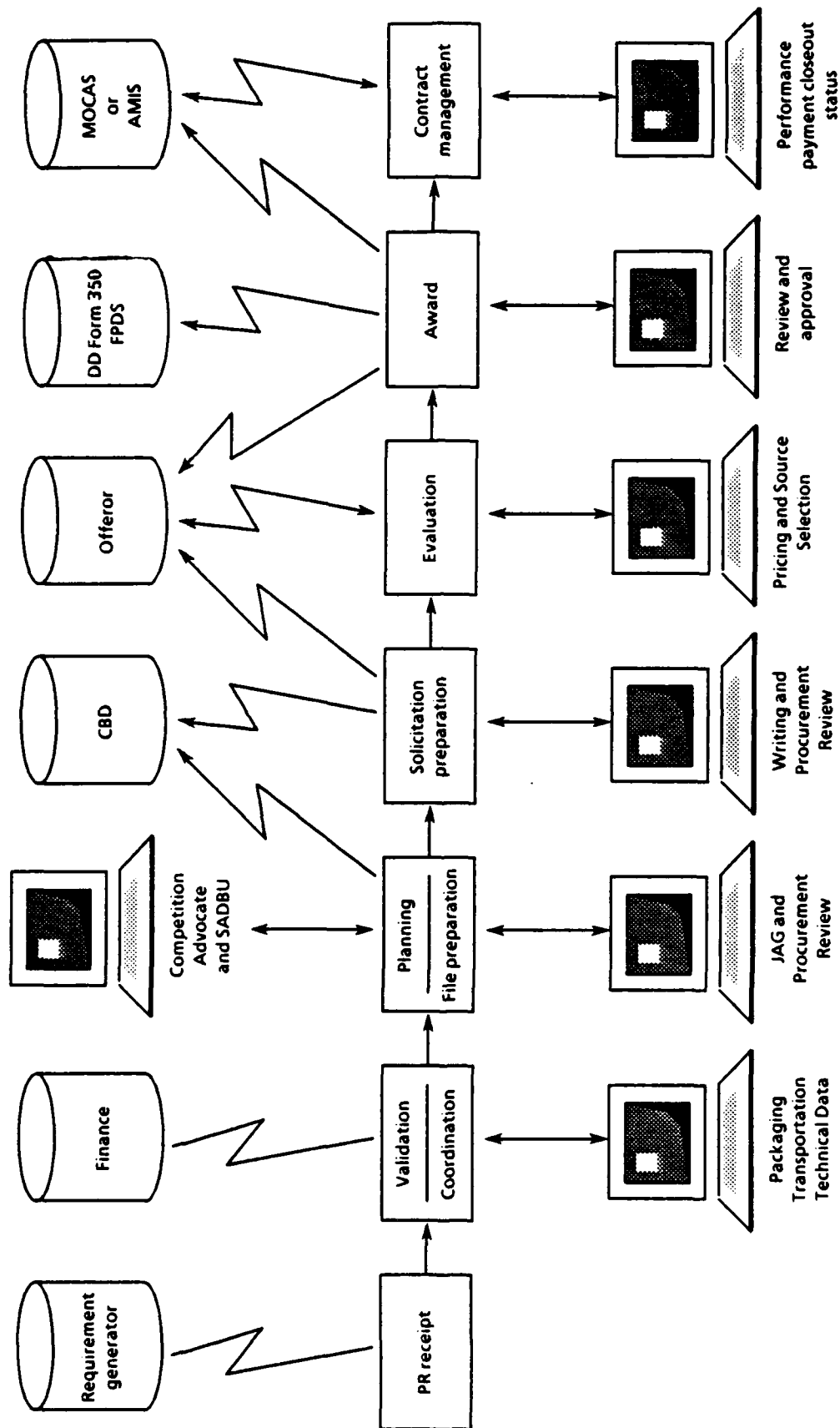
BUYING ACTIVITY MODEL AUTOMATED PROCUREMENT SYSTEM

As a reference point for comparison purposes with the systems evaluated, a model automated procurement system has been described for buying activities. A buying activity's automated procurement system should possess workstation data entry, on-line access to buyer data, and menu-driven screens for process selection.

Any automated procurement system should accept requirements, prepare the procurement file, plan the procurement action, prepare the solicitation, analyze the bid/offer, and award the contract and provide postaward management.

As illustrated in Figure 4-1, all phases of the contracting process can be automated with the various systems electronically integrated and the various users accessing the process via computer terminals. These are the features of a model automated procurement system. The seven buying systems are compared against these capabilities within their type of contracting.

Table 4-2 compares BCAS, APADE, and SAACONS within operational contracting. Table 4-3 compares the capabilities of IPS, PED, CDMS, and DPACS within central supply contracting. And lastly, Table 4-4 compares AMIS and IPS within weapon system contracting.



Note: FPDS = Federal Procurement Data System, JAG = judge advocate general, SADBUs = Small and Disadvantaged Business Utilization.

FIG. 4-1. ELECTRONIC CONTRACTING PROCESS

TABLE 4-2
OPERATIONAL CONTRACTING

Capabilities	BCAS (Air Force)	APADE (Navy)	SAACONS (Army)
Contract placement			
<i>Requirement processes</i>			
Receipt	Automatic and CRT input	Automatic and CRT input	Automatic and CRT input
Validation	Yes	Yes	Limited
Coordination	No	Yes	No
Consolidation	Yes	Yes	Yes
<i>Procurement file preparation</i>			
Electronic file	No	Planned	No
Automated referral	Yes	Yes	No
<i>Planning</i>			
Buy price/history	Yes - local only	Yes - local but wide expansion planned	Yes - local only
Sources	Yes - local only	Yes - local only	Yes - local only
Expert advice	No	Planned	No
Synopsis preparation	Yes - WP	Yes - WP	Yes - WP
Synopsis transmission	No	Yes	No
<i>Solicitation/contract preparation</i>			
Model contract preparation	No - local option	No	Yes
FAR on line	No - local option	Planned	Yes
Clause selection	Yes - local clause	Planned	Yes
Bidder's mailing list	Yes	Planned	Yes
Electronic bid board	Planned	No - local plans	No
Electronic solicitation	No	No	No
<i>Bid/proposal/negotiation analysis</i>			
Proposal evaluation	No	No	No
Source selection	No	No	No
Price analysis	Spreadsheet	Spreadsheet	No
Past performance	Yes	No	No
Bid abstract	Yes	Yes	Yes
Negotiation memo	WP	WP	WP
DD Form 1547/DD Form 1861 preparation	Local option	Planned	Local option
<i>Award</i>			
Business clearance review	Local option	Yes	Local option
Debarred/suspended check	Yes	Yes	Yes
DD Form 350/DD Form 1057 preparation	Yes	Yes	Yes
DD Form 350/DD Form 1057 edits	Yes	Yes	Yes
DD Form 350/DD Form 1057 transmission	No	Yes	No
Electronic distribution	No	No	No
Contract management			
<i>Action tracking</i>	Yes	Yes	Yes
<i>Workload management</i>	Yes	Yes	Yes
<i>Contract summaries</i>	Yes	Yes	Yes
<i>Undefinitized actions</i>	Yes	No	Yes
<i>Contract closeout</i>	Yes	Planned	Yes
<i>Delivery/performance</i>	Yes	Yes	Yes
<i>MILSCAP</i>	No	Planned	No

Note: CRT = cathode ray tube; WP = word processing.

TABLE 4-3
CENTRAL SUPPLY CONTRACTING

Capabilities	IPS (Army)	UICP-PED Phase I (Navy)	CDMS (Air Force)	SAMMS- DPACS (DLA)
Contract placement				
<i>Requirement processes</i>				
Receipt	Planned	Yes	Planned	Yes
Validation	Planned	Yes	Planned	Yes in SAMMS
Coordination	Planned	Yes	Planned	Yes
Consolidation	Planned	Yes	Planned	Yes
<i>Procurement file preparation</i>				
Electronic file	Planned	Yes	Planned	Yes
Automated referral	Planned	Yes	Planned	Yes
<i>Procurement planning</i>				
Buy history	Planned	Yes	Planned	Yes
Price history	Planned	Yes	Planned	Yes
Sources	Planned	Yes	Planned	Yes
Expert advice	Planned	Planned Phase II	Planned	Yes – planned
Synopsis preparation	Planned	Yes	Planned	Yes – planned
Synopsis transmission	Planned	Yes	Planned	Yes – planned
<i>Solicitation preparation</i>				
Model contract preparation	Planned	Planned Phase II	Planned	Yes
FAR on line	No	No	Planned	Yes – planned
Clauses selection	Planned	Yes – PO only	Planned	Yes – planned
Bidder's mailing list	Planned	Yes	Planned	Yes
Electronic bid board	No	No	TBD	Yes – planned
Electronic solicitation	No	Yes	Planned	Yes – planned
<i>Bid/proposal/negotiation analysis</i>				
Proposal evaluation	Planned	Planned Phase II	No	Yes
Source selection	No	No	No	No
Price analysis	No	No	Planned	Planned
Past performance	Planned	Limited	No	Yes
Bid abstract	Planned	Optional	Planned	Yes
Price negotiation preparation	Planned	N/A	Planned	Yes
DD Form 1547/DD Form 1861	Planned	N/A	Planned	TBD
<i>Award</i>				
Review/clearance	Planned	Yes	Planned	Yes
Debarred/suspended check	Yes – CCSS	Yes	Planned	Yes
DD Form 350/DD Form 1057 preparation	Planned	Phase II	Planned	Yes
DD Form 350/DD Form 1057 edits	Planned	Phase II	Planned	Yes
DD Form 350/DD Form 1057 transmission	Planned	Phase II	Planned	Yes
Electronic distribution	Planned	Phase II	Planned	Planned
Contract management				
<i>Action tracking</i>	Planned	Yes	Planned	Yes
<i>Workload management</i>	Planned	Yes	Planned	Yes
<i>Contract summaries</i>	Planned	Yes	Planned	Yes
<i>Unfinalized actions</i>	Planned	No – Phase II	Planned	No
<i>Contract closeout</i>	Planned	No – Phase II	Planned	Yes in SAMMS
<i>Delivery/performance</i>	Planned	No – Phase II	Planned	Yes in SAMMS
<i>MILSCAP</i>	Planned	Planned	Planned	Yes in SAMMS

Note: N/A = not applicable; PO = purchase order; TBD = to be determined.

TABLE 4-4
WEAPON SYSTEM CONTRACTING

Capabilities	AMIS (Air Force)	IPS (Army)
Contract placement		
<i>Requirement processes</i>		
Receipt	CRT input	Automatic from CCSS
Validation	Yes	Planned
Coordination	Yes - limited	Planned
Consolidation	No	Planned
<i>Procurement file preparation</i>		
Electronic file	No	Planned
Automated referral	No	Planned
<i>Procurement planning</i>		
Buy history	Yes - special query	Planned
Price history	Yes - special database	Planned
Sources	R&D only	Planned
Expert advice	No	Planned
Synopsis preparation	Yes - WP	Planned
Synopsis transmission	No - local option	Planned
<i>Solicitation preparation</i>		
Model contract preparation	Yes	Planned
FAR on line	Planned - local option	No
Clause selection	Yes	Planned
Bidder's mailing list	No	Yes - CCSS
Electronic bid board	No	No
Electronic solicitation	No	Planned
<i>Bid/proposal/negotiation analysis</i>		
Proposal evaluation	No	Planned
Source selection	No	No
Price analysis	No	No
Past performance	No	Planned
Bid abstract	No	Planned
Price negotiation preparation	WP	Planned
DD Form 1547/DD Form 1861	No	Planned
<i>Award</i>		
Review/business clearance	Limited	Planned
Debarred/suspended	No	Planned
DD Form 350/DD Form 1057 preparation	Automated	Automated - planned
DD Form 350/DD Form 1057 edits	Yes	Planned
DD Form 350/DD Form 1057 transmission	Yes - tape feed	Planned
Electronic distribution	No	Planned
Contract management		
<i>Action tracking</i>	Yes	Planned
<i>Workload management</i>	Yes	Planned
<i>Contract summaries</i>	Yes	Planned
<i>Unfinalized actions</i>	Yes	Planned
<i>Contract closeout</i>	Yes	Planned
<i>Delivery/performance</i>	Yes	Planned
MILSCAP	Yes	Planned

Note: CRT = cathode ray tube; WP = word processing.

Contract Placement Capabilities

- ***Requirement processes***

Receipt — requirement receipt either through automatic input from supply, inventory or program management systems, or manual workstation data entry

Validation — automated edits to ensure accuracy and completeness of requirements before assignment to the buyer

Coordination — automated routing of requirement package to technical, finance, transportation, packaging, small business, security, data, safety, etc.

Consolidation — automated identification of requirements for identical or similar items for potential consolidation

- ***Procurement file preparation***

Electronic file — paperless file of requirement package, procurement plans, memos, etc.

Automated referral — decision logic to decide if file is incomplete and buyer must be flagged for input

- ***Procurement planning***

Buy/price history — automated access to buy and price history data for the item/service being acquired

Sources — automated access to source data for the item/service being acquired

Expert advice — assistance in preparing acquisition plan for item/service being acquired: its buy/price history, source history, etc.

Synopsis — automated generation and transmission of synopsis of solicitation document to CBD

- ***Solicitation/contract preparation***

Model contract preparation — automated preparation of model contract, representations, and certifications

FAR on-line — capability to retrieve FAR text based on workstation entry of key words

Clause selection — decision logic to aid buyer in selection of clauses for the item/service being acquired, type of contractor, type of contract, etc.

Bidder's mailing list – automated selection and preparation of a bidder's mailing list including printing of mailing labels

Electronic bid board – use of electronic bulletin board or mailbox to post proposed buys so interested parties can request a solicitation

Electronic solicitation – capability to transmit the solicitation document to interested parties via telecommunications such as electronic mail, EDI, etc.

- *Bid/proposal/negotiation analysis*

Proposal evaluation – capability to electronically evaluate proposals and select the best submitted based on factors such as quantities, options, delivery schedules, and transportation costs

Source selection – automation of formal source selection process

Price analysis – support for quantitative analysis of contractor's cost proposal through spreadsheets, statistical programs, etc.

Past performance – capability to access offeror's past performance data including preaward survey

Bid abstract – automatic preparation of bid abstract data

Price negotiation preparation – automated preparation of negotiation memorandum

DD Form 1547/DD Form 1861 – automated calculation and preparation of weighted guidelines and cost of money forms

- *Award*

Review/business clearance – capability to review and approve contract document and file electronically

Debarred/suspended – check contractor's status against an automated list before each award

DD Form 350/DD Form 1057 preparation – capability to generate DD Form 350/DD Form 1057 data as a by-product of preaward and contract writing processes

DD Form 350/DD Form 1057 edits – capability to edit and validate DD Form 350 entries against DoD DD Form 350 criteria, the contract document, and the master contract database

DD Form 350/DD Form 1057 transmission – automated data feed of data to higher level DD Form 350 system

Electronic distribution – capability to electronically distribute the contract to successful bidder.

Contract Management

- *Action tracking* – capability to provide status of individual purchase requests and contract actions
- *Workload management* – capability to measure volume, distribution, dollar value, and type of procurement actions in process or awarded
- *Contract summaries* – capability to access cumulative contract files that reflect contract modifications
- *Undefinitized actions* – visibility of the type, number, and value of undefinitized contract actions.
- *Contract closeout* – visibility of the number, value, and overage status of physically complete contracts awaiting closeout
- *Delivery/performance surveillance* – visibility of contractor's performance on a given contract, line item, or delivery schedule
- *MILSCAP* – capability to generate and receive MILSCAP transactions.

ACQUISITION MANAGEMENT INFORMATION SYSTEM

AMIS is AFSC's integrated contracting system for central acquisition of weapon systems, subsystems, and research and development. It supports preaward contract placement, postaward contract administration, and disbursement. It provides information and processes that directly support AFSC buying activities, Air Force Plant Representative Offices (AFPROs), and the AFCMD paying office.

It is an integrated system in which the various AMIS computers and databases share data on preaward action tracking, acquisition planning, solicitation preparation, contract/modification writing, DD Form 350 reporting, undefinitized contract actions, line item delivery/performance tracking, line item price and payment, and contract closeout. AMIS consists of the four major subsystems/modules shown in Table 4-5. AMIS also consists of many smaller subsystems/modules and databases that support, for example, disbursement, source identification, spare parts negotiations, and headquarters reporting.

TABLE 4-5
ACQUISITION MANAGEMENT INFORMATION SYSTEM

Function	Subsystem
Contract action tracking	Procurement Management System • Milestone schedules • Buying plan data • Contract closeout management • Undefined action reports • Workload assignments • DD Form 350 data
Buy/price history	Price History Database • Organized by stock and part numbers • Price/buy history • Value review history
Contract writing	Distributed Processing for Contractual Input • Menu screens • Solicitation/contract/modification writing • Automated clause selection • Integrated with word processing • Edits and validations
Contract administration	Contract administrative data • Notice of assignment reports • Contract closeout reports • Obligation and payment data • Contract modification history • Production surveillance data • Contract summary data • Contract line item detail

Procurement Management System

The Procurement Management System (PMS) is an automated system of data records on the pre- and postaward status of contract actions issued by AFSC buying activities. It provides buyers and managers awareness of and control over individual procurement actions from requirement receipt through contract retirement. PMS consists of a series of databases, one for each AFSC buying activity and a

consolidated Command-level database. These databases provide real time update and query capability; however, more voluminous reports are produced through overnight batch processing.

PMS provides milestone event tracking tailored to each local buying activity's procedures and time standards. PMS captures a contract action's status as a by-product of daily operational processes of PR/Military Interdepartmental Purchase Request (MIPR) control, small business coordination, procurement management reviews, contract writing, and contract closeout. As a contract action progresses through the buying activity, its PMS milestone schedule is updated through computer terminal inputs. Contract action status can be obtained through on-line queries but buying office summaries require overnight report processing.

Individual contract action records in PMS receive not only buyer computer terminal updates but also contract award, obligation, and closeout information from AMIS contract writing and contract administration processes. It is planned to more closely integrate PMS with the contract writing subsystem by distributing each buying office's PMS database from the AMIS mainframe to the local contract writing minicomputer. This will facilitate editing and validating of data entered in each subsystem. Data captured in PMS when the procurement requirement is initially established could be more easily shared with the contract writing process.

Price History Database

The Price History Database (PHDB) is a consolidated price history for all spare parts and support equipment procured, administered, or paid for by AFSC or procured by AFLC. It was developed following the 1983 spare parts overpricing controversy to resolve Air Force concerns about price and buy history availability. PHDB provides buyers or contract administrators with procurement, price, and value review histories for items identified by a national stock number (NSN), part number (P/N), or support equipment requirement document (SERD) number.

As firm priced contract line items are established in the various AMIS databases for contract administration or disbursement purposes, a specialized record is created for price history. This record is not purged when the contract is retired. Price history records are also created from monthly tapes provided by AFLC's ADIS/J041.

By entering either an NSN, P/N, or SERD on a PHDB menu screen, a price history can be obtained on items of Air Force interest. Although this database does not contain price histories on items administered by DCAS for Services other than the Air Force, DCAS pricing personnel are accessing PHDB. This usage indicates a fundamental need that is not being met by individual Service or agency systems. DoD buyers, price analysts, and contract administrators need the capability to query buy, price, and value review history on any numbered item. There are several approaches to meeting this common need:

- Expand AMIS PHDB to include all DoD buy, price, and value review information
- Access the various automated procurement logistics and contract administration systems via an IGN that electronically overcomes the differences in databases and locations to provide users with one consolidated response
- Contract with a commercial source for a consolidated DoD price history database possibly including automated catalog and sourcing features.

Although the Air Force has developed a consolidated database, it is not unique in storing price history information. Almost all automated procurement systems contain buy and price history data. However, this information is not necessarily accessible because antiquated systems store data on tape or files and even modern DBMSs may not have adequate telecommunication lines and front-end processors to access data.

Distributed Processing for Contractual Input

DPCI is a minicomputer-based contract writing system that uses menu-driven screens organized by uniform contract format (UCF) to collect data for contract instrument preparation. DPCI also provides contract clause generation capability based on user definition of the procurement requirement. The procurement instruments generated by DPCI use nonstandard award, order, and modification forms unique to AFSC. AMIS needs to reprogram DPCI to support standard procurement forms (DD Form 1155, SF26, and SF30). DPCI is available to AFSC buying activities. AFPROs use a microcomputer-based contract modification writing system developed by AFCMD but integrated with AMIS edit and validation processing.

BCAS uses the same minicomputer hardware and operating system as DPCI. This has permitted several AFSC activities that issue both R&D/weapon systems and base procurements to cohost both systems on the same hardware.

Contract Administrative Data

The AMIS core consists of three databases containing all summary, line item, delivery, and accounting data related to contracts issued by, administered by, or paid by AFSC. These databases receive a contract abstract from either the AFSC contract writing system or from the AFCMD paying office. Each database provides information either through preformatted queries, ad hoc queries, or scheduled reports. Buyers and contract administrators can query AMIS to obtain information on, for example, item delivery status, closeout schedules, progress payment amounts, all active cost-plus-fixed-fee contracts, or all small business contracts issued by a buying office.

AMIS's contract administrative data (CAD) databases support buying and contract administration offices throughout the country from a mainframe computer centrally located at Wright-Patterson Air Force Base, Ohio. This arrangement requires users to access the mainframe at Wright-Patterson via a telephone modem at their remote terminals. Data retrieval using this method is precarious given the distance, the communications load on the mainframe, and the slow asynchronous modems used.

Technology now permits data to be moved to the user's local micro or minicomputer for local access. The AMIS program office is evaluating fourth generation DBMS for possible use in a two-tier, distributed system. The mainframe computer would periodically download data to the local system DBMS via high-speed data communications lines. Moving data closer to users so they can access a modern DBMS from local terminals is the direction AMIS and other systems are moving.

AUTOMATION OF PROCUREMENT AND ACCOUNTING DATA ENTRY

APADE is the NAVSUP's automation initiative of the major contracting activities of the Navy Field Contract System (NFCS). Today's APADE project has evolved from earlier redesigns dating from the early 1970s.

APADE is primarily a small purchase system with limited large purchase processing. A full contract-writing/management capability is being developed.

APADE provides preaward processing of requirements and contract actions, solicitation and purchase/delivery order preparation, postaward contract management, status inquiry, report generation, and system support including help and CAI. APADE uses microcomputer terminals with preformatted menu-driven screens to automate these actions. APADE is cohosted on a minicomputer cluster within NAVSUP's logistics information network called Stock Point Logistics Integrated Communications Environment (SPLICE). This hardware arrangement not only allows APADE sufficient computing power but provides tremendous interoperability capabilities. Interoperability makes APADE unique among operational procurement systems. It not only interfaces with local requirement and financial systems while providing on-line customer status, but it also provides access through SPLICE to information at other APADE sites and at the NAVSUP's two ICPs: ASO and SPCC.

The goal for development of APADE is to use a workstation to provide automated contract writing, decision support, access to SPLICE, on-line access to procurement and price histories, source data, and possible substitute items; and automated interfaces with supply, receiving, and financial systems. By providing buyers with APADE the Navy expects not just a reduction in procurement office paper but also improvement in information access and decisions. The use of a desktop microcomputer permits buyers to access spreadsheet, statistical, and database programs for decision support. Interconnectivity with other Navy logistics systems through SPLICE will permit APADE buyers to benefit from information improvements in other Navy logistics systems.

One impressive capability is the interoperability between APADE sites. Workload can be transferred among sites, or buyers with free time can access procurement files across the country and help out.

As indicated in Table 4-6, APADE project development has been divided into four phases for small purchase, system interfaces, contract management, and large purchase capabilities.

Because the Navy centralizes its operational contracting at large regional contracting and supply centers, APADE is supporting buying activities much larger than its typical Air Force or Army counterparts. APADE is scheduled for the 35 largest activities in the NFCS, each with unlimited contracting authority.

TABLE 4-6

AUTOMATION OF ACCOUNTING AND PROCUREMENT DATA ENTRY

Phase I Small Purchase Emphasis IOC: April 1986	• Manual requisition input/update capability • Generation of buyer worksheets • Reassignments, combinations, cancellations • On-line price histories and source lists • On-line customer status and ad hoc queries • Interface with supply system (UADPS-SP) • Automated small and large award processing • Laser printed DD Form 1155 purchase orders • DD Form 1057 report generation • CAI
Phase II System Interfaces Emphasis IOC: February 1987	• Interface with SYMIS/MM system • Intrasystem integration • Referral/document tracking • MILSCAP abstract generation • Daily balance (work in process) reports
Phase III Contract Management Emphasis IOC: May 1988	• Automated delivery orders and BPAs • Standard item descriptions • Referral and suspense processing • Purchase history • DD Form 350 report generation
Phase IV Large Purchase Emphasis IOC: November 1989	• Solicitation (IFB/RFP) preparation • Automated bidder's mailing list • Contract document preparation • Total MILSCAP interface • Word processing • Help functions • Bid evaluation tools • Contract closeout • Record archival • Contract modifications

Note: BPA = blanket purchase agreement; IOC = initial operational capability; MIS = Management Information System; SYMIS/MIS = Shipyard Management Information System/MM; UADPS-SP = Uniform Automated Data Processing System-Supply.

Smaller satellite contracting activities with limited contracting authority will pass requirements to the fully capable APADE site. The Air Force BCAS is being deployed at approximately 130 sites and the Army SAACONS is being deployed at over 250 sites, all of which generally support only one local installation. Obviously there are organizational and contracting differences between the Services that influence the capability of their automated systems. Establishing data sharing

capabilities among 35 Navy contracting activities and 2 ICPs is much easier than the interconnectivity required between 130 Air Force bases and 5 Air Logistics Centers (ALCs) or 250 Army posts and 6 AMC buying centers.

BASE CONTRACTING AUTOMATED SYSTEM

BCAS is a base-level small-purchase contracting system primarily designed for supply contracting less than \$25,000 but it also can support large purchase supply, service, and construction contracting. Although lacking the broad capabilities of other systems reviewed, BCAS is more than adequate for Air Force base-level contracting where small purchases represent over 90 percent of contract actions. It has been implemented at over 100 of the 130 Air Force sites planned. BCAS is also operational at 10 Marine Corps logistics bases and 2 DMA contracting activities.

BCAS is replacing the CIAPS that was first operational in 1973. Although CIAPS was a batch-oriented, manpower intensive system, it was DoD's first widely used base-level automated procurement system. The CIAPS experience provided DoD with important lessons that are being applied to second generation systems. The rigid CIAPS system taught the Air Force that systems must be flexible to support new requirements and to permit innovative contracting methods.

As indicated in Table 4-7, BCAS provides an automated small purchase system at the buyer's terminal. BCAS receives the requirement, generates a buy abstract, supports telephonic and written RFQs, generates the purchase order document, provides award status to customer computers, produces contract action reports and, if necessary, generates a follow-up request to vendors.

BCAS also provides many user-generated reports that provide impressive management overview of the procurement process. Summary reports are available for actions/awards and their dollar value by customer, branch, and buyer. Both performance (output), workload (in process), and leadtime (time elapsed) reports are available. Many specialized reports are also available tailored to individual needs. When compared to its predecessor, BCAS has made significant improvements.

BCAS improves support to base contracting's customers by providing them automated interfaces with the purchasing system. For example, base supply, who generates approximately 70 percent of the requirements, has a direct data feed to BCAS's PR input process. Automatic passing of requirements eliminates duplicate

TABLE 4-7

BASE CONTRACTING AUTOMATED SYSTEM

Requirement initiation	● Automatically receives supply and civil engineering requirements ● Provides terminal input of manual PRs from nonautomated customers ● Validates requirements for completeness and accuracy
Quotation support	● Automatically requests correction or missing data ● Automatically assigns buy based on stock classes and workload ● Automatically selects rotated vendor list based on stock class or service description ● Automatically generates buy abstract containing requirement, description, vendor, and procurement history data at buyer's terminal
Award support	● Generates letter RFQ or telephonic quote screen ● Automatically generates DD Form 1155 after qualified vendor data is input by buyer ● For actions less than \$25,000, award information is accumulated for end-of-month DD Form 1057 preparation ● For actions \$25,000 or more, a DD Form 350 is automatically generated
Postaward support	● Automatically updates supply, finance, and engineering computers with award, obligation, and delivery data ● Upon request, generates follow-up form letter to vendor ● Provides computer terminal access to receiving, medical supply, and finance

manual entry of the PR in the purchasing system and eliminates the time required to deliver the paper PR to the base contracting office. Also, with manual and first generation purchasing systems, buyers were answering telephone inquiries on purchase order status and item deliveries. BCAS eliminates these interruptions by providing the base supply computer with PR and delivery status files. This feature also has reduced leadtimes and improved follow-up support.

The various interfaces designed into BCAS that provide interoperability with other base-level systems are illustrated in Figure 4-2. The BCAS minicomputer exchanges requirement and PR status data through electronic interfaces with the

base supply, civil engineering, and commissary computers. It currently exchanges obligation and payment data with the comptroller computer via tape exchange but an electronic interface is planned. Computer terminal access to the PR and delivery status files in BCAS is provided to medical supply, base receiving, and comptroller personnel.

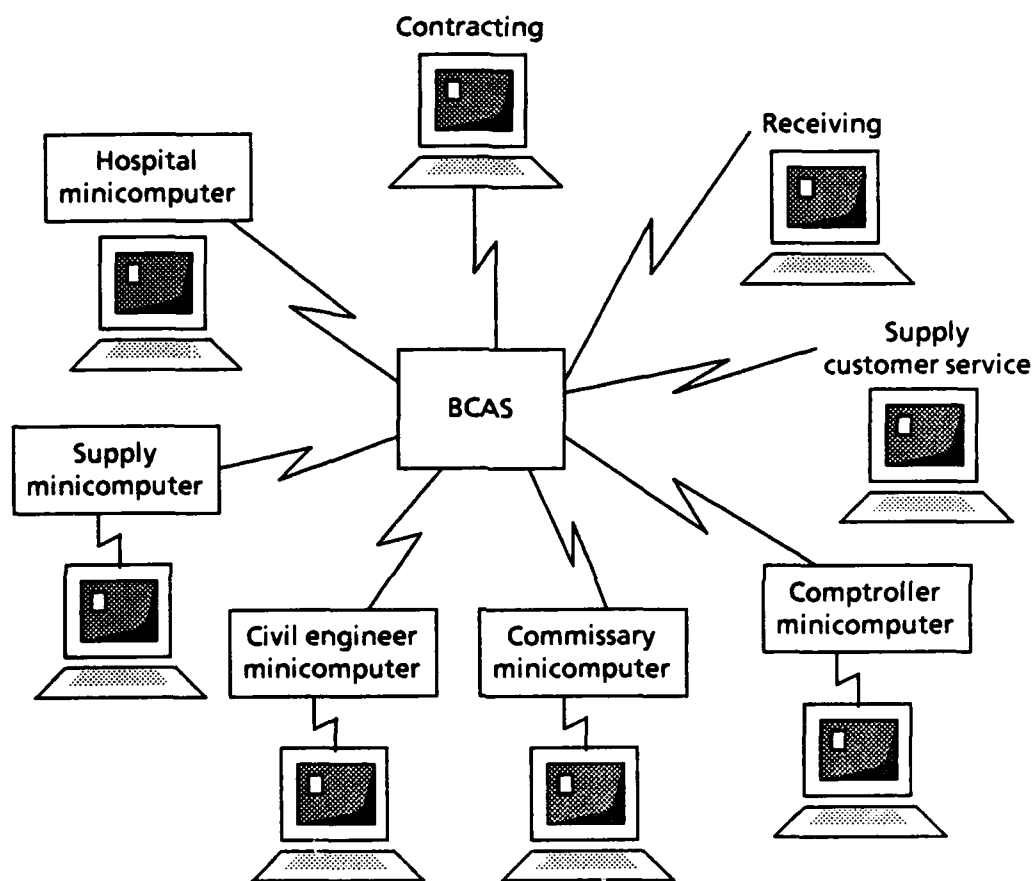


FIG. 4-2. BCAS INTEROPERABILITY

As an example of how operations can be improved through procurement automation, electronic receiving documents in BCAS has eliminated the printing, mailing, and filing of hard copy receiving documents. Receiving personnel now have terminal access to BCAS and check newly arrived shipments against BCAS's electronic files.

Although BCAS has considerable interoperability and data sharing capabilities at the base level, its current data element design limits data sharing with other procurement systems. For example, BCAS uses locally assigned

contractor codes to identify vendors in source files, performance files, and debarred/suspended files. Until standard contractor identifiers are used, it will be difficult to share source or performance data with other Air Force or DoD procurement systems. OSD should encourage adoption of data element standards. The Air Force recognizes this problem and is moving to adopt the DoD standard Commercial and Government Entity (CAGE) codes.

One shortcoming in BCAS is the inability to write solicitations/contracts. Some large base and regional contracting offices require contract writing capability and, on their own initiative, have installed either AFSC's DPCI or commercial, off-the-shelf software such as Compusearch's FARA system. These contract writing systems do not integrate well with BCAS processes and can only be viewed as interim fixes. The Air Force is considering installation of modified commercial contract writing software to solve this problem.

Another issue is that BCAS report generators are written in Common Business Oriented Language (COBOL). Several users have found the limitations of BCAS report writing unacceptable and have lobbied for a DBMS that will permit ad hoc queries and report writing. When BCAS was designed, the Air Force Standard System Center (AF/SSC) felt that a COBOL report writer was adequate. However, users at various Air Force commands request that a 4GL DBMS be integrated with BCAS to provide the base contracting offices with a modern management information system (MIS). Such user awareness of computer report generation capabilities is an example of the increased sophistication among some procurement automation users. However, when we compare BCAS report generation written in COBOL with the CIAPS punch card method for creating reports, progress has been considerable.

CONTRACT DATA MANAGEMENT SYSTEM

CDMS is the procurement system within AFLC's logistics systems modernization program. AFLC's current logistics systems consist of 1960s technology long overdue for modernization. An early 1970s attempt to modernize resulted in the Advanced Logistics System (ALS) that was terminated due to program and financial difficulties. The current AFLC systems modernization will replace antiquated systems with current technology while permitting the incorporation of emerging technologies in the 1990s. The modernization will provide

end-user computing via desktop microcomputers, on-line access to information stored in a modern DBMS, and distributed processing and communications connectivity between systems. Users will have immediate access to information not just within their function but information shared among logistics functions. Procurement system modernization is dependent on improvements to other AFLC logistics systems.

CDMS is in development and will replace AFLC's current but obsolete automated procurement systems, i.e., ADIS/J041, APS/J023, MBLS/J014, while absorbing the functions of its modern, capable contract writing system -- ACPS. Many of these systems are not accessible to users and produce batch-processed paper and microfiche reports that reflect inaccurate and out-of-date information. The primary objective of the development effort is to provide buyers and other users of procurement information access to timely, reliable information. The outcome of improved information access should be greater efficiency and effectiveness manifested in reduced PALT, better visibility of procurement actions in process, better funds tracking and program execution, and less paper documentation.

CDMS plans to automate the AFLC contract process from PR receipt and buyer assignment, through solicitation preparation, proposal evaluation, contract preparation and award, contract management, and eventual contract closeout. CDMS will permit buyers to select information and produce contract documents directly from the computer terminal via menu screens, prompts, and checklists. Data will be entered only once. Buyers will receive an electronic PR in their electronic in-basket with potential sources, price history, and technical data package all provided on their computer screen. Workload assignments will be managed by the supervisor who reviews buyer workload and, if necessary, makes reassignments. If the PR is incomplete, the item manager can be queried through electronic mail to make corrections or the PR may be electronically returned. Once a valid requirement is recognized by the buyer, the system will generate a synopsis for the buyer to review, revise, and release.

The system will be programmed to decide what type of solicitation is appropriate based on history, price estimate, and existing contract data. The buyer will review the recommended type of solicitation and, through a series of menu screens and prompts, prepare the document. This will include selection of clauses based on the specifics of the instant procurement. On-line access to procurement

regulations will be available for research. The system will use electronic signatures to approve or coordinate documents. Security procedures will control access to this and other system features.

CDMS is capable of accepting electronic proposals directly from the potential contractors. The buyer's workstation will have electronic spreadsheet capabilities. Through electronic mail, the buyer will be able to request assignment of a price analyst for more detailed proposal evaluation. Information on recent negotiated prices for a given part number can be obtained from stored price history. The system will automatically notify buyers of items with defective pricing or voluntary refund history. The system will automatically support price negotiation briefing graphics and preparation of price negotiation memoranda.

CDMS will generate on-line requests for Certificates of Competency from the Small Business Administration and automatically draft requests for Equal Employment Opportunity (EEO) clearance for mailing to the Department of Labor. Many automatic features will be included in CDMS to eliminate redrafting memoranda or letters for the procurement file.

At award, CDMS will automatically create DD Form 350/DD Form 1057 reports based on the procurement data previously entered during the preaward process. This information will be edited and electronically transmitted to the Air Force central DD Form 350 data system.

Information will be shared among AFLC's internal systems and with the external contract administration and disbursement systems. The CDMS relationship with these other systems is depicted in Figure 4-3. Requirements data will be passed from the Requirement Data Bank (RDB) and funds committed by the Central Procurement Accounting System (CPAS). CDMS will send RDB leadtimes, delivery schedules, and due-in data. It will notify CPAS of obligation amounts; pass due-in and schedule data to Weapon System Management Information System (WSMIS); pass contract award, price, and due-in data to Security Assistance Management Information System (SAMIS); pass due-in data to Stock Control and Distribution (SC&D); and provide Depot Maintenance Management Information System (DMMIS) and backorder status upon request. CDMS will also permit AFLC to fully comply with DoD's MILSCAP requirements thereby providing AFLC delivery, payment, and closeout status from DoD contract administration activities.

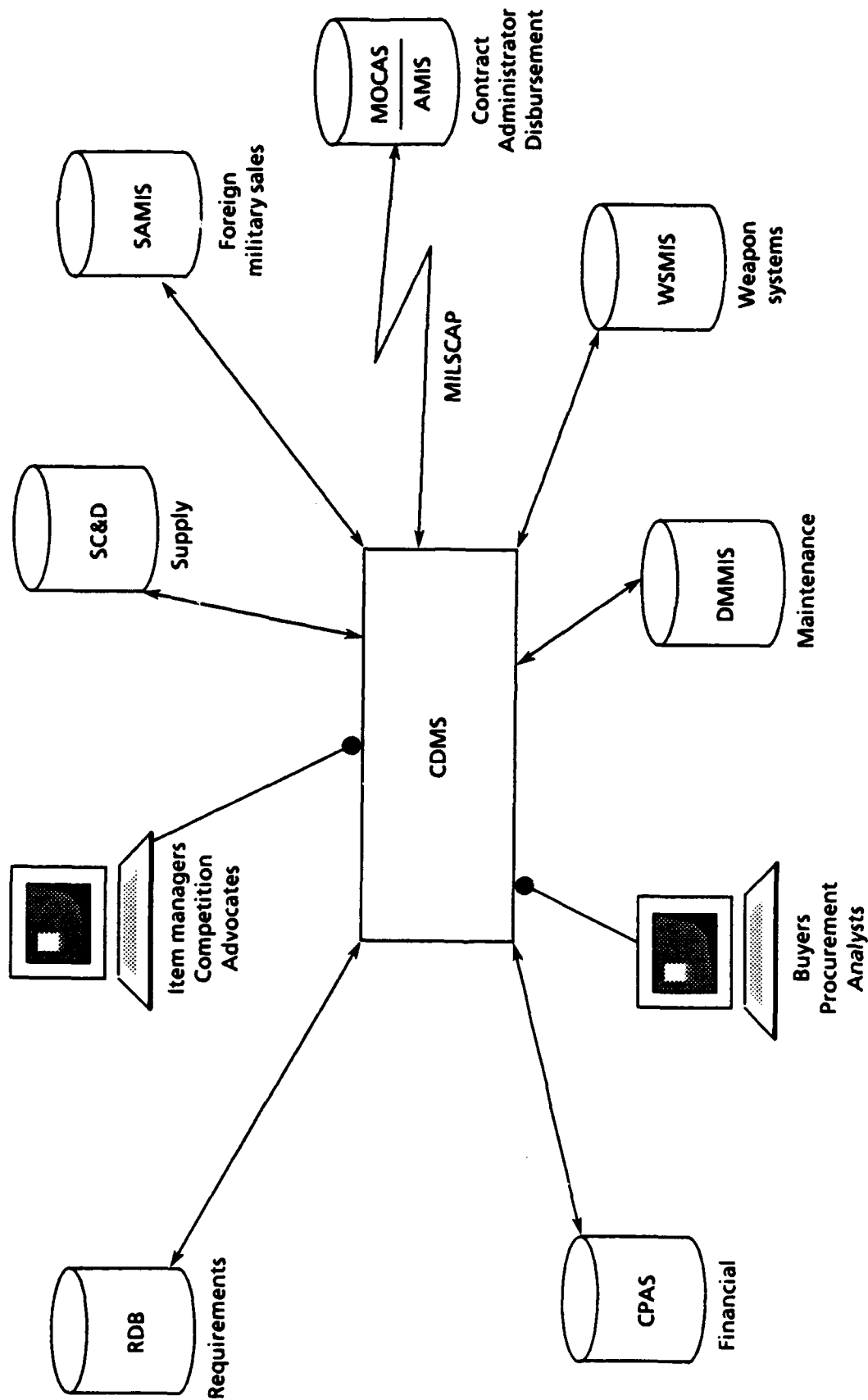


FIG. 4-3. CDMS SYSTEM INTERCONNECTIVITY

This highly integrated systems network, and not CDMS alone, will improve the AFLC procurement process.

CDMS development plans foresee a very impressive system, especially when viewed as part of the modern integrated automated logistics system AFLC is attempting. However, modernization of AFLC's information systems is a billion-dollar 10-year undertaking of which CDMS is a relatively minor player. Except for the ACPS, none of AFLC's current systems would be desirable if CDMS was cut back or canceled due to funding constraints. OSD needs to be aware of the economic and performance tradeoffs if CDMS capabilities are not fully developed in favor of automation improvements in other functional areas.

DLA PREAWARD CONTRACTING SYSTEM

DPACS is the DLA's interim modernization of procurement systems within the SAMMS. Of the central supply contracting modernization initiatives reviewed, DPACS is the only operational system. DPACS represents a considerable advancement over the mechanized paper reports and delivery/purchase orders produced by the SAMMS batch processes. DPACS is a transition step between the mechanized, outmoded SAMMS and the information efficient LSMP. DPACS capabilities approach electronic contracting with its electronic receipt of requirements, establishment of a paperless procurement file, and automated routing and coordination among the logistics functions supporting the procurement.

When DPACS is coupled with other DLA advances in decision support, EDI, and optical disk storage the system seems to be such a significant improvement that, from the buyer's perspective, little more needs to be done. What the buyer does not see is the duplication of data entry and storage, the lack of interoperability among systems and functions, and the problems of managing ever increasing data. LSMP will modernize information management in contracting and contract administration by establishing subject area databases to provide all DLA functions with the identical contracts information.

DPACS automates what were formerly "manual PRs" within DLA supply centers. SAMMS had previously automated its small purchase actions with SAMMS Automated Small Purchase System (SASPS). Requirements generated by SAMMS that did not meet SASPS criteria for automated small purchasing were processed manually and consumed 7 to 14 days of administrative processing before the PR

package reached the buyer's desk. Faster processing of requirements is one of the productivity improvements of DPACS. DPACS provides the buyer with an electronic PR together with vendor, price, and buy histories 1 day after requirement generation. As illustrated in Figure 4-4, DPACS downloads the requirement and all relevant data to a DLA Minicomputer Network System (DMINS) minicomputer where buyers can access it from their microcomputers. Information has been moved from the centrally controlled mainframe to a mini/microcomputer environment where on-line queries and reports are within control of the procurement function.

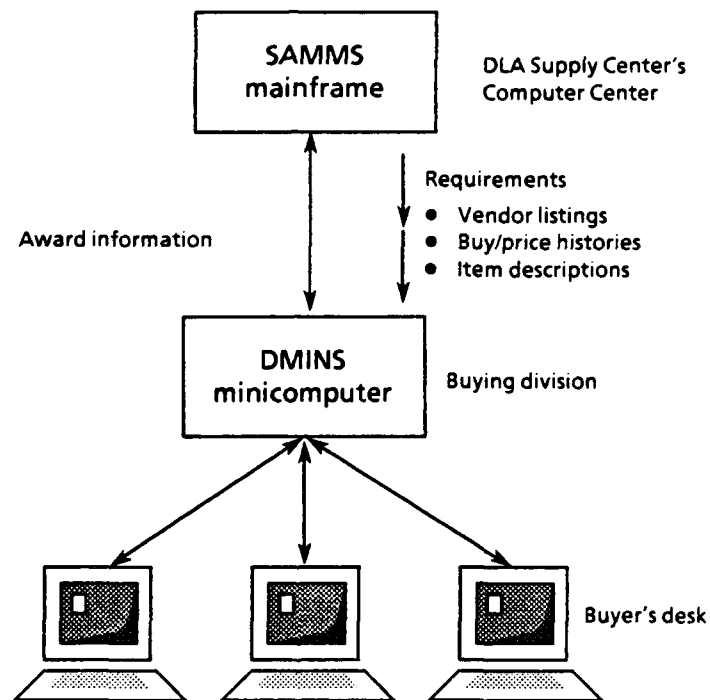


FIG. 4-4. SAMMS/DPACS MULTI-TIER ARCHITECTURE

As indicated in Table 4-8, the current version of DPACS, with Releases 1 through 3, provides automatic receipt, ranking, and assignment of PRs; management access to actions with on-line queries and reports; automated solicitation and award generation via semiautomated clause selection; and electronic document storage. With DPACS Release 4, DPACS will have an enhanced master vendor file, an automated procurement action numbering register, workload reporting, and electronic referral of PRs to technical and supply operations. Release 5 will allow the review committee, judge advocate general (JAG), and small business to electronically review the procurement action while the solicitation

document is being prepared. Also, DPACS will provide intelligent clause selection and document archival. Multiple PRs can be combined into one solicitation and multiple solicitations can be combined into one award document. Release 6 will enhance the automated synopsis feature, provide automated milestone calculations for acquisition planning, and permit set-aside and option quantity awards on contract modifications.

TABLE 4-8

DLA PREAWARD CONTRACTING SYSTEM

Releases 1 – 3 IOC: October 1987	● Electronic receipt, prioritization, and assignment of PRs ● On-line vendor, price, and description data ● Semiautomated clause selection ● Laser printing of solicitation/award documents ● On-line help screens ● On-line action tracking
Release 4 IOC: September 1988	● Enhanced master vendor file ● Automated procurement action numbering ● Workload reporting ● Electronic PR referral to technical or supply operations ● On-line abstracts of previous buys
Release 5 IOC: December 1988	● Electronic review and approval by JAG, small business, and review committee ● Intelligent clause selection ● Document archival ● Multiple PR-solicitations to one award ● Buyer's assistant for bid/vendor evaluation
Release 6 IOC: February 1989	● Enhanced automated synopsis ● Automated planning milestone calculations ● Automate set-aside and option awards ● Electronic signature facsimile ● Pricing assistant for price analysis

Note: IOC = initial operational capability.

The basic DPACS system (Releases 1 through 3) was tested at the DISC in a prototype buying branch from August 1986 to October 1987. The buyers in this branch were not preselected to participate in the test. Although the prototype test had its share of problems, the final results were very well received at DISC and

DPACS will be implemented at all DLA supply centers. It is reported by the program manager that DPACS has improved the morale of buyers who had been frustrated by manual PR processing. Procurement automation might have unforeseen secondary benefits in personnel development and retention.

DPACS is changing the way DLA does business. The following examples illustrate supplementary benefits provided by electronic contracting.

- *Automatic synopsis generation.* Under the manual SAMMS process, a solicitation synopsis was not issued until after the PR had been received and the synopsis had been written by the buyer. With DPACS, as soon as a requirement has been established, DLA can prepare an off-the-shelf synopsis to match the procurement and transmit it electronically to the CBD in Chicago. This short cut will save weeks of PALT.
- *Uninterrupted procurement processing.* Because of the DPACS architecture shown in Figure 4-4, buyers are not affected by mainframe downtime. If the central processing unit (CPU) is down, the buyer using DPACS can still work the PRs because they can obtain information from the DPACS minicomputer, and can issue solicitations and awards. Since the maintenance downloads requirement data daily, vendor data weekly, and price data weekly, the buyer always has the necessary information and tools to accomplish the job.
- *On-line edits and validations.* The on-line edits and validations of buyer entries provided by DPACS is far more efficient than the overnight batch processing using the SAMMS system. This on-line feature saves 2 days of PALT time.

Now that DPACS is being installed throughout the DLA supply centers, two problems have occurred. First, the minicomputer is undersized for the many buyers who may try to access it at one time. DLA plans to either install upgraded minicomputers (Gould NP-1) or go to a multi-tiered architecture. Secondly, DPACS needs a chance to stabilize and for documentation and training to catch up with its overly ambitious installation schedule. In time both of these problems will be corrected.

INTEGRATED PROCUREMENT SYSTEM

IPS is the AMC's planned modernization of the procurement subsystems within the CCSS. IPS will provide state-of-the-art automated acquisition for AMC's major subordinate commands. IPS will reduce leadtime, increase productivity, and provide an MIS. It is planned that an IPS workstation will provide virtually paperless

processing, electronic contract files, word processing, office automation tools, spreadsheet, graphics, help features, on-line queries, and external interfaces to other systems through the DDN. The time table planned for IPS development is shown in Table 4-9.

TABLE 4-9
INTEGRATED PROCUREMENT SYSTEM

IPS Phase I Presolicitation IOC: 1990	● Electronic receipt of PWDs from CCSS's MARVS ● Consolidate multiple PWDs ● Establish standard milestones of buy action ● Establish buyer's task checklist ● Route requirements to the technical loop for coordination: quality assurance, transportation, packaging, safety, security, and engineering ● Route requirements to acquisition planning
IPS Phase II Solicitation IOC: 1991	● Replace PADDs automation of draft/final solicitations ● Automate review and approval of solicitation
IPS Phase III Evaluation/Award IOC: 1991	● Automate abstract of offers ● Automate offer evaluation process including contractor responsibility determinations ● Automate award review and approval process ● Automate the award process
IPS Phase IV Contract Administration IOC: 1992	● Closeout

Note: IOC = initial operational capability.

Information systems planners at AMC have identified the following deficiencies in procurement that IPS is targeted to solve:

- Excessive leadtime for routing requirement documents
- Manual analysis required for procurement planning
- Inefficient routing of contractual/financial data
- Excessive leadtime required for creation, review, and approval of contracting actions.

IPS is an excellent example of automated DoD procurement moving toward total electronic contracting. AMC had experimented with electronic contracting at Communications-Electronics Command (CECOM) with a project called Command Automated System for Procurement (CASPR). Although CASPR demonstrated paperless procurement packages successfully, lack of integration with CCSS caused duplicate data entry and data storage. IPS succeeds CASPR and has full integration and data sharing with all the CCSS logistics functions.

IPS will electronically post new requirements, called PWD, in the buyer's electronic in-basket as they are received from CCSS. A series of menus and screens will permit the buyer to read incoming mail, tasks, and electronic folders. The actions required to complete a procurement will be selected from menus and screens. One electronic copy will be maintained and shared with authorized users.

The MARVS application within the CCSS preaward module will be retained when IPS is developed. MARVS permits on-line entry of requirements by requiring offices. It will electronically generate and transmit the PWD to IPS where technical data and other information will be electronically requested from responsible offices. The building of the complete technical data and procurement package is scheduled, controlled, and coordinated through IPS. The following functions will be electronically tied to the IPS requirement coordination process: quality assurance, packaging, safety, security, transportation, value engineering, acquisition method screening, and mobilization planning.

IPS will access information contained in the following CCSS databases:

- SABL
- NSN Master Data Record (NSNMDR)
- Deficiency Reporting System
- Procurement history (vendor files)
- Material acquisition and delivery (MAD) files
- MILSCAP files.

IPS will also support procurement planning and procurement package development in the following areas:

- Determination of PALT based on history
- Development of independent Government cost estimate
- Justification and approval (J&A) preparation
- Small business office coordination
- Presolicitation synopsis preparation and transmission
- Bidder's list generation from SABL in CCSS
- Government-furnished property requirements.

The following coordination and review processes will be electronically performed in IPS:

- Technical review of the PWD
- Buyer review of the procurement package
- Review of proposals by technical and pricing personnel
- JAG reviews
- Small business review.

IPS will absorb the functions of the PADDS which is AMC's current contract writing system. It will continue to generate solicitation and award documents, select contract clauses, and obligation records upon award.

Also, IPS plans to maintain the following electronic data exchanges:

- CBD transmission of solicitation synopsis
- Wage determinations to the Department of Labor
- Proposal from contractors
- Award documents to contractors.

The major benefit of IPS will be better use of buyers. Instead of being burdened with paper processes, buyers will have more time to plan and negotiate.

MECHANIZATION OF CONTRACT ADMINISTRATION SERVICES

MOCAS automates the postaward administration of contracts assigned to the nine DCASRs. MOCAS automates not only contract management from the contracting officer's perspective, but also support of engineering, production, quality assurance, finance, property, and transportation aspects of contracts delegated to DCAS for administration and payment. MOCAS is the source of data for contract actions, delivery schedules, shipments, obligations, payments, and closeout status provided to buying, payment and receiving activities through MILSCAP transactions.

Each DCASR runs its own MOCAS system centered around a mainframe computer that provides hard copy report and query access to supported functions. Two versions of MOCAS currently exist. In the latest version, some of the system functions have been converted to operate in an on-line, real-time mode providing users current information at their terminals.

A contract administrator is currently provided with two hard copy reports, the ACO Alert and the Contract Administrative Record (CAR). The ACO Alert signals that a certain action is required or that a specified event has occurred, e.g., physical completion of a contract. The CAR is an abstract of the contract including all modifications, deliveries, and payments and has until recently been the contract administrator's primary source of MOCAS information. As new contracts are received for administration and payment, they are abstracted into MOCAS and an individual contract CAR printout is provided the next day to the ACO team. At the end of the monthly cycle a complete contract inventory is printed out. Each ACO team must look through CAR printouts of up to 900 pages to find individual contract abstracts. The consolidated CAR reports represent an end of month position, although at DCASRs with the enhanced MOCAS version, detailed line item queries can be made on-line up to 5 hours per day and individual CAR reports can be requested for overnight batch processing and printing.

When MOCAS was modernized to provide on-line, real-time processing, the ACO Workstation was developed to provide CAR information directly to the contract administrator. Selected CAR data is downloaded to a microcomputer so the contract administrator can personally select, sort, and print required data. Contract administration will be the first DCAS function to be automated under the Contract

Management Paperless Automated Support Systems (COMPASS) project. Eventually, DCAS plans to provide COMPASS workstations to industrial specialists, property administrators, etc., to give them access to their data.

The ACO Workstation speeds the transition to a paperless contracting environment by eliminating paper copies of ACO Alerts and CAR printouts, creating an electronic file capability, setting automated ACO team workload priorities, and providing automated data extraction. The workstation will initially download contract summary and eventually detailed line item or delivery data. Through application programs that give the contract administrator control of the data, selections can be made from menu-driven screens. Although not currently programmed, it is planned that the ACO Workstation will provide ACO teams with letter generation and contract modification writing capabilities.

One important improvement provided by the ACO Workstation is the contract administrator's ability to request only that contract information required. Under the old MOCAS batch processing, all CAR data, whether needed or not, was printed out in lengthy reports.

The ACO Workstation's two Inquiry Menus, shown as a consolidated example in Figure 4-5, illustrate the user friendliness and versatility programmed into the workstations. With subsequent screens, the contract administrator can tailor the query to select contracts that meet specified parameters. With a series of keystrokes, the contract administrator can gain access to data at his or her terminal. Help screens are also available.

An important architectural feature of systems such as the ACO Workstation, is that downloading functional data to mini- or microcomputer systems removes ad hoc query transactions from mainframe computer processing. As MOCAS is designed, the payment process has first priority. With the advent of the Prompt Payment Act, nonpayment queries are restricted to a few hours per day. Complicated queries that might consume too much computer time are not permitted. The ACO Workstation directs queries to data at the microcomputer, avoiding queries to the mainframe.

Although MOCAS is an outmoded, paper-intensive mainframe system, DCAS and Defense Systems Automation Center (DSAC) have had the most experience in developing automated contract administration systems. They will eventually solve the MOCAS problems. After reviewing the current MOCAS and its planned

INQUIRING MENU																	
A VIEW BY PART, SEC, KIND, TYPE B VIEW BY CONTRACT NUMBER C VIEW BY OVERAGE CONTRACTS D VIEW BY CAGE OR CONTRACTOR E VIEW BY PROD. SURVEILLANCE F VIEW BY BUYING ACTIVITY G VIEW BY DOLLAR AMOUNT H VIEW BY INDUSTRIAL SPECIALIST I VIEW COMPLETED PRODUCTION J INPUT USER DEFINED VARIABLES K SPECIAL CONTRACT PROVISIONS L VIEW BY CONTRACTOR CODE M VIEW BY DEPARTMENT CODE N VIEW BY CONTRACTOR/R9 O VIEW BY PROGRESS PAYMENTS P STANDARD ACO CODED REMARKS Q VIEW BY CLASSIFICATION R ... VIEW BY SECONDARY CONTRACTOR S FIN. COMP. DATE (PROPOSED) T NORM ANALYSIS U ... VIEW BY BUYING ACT/CONTRACTOR V ... GOV'T/CONTR/UNKNOWN DELAYS W TYPE OF INSTRUMENT CODE X TO BE DEVELOPED Y TO BE DEVELOPED	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; text-align: center;">■</td> <td style="width: 10%; text-align: center;">■</td> <td style="width: 50%;">INQUIRIES</td> <td style="width: 30%;"></td> </tr> <tr> <td style="text-align: center;">■</td> <td style="text-align: center;">■</td> <td>LETTER GENERATION</td> <td></td> </tr> <tr> <td style="text-align: center;">■</td> <td style="text-align: center;">■</td> <td>PENDING CONTRACTOR ALERTS</td> <td></td> </tr> <tr> <td style="text-align: center;">■</td> <td style="text-align: center;">■</td> <td>MODIFIED CONTRACTS</td> <td></td> </tr> </table>	■	■	INQUIRIES		■	■	LETTER GENERATION		■	■	PENDING CONTRACTOR ALERTS		■	■	MODIFIED CONTRACTS	
■	■	INQUIRIES															
■	■	LETTER GENERATION															
■	■	PENDING CONTRACTOR ALERTS															
■	■	MODIFIED CONTRACTS															

FIG. 4-5. ACO WORKSTATION INQUIRY MENUS

enhancements, AMC decided to test MOCAS at its three ARPROs. If these tests are successful it is feasible that the Navy could also adopt MOCAS rather than develop a separate contract administration system.

PROCUREMENT EARLY DEVELOPMENT

PED Phase I is a central supply small purchase system currently under development by NAVSUP Fleet Material Support Office (FMSO) for the Navy's two ICPs, ASO, and SPCC. Both ASO and SPCC are conducting operational tests of PED. As indicated by its name, PED Phase I is a precursor to the improvements envisioned by FMSO's UICP Resystemization Project. Since PED will be integrated with the central logistics system, it will benefit from the Resystemization Project's computer hardware and system modernization.

PED Phase I, scheduled for formal delivery to the ICPs in the Spring of 1989, is an automated small purchase (\$25,000 or less) system with limited solicitation preparation capabilities. Phase II is a follow-on procurement automation effort planned as a replacement large purchase system for UICP's Purchase system. UICP-Purchase is being redesigned to correct deficiencies in buy consolidation, workload queuing, contract writing, updating procurement records, and functional integration. The UICP-Purchase concept will build upon the electronic file folders, electronic interfaces, and electronic facsimile signatures designed into PED Phase I.

PED Phase I provides buyers and supporting ICP functional specialists with a paperless environment through creation of electronic file folders that can be accessed and updated from computer terminals via menu-driven screens. From these screens, the buyer can control establishment of buy requirements, prepare solicitation documents, evaluate offers, and award procurement actions.

The electronic file folder is created upon automated receipt of a requirement from the UICP system. Support data for item description, source, vendor history, and price history for a given item are loaded into the PED database upon creation of an electronic file folder. An automated referral process lets the buyer control electronic file folder transmission to small business, packaging, breakout, finance, and technical specialists for input or correction of missing or erroneous information. File folders in the referral process are suspended for update/correction based on automatic edits and validations. The PED electronic file folder process allows for cancellation, correction, and consolidation of requirements through a series of menu-driven screens.

Once an electronic file folder is complete, the buyer can initiate a small purchase solicitation generation process by accessing a menu-driven screen. The system will check to see if a solicitation exists for the file folder. If none exists, the buyer will be asked to review predetermined indicators [free on board (FOB) point, small business set-aside, document type, and fast pay] based on the details contained in the file folder and make any adjustments. The system will also automatically set the offer response date, required delivery date, and synopsis requirement. The solicitation process also prepares line-item and bidder lists, selects clauses, and releases the solicitation for printing. Due to the small purchase nature of PED Phase I, only RFQs can be generated.

Upon receipt of offers, the buyer accesses formatted screens to input offer data to the electronic file folder of subject buy. The offeror's quote number, offer date, and responsiveness may be input. Unit price and delivery details can be input through screens that are designed with flexible displays for alternate items, quantities, packaging, and economic order quantity. Following entry of all offer data, an offer summary is prepared and printed for award determination.

The award process presents to the buyer data from each offeror contained in the electronic file folder. The buyer can scroll through the display to select the most advantageous offer. Upon selection of an offer for award, PED compares the details of the buy requirement against the details of the selected offer. If proposed award fails this requirement validation, the buyer is shown a comparison screen. The discrepancy must be corrected before award can proceed. The award is actually made from a terminal screen but only by a contract officer authorized to make awards at the award value. Once an award has been made, the procurement action is sent with an electronic signature to a central printing facility.

PED Phase I has been designed to minimize data entries by sharing data with other UICP processes and automatically setting indicator flags based on dollar values, item characteristics, sources, etc. There are also many automatic edits and validations programmed to control data quality. Another important PED feature is its control over authorized updates and access to source-selection-sensitive screens.

Very commendable features are the paperless contracting environment and electronic document transmission capabilities designed into PED. They will permit a gradual expansion of capabilities towards electronic solicitations, offers, and awards as data exchange technology warrants. However, MILSCAP data exchanges with contract administration activities are limited to DCAS's MOCAS with no exchanges with Air Force's AMIS.

An issue is use of a single-tier architecture in the UICP-PED system design. The PED database runs on the UICP mainframe. Since procurement data is not distributed to a dedicated procurement computer system, PED is dependent on UICP mainframe computer availability. A multi-tier system architecture where procurement data files are downloaded to mini/microcomputers would be preferred since it gives procurement more control over its data and processing alternatives if the mainframe fails.

STANDARD ARMY AUTOMATED CONTRACTING SYSTEM

SAACONS is primarily an installation-level contracting system using interactive, menu-driven prompts to assist buyers in requirements analysis, source identification, solicitation preparation, bid evaluation, contract award, contract administration, and closeout. SAACONS uses a customized off-the-shelf software, the UNIX operating system, and Army standard Sperry 5000/80 minicomputer hardware. The use of a UNIX operating system means SAACONS is transportable to other computers using this de facto standard.

SAACONS supports small and large purchasing; prepares solicitation documents; tracks purchase requests from initial receipt through postaward; and accepts customer-generated status requests, cancellations requests, and stock number changes. Through its DBMS, SAACONS maintains purchase histories, price histories, vendor histories, ship-to addresses, item records, and PR records. Of the installation-level systems reviewed, SAACONS has the broadest capabilities but is not capable, at this time, of interfacing with other local systems. This shortcoming will be remedied when SAACONS can interface with the Army's standard logistics, depot, and financial systems. The current and planned SAACONS capabilities are indicated in Table 4-10.

The development of SAACONS has minimized risk by using proven hardware with portable, off-the-shelf software in order to field a basic but fully functional system quickly. SAACONS has successfully automated the manual work of the procurement clerk/typist and the buyer in Phase 1. SAACONS development and implementation has been very rapid, from concept in September 1985 to Phase 1 acceptance in May 1987 and Phase 2 in April 1988. SAACONS is not a true electronic contracting system. It does not replace paper documentation of the requirement or procurement file with electronic documents. Complete paperless processing may not be desirable in many operational-level contracting scenarios. At least having a paper trail permits a manual backup if the minicomputer fails.

Since Army installation contracting is very similar to Air Force base contracting, the Army considered adopting the Air Force BCAS as a possible automated procurement system. However, the Army decided to develop its own system because BCAS lacks a large purchase module, a contract writing capability, and an automated FAR text retrieval capability.

TABLE 4-10

STANDARD ARMY AUTOMATED CONTRACTING SYSTEM

Phase 1 (Implemented May 1987)	● Large contract module (limited) ● Small purchase module ● Reports module ● Automated FAR on-line search ● Limited contract administration module ● DBMS (4GL)
Phase 2 (Implemented April 1988)	● Improvements to Phase 1 capabilities ● Line item management ● Software ported to Sperry 5000/80 minicomputers
Phase 3 (Under development)	● Full contract administration module ● MIS module
Ongoing effort	● Integration with other Army-wide standard systems ▶ Standard Automated Integrated Logistics System ▶ Standard Depot Supply System ▶ Commercial Account Processing System

SAACONS approaches being a true Army-wide contracting system. It is not only scheduled for implementation at all Army installation contracting offices but all Army hospitals, AMC installation and depot support contracting offices, Army Corps of Engineers (COE) district offices, and Army Laboratory Command research contracting offices. The only Army contracting activities not scheduled to receive SAACONS are AMC's major subordinate commands — Aviation Systems Command; Troop Support Command; Tank and Automotive Command; Communications/Electronics Command; Missile Command; and Armament, Munitions, and Chemical Command. AMC's major subordinate commands primarily perform weapon system and central supply contracting. They are best supported by the planned customized IPS designed to interface with the high volume and integrated project management, financial, and logistics subsystems within AMC's CCSS.

SAACONS is the best candidate for a DoD standard automated system given its broad capabilities in small and large purchasing and its use of UNIX for transportability to other systems. As indicated by the software, bridges are being created to fit SAACONS within the COE system; its lack of interfaces is correctable.

However, it is doubtful a standard system is possible, or desirable, in the complex, highly integrated logistics and weapon systems contracting of AMC, AFSC, AFLC, DLA, NAVAIR, NAVSUP, etc.

GLOSSARY

ACASS	= Architect-Engineers Contract Administration Support System
ACO	= Administrative Contracting Officer
ACP	= automated contract preparation
ACPS	= Automated Contract Preparation System
ACS	= Automated Contracting System
ADIS/J041	= Acquisition and Due-In System
ADP	= automatic data processing
A-E	= Architect-Engineer
AF	= Air Force
AFB	= Air Force Base
AFFARS	= Air Force Federal Acquisition Regulation Supplement
AFCMD	= Air Force Contract Management Division
AFLC	= Air Force Logistics Command
AFOSR	= Air Force Office of Scientific Research
AFPRO	= Air Force Plant Representative Office
AFSC	= Air Force Systems Command
AF/SSC	= Air Force Standard System Center
AFSSDO	= Air Force Standard System Design Office
AI	= artificial intelligence
AID	= Automated Information and Documentation
ALC	= Air Logistics Center
ALS	= Advanced Logistics System
AMALGAMAN	= Amalgamated Management System

AMC	= Army Materiel Command
AMIS	= Acquisition Management Information System
ANSI	= American National Standards Institute
APADE	= Automation of Procurement and Accounting Data Entry
APS/J023	= Automated Purchase System
ARPRO	= Army Plant Representative Office
ASD(P&L)	= Assistant Secretary of Defense (Production and Logistics)
ASO	= Aviation Supply Office
BASIS	= Base and Station Information System
BCAS	= Base Contracting Automated System
BOSS	= Base Operations Support System
BPA	= blanket purchase agreement
CAD	= contract administrative data
CAGE	= Commercial and Government Entity
CAI	= computer-aided instruction
CAMIS	= Contract Administrative Management Information System
CAPS	= Commercial Account Processing System
CAR	= Contract Administrative Record
CAS	= contract administration services
CAS AIS	= Contract Administration System Automated Information System
CASPR	= Command Automated System for Procurement
CATS	= Contracting Automated Tracking System
CBD	= <i>Commerce Business Daily</i>
CCASS	= Construction Contractor Appraisal Support System
CCSS	= Commodity Command Standard System
CDMIS	= Contract Directorate MIS

CDMS	= Contract Data Management System
CECOM	= Communications-Electronics Command
CES	= Contractor Evaluation System
CIAPS	= Customer Integrated Automated Purchasing System
CICS	= Customer Information Control System
CIDS/J018	= Contracting Information Data System
COBOL	= Common Business Oriented Language
COE	= Corps of Engineers
COMPASS	= Contract Management Paperless Automated Support Systems
CONDIRAIS	= Contract Directorate Automated Information System
CPAS	= Central Procurement Accounting System
CPAR	= Contractor Performance Assessment Reporting
CPDS	= Contractor Profile Data System
CPFF	= cost plus fixed fee
CPU	= central processing unit
CRP	= Contract Research Program
CRT	= cathode ray tube
CSDA	= Central System Design Activity
D&F	= determinations and findings
DAITC	= Defense Applied Information Technology Center
DBMS	= database management system
DCA	= Defense Communications Agency
DCAA	= Defense Contract Audit Agency
DCAS	= Defense Contract Administration Service
DCASMA	= Defense Contract Administration Service Management Area
DCASR	= Defense Contract Administration Service Region

DCSC	= Defense Construction Supply Center
DD Form 250	= Material Inspection and Receiving Report
DD Form 254	= The Contract Security Classification Specification
DD Form 350	= Individual Contracting Action Report
DD Form 1057	= Monthly Contracting Summary of Actions \$25,000 or Less
DD Form 1155	= Orders for Supplies or Services/ Request for Quotation
DD Form 1547	= Record of Weighted Guidelines
DD Form 1861	= Contract Facilities Capital Cost of Money
DD Form 2222	= Short Form Research Contract
DDN	= Defense Data Network
DFAMS	= Defense Fuels Automated Management System
DFARS	= Department of Defense Federal Acquisition Regulation Supplement
DGSC	= Defense General Supply Center
DIPAC	= Defense Interdepartmental Procurement Automation Committee
DIPEC	= Defense Industrial Plant Equipment Center
DISC	= Defense Industrial Supply Center
DISMS	= Defense Integrated Subsistence Management System
DLA	= Defense Logistic Agency
DLSSO	= Defense Logistics Standards Systems Office
DMA	= Defense Mapping Agency
DMINS	= DLA Minicomputer Network System
DMMIS	= Depot Maintenance Management Information System
DoD	= Department of Defense
DOS	= Disk Operating System
DPACS	= DLA Preaward Contracting System

DPCI	= Distributed Processing for Contractual Input
DSAC	= Defense Systems Automation Center
EDI	= electronic data interchange
EEO	= Equal Employment Opportunity
E481	= Manpower Management System
EIS	= Executive Information System
FAR	= Federal Acquisition Regulation
FARA	= FAR Automated
FIRMR	= Federal Information Resource Management Regulation
FMS	= foreign military sales
FMSO	= Fleet Material Support Office
FOB	= free on board
FPAC	= Federal Procurement Automation Council
FPDS	= Federal Procurement Data System
4GL	= fourth generation language
GAO	= General Accounting Office
HQ	= headquarters
ICP	= inventory control point
IFB	= invitation for bid
IGN	= intelligent gateway network
IPS	= Integrated Procurement System
IOC	= initial operational capability
J001	= Procurement Management Reporting System
J&A	= justification and approval
JAG	= judge advocate general
LAN	= local area network
LSMP	= Logistics System Modernization Program

M3S	= Marine Standard Supply System
MADES	= Menu Assisted Data Entry System
MAD	= material acquisition and delivery
MARVS	= Material Acquisition and Requirements Validation System
MBLS/J014	= Mechanized Bidder's List System
MILSCAP	= Military Standard Contract Administration Procedures
MILSPETS	= Military Standard Petroleum System
MIPR	= Military Interdepartmental Purchase Request
MIRR	= Material Inspection and Receiving Report
MIS	= management information system
MOCAS	= Mechanization of Contract Administration Services
MODS & CLAIMS	= Modifications and Claims Module
MODELS	= Modernization of Defense Logistics Standard Systems
N/A	= not applicable
NAMTO	= Navy Acquisition Management Training Office
NARDAC	= Naval Regional Data Automation Command
NARS	= Navy Acquisition Regulation Supplement
NAVAIR	= Naval Air Systems Command
NAVDAC	= Naval Data Automation Command
NAVFACENG	= Naval Facilities Engineering Command
NAVPRO	= Navy Plant Representative Office
NAVSEA	= Naval Sea Systems Command
NAVSPAWAR	= Naval Space and Warfare Command
NAVSUP	= Naval Supply Systems Command
NFCS	= Navy Field Contracting System
NPD	= Northern Pacific Division
NRCC	= Naval Regional Contracting Center

NSC	= Naval Supply Center
NSN	= national stock number
NSNMDR	= National Stock Number Master Data Record
OCNR	= Office of the Chief of Naval Research
ONR	= Office of Naval Research
ONRR	= Office of Naval Research Residency
OSD	= Office of the Secretary of Defense
PADDS	= Procurement Automated Data and Document System
PALT	= procurement administrative leadtime
PAMUPS	= Procurement Automated Manpower Utilization and Projection System
PASR	= Procurement Action Status Report
PED	= Procurement Early Development
PHDB	= Price History Database
PHR	= procurement history record
PIF	= productivity improvement funds
PKQ	= Directorate of Contracting Systems
PMS	= Procurement Management System
P/N	= part number
PO	= purchase order
POPS	= Paperless Order Placement System
PR	= purchase request
PROLANS	= Plant Representative Office Local Area Network Solution
PWD	= procurement work directive
QA	= quality assurance
RADMIS	= Research and Development Management Information System
RDB	= Requirement Data Bank

RDBMS	= relational database management system
RFP	= request for proposal
RFQ	= request for quotation
SAACONS	= Standard Army Automated Contracting System
SABL	= Standard Automated Bidder's List
SADBU	= Small and Disadvantaged Business Utilization
SAIS	= Standard Automated Integrated Logistics System
SAMIS	= Security Assistance Management Information System
SAMMS	= Standard Automated Materiel Management System
SASPS	= SAMMS Automated Small Purchase System
SC&D	= stock control and distribution
SDSS	= Standard Depot Supply System
SERD	= support equipment requirement document
SF26	= Award/Contract
SF30	= Amendment of Solicitation/Modification of Contract
SF254	= Architect-Engineer and Related Services Questionnaire
SF1421	= Performance Evaluation (Architect-Engineer)
SFRC	= Short Form Research Contract
SPCC	= Ship Parts Control Center
SPEDE	= SAMMS Procurement by Electronic Data Exchange
SPLICE	= Stock Point Logistics Integrated Communications Environment
SPLICENET	= Stock Point Logistics Integrated Communications Environment Network
SPO	= system program office
SIS	= shipping instruction sheet
SYMIS/MM	= Shipyard Management Information System/MM

TAPS	= Terminal Application Processing System
TBD	= to be determined
TSO	= Time Sharing Option
TURFA	= Tracking Undefined Requirements and Funds for AFPROs
UADPS-SP	= Uniform Automated Data Processing System-Supply
UATS	= Undefined Action Tracking System
UCAMS	= Undefined Contract Action Management System
UCF	= uniform contract format
UICP	= Uniform Inventory Control Program
USAF	= United States Air Force
VDT	= video display tube
WESCOM	= Army Western Command
WP	= word processing
WSMIS	= Weapon System Management Information System

APPENDIX

DIRECTORY OF AUTOMATED PROCUREMENT SYSTEMS AND PROJECTS IN THE DEPARTMENT OF DEFENSE

INTRODUCTION

The Directory of Automated Procurement Systems and Projects in the Department of Defense was developed to provide an inventory of systems, projects, and capabilities of Military Services and Defense agencies as a baseline for studying the overall direction of DoD procurement automation. This inventory will also be useful to the Defense Interdepartmental Procurement Automation Committee (DIPAC) and the Services/agencies to let them know capabilities that are available elsewhere when they contemplate future automation projects.

The idea for the inventory is based on a September 1981 publication by the Office of Federal Procurement Policy's Federal Procurement Automation Council (FPAC), entitled *Compendium of Automated Procurement Systems in Federal Agencies*. The FPAC inventory attempted to identify all civil and defense systems in existence in 1981. We have limited our directory to DoD systems that were operational or in development as of mid-1988. In some cases we have updated descriptions of systems identified by the FPAC study, but many of the newer systems are identified here for the first time. Several DoD systems that were cited by the FPAC are more properly considered supply management and property management systems and are not within the DoD procurement function. This inventory of DoD automated procurement systems defines the function of procurement systems more narrowly, as being from receipt of the requirement through contract close-out. However, in cases in which several functions, including procurement, are integrated into one system, we identify the total system but describe only the procurement subsystem.

Information was collected for this directory by informal telephone interviews and site visits. The FPAC listing was prepared by written responses to formal questionnaires distributed to all civil and defense services and agencies.

This inventory only identifies automated procurement systems and projects recognized by Service/agency or Command-level authorities. It does not attempt to catalog procurement automation initiatives that do not have application beyond an individual base or organization. Although Service/agency and Command-sponsored standardization efforts have slowed the proliferation of automated procurement systems, many local initiatives still exist. Identification of those local initiatives was deemed futile since they have no higher level program and budgetary support. While many of those initiatives have merit and could be used by other activities, their identification and description are best left to other forums such as contracting automation fairs and conferences.

TYPES OF CONTRACTING SUPPORTED

We have organized systems by the type of contracting they support. The following listing shows the types of contracting categories (bold face), the major contracting commands/activities (bullets), and the systems (arrows) and, if applicable, significant subsystems (dashes) with each system or subsystem description.

Each system or project is listed in alphabetical order.

Basic Research Contracting

- **Air Force Office of Scientific Research (AFOSR)**
 - ▶ **Automated Information and Documentation (AID) System** — page A-14
- **Army Research Office and Laboratory Commands**
 - ▶ **Standard Army Automated Contracting System (SAACONS)** — page A-55
- **Office of Naval Research (ONR)**
 - ▶ **Research and Development Management Information System (RADMIS)** — page A-51
 - **Contract Research Program (CRP)** — page A-29
 - **Contractor Profile System (CPS)** — page A-33

Weapon System Contracting

- **Air Force Systems Command (AFSC)**

- ▶ **Acquisition Management Information System (AMIS) – page A-9**
 - **Distributed Processing for Contractual Input (DPCI) – page A-37**
 - **Procurement Management System (PMS) – page A-50**
- ▶ **Contractor Performance Assessment Reporting (CPAR) – page A-32**

- **Army Materiel Command (AMC)**

Current systems:

- ▶ **Commodity Command Standard System (CCSS) – page A-19**
 - **Procurement Automated Data and Document System (PADDS) – page A-47**
 - **Procurement Automated Manpower Utilization and Projection System (PAMUPS) – page A-48**

Future systems:

- ▶ **Integrated Procurement System (IPS) – page A-39**
- **Naval Air Systems Command (NAVAIR)**
 - ▶ **NAVAIR Procurement Automation – page A-44**
- **Naval Sea Systems Command (NAVSEA)**
 - ▶ **Contract Directorate Automated Information System (CONDIRAIS) – page A-25**
 - ▶ **Contractor Evaluation System (CES) – page A-31**
 - ▶ **Procurement Action Status Report (PASR) – page A-46**
- **Naval Space and Warfare Command (NAVSPAWAR)**
 - ▶ **Contract Directorate MIS (CDMIS) – page A-26.**

Central Supply Contracting

- **Air Force Logistics Command (AFLC)**

Current systems:

- ▶ **Automated Contract Preparation System (ACPS) – page A-12**
- ▶ **Acquisition and Due-In System (ADIS/J041) – page A-8**
- ▶ **Automated Purchase System (APS/J023) – page A-15**
- ▶ **Mechanized Bidder's List System (MBLS/J014) – page A-42**
- ▶ **Manpower Management System (E841) – page A-40**
- ▶ **Contracting Information Data System (CIDS/J018) – page A-30**
- ▶ **Undefinitized Contract Action Management System (UCAMS) – page A-59**

Future system:

- ▶ **Contract Data Management System (CDMS) – page A-24**

- **Army Materiel Command (AMC)**

Current systems:

- ▶ **Commodity Command Standard System (CCSS) – page A-19**
 - **Procurement Automated Data and Document System (PADDS) – page A-47**
 - **Procurement Automated Manpower Utilization/Projection System (PAMUPS) – page A-48**

Future system:

- ▶ **Integrated Procurement System (IPS) – page A-39**

- **Defense Logistics Agency (DLA)**

- ▶ **Standard Automated Material Management System (SAMMS) – page A-56**
 - **DLA Preaward Contracting System (DPACS) – page A-38**
 - **SAMMS Automated Small Purchase Systems (SASPS) – pages A-52 and A-53**

- ▶ Contracting Automated Tracking System (CATS) – page A-27
- ▶ Construction Contractor Appraisal Support System (CCASS) – page A-20
- ▶ Modifications and Claims Module (MODS & CLAIMS) – page A-43
- ▶ Standard Army Automated Contracting System (SAACONS) – page A-55
- Naval Facilities Engineering Command (NAVFACENG)
 - ▶ Amalgamated Management System (AMALGAMAN) – page A-10.

Contract Administration

- AFSC's Air Force Contract Management Division (AFCMD)
 - ▶ Acquisition Management Information System (AMIS) – page A-9
 - Contract administrative data (CAD) module – page A-21
 - Tracking Undefined Requirements and Funds for Air Force Plant Representative Offices (AFPROs) (TURFA) – page A-57
- Defense Contract Administration Service (DCAS)
 - ▶ Mechanization of Contract Administration Services (MOCAS) – page A-41
 - Contract Management Paperless Automated Support Systems (COMPASS) – page A-28
 - Contractor Profile Data System (CPDS) – page A-34
- NAVAIR's Navy Plant Representative Offices (NAVPROs)

Current system:

- ▶ Contract Administration System Automated Information System (CASAIS) – page A-22

Future system:

- ▶ Plant Representative Office Local Area Network Solution (PROLANS) – page A-45
- Office of Naval Research Residency (ONRR)
 - ▶ Contract Administrative Management Information System (CAMIS) – page A-23

- SAMMS Procurement by Electronic Data Exchange (SPEDE) – page A-54

- Naval Supply Systems Command (NAVSUP)

Current systems:

- ▶ Uniform Inventory Control Program (UICP) Purchase System – page A-58

Future system:

- ▶ Procurement Early Development (PED) – page A-49

Base/Operational Contracting

- Air Force Bases

- ▶ Base Contracting Automated System (BCAS) – page A-17

- Army Posts, Camps, and Hospitals

- ▶ Standard Army Automated Contracting System (SAACONS) – page A-55

- DLA Centers and Depots

- ▶ Base Operations Support System (BOSS) – page A-18

- Marine Corps Logistic Bases

Current system:

- ▶ Base Contracting Automated System (BCAS) – page A-17

Future system:

- ▶ Automated Contracting System (ACS) – page A-13

- Naval Supply Centers, Naval Regional Contracting Centers (NRCC), Naval Shipyards, and Navy Field Contracting System (NFCS) (Large Activities)

- ▶ Automation of Procurement and Accounting Data Entry (APADE) – page A-16.

Construction Contracting

- Army Corps of Engineers (COE)

- ▶ Architect-Engineers (A-E) Contract Administration Support System (ACASS) – page A-11

- **Army Plant Representative Offices (ARPROs)**

- ▶ **Modernization of Contract Administration Services (MOCAS) – page A-41.**

Specialized Contracting

- **Defense Communications Agency (DCA)**

- ▶ **DCA Procurement Automation – page A-36**

- **Defense Fuels Supply Center**

- ▶ **Defense Fuels Automated Management System (DFAMS) – page A-35.**

System/Project Name: Acquisition and Due-In System

Acronym: ADIS/J041 **Organization:** AF, AFLC

Program Office: HQ AFLC/PMXS
Wright-Patterson
AFB, Ohio

Point of Contact: Scott Burk

Telephone: (513) 257-4851/Autovon: 787-4851

Status: Operational

Parent System: N/A

Predecessor: N/A

Successor: CDMS

Function: Purchase request (PR) and contract tracking, contract summary reports, due-in status, and procurement history

Type of Contracting: Central supply

Sites Planned: 5

Sites Operating: 5

Developed By: HQ AFLC/SC and PM

Maintained By: Sacramento ALC/SCD

Hardware: CDC Cyber 70

Application Software: COBOL

DBMS: None

Operating Mode: Batch

Operating System: Scope

System Integration: Tape interfaces with CIDS/J018, E841, APS/J023, MBLS/J014, ACPS, and numerous other systems.

Description: Provides status of PRs in process and current status of contracts after award. Status of contract line items scheduled for delivery is used to compute requirements by national stock number (NSN). Procurement history record (PHR) provides AFLC buyers price and buy history for a given NSN. On-line query is provided through CIDS/J018 system.

Planned Enhancements: Migration to AMDAHL mainframe

Emerging Technologies: None

System/Project Name: Acquisition Management Information System

Acronym: AMIS **Organization:** AF, AFSC **Program Office:** AFSC/PKQ

Point of Contact: Tracey E. Bailey **Telephone:** Autovon: 785-3992

Status: Operational **Parent System:** N/A

Predecessor: Manual **Successor:** N/A

Function: Preaward contract management, small and large purchase contract writing, contract administration and disbursement

Type of Contracting: Weapon system acquisition and R&D

Sites Planned: 38 **Sites Operating:** 38

Developed By: AFSC/PKQ **Maintained By:** AFSC/PKQ

Hardware: NAS 8063

Application Software: COBOL

DBMS: System 2000

Operating Mode: On line and batch **Operating System:** MVS-XA
with TSO/CICS

System Integration: Tape interfaces with AFLC's D220 and ADIS/J041 systems. Also, interfaces with HQ AFSC's Executive Information System (EIS) and AF's DD Form 350 system [Procurement Management Reporting System (J001)].

Description: Integrated contract management system with contract administration and disbursement capabilities

Planned Enhancements: Distributed fourth generation language (4GL) databases, improved system integration

Emerging Technologies: None

System/Project Name: Amalgamated Management System

Acronym: AMALGAMAN **Organization:** Navy, NAVFACENG **Program Office:** NAVFACENG
(Code 0114)

Point of Contact: Bob Hammond

Telephone: Autovon: 325-8571

Status: Operational

Parent System: N/A

Predecessor: MADMAN

Successor: EFD/MIS Improvement Project

Function: Corporate MIS for Engineering Field Divisions

Type of Contracting: Construction

Sites Planned: 8

Sites Operating: 8

Developed By: Facilities System Office
(FACSO), Port Hueneme, Calif.

Maintained By: FACSO, Port Hueneme, Calif.

Hardware: IBM 4381 Plat Port Hueneme is central mainframe. Data is downloaded to field computers at field divisions (IBM 4331) and Offices in Charge Construction (IBM 4331).

Application Software: IDEAL 4GL

DBMS: DATACOM DB

Operating Mode: Batch

Operating System: MVS

System Integration: With engineering specification system

Description: Functional integration of accounting, contracting, project management, and disbursement. Engineering specs are automated but contract clauses and solicitation certifications and representations are not automated. DD Form 350 is created from award and contractor data. DD Form 350 report transmitted electronically to NAVSUP.

Planned Enhancements: More on-line processing

Emerging Technologies: None

System/Project Name: Architect-Engineers Contract Administration Support System

Acronym: ACASS **Organization:** Army, COE **Program Office:** COE Northern Pacific
Division (NPD)
Portland, Oreg.

Point of Contact: Judy McGinnis

Telephone: (503) 221-4910

Status: Operational

Parent System: None

Predecessor: None

Successor: None

Function: Contractor performance evaluation, procurement history

Type of Contracting: Construction

Sites Planned: 1

Sites Operating: 1

Developed By: COE NPD

Maintained By: COE NPD

Hardware: AMDAHL 470 V7 for batch processing, downloaded query file on Honeywell 6620

Application Software: TSO, Telenet communications access, ANSI COBOL 74

DBMS: Cullinet IDMS/R

Operating Mode: Batch and interactive

Operating System: MVS/JES3

System Integration: None

Description: Provides COE-wide method of screening SF254, the Architect-Engineer and Related Services Questionnaire, submitted by A-Es who wish to be considered for COE work. This information is provided to preselection and selection boards for A-E services. Data are also used to determine amount of A-E work by individual firm. The Department of Defense Federal Acquisition Regulation Supplement (DFARS) 36.604 requires submission of SF1421, Performance Evaluation (Architect-Engineer) for each A-E contract award over \$10,000 at acceptance of the work or contract termination. Contracting officers and construction managers can query ACASS via terminal and modem.

Planned Enhancements: TBD

Emerging Technologies: None

System/Project Name: Automated Contract Preparation System

Acronym: ACPS **Organization:** AF, AFLC **Program Office:** OO-ALC/PML

Point of Contact: Dan Jones **Telephone:** Autovon: 458-9011

Status: Operational **Parent System:** N/A

Predecessor: Manual **Successor:** CDMS

Function: Contract writing, DD Form 350 preparation, preaward action tracking

Type of Contracting: Central supply

Sites Planned: 7 **Sites Operating:** 7

Developed By: Ogden ALC/PML **Maintained By:** Ogden ALC/PML

Hardware: Data General MV8000 and Xerox 9700 high speed laser printers

Application Software: COBOL and Word Perfect

DBMS: INFOS (Data General Utility for database creation)

Operating Mode: On line **Operating System:** AOS/VS

System Integration: Requirement data from ADIS/J041 via tape. ADIS/J041 interface of award information. DD Form 350 data is electronically transmitted to J001.

Description: ACPS consists of several subsystems: (1) Menu Assisted Data Entry System (MADES) allows preparation of contractual documents from stock number, part number, descriptions, and delivery data automatically passed from the ADIS/J041 system; (2) manufacturer database contains contractor related data such as names, addresses, Commercial and Government Entity (CAGE) codes, size codes, DUNS numbers, and debarred/suspended status; (3) Automated Bidder's List; (4) Automated Synopsis generation and transmission to *Commerce Business Daily* (CBD); (5) the Federal Acquisition Regulation (FAR) on-line ACPS creates DD Form 350s from previous data entries, edits data and electronically transmits DD Form 350 data to J001. As a by-product of the award process, ACPS generates manpower data for the E841 Manpower System based on the actual hours required to make the buy. ACPS is capable of generating Military Standard Contract Administration Procedures (MILSCAP) transactions.

Planned Enhancements: Bar-coded DD Form 350 reports. MBLS/J014 interface is planned.

Emerging Technologies: None

System/Project Name: Automated Contracting System

Acronym: ACS **Organization:** Marine Corps **Program Office:** MCLB(752) Albany, Ga.

Point of Contact: Tom Wilson

Telephone: Autovon: 567-6692

Status: Development

Parent System: Marine Standard Supply System (M3S)

Predecessor: BCAS

Successor: N/A

Function: Action tracking, bidder's list, document generation, FAR on line, on-line status, MILSCAP, small and large purchase

Type of Contracting: Base/operational

Sites Planned: 10

Sites Operating: 0

Developed By: CRC, Inc. for EPA

Maintained By: CRC, Inc. and ASG, Inc.

Hardware: Wang VS 100 minicomputer with desktop terminals and microcomputers

Application Software: COBOL

DBMS: None

Operating Mode: Interactive, batch for document generation **Operating System:** VS 7.19

System Integration: The Wang VS accesses the AMDAHL V7 mainframe for supply, receiving, and financial data.

Description: Marine Corps has selected AGS, Inc. to develop ACS. AGS, Inc. has subcontracted with CRC, Inc. for the Automated Procurement Documentation System originally developed for EPA and now used by over 20 civil agencies. Seven subsystems: (1) action subsystem to track PR and Military Interdepartmental Purchase Requests (MIPRs); (2) milestone subsystem to track procurement actions through pre and postaward; (3) bidder's mailing list subsystem to update, search, and generate; (4) document preparation of PRs, SF26, SF30, SF33, and DD Form 1155; (5) full text search of on-line FAR, DFARS, Navy Acquisition Regulation Supplement (NARS); (6) interface subsystem to M3S AMDAHL, HQ MC DD Form 350 and MILSCAP; and (7) contract management subsystem to update other systems. Prototype test at Marine Corp Logistics Base (MCLB) Albany commenced in late July 1988.

Planned Enhancements: (1) Improve runtime software and (2) possible DBMS enhancements in 1990s

Emerging Technologies: None

System/Project Name: Automated Information and Documentation System

Acronym: AID

Organization: AF, AFSC

Program Office: AFOSR/XOC

Point of Contact: Capt Cynthia Martin, USAF

Telephone: (202) 767-4924/Autovon: 297-4924

Status: Operational

Parent System: N/A

Predecessor: Manual

Successor: N/A

Function: Preaward and postaward action tracking, document writing

Type of Contracting: Basic research

Sites Planned: 1

Sites Operating: 1

Developed By: Booz-Allen & Hamilton, Inc.

Maintained By: Booz-Allen & Hamilton, Inc.

Hardware: Wang VS 7310

Application Software: Wang's EZ Query, VS Report, and COBOL

DBMS: None, but see enhancements

Operating Mode: Real time, on line

Operating System: VS 7.14

System Integration: None

Description: AID is an integrated system for program, budget, legal, and contracting functions within the AF Office of Scientific Research. Originally developed as a word processing system to aid document preparation, it has been enhanced to include report generation for status of solicitations, proposals, contract awards, close-out actions, payments, deliverables, data, and option exercises. Program management starts process by entering synopsis of research effort and estimated dollar value, finance commits funding, procurement receives requirement data but hard copy signed PR still required. Contract writing includes clause selection but not word/text search capability. No capability to either generate or receive MILSCAP transactions.

Planned Enhancements: Redesign planned to move from COBOL flat files to a 4GL DBMS.

Emerging Technologies: None

System/Project Name: Automated Purchase System

Acronym: APS/J023 **Organization:** AF, AFLC

Program Office: AFLC/PMXS

Point of Contact: Delia Adams

Telephone: Autovon: 787-4851

Status: Operational

Parent System: N/A

Predecessor: None

Successor: CDMS

Function: Mechanized requirement, solicitation, and order generation

Type of Contracting: Central supply

Sites Planned: 5

Sites Operating: 5

Developed By: Oklahoma City ALC/SCDA

Maintained By: Oklahoma City ALC/SCDA

Hardware: CDC Cyber 70

Application Software: COBOL

DBMS: None

Operating Mode: Batch

Operating System: Scope

System Integration: Tape interface with requirement system D032, ADIS/J041, D062, D143B

Description: APS/J023 is a mechanized small purchase system for competitive purchases less than \$25,000. APS/J023 will produce a machine printed PR, solicitation document, and DD Form 1155 order. Items excluded from APS/J023 are local purchase items, sole source items, and items on prepriced catalogs. APS/J023 is to be replaced by CDMS.

Planned Enhancements: None — design change freeze

Emerging Technologies: None

System/Project Name: Automation of Procurement and Accounting Data Entry

Acronym: APADE **Organization:** Navy, NAVSUP **Program Office:** NAVSUP-0472

Point of Contact: LCDR Matt Lechleitner

Telephone: (703) 697-3395

Status: Operational

Parent System: N/A

Predecessor: APADE I

Successor: N/A

Function: Small and large purchase, contract writing, action tracking, management reporting

Type of Contracting: Operational (base/regional)

Sites Planned: 35

Sites Operating: 15

Developed By: Fleet Material Support Office
(FMSO)

Maintained By: FMSO

Hardware: Tandem TPX minicomputer, IBM-PC microcomputer with laser printers

Application Software: COBOL

DBMS: N/A

Operating Mode: Interactive and batch

Operating System: Tandem's
Guardian

System Integration: Uniform Automated Data Processing System-Supply (UADPS-SP) and Shipyard Management Information System/MM (SYMIS/MM); Stock Point Logistics Integrated Communication Environment Network (SPLICENET) access

Description: Designed as full capability contracting system for NRCC, NSCs, and Naval Shipyards. Phase I: small purchase (DD Form 1155), contract action tracking, DD Form 1057 report generation, UADPS interface; Phase II: better system interfaces, workload tracking, automated referrals, MILSCAP abstract; Phase III: delivery orders, limited solicitation processing; Phase IV: automated requirement inputs, bidder's mailing lists, request for proposals (RFPs)/invitation for bids (IFBs), large purchase writing, DD Form 350, and contract closeout/archival.

Planned Enhancements: DBMS

Emerging Technologies: Electronic data interchange (EDI)

System/Project Name: Base Contracting Automated System

Acronym: BCAS

Organization: AF

Program Office: SAF/AQC

Point of Contact: Mike Gaston

Telephone: Autovon: 224-2626

Status: Operational

Parent System: N/A

Predecessor: Customer Integrated Automated
Purchasing System (CIAPS)

Successor: None

Function: Small purchase automation

Type of Contracting: Base/operational

Sites Planned: 139

Sites Operating: 120 +

Developed By: Air Force Standard System
Design Office (AFSSDO)

Maintained By: AFSSDO

Hardware: Wang VS 85/100

Application Software: COBOL

DBMS: None

Operating Mode:

Operating System: VS 7.19

System Integration: Interfaces with Sperry computers in supply and finance and Wang computers in civil engineering and commission.

Description: Primarily large volume, small purchase system with direct interfaces with base supply, receiving and accounting, and finance office. PRs are input by requiring activities, automatic output of solicitations, and purchase orders. Reports generated for tracking and status. On-line status of PR by contracting and users. Also used by Marine Corps and Defense Mapping Agency.

Planned Enhancements: Large purchase contract writing, 4GL DBMS

Emerging Technologies: None

System/Project Name: Base Operations Support System

Acronym: BOSS

Organization: DLA

Program Office: DLA-PPS

Point of Contact: Bob Reisch

Telephone: (703) 274-7866

Status: Operational

Parent System: SAMMS

Predecessor: None

Successor: Logistics System Modernization
Program (LSMP)

Function: Supply, financial accounting, contracting

Type of Contracting: Base/operational

Sites Planned: 8

Sites Operating: 8

Developed By: Defense Systems Automation
Center (DSAC)

Maintained By: DSAC-H,
Ogden, Utah

Hardware: AMDAHL and IBM mainframe

Application Software: ANSI COBOL 74

DBMS: None

Operating Mode: Batch

Operating System: MVS/SP with
TSO

System Integration: Interface with finance

Description: BOSS consists of a financial subsystem, a supply subsystem, and a contracting subsystem. The contracting module of BOSS provides on-line preparation of PRs and contracts including updating of contract modification records. BOSS is also used by the U.S. Naval Academy and DoD Dependents Schools.

Planned Enhancements: Large purchase (greater than \$25,000) and capability for on-line queries of contract status by on-base customers

Emerging Technologies: None

System/Project Name: Commodity Command Standard System

Acronym: CCSS **Organization:** Army, AMC **Program Office:** HQ AMCPP-OA

Point of Contact: Al Douglas **Telephone:** (703) 274-3169

Status: Operational **Parent System:** N/A

Predecessor: N/A **Successor:** IPS

Function: Integrated logistics system encompassing functions of supply, cataloging, physical inventory, maintenance management, financial management, material acquisition, and managerial accountability

Type of Contracting: Weapon system, central supply, and R&D

Sites Planned: 6 **Sites Operating:** 6

Developed By: AMC's Central System Design Activity (CSDA) St. Louis, Mo. **Maintained By:** AMC's CSDA St. Louis, Mo.

Hardware: Mainframe: IBM 4381 minicomputers (three sites) being replaced by AMDAHL 5890 (three sites). Mini: Sperry 5000/80 and Perkin-Elmer 3254

Application Software: COBOL

DBMS: ADVANCE on Sperry 5000/80

Operating Mode: Batch and real time **Operating System:** IBM 4381 MVS/TSO/CICS
AMDAHL 5890 MVS-XA
Sperry 5000/80 UNIX

System Integration: Integrates complete logistic process: requirements determination, technical data, financial, QA, distribution and stock control, maintenance, and procurement and production

Description: The procurement and production processes of CCSS support bidder's list preparation (Standard Automated Bidder's List), preaward milestone tracking (Procurement Ageing and Staging System), contract writing (Procurement Automated Data and Document System), postaward surveillance (Contract Shipment Notice), MILSCAP and award reporting (DD Form 350/DD Form 1057). Both small and large purchase solicitations and orders/contracts are supported. On-line queries through ADVANCE 4GL DBMS is supported by downloading files from the IBM/AMDAHL mainframe to Sperry minicomputers.

Planned Enhancements: Integrated paperless purchasing via IPS

Emerging Technologies: None

System/Project Name: Construction Contractor Appraisal Support System

Acronym: CCASS **Organization:** Army, COE **Program Office:** CoE NPD
Portland, Oreg.

Point of Contact: Judy McGinnis

Telephone: (503) 221-4910

Status: Operational

Parent System: None

Predecessor: None

Successor: None

Function: Performance evaluation

Type of Contracting: Construction

Sites Planned: 1

Sites Operating: 1

Developed By: COE NPD

Maintained By: COE NPD

Hardware: AMDAHL 470 V8 mainframe and IBM PC compatibles with Telenet access to mainframe

Application Software: dBASE III Plus on micro for data entry and upload to AMDAHL

DBMS: IDMS/R on mainframe and ADS/O (Application Development System/On line)

Operating Mode: Batch and on line

Operating System: MVS/JES3

System Integration: None

Description: Aids contracting officers in evaluating an offerors previous contract performance. COE contracting offices input SF1420 to central database maintained by COE NPD. See DFARS Part 36.

Planned Enhancements: Convert to an Oracle-based environment.

Emerging Technologies: None

System/Project Name: Contract Administrative Data

Acronym: CAD

Organization: AF, AFSC

Program Office: AFSC/PKQ

Point of Contact: Tracey E. Bailey

Telephone: (513) 255-3992/Autovon: 785-3992

Status: Operational

Parent System: AMIS

Predecessor: None

Successor: N/A

Function: Postaward contract tracking, contract closeout, production surveillance

Type of Contracting: Contract administration

Sites Planned: 38

Sites Operating: 38

Developed By: AFSC/PKQ

Maintained By: AFSC/PKQ

Hardware: NAS 8063

Application Software: COBOL

DBMS: System 2000

Operating Mode: Batch

Operating System: MVS-XA with
TSO

System Integration: Interfaces with PMS, TURFA, DPCI, and disbursement processes.

Description: Contract database with summary and line item data from contract management, production surveillance, undefinitized document control, and contract closeout

Planned Enhancements: Database replacement

Emerging Technologies: None

System/Project Name: Contract Administration Services Automated Information System

Acronym: CASAIS **Organization:** Navy, NAVAIR **Program Office:** AIR-119

Point of Contact: Sally Wallace

Telephone: (202) 692-7480/Autovon: 222-7480

Status: Operational

Parent System: N/A

Predecessor: None

Successor: PROLANS

Function: Contract closeout and financial management

Type of Contracting: Contract administration

Sites Planned: 7 (6 in United States, 1 in Australia) **Sites Operating:** 6 in the United States

Developed By: NAVPROs and AIR-119

Maintained By: NAVPROs and AIR-119

Hardware: Wang 2200

Application Software: Wang BASIC

DBMS: AIMS

Operating Mode: Interactive, some batch report generation **Operating System:** Wang's MVP

System Integration: None

Description: Supports contract administrative functions of QA, production, engineering, contracting, and management support. CRT data entry of contract data – primarily financial summary data with no line item details – provides close-out and financial management on individual contracts and summary reports on total contracts administered. Obsolete due to hardware and software limitations.

Planned Enhancements: None

Emerging Technologies: None

System/Project Name: Contract Administrative Management Information System

Acronym: CAMIS **Organization:** Navy, ONR **Program Office:** OCNR (Code 14)

Point of Contact: Jim Carbonara **Telephone:** Autovon: 226-4601

Status: Operational **Parent System:** RADMIS

Predecessor: Manual **Successor:** None

Function: Postaward tracking, contract closeout, financial management

Type of Contracting: Contract administration

Sites Planned: 18 **Sites Operating:** 18

Developed By: OCNR (Code 14) **Maintained By:** OCNR with contractor support

Hardware: IBM-PC and compatibles

Application Software: Word processing

DBMS: dBASE III

Operating Mode: On line **Operating System:** MS-DOS

System Integration: Voucher information to RADMIS

Description: CAMIS has databases for contracts, vouchers, and reports. Performs close-out, tracking status, and workload reports.

Planned Enhancements: Add grants management, patent reviews, property reviews, foreign travel requests

Emerging Technologies: None

System/Project Name: Contract Data Management System

Acronym: CDMS **Organization:** AF, AFLC **Program Office:** AFLC LMSC/SBD

Point of Contact: Ann Growe **Telephone:** (513) 257-5941/Autovon: 787-5941

Status: Development **Parent System:** AFLC's LMS

Predecessor: ADIS/J041, ACPS,
APS/J023, MBL/J014 **Successor:** N/A

Function: Preaward management, contract writing, small and large purchase

Type of Contracting: Central supply contracting

Sites Planned: 5 **Sites Operating:** 0

Developed By: AFLC LMSC/SBD and **Maintained By:** TBD
Integrated Microcomputer Systems

Hardware: IBM 3090

Application Software: Ideal (4GL), COBOL, and "C" in PC network

DBMS: ADR's DATACOM DB

Operating Mode: On line, real time **Operating System:** MVS-XA with
CA-Top Secret

System Integration: Requirement Data Bank (RDB), Stock Control and Distribution (SC&D) System, Security Assistance Management Information System (SAMIS), Engineering Data Computer Assisted Retrieval System (EDCARS), Depot Maintenance Management Information System (DMMIS), Central Procurement Accounting System (CPAS)

Description: CDMS replaces nine existing data systems and provides automation of PR preparation, price history, contract writing, contract line item data.

Planned Enhancements: N/A

Emerging Technologies: Artificial intelligence in CDMS Phase II

System/Project Name: Contract Directorate Automated Information System

Acronym: CONDIRAIS **Organization:** Navy, NAVSEA **Program Office:** SEA-02C6

Point of Contact: Pete Brownell

Telephone: (703) 692-3732

Status: Development

Parent System: N/A

Predecessor: Wang Alliance Word Processing

Successor: N/A

Function: Contract writing, management reports

Type of Contracting: Weapon system and R&D

Sites Planned: 1

Sites Operating: 0

Developed By: CRC, Inc.

Maintained By: TBD

Hardware: Wang VS minicomputer 7300 and VS65/75E

Application Software: WP Plus, Wang Office, Wang Imaging System (WIS), Wang Net

DBMS: PACE RDBMS

Operating Mode: Interactive

Operating System: VS/OS

System Integration: Engineering development

Description: Electronic PRs will be passed from engineering to contracting, automatic PR assignment, electronic procurement files, and contract writing, clause writing. Project on hold awaiting facility improvements.

Planned Enhancements: Interfaces with comptroller, with NAVPROs

Emerging Technologies: Optical disk, artificial intelligence, E-mail with field activities

System/Project Name: Contract Directorate MIS

Acronym: CDMIS **Organization:** NAVSPAWAR **Program Office:** NAVSPAWAR-12

Point of Contact: LCDR W. Hall

Telephone: Autovon: 222-6044

Status: Operational

Parent System: N/A

Predecessor: N/A

Successor: TBD

Function: Milestone tracker, clause drafting

Type of Contracting: Weapon system

Sites Planned: 1

Sites Operating: 1

Developed By: Wilson Hill, Inc.

Maintained By: Wilson Hill, Inc.

Hardware: MOLECULAR

Application Software: Customized

DBMS: N/A

Operating Mode: Batch

Operating System: CP/M

System Integration: None

Description: CDMIS primarily provides procurement milestone tracking and has no DD Form 350 nor contract document preparation capabilities. CDMIS will assist in contract clause preparation. MOLECULAR hardware is obsolete and very difficult to maintain because the manufacturer is no longer in business.

Planned Enhancements: NARDAC will study procurement automation needs of NAVSPAWAR and design a new system.

Emerging Technologies: None

System/Project Name: Contracting Automated Tracking System

Acronym: CATS

Organization: COE

Program Office: COE, SWD

Point of Contact: James Brown

Telephone: (409) 766-3975

Status: Development

Parent System: N/A

Predecessor: Manual

Successor: Integrated with SAACONS

Function: Cradle-to-grave tracking system: requirement generator front end, financial and accounting tail end to the procurement process

Type of Contracting: Construction

Sites Planned: TBD

Sites Operating: TBD

Developed By: COE, SWD Dallas, Tex.

Maintained By: COE, SWD Dallas, Tex.

Hardware: Presently on McDonnell-Douglas VAX at St. Louis

Application Software: Vitamin C – window access to "C"

DBMS: ORACLE

Operating Mode: Interactive on line

Operating System: UNIX

System Integration: See planned enhancements.

Description: CATS is part of COE Information Systems Plan to tie all business functions of the COE together. CATS is a PC-based requirement generator tied to VAX minicomputers. It also records payment information for each contract. The COE ISP plans to integrate CATS with SAACONS.

Planned Enhancements: Integrate with SAACONS

Emerging Technologies: None

System/Project Name: Contract Management Paperless Automated Support System

Acronym: COMPASS **Organization:** DLA, DCAS **Program Office:** DCASR-CLE-AL

Point of Contact: Phylliss Merrel

Telephone: Autovon: 580-6621

Status: Development/prototyping

Parent System: MOCAS

Predecessor: MOCAS hard copy reports

Successor: None

Function: Contract closeout, contract management, forms preparation

Type of Contracting: Contract administration

Sites Planned: All 9 DCASRs

Sites Operating: 2 DCASMA's

Developed By: DSAC Columbus

Maintained By: DSAC Columbus

Hardware: Z-248 microcomputers

Application Software: dBASE III compiled in Clipper

DBMS: N/A

Operating Mode: Interactive

Operating System: MS-DOS

System Integration: N/A

Description: ACO Workstation module of COMPASS brings mainframe data to the ACO's microcomputer in a paperless environment. MOCAS contract-level data for an individual ACO team is downloaded to a Z-248 where an ACO or contract administrator can access their data via menu-driven screens. Permits ACO to manage contracts for physical completion, deliveries, payments, etc. Also, provides form letter and standard form generation capability. Automatic prioritization of ACO team workload will replace ACO's Contract Administration Reports (up to 900 pages) with screen displays and print on demand. Full implementation is scheduled for late 1989. Currently being prototyped at selected offices within DCASRs Cleveland and New York.

Planned Enhancements: Source automation – capability to prepare contract modifications

Emerging Technologies: None

System/Project Name: Contract Research Program

Acronym: CRP **Organization:** Navy, ONR **Program Office:** OCNR (Code 15)

Point of Contact: Jim Carbonara **Telephone:** (202) 696-4601

Status: Operational **Parent System:** RADMIS

Predecessor: N/A **Successor:** N/A

Function: Preaward MIS and document/form preparation

Type of Contracting: Basic research

Sites Planned: 1 **Sites Operating:** 1

Developed By: ONR **Maintained By:** ONR

Hardware: IBM 4381 for DBMS, IBM 5520 for word processing

Application Software: Cullinet's IDMSR, a 4GL relational DBMS with OLQ for ad hoc queries and CULPRIT for report generation. Older portions of software in COBOL.

DBMS: IDMSR

Operating Mode: Batch reports with on-line queries **Operating System:** VM/CMS

System Integration: CRP is a module within RADMIS.

Description: Produces reports, contract forms, Short Form Research Contract (SFRC) (DD Form 2222) documents, business clearance memos, and D&Fs

Planned Enhancements: Add cost plus fixed fee (CPFF) contract preparation, integration with financial and disbursement systems (Financial Management/Resource Control System). Older COBOL reports being converted to IDMSR.

Emerging Technologies: None

System/Project Name: Contracting Information Data System

Acronym: CIDS/J018

Organization: AF, AFLC

Program Office: AFLC/PMXS

Point of Contact: Delia Adams

Telephone: Autovon: 787-4851

Status: Operational

Parent System: N/A

Predecessor: ADIS/J041

Successor: CDMS

Function: Procurement MIS

Type of Contracting: Central supply

Sites Planned: 6

Sites Operating: 6

Developed By: AFLC/PMXS and ABSS, Inc.

Maintained By: AFLC/PMXS

Hardware: Data General MV10000 or MV8000

Application Software: COBOL and FORTRAN

DBMS: Data General DBMS

Operating Mode: On line, real time

Operating System: AOS/VS

System Integration: Tape feeds from ADIS/J041 system

Description: CIDS/J018 is an interim means of providing on-line interactive query capability of procurement information. Until the contracting portion of AFLC's Logistics System Modernization is implemented, CIDS/J018 is fed preaward, postaward, and procurement history files from the Acquisition Due-In Asset System (ADIS/J041) so on-line interrogations can be made. Queries of contract actions are possible by NSN, PR, contract number, etc. CIDS/J018 also provides on-line queries of AFLC's Undefined Contract Action Management System (UCAMS) and AFLC's Manpower System (E841).

Planned Enhancements: None

Emerging Technologies: None

System/Project Name: Contractor Evaluation System

Acronym: CES

Organization: Navy

Program Office: NAVSEA, NMQAO

Point of Contact: Bob Morris

Telephone: (603) 431-9460/Autovon: 684-1690

Status: Operational

Parent System: N/A

Predecessor: NAVSEA's Uniform Vendor
Evaluation Program

Successor: None

Function: Contract performance evaluation

Type of Contracting: Central supply

Sites Planned: 1

Sites Operating: 1

Developed By: NMQAO and NARDAC Newport

Maintained By: NARDAC Newport

Hardware: UNIVAC 1100

Application Software: COBOL and QLP for ad hoc query

DBMS: DMS 1100

Operating Mode: Batch updates with on-line query

Operating System: OS1100

System Integration: None

Description: Used by all Navy systems commands, NAVSUP, and shipyards to collect data on contractor performance. Provides decision support to buyer on contractor's quality history for bid evaluation, source selection.

Planned Enhancements: NAVSEA is considering additional data elements, automation of data transmission, improving on-line report system, and 4GL DBMS.

Emerging Technologies: None

System/Project Name: Contractor Performance Assessment Reporting

Acronym: CPAR

Organization: AF, AFSC

Program Office: AFSC/PKCP

Point of Contact: Susan Wright

Telephone: (301) 981-4022

Status: Conceptual

Parent System: None

Predecessor: None

Successor: None

Function: Source selection evaluation

Type of Contracting: Weapon system

Sites Planned: TBD

Sites Operating: TBD

Developed By: Not yet developed

Maintained By: N/A

Hardware: IBM XT compatibles

Application Software: TBD

DBMS: TBD

Operating Mode: On line, real time

Operating System: MS-DOS

System Integration: None

Description: CPAR is being planned as a means of using a contractor's relevant past performance as a source selection evaluation factor.

Planned Enhancements: N/A

Emerging Technologies: N/A

System/Project Name: Contractor Profile System

Acronym: CPS

Organization: Navy, ONR

Program Office: OCNR (Code 14)

Point of Contact: Jim Carbonara

Telephone: (202) 696-4601

Status: Operational

Parent System: RADMIS

Predecessor: None

Successor: None

Function: Contractor performance

Type of Contracting: Basic research

Sites Planned: 1

Sites Operating: 1

Developed By: ONR

Maintained By: University of Southern
California's Information
Sciences Institute

Hardware: VAX and IBM-PC compatible

Application Software: dBASE III Plus

DBMS: dBASE III Plus

Operating Mode: Interactive

Operating System: UNIX

System Integration: RADMIS

Description: Originally on CAMIS but now on MILNET at University of Southern California's Information Sciences Institute. Provides three page profile of over 300 nonprofit contractors and universities. Accessed by Government auditors, negotiators, and scientists to learn about the contractor and university they are dealing with. Contractors profiles are prepared on IBM-PC or Z-248 at ONRR and then file transferred via Kermit and dB Vista. Users can access profiles via menu screens but the system will not provide ad hoc queries.

Planned Enhancements: Ad hoc query capability

Emerging Technologies: None

System/Project Name: Contractor Profile Data System

Acronym: CPDS

Organization: DLA

Program Office: DLA-AP

Point of Contact: Dan Morriarty

Telephone: (703) 274-7544

Status: Conceptual

Parent System: MOCAS/LSMP

Predecessor: None

Successor: N/A

Function: Contractor performance evaluation

Type of Contracting: Central supply

Sites Planned: TBD

Sites Operating: TBD

Developed By: N/A

Maintained By: TBD

Hardware: TBD

Application Software: TBD

DBMS: TBD

Operating Mode: TBD

Operating System: TBD

System Integration: TBD

Description: An initiative to consolidate contractor information in MOCAS, SAMMS, and service systems into one database. Long-term initiative will organize contractor performance information by NSN. Eventually, DLA intends to use CPDS for industrial preparedness planning scenarios. CPDS will permit menu-driven queries of quality, production, financial, debarred/suspended data. CAGE code will be used to identify contractors.

Planned Enhancements: TBD

Emerging Technologies: TBD

System/Project Name: Defense Fuels Automated Management Systems

Acronym: DFAMS **Organization:** DLA, DFSC **Program Office:** DFSC-PPS

Point of Contact: Shelby Yeakley **Telephone:** (703) 274-6306

Status: Operational **Parent System:** None

Predecessor: None **Successor:** LSMP

Function: Procurement module: PR tracking, solicitation generation, bid evaluation

Type of Contracting: Specialized

Sites Planned: 1 **Sites Operating:** 1

Developed By: DFSC-Z **Maintained By:** DFSC-Z

Hardware: IBM 4341 and IBM 3033

Application Software: COBOL 74

DBMS: Model 204 DBMS

Operating Mode: Batch **Operating System:** MVS

System Integration: None

Description: DFAMS integrates procurement, transportation, inventory, and financial functions in support of bulk petroleum management for DoD. MIPRs are received from services and manually input to DFAMS. PRs are issued to buyers who can generate automated solicitation data. DFAMS permits on-line PR tracking. Also DFAMS has bid evaluation capability. Utilizes Military Standard Petroleum System (MILSPETS) transactions to link Defense Fuel Supply Points and Defense Fuel Regions to DFSC.

Planned Enhancements: Will be included in DLA's LSMP project

Emerging Technologies: None

System/Project Name: DCA Procurement Automation

Acronym: N/A

Organization: DCA

Program Office: DCA Code 780

Point of Contact: MAJ David Reilly, USA

Telephone: (703) 692-3710

Status: Development

Parent System: None

Predecessor: FARA on Wang VS

Successor: N/A

Function: Action tracking, contract writing

Type of Contracting: Specialized

Sites Planned: 1

Sites Operating: 1

Developed By: Compusearch

Maintained By: Compusearch

Hardware: VAX 11/780 with Z-248s connected by LAN within DCA HQ. Also VAX 11/730 as terminal server.

Application Software: FARA/PRISM by Compusearch

DBMS: DATAFLEX

Operating Mode: Real time, on line

Operating System: VMS

System Integration: Integrated with financial program management systems within HQ DCA

Description: Integrate financial, technical, contracting, and legal function within DCA. PRISM software permits cradle-to-grave contract action tracking system. FARA provides contract writing capability of contract and modification documents. FAR on line provides access to 32 databases. Electronic synopsis transmitted to CBD and to DCA's electronic bid board through Western Union's EASYLINK. Single point data entry and paperless processes are DCA goals.

Planned Enhancements: Plan to acquire larger minicomputer to serve 200 microcomputers

Emerging Technologies: None

System/Project Name: Distributed Processing for Contractual Input

Acronym: DPCI

Organization: AF, AFSC

Program Office: AFSC/PKQ
Wright-Patterson
AFB, Ohio

Point of Contact: Jerry Lapham

Telephone: (513) 255-3992/Autovon: 785-4646

Status: Operational

Parent System: AMIS

Predecessor: IDI

Successor: None

Function: Contract writing, source data automation

Type of Contracting: R&D and weapon system

Sites Planned: 9 (30 CPUs)

Sites Operating: 9 (27 CPUs)

Developed By: AFSC/PKQ

Maintained By: AFSC/PKQ

Hardware: Wang VS 65/85/100 and laser printers, and Wang OIS 140/150

Application Software: Wang WP and OIS BASIC

DBMS: None

Operating Mode: Interactive

Operating System: Wang VS OS
Wang OIS OS

System Integration: Contract input to AMIS databases

Description: CRT data entry of contract requirement data including clauses through menu screen selection. Generates document and captures MILSCAP data for database update and external transmission. Each individual Wang suite telecommunicates with AMIS mainframe at Wright-Patterson AFB for edits and transmissions of MILSCAP data.

Planned Enhancements: Integration with the AMIS Procurement Management System and 4GL DBMSs are being evaluated.

Emerging Technologies: None

System/Project Name: DLA Preaward Contracting System

Acronym: DPACS **Organization:** DLA

Program Office: DLA-PPS

Point of Contact: Joe Familetti

Telephone: (703) 274-3730

Status: Operational

Parent System: SAMMS

Predecessor: Manual

Successor: LSMP

Function: Preaward processing of small and large purchases

Type of Contracting: Central supply

Sites Planned: 5

Sites Operating: 3 (partial implementation)

Developed By: DSAC

Maintained By: DSAC

Hardware: Gould 9050 minicomputer with Z-248 microcomputers and Visual terminals

Application Software: "C" language

DBMS: UNIFY – a relational DBMS with SQL capability and query by form (QBF)

Operating Mode: On line, real time

Operating System: UNIX

System Integration: SAMMS for requirement, vendor, description, and price data

Description: DPACS receives download of SAMMS PR data daily, vendor file updates weekly, and item description updates weekly. DPACS automates manual processes of DLA large purchasing. PR package is built in 1 day and electronically passes from SAMMS to DPACS for concurrent review by JAG, small business, technical, contract review. DPACS supports PR management, solicitation, and award phases of preaward process. Plan is to go to paperless PR package and intelligent clause selection. Vendor and price history data is now available to buyers via DPACS on-line screens. Automated DD Form 350 produced but no electronic transmission capability. Also planned is electronic transmission of automated CBD synopsis.

Planned Enhancements: Incorporation of SASPS I/II

Emerging Technologies: Expert system to select clauses for solicitation preparation

System/Project Name: Integrated Procurement System

Acronym: IPS

Organization: Army, AMC

Program Office: HQ AMC

Point of Contact: Thomas Craterfield

Telephone: Autovon: 284-8241

Status: Development

Parent System: CCSS

Predecessor: CASPR-Command Automated
System for Procurement

Successor: N/A

Function: Preaward processing of small and large purchases, contract writing, contract administration

Type of Contracting: Central supply, weapon system, R&D

Sites Planned: 6

Sites Operating: 0

Developed By: TBD

Maintained By: TBD

Hardware: Mainframe: AMDAHL 5890, minicomputer: Sperry 5000/80 with PCs networked via LAN

Application Software: TBD (ADA or ?)

DBMS: Oracle

Operating Mode: On line, real time

Operating System: MVS-XA,
UNIX

System Integration: CCSS logistic functions

Description: IPS is divided into four phases to reduce paper, electronically transmit acquisition data, improve individual tasks, and prepare for paperless environment. Phase I will modernize requirement generation and procurement planning; Phase II will improve generation of draft and final solicitations and amendments; Phase III will improve receipt of proposals, offeror evaluation, and contract award; and Phase IV will improve contract administration including close-out and archiving.

Planned Enhancements: TBD

Emerging Technologies: Decision support

System/Project Name: Manpower Management System

Acronym: E841

Organization: AF, AFLC

Program Office: AFLC/PMXA

Point of Contact: Bob Hill

Telephone: Autovon: 787-2188

Status: Operational

Parent System: N/A

Predecessor: None

Successor: CDMS

Function: Manpower accounting and management

Type of Contracting: Central supply

Sites Planned: 5

Sites Operating: 5

Developed By: AFLC

Maintained By: AFLC

Hardware: Cyber 70

Application Software: Customized COBOL

DBMS: None

Operating Mode: Batch

Operating System: Scope

System Integration: Tape feed from ADIS/J041

Description: ADIS/J041 provides hours required for completed contract actions made at AFLC central contracting activities. The hours required to process each PR, including canceled or returned PRs, is summarized in management reports. Credit is given for contract complexity by type of instrument. E841 manpower calculations are loaded into CIDS/J018 for on-line query capability.

Planned Enhancements: None

Emerging Technologies: None

System/Project Name: Mechanization of Contract Administration Services

Acronym: MOCAS

Organization: DLA

Program Office: DLA-AO

Point of Contact: John Spenik

Telephone: (703) 274-7544

Status: Operational

Parent System: N/A

Predecessor: None

Successor: LSMP

Function: Integrated CAS: QA, production, contract administration, disbursement, property, and transportation

Type of Contracting: Contract administration

Sites Planned: 9 DCASRs, 3 ARPROs

Sites Operating: DCASRs – Phase I: 3,
Phase II: 6

Developed By: DSAC

Maintained By: DSAC and DLA-Z

Hardware: Mainframe: Phase I: AMDAHL 470/V7 batch processing, Phase II: AMDAHL 470/V8 on-line CAS processing; minis: four phase; micros: Z-248 PCs

Application Software: COBOL 74, CINCOM MANTIS (4GL)

DBMS: Total Information System (TIS)

Operating Mode: Batch with on-line queries

Operating System: MVS

System Integration: MILSCAP interface with ICPs and buying activities

Description: MOCAS identifies ACO workload and milestones; monitors contractor performance; produces contract summary reports; produces alerts on progress payments, clause requirements, and contract close-out. It does not produce automated contract modifications. All data must be abstracted into MOCAS. MOCAS retains contract data for 6 months after close-out. Receives and generates MILSCAP transactions. Monthly Contract Administration Report is produced monthly by contract administrator with abstract of each contract.

Planned Enhancements: Three-tier architecture (mainframe, mini, micros) to replace paper reports and alerts. Also developing ACO workstation for downloading of contract management data to Z-248 PC for on-line queries and reports.

Emerging Technologies: EDI of DD Form 250 submission from contractors

System/Project Name: Mechanized Bidder's List System

Acronym: MBLS/J014 **Organization:** AF, AFLC **Program Office:** AFLC/PMXS

Point of Contact: Scot Burke

Telephone: Autovon: 787-4851

Status: Operational

Parent System: None

Predecessor: None

Successor: CDMS

Function: Source list

Type of Contracting: Central supply

Sites Planned: 5

Sites Operating: 5

Developed By: Ogden ALC/SC

Maintained By: Ogden ALC/SC

Hardware: CDC Cyber 70

Application Software: COBOL

DBMS: None

Operating Mode: Batch

Operating System: Scope

System Integration: Tape interface with J041 for PR date and D069 for projected buys over next 12 months

Description: Identifies potential sources of supply for stock numbered items. Potential sources submit SF129 bidder's mailing list applications to the responsible Air Logistics Center who enters it into MBLS. The system allows automatic rotation of bidders and identifies small businesses, small disadvantaged businesses, and woman-owned businesses. Prints mailing labels for solicitation packages. MBLS will be redesigned and moved to CDMS.

Planned Enhancements: None

Emerging Technologies: None

System/Project Name: Modifications and Claims Module

Acronym: MODS & CLAIMS

Organization: COE

Program Office: DAEN-ECC-C

Point of Contact: Mike Yeoman

Telephone: (202) 272-0048

Status: Development

Parent System: Design and Construct

Predecessor: Manual

Successor: N/A

Function: Track modifications and claims

Type of Contracting: Construction

Sites Planned: TBD

Sites Operating: TBD

Developed By: SED Ft. Worth, Tex.
SWD Savannah, Ga.

Maintained By: TBD

Hardware: IBM compatible workstation (Z-248 or IBM-AT/XT) linked to VAX 11/780 (McDonnell-Douglas)

Application Software: Oracle

DBMS: Oracle

Operating Mode: Interactive query to central DBMS

Operating System: UNIX

System Integration: See enhancements below.

Description: Tracks modifications and claims on major construction contracts for construction managers and contracting personnel

Planned Enhancements: Integrate with SAACONS and CATS

Emerging Technologies: None

System/Project Name: NAVAIR Procurement Automation

Acronym: N/A **Organization:** Navy, NAVAIR **Program Office:** NAVAIR (Code 211C)

Point of Contact: LCDR Dean Bunker, USN **Telephone:** (703) 692-8199

Status: Development **Parent System:** PRISM

Predecessor: Manual **Successor:** N/A

Function: Preaward

Type of Contracting: Weapon system

Sites Planned: 1 **Sites Operating:** 1

Developed By: NAVAIR/Compusearch **Maintained By:** NAVAIR

Hardware: IBM PCs and XTs

Application Software: Compusearch's FARA

DBMS: None

Operating Mode: Interactive, on line

Operating System: MS-DOS but
moving to
UNIX

System Integration: None

Description: Compusearch's FARA is being modified for NAVAIR application. PR data received on floppy disk. Contract writing process will be tied together via LAN. PRISM – Purchase Request MIS will provide PR, history files, and management reports. NAVAIR is looking at digitized contract documents and optical disks storage of contract and procurement file. Also, will have electronic synopsis CBD.

Planned Enhancements: None

Emerging Technologies: Optical disk storage, local area networks

System/Project Name: Plant Representative Office Local Area Network Solution

Acronym: PROLANS **Organization:** Navy, NAVAIR **Program Office:** AIR-119

Point of Contact: Sally Wallace

Telephone: (202) 692-7480/Autovon: 222-7480

Status: Conceptual

Parent System: N/A

Predecessor: CASAIS

Successor: N/A

Function: CAS functions

Type of Contracting: Contract administration

Sites Planned: 6

Sites Operating: 0

Developed By: TBD

Maintained By: TBD

Hardware: Z-248 microcomputer tied together via local area network and file servers

Application Software: TBD

DBMS: TBD

Operating Mode: TBD

Operating System: DOS or UNIX

System Integration: TBD

Description: Microcomputer-based replacement for current contract administration system CASAIS in conceptual development to meet CAS automation needs of NAVPROs into 1990s.

Planned Enhancements: TBD

Emerging Technologies: Optical disk storage similar to NAVAIR-02 project to digitize contract documents for compact disk storage and retrieval.

System/Project Name: Procurement Action Status Report

Acronym: PASR **Organization:** Navy, NAVSEA

Program Office: NAVSEA

Point of Contact: Mary Andrews

Telephone: (202) 692-7608

Status: Operational

Parent System: N/A

Predecessor: None

Successor: CONDIRAIS

Function: PR and contract action milestone tracking

Type of Contracting: Weapon system

Sites Planned: 1

Sites Operating: 1

Developed By: NARDAC

Maintained By: NARDAC

Hardware: IBM CMCT data transmission to AMDAHL V7A mainframe

Application Software: COBOL

DBMS: None

Operating Mode: Batch

Operating System: MVS/TSO/
CICS

System Integration: None

Description: Milestone tracking system from receipt to contract award. Limited query capability with batch report generation on weekly and monthly basis.

Planned Enhancements: None

Emerging Technologies: None

System/Project Name: Procurement Automated Data and Document System

Acronym: PADDs **Organization:** Army, AMC **Program Office:** HQ AMC

Point of Contact: Al Douglas

Telephone: (703) 274-3169

Status: Operational

Parent System: CCSS

Predecessor: Manual

Successor: IPS

Function: Contract writing system

Type of Contracting: Weapon system, R&D, central supply

Sites Planned: 6

Sites Operating: 6

Developed By: CSDA St. Louis, Mo.

Maintained By: CSDA St. Louis, Mo.

Hardware: Perkins Elmer (Interdata) 3242 minicomputers

Application Software: Terminal Application Processing System (TAPS) as the screen processor

DBMS: TOTAL

Operating Mode: On line, interactive

Operating System: OS 32MT

System Integration: CCSS

Description: Although defined as an application under CCSS, PADDs is a stand-alone source data automation and contract writing system via menu-driven CRT screens. It produces solicitations, contracts, orders, modifications, obligation records, and selects standard and customized clauses. Also, PADDs generates the DD Form 350s electronically to CSDA East who transmits it to DA.

Planned Enhancements: Functions to be absorbed by IPS

Emerging Technologies: None

System/Project Name: Procurement Automated Manpower Utilization and Projection System

Acronym: PAMUPS **Organization:** Army, AMC **Program Office:** HQ AMC

Point of Contact: Al Douglas **Telephone:** (703) 274-3169

Status: Developmental **Parent System:** CCSS

Predecessor: None **Successor:** IPS

Function: Manpower accounting and management

Type of Contracting: Weapon system and central supply

Sites Planned: 6 **Sites Operating:** 6

Developed By: CSDA St. Louis, Mo. **Maintained By:** CSDA St. Louis, Mo.

Hardware: IBM mainframe but moving to large-scale AMDAHL

Application Software: COBOL

DBMS: System 2000

Operating Mode: Batch **Operating System:** MVS and TSO

System Integration: CCSS

Description: PAMUPS receives data from CRT screen inputs, PADDS, SABL, and MILSCAP and generates manpower utilization data and tracks PALT complexity factors.

Planned Enhancements: None

Emerging Technologies: None

System/Project Name: Procurement Early Development

Acronym: PED **Organization:** Navy, NAVSUP

Program Office: FMSO Code 96B

Point of Contact: Carol Waterman

Telephone: Autovon: 430-6348

Status: Development/testing

Parent System: UICP

Predecessor: UICP-Purchase

Successor: None

Function: Small purchase preaward and document preparation

Type of Contracting: Central supply

Sites Planned: 2

Sites Operating: 0

Developed By: FMSO

Maintained By: FMSO

Hardware: IBM 3090 mainframe with terminal access

Application Software: Cullinet's ADS on-line (ADSO) and COBOL

DBMS: IDMS – a hierarchical database

Operating Mode: Batch and on line

Operating System: MVS/XA

System Integration: UICP requirements, funding, packaging, transportation, and technical

Description: PED Phase I is an automated small purchase system with capability to electronically coordinate requirement package, Phase II will provide large purchase automation. Uses electronic procurement files at buyer workstations to create a paperless environment.

Planned Enhancements: On line, ad hoc query capability

Emerging Technologies: Paperless processes, electronic publishing

System/Project Name: Procurement Management System

Acronym: PMS **Organization:** AF, AFSC **Program Office:** AFSC, PKQ

Point of Contact: Paul Hicks **Telephone:** Autovon: 785-5140

Status: Operational **Parent System:** AMIS

Predecessor: Data Central **Successor:** N/A

Function: Preaward and postaward contract tracking with DD Form 350 reporting

Type of Contracting: Weapon system and R&D

Sites Planned: 11 **Sites Operating:** 11

Developed By: AFSC/PKQ **Maintained By:** AFSC/PKQ

Hardware: NAS 8063

Application Software: COBOL

DBMS: System 2000

Operating Mode: On line and batch **Operating System:** MVS-XA with
TSO/CICS

System Integration: Interfaces with AMIS postaward databases (CONTRACT, AMISDCAS, and
OTHRCONT)

Description: Cradle-to-grave contract action tracking through menu-screens, queries, and reports

Planned Enhancements: Distributed 4GL DBMS on Wang VS minicomputer to improve integration
with DPCI (contract writing)

Emerging Technologies: None

System/Project Name: Research and Development Management Information System

Acronym: RADMIS **Organization:** Navy, ONR **Program Office:** DCNR (Code 1513)

Point of Contact: Tom Dolan

Telephone: (202) 696-4601

Status: Operational

Parent System: None

Predecessor: Manual

Successor: None

Function: Action tracking, document preparation

Type of Contracting: Research and development

Sites Planned: 1

Sites Operating: 1

Developed By: ONR

Maintained By: ONR

Hardware: IBM 4381

Application Software: Customized word processing programs, CULPRIT report generation

DBMS: IDMSR-relational 4GL

Operating Mode: Batch reports

Operating System: VM/CMS

System Integration: None

Description: Tracks research proposal, PRs, and fundings. Produces reports, short form research contract documents, D&Fs, and business clearance memos.

Planned Enhancements: Add capability to produce CPFF contracts

Emerging Technologies: None

System/Project Name: SAMMS Automated Small Purchase System I

Acronym: SASPS-I **Organization:** DLA

Program Office: DLA-PPS

Point of Contact: Bob Reisch

Telephone: (703) 274-7866

Status: Operational

Parent System: SAMMS

Predecessor: Manual

Successor: SPEDE

Function: Small purchase orders against BPA

Type of Contracting: Central supply

Sites Planned: 5

Sites Operating: 5

Developed By: DSAC

Maintained By: DSAC and DLA centers

Hardware: AMDAHL V8 mainframe

Application Software: COBOL

DBMS: None

Operating Mode: Batch

Operating System: MVS

System Integration: Internal SAMMS files

Description: Automated Blanket Purchase Agreement (BPA) System which places noncompetitive order for \$2,500 or less. PRs are screened by FSC against FSCM/vendor file. Generates a shipping instruction sheet (SIS) to contractor for items valued less than \$2,500. If contractor has item at stated price, it is shipped. If item is greater than \$2,500 or item cannot be identified, item not shipped and a vendor return card (ADP card) is returned and is entered into SAMMS.

Planned Enhancements: None but some orders will be through SPEDE

Emerging Technologies: None

System/Project Name: SAMMS Automated Small Purchase System II

Acronym: SASPS-II **Organization:** DLA

Program Office: DLA-PPS

Point of Contact: Bob Reisch

Telephone: (703) 274-7866

Status: Operational

Parent System: SAMMS

Predecessor: Manual

Successor: DPACS

Function: Solicitations/request for quotation (RFQ) generation

Type of Contracting: Central supply

Sites Planned: 5

Sites Operating: 5

Developed By: DSAC

Maintained By: DSAC and DLA centers

Hardware: AMDAHL V7 mainframe

Application Software: COBOL

DBMS: None

Operating Mode: Batch

Operating System: MVS

System Integration: Internal SAMMS files

Description: Restricted to buys less than \$25,000. PR is screened in SAMMS against bidder's list. If FSC-FSCM match made, seven RFQs generated. Provides for bidder rotation. Addresses provided on RFQs for envelopes stuffing by Pitney Bowes machine. Will be replaced by Buyer Directed RFQ (BDRFQ) system. BDRFQ is NSC specific and will be incorporated in DPACS. SPEDE will also handle some RFQs.

Planned Enhancements: BDRFQ to permit specific clauses and delegation of contract administration/payment

Emerging Technologies: None

System/Project Name: SAMMS Procurement by Electronic Data Exchange

Acronym: SPEDE **Organization:** DLA **Program Office:** DSAC

Point of Contact: Sue Jones **Telephone:** Autovon: 850-9120

Status: Development **Parent System:** SAMMS

Predecessor: PET at DPSC **Successor:** None

Function: Order placing at DCSC, DISC, DESC; RFQ at DPSC (medical)

Type of Contracting: Central supply

Sites Planned: 5 **Sites Operating:** 4

Developed By: DSAC **Maintained By:** DSAC

Hardware: Gould minicomputer (DMINS)

Application Software: EDI

DBMS: UNIFY (4GL RDBMS)

Operating Mode: Batch and interactive **Operating System:** UNIX

System Integration: SAMMS download of requirement and upload of award shipment notification to SAMMS

Description: EDI transmission of PO to vendor and PO acknowledgment. Shipment notice back from vendor to DLA purchasing office.

Planned Enhancements: Redesign of SASPS-I SPEDE

Emerging Technologies: EDI ANSI X.12

System/Project Name: Standard Army Automated Contacting System

Acronym: SAACONS **Organization:** Army

Program Office: CDSA

Point of Contact: LTC Phil Yenrick, USA

Telephone: (703) 756-1700

Status: Operational

Parent System: None

Predecessor: Various manual
and automated systems

Successor: None

Function: Small and large purchase writing, MIS, local contract administration

Type of Contracting: Base/operational and construction

Sites Planned: 256

Sites Operating: 42 +

Developed By: CACI, Inc.

Maintained By: CACI, Inc.

Hardware: INTEL 310/320 microcomputers for small activities and Sperry 5000/80 minicomputers for large activities. Wyse 30 terminals are used for computer access.

Application Software: "C" language

DBMS: PROGRESS 4GL

Operating Mode: On line

Operating System: UNIX

System Integration: None, but see enhancements

Description: SAACONS developed from existing commercial software. It consists of six modules (of which four are operational) – small purchase, large purchase, report generator (DD Form 350/DD Form 1057), automated FAR/DFARS on line with clause selection – and in development: MIS/DBMS and contract administration.

Planned Enhancements: Local interfaces with supply, receiving, finance

Emerging Technologies: None

System/Project Name: Standard Automated Material Management System

Acronym: SAMMS **Organization:** DLA

Program Office: DLA-PPS

Point of Contact: Bob Whitmer

Telephone: (703) 274-7866

Status: Operational

Parent System: None

Predecessor: Manual

Successor: LSMP

Function: Integrated logistics management including supply, technical, financial, and contracting

Type of Contracting: Central supply

Sites Planned: 5

Sites Operating: 5

Developed By: DSAC

Maintained By: DSAC

Hardware: Amdahl V7 mainframe

Application Software: COBOL

DBMS: None

Operating Mode: Batch

Operating System: MVS

System Integration: MILSCAP with MOCAS and AMIS

Description: Contracting subsystem screen requirements to be purchased for funds availability and technical sufficiency. Generates purchase request and establishes Active Purchase Request File (APRF) for tracking workload and action status. Parent system for SASPS-I/II, SPEDE, and DPACS.

Planned Enhancements: DPACS

Emerging Technologies: EDI via SPEDE

System/Project Name: Tracking Undefinitized Requirements and Funds for AFPROs

Acronym: TURFA **Organization:** AF, AFSC

Program Office: AFSC/PKQ

Point of Contact: Tracy E. Bailey

Telephone: (513) 255-3992/Autovon 785-4646

Status: Operational

Parent System: AMIS-J011

Predecessor: TURF and UATS

Successor: N/A

Function: Management of undefinitized contractual actions and funding

Type of Contracting: Contract administration

Sites Planned: 25

Sites Operating: 20

Developed By: AFSC/PKQ and AFCMD/SC

Maintained By: AFSC/PKQ and AFCMD/SC

Hardware: Z-248 and IBM PCs at AFPROs, NAS 8063 mainframe at Wright-Patterson AFB

Application Software: dBase III Plus compiled by CLIPPER on PCs, System 2000 on mainframe

DBMS: System 2000 on NAS, dBase III on PCs

Operating Mode: Interactive and batch

Operating System: NAS 8063: VS/XA
with TSO/CICS
Z-248: MS-DOS

System Integration: With AMIS postaward databases

Description: Tracks undefinitized actions through definitization milestones and obligated funds tracking for ACO. TURFA database resides on mainframe, receives contract data from AFPRO manual entry of nonautomated contracts/modifications and automatic entry of MILSCAP transactions received by AMIS contract administrative database. Provides reports of definitization status down to line item level. Also, summary reports of workload, overage, funding, and overdue milestones.

Planned Enhancements: (1) Automated feed of undefinitized status data to HQ AFSC Executive Information System, (2) UCAPS – Undefinitized Contractual Action Presentation System for preparing briefing of UCA summary data by AFPRO and command

Emerging Technologies: None

System/Project Name: UICP-Purchase

Acronym: UICP-Purchase **Organization:** Navy, NAVSUP

Program Office: FMSO

Point of Contact: Carol Waterman

Telephone: Autovon: 430-6348

Status: Operational

Parent System: UICP

Predecessor: N/A

Successor: Resystemized Purchase

Function: RFQ and purchase order generator

Type of Contracting: Central supply

Sites Planned: 2

Sites Operating: 2

Developed By: FMSO

Maintained By: FMSO

Hardware: IBM 3090

Application Software: COBOL

DBMS: None

Operating Mode: Batch

Operating System: MVS/XA

System Integration: UICP

Description: Produces SF18 and DD Form 1155s but not clauses. The system will determine possible sources based on information stored for the required item. Based on item description and item history, it will determine if RFQ is necessary. After price has been established, it will generate DD Form 1155.

Planned Enhancements: None, will be replaced by UICP-Purchase Resystemization.

Emerging Technologies: None

System/Project Name: Undefined Contract Action Management System

Acronym: UCAMS **Organization:** AF, AFLC **Program Office:** HQ AFLC/PMXA
Wright-Patterson
AFB, Ohio

Point of Contact: Ray Beckett

Telephone: Autovon: 787-2188

Status: Operational

Parent System: CIDS/J018

Predecessor: UPAMS

Successor: CDMS

Function: Contract action status

Type of Contracting: Central supply

Sites Planned: 5

Sites Operating: 5

Developed By: HQ AFLC/PMXA

Maintained By: HQ AFLC

Hardware: Data General MV10000 or MV8000, depending on integration

Application Software: COBOL

DBMS: Data General DBMS

Operating Mode: On line, real time

Operating System: AOS/VS

System Integration: ADIS/J041 data feed

Description: Undefined Contract Action (UCA) data is entered to establish UCA record for tracking. Some data obtained from ADIS/J041. Monthly reports by contracting activity are produced to manage number, type, dollar value, age, and contractor information on UCAs.

Planned Enhancements: None

Emerging Technologies: None

System/Project Name: Undefinitized Contractual Action Presentation System

Acronym: UCAPS **Organization:** AF, AFCMD **Program Office:** AFCMD/TM
Kirtland AFB, N.M.

Point of Contact: Dwayne Ericksen

Telephone: Autovon: 244-5372

Status: Developmental

Parent System: N/A

Predecessor: Manual process

Successor: N/A

Function: Executive briefings

Type of Contracting: Contract administration

Sites Planned: 20 AFPROs + 1 HQ

Sites Operating: 0

Developed By: TRW, Inc.

Maintained By: TBD

Hardware: VAX 11/780s or Z-248s (not yet decided)

Application Software: Telegraph graphics software on VAX PIXIE and Z-248

DBMS: Oracle on VAX

Operating Mode: Interactive updates, batch
graph generation

Operating System: Z-248: MS-DOS
VAX: VMS

System Integration: Data fed from AMIS's TURFA

Description: End-of-month summary data from TURFA for each AFPRO is downloaded from AMIS mainframe to central VAX.

Planned Enhancements: Possible download of data from VAX to Z-248

Emerging Technologies: None