



CITY OF SACRAMENTO

DEPARTMENT OF DATA PROCESSING

James L. Puthuff
Data Processing Director
Alfred S. Ortiz
Systems & Programming Manager
Van Mitchell
Operations Manager
Marv Broyles
Computer Systems Specialist

April 8, 1986

Budget and Finance Committee
Sacramento, California

Honorable Members in Session:

SUBJECT: Acquisition of FMIS Utility Software

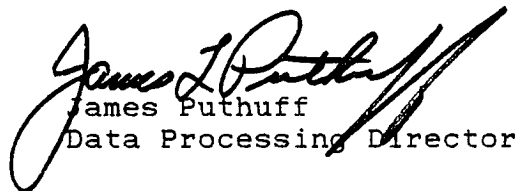
SUMMARY:

The attached report is being submitted to the Budget and Finance Committee for review and recommendations prior to consideration by the City Council at their regular meeting April 15, 1986

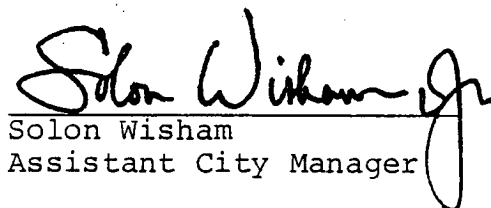
RECOMMENDATION:

It is recommended that the City Council approve the attached Resolution authorizing the City Manager to enter into agreements with three separate vendors for utility software that will provide a means for the staff to monitor, control, schedule, maintain and manage the new FMIS computer system.

Respectfully submitted,


James Puthuff
Data Processing Director

RECOMMENDATION APPROVED:


Solon Wisham
Assistant City Manager



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SUBJECT: Acquisition of FMIS Utility Software

SUMMARY

The Financial Management Information System (FMIS) computer can more efficiently be operated with the assistance of certain utility software products. "Utility software" is a generic term that refers to a variety of software products marketed by vendors with the intent to provide tools which assist in using, monitoring, controlling, scheduling, maintaining, managing and reporting on the condition of the computer system and its individual components.

As part of the FMIS report presented on March 4th, City Council approved the acquisition of these products using normal procurement procedures for an amount not to exceed \$203,500. Due to the very tight schedule for implementing the FMIS application system, City staff recommends waiving formal competitive bidding to acquire the six utility software products listed below. In lieu of the formal bidding process, staff has investigated and analyzed a wide variety of products and recommends the following:

1. UCCEL Corporation
 - A. UCC-1 Magnetic Tape Library System
 - B. UCC-7 Automated Production Control System
 - C. UCC-11 Automated Job Management System

2. Candle Corporation

- A. OMEGAMON/MVS System Resource/Operating System Monitor
- B. OMEGAMON/CICS Communications Network Monitor

3. Information Builders, Inc.

- A. FOCUS - On-Line Inquiry and Report Writer

The combined cost of these six products is \$203,500 (plus tax) which was included in the cost projections provided in the FMIS project.

BACKGROUND

The plan for implementing the FMIS system included acquiring appropriate hardware. The staff studied the configuration of hardware carefully to determine the appropriate size and configuration. Also included was the determination of both the operating system software and the potential use of utility software. Both would assist the City staff in developing an efficient, carefully monitored, well managed computer complex.

The City interviewed other installations with similar computer systems and had our consulting firm of Touche Ross bring in an expert from their Texas office to review our analysis.

Touche Ross has reviewed the list of utility software products. They concur with City staff that although there are other products with excellent capabilities, these six products are best suited to meet the City's specific needs.

Please refer to Attachment A for further details.

FINANCIAL

The cost for each of the six products is as follows:

1. UCC-1 - Magnetic Tape Library System	\$20,800
2. UCC-7 - Automated Production Control System	39,000
3. UCC-11 - Automated Job Management System	16,800
4. OMEGAMON/MVS - System Resource/Operating System Monitor	28,500

5. OMEGAMON/MVS - Communications Network	
Monitor	25,500
6. FOCUS - On-Line Inquiry and Report Writer	72,500
	Total.....203,500

There is an annual maintenance charge of from 10% to 20% of the original purchase cost, depending on the vendor, which has been included in the FY 86/87 operating costs for Data Processing.

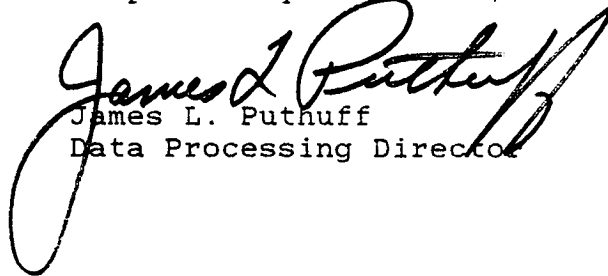
RECOMMENDATION

It is recommended that the City Council approve waiving formal competitive bidding for the six utility software products and authorize the City Manager to execute an agreement with

- A. UCCEL Corporation for a sum not to exceed *\$76,600
- B. Candle Corporation for a sum not to exceed *\$54,000
- C. Information Builders for a sum not to exceed *\$72,900

* (Plus normal sales tax)

Respectfully submitted,



James L. Puthuff
Data Processing Director

RECOMMENDATION APPROVED:

Walter J. Slipe
City Manager

RESOLUTION NO.

ADOPTED BY THE SACRAMENTO CITY COUNCIL ON DATE OF

April 15, 1986

RESOLUTION SUSPENDING FORMAL
COMPETITIVE BIDDING FOR THE UTILITY
SOFTWARE TO EXPEDITE INSTALLATION OF
SAME TO COINCIDE WITH FMIS HARDWARE
AND SOFTWARE IMPLEMENTATION

BE IT RESOLVED BY THE COUNCIL OF THE CITY OF SACRAMENTO:
TWO-THIRDS (2/3) OF ALL MEMBERS VOTING IN FAVOR THEREOF:

The City Manager is authorized to suspend formal
competitive bidding for utility software; and

FURTHER RESOLVED THAT,

The City Manager is authorized to enter into an
agreement with UCCEL Corporation for utility
software products called "UCC-1", "UCC-7", and
"UCC-11" for a sum not to exceed \$81,200; and

FURTHER RESOLVED THAT,

The City Manager is authorized to enter into an
agreement with Candle Corporation for utility
software products called "OMEGAMON/MVS" and
"OMEGAMON/CICS" for a sum not to exceed \$57,240;
and

FURTHER RESOLVED THAT,

The City Manager is authorized to enter into an agreement with Information Builders, Inc. for utility software called FOCUS for a sum not to exceed \$77,275.

MAYOR

ATTEST:

CITY CLERK

UTILITY SOFTWARE

UCCEL CORPORATION - Computer Operations Management Software

In each of the sites listed and in other sites contacted so far, the products of one company are being used (or are scheduled for installation) to meet one or more of the three areas as defined as important to Computer Operations. These products are UCC-One, UCC-Seven, and UCC-Eleven, all produced by UCCEL Corporation. These three software products are integrated to the extent that they directly interface with each other and easily meet the requirements of Computer Operations in managing the production processing workload. Applicability of these products to workload management is such that Computer Operations is recommending the reduction of assigned Computer Operator positions by 1 FTE person if these products are utilized on the new IBM 4381 computer system environment.

Contact with other municipal agencies (City of Anaheim, City of Seattle, and City of Modesto) county agencies (Sacramento County and Monterey County) and private firms (Almond Growers Exchange and SMUD) having IBM 43XX and/or 30XX equipment indicates that Computer Operations should acquire an integrated set of software made up of the following products: 1) A magnetic tape library system; 2) an automated production control system; and 3) an automated job management system. All of these systems should work together in an integrated arrangement whereby each software system supports and enhances the others

Magnetic Tape Library System (UCC-One)

A magnetic tape library system is a software product that controls and maintains the magnetic tape volumes used as input or created as output for all application programs running on the computer system. The magnetic tape library system must provide absolute protection against the inadvertent destruction of tape files in either single volume or multi-volume conditions. It must provide reports in several forms that aid Computer Operations in preparing and processing all production application programs.

Automated Production Control System (UCC-Seven)

An automated production control system is a combination job scheduling system and processing management system that automates the critical function of the production workload scheduling. It should provide on-line, real-time status information of production processes and aid the Computer Operations section in maximizing the capabilities of the computer equipment. It must provide the tools to successfully control the production processing environment and help manage the workload by providing data on scheduled and non-scheduled activities.

Automated Job Management System (UCC-Eleven)

An automated job management system is a system that provides an automated process for the manual tasks associated with rerun/restart set-up and execution in the case where a production process abnormally terminates. It must aid Computer Operations in determining and correcting the cause of the abnormal termination and automatically controls the restart of the job at the appropriate location in the affected job stream.

CANDLE CORPORATION - Technical Services Monitor Software

The purpose for acquiring system monitoring software is to allow the Technical Services staff to efficiently analyze the system resources, operating system and communications network. This will allow for tuning the system to insure maximum utilization of the system resources. Through research and with the recommendation of the Touche Ross consultant from Texas, the Technical Services and Operations staffs believe the OMEGAMON products to be the monitoring software that best meets the City's needs.

OMEGAMON/MVS - System Resource/Operating System Monitor

This is a real-time system monitoring package which provides more than 200 commands for the analysis, evaluation, and trouble-shooting of the MVS environment. Through the use of either a dedicated terminal, or as a task under TSO, OMEGAMON/MVS provides the means of displaying the current status of both the hardware and the software environment, as well as provide a display when exception conditions occur.

OMEGAMON/MVS offers an extremely flexible mechanism for the automatic analysis and reporting of exceptional conditions. The types of exception conditions reported may be divided into three categories; system activity, device activity, and user activity. A partial list of these categories are:

1. Low WTO buffers
2. Page dataset errors
3. Long I/O time on a page dataset
4. Missing main storage
5. A disk drops ready
6. A tape mount is pending beyond a given time interval
7. CSA storage utilization
8. SMF dataset problem
9. Excessive total paging
10. Excessive elapsed time

As a "fire-fighting" tool it provides a potent arsenal of restricted commands. The Authorized Command Facility provides a password protectable mechanism for the following:

1. Issue an MVS operator command
2. Display information as if from an operator console
3. Display data from a user's private area. This includes such information as dataset allocation, subpool storage allocation, TCB structure and module names.
4. Kill a job or TSO session.
5. Swap a job in or out.
6. Mark a job as swapable or non-swapable.
7. List or zap private or common storage areas.

Working through a major command/minor command structure screens may be tailored dynamically by the user or predefined and saved for future use. There is also an on-line tutorial that explains structure and syntax of commands. One other feature allows the interfacing between OMEGAMON/MVS and OMEGAMON/CICS.

OMEGAMON/CICS - Communications Network Monitor

OMEGAMON/CICS provides the same type of analysis, evaluation and troubleshooting capabilities for the communications network as OMEGAMON/MVS does for the operating environment. It also has the same type of early warning facility that allows for spotting exception conditions. Some of the automatic exception conditions that can be detected are:

1. Percent of DSA pages in use
2. Total VSAM string waits by file
3. Paging rate
4. Working set size
5. Maximum contiguous OSCOR
6. Number of transaction dumps taken
7. Working set size over fence
8. Number of storage violations
9. Number of control interval splits
10. I/O rate

Once thresholds have been reached, the Network Controller may be able to take remedial action to avert a slowdown. There is also an Authorized Command Facility that allows password protected access to the following functions:

1. Display or zap system or task storage areas
2. Enter a subset of the CEMT commands
3. Kill a task

It should be noted that the above facilities when used from a dedicated terminal may even be invoked when all other terminals are locked out of the CICS network.

INFORMATION BUILDERS, INC. - End-User Ad Hoc Reporting and
Inquiry Language

The recent decision to move into a state-of-the-art financial management information system, coupled with the move to a 4th generation hardware/software environment requires that we use tools that take advantage of the additional capabilities and speed of the new hardware. FOCUS is the product that best meets the needs of the City.

One area of immediate concern is to provide an on-line processing application for non-technical end-users, to select, retrieve, analyze, and perform ad hoc queries and reports.

Of major importance is the fact that Data Processing is looking for a product that is user oriented, we are primarily interested in a tool for end-user computing. FOCUS provides an easy to use, user friendly tool for managing data for reporting and inquiry purposes.

Another important factor is Data Processing's decision not to move into a data base environment for application control and development.

FOCUS is a highly versatile fourth generation language for IBM mainframes. FOCUS supports an impressive range of integrated functionality and, as such, is well suited for our specific needs. We can purchase the basic system which will provide the following functions:

- . Query language
- . Report generator
- . Screen painter/data entry
- . Menu structures
- . Procedural language
- . Subset language for non-technical users to extract data, edit data, sort data, perform calculations, and format reports

And if and when the decision is made, FOCUS can be used to control the entire application-development process and replace conventional computer programming wherever possible.

This integrated modularity which allows FOCUS to directly process existing files saves both overhead and time since they do not have to be loaded into a FOCUS database before they are usable.

FOCUS is easy to use, easy to learn, and provides excellent human factoring and supports many different types of end-user interfaces.