THE UNIVERSITY OF KANSAS · LAWRENCE, KANSAS · 66044

DEPARTMENT
OF
COMPUTER SCIENCE
913-UN 4-4482

1970 November 21

TO: Mr. Robert F. Brandt, Executive Director
Department of Administration, State of Kansas
State House, Topeka, Kansas 66612

FROM: Professor Earl J. Schweppe, Chairman
Computer Science Department
University of Kansas, Lawrence, Kansas 66044

SUBJECT: Request for authorization to lease and install a computer terminal system consisting of four (4) CRT Terminals and one (1) Printer Unit.

I. Recommendation

It is recommended that the following equipment be leased and installed in the Computer Science Department at the University of Kansas:

4 DATAPOINT Model 2200 CRT Terminals

1 DATAPOINT Model 2200 Printer Unit

These terminals are new equipment which will not be available until the first quarter of 1971 and so authorization is requested for the temporary lease of the following equipment to be used until the above equipment becomes available:

4 DATAPOINT Model 3300 CRT Terminals

4 DATAPOINT Model 3300T Magnetic Tape Units

1 DATAPOINT Model 3300P Printer Units

These computer terminals will be used by faculty and students involved in the educational and research program in Computer Science at the University.

II. Justification

The Computer Science Department has developed substantial need to expand its computer terminal equipment. This expanded need is related to an increase in the size of the faculty, growth in the number of students taking advanced courses in computer science, the need to successfully complete work on funded research projects, the need to provide better access to the Computation Center for students working on their master's theses, and the need to introduce our students in upper division courses to the more sophisticated techniques available in interactive computing.

Our experience during the past year with both "hard copy" and "CRT" type computer terminals and the present type of time-sharing indicate some severe limitations. First, the terminals themselves are quite crude and inconvenient

to use. The "hard copy" terminals are slow, often noisy, difficult to correct, and much material is printed which is of no value. The "CRT" terminals do not allow one to obtain hard copy when needed and many have been designed with artificial limitations to behave like antiquated hard copy terminals. Second, the principal computer is not always available because of system failures or other factors. When this computer is out of service most present terminals are of little value. Third, some system failures involve a loss of data files and these could be more quickly and easily restored if a local copy was available. With most present terminals one has at best a crude local copy, such as on paper tape. Fourth, present terminals, data sets, acoustic couplers, and other such equipment involve a maze of switches to push and sequence of operations to perform. These are confusing, time consuming and for the most part unnecessary. Finally, time sharing is expensive and most of the time spent in contact a major computer involves a relatively low level of computational activity.

We are just now beginning to see the advent of programmable remote computer terminal systems which offer some hope for correcting many of these difficulties. Such programmable terminals will allow many time-sharing operations to be performed at the local terminal. We anticipate the following applications of the proposed system: text creation, scanning, and editing; program writing and syntax checking; formatted data entry and verification; desk calculator on keyboard-display; cassette copying and merging; and computer-aided instruction.

Beginning early last summer the Chairman of the Department of Computer Science has conducted an extensive survey of computer terminals and related equipment in preparation for making this proposal. A letter and a list of general specifications for the equipment which we hoped to obtain was sent out to nearly one hundred vendors. Although we have obtained large amounts of information and investigated many lines of equipment, none of this equipment appears to compete favorably with the DATAPOINT 2200 system proposed herein. We will however continue to study possibilities in this area as developments can be expected to occur with great rapidity. The Department is anxious to have the finest equipment available to it for explorations in the man-machine interface area. It is our desire to reach as near the forefront of the developments in this area as is within our means.

The Department of Computer Science already has underway two funded research projects: one funded by the National Science Foundation is concerned with "automata theory" and the other funded by the Office of Naval Research involves "automated language analysis." Several additional such research proposals are in the state of preparation. One of these planned proposals will involve specific research on the application of computational techniques involved with the use of programmable or "intelligent" terminals such as those proposed herein. The success of all these funded research projects will depend on the efficient access to the computational resources at the University.

With the proposed terminals, the Department of Computer Science will be able to offer its graduate students and all students in advanced courses access to the computer at a much more sophisticated level than has been possible in the past. If the anticipated success of this approach to the use of computers is achieved, the results will be far-reaching in their application to all educational activities involving the computer as well as many of the research and management applications which are foreseen at the University of Kansas. In

particular the success of joint ventures with such groups as KCRCHE in the development of regional computer cooperation could well hinge on equipment of this type.

III. Cost Summary

The new equipment to be leased and installed as soon as possible in 1971 will involve the following approximate costs, subject to final price determination as the equipment is formally announced in November:

		Each Monthly	Total Monthly
4	DATAPOINT Model 2200 CRT Terminals with 8K of memory, processor, two integral tape cassette drives and communications adaptor.	270.00	1080.00
1	DATAPOINT Model 2200P Printer Unit with selectric typing mechanism.	150.00	150.00
4	Telephone circuits with access arrangement	10.50	42.00
			$1272.00

The temporary equipment to be leased until the above requested equipment is available, installed and operational, will involve the following costs:

		Each Monthly	Total Monthly
4	DATAPOINT Model 3300 CRT Terminals	131.50	526.00
4	DATAPOINT Model 3300T Tape Units	80.00	320.00
1	DATAPOINT Model 3300P Printer Unit	100.00	100.00
4	Novation Acoustic Couplers	25.00	100.00
4	Telephone Circuits	5.50	22.00
			$1068.00

Initially only two of the DATAPOINT 3300 terminals, two magnetic tape units, and the printer will be installed. A decision on whether to expand this installation to four units will depend upon the actual delivery date for the DATAPOINT 2200 system.

The Department presently has a GE-Honeywell TermiNet 300 remote terminal to the GE-Honeywell 635 Computer. The total monthly cost of this terminal at present is approximately $200.00 per month. Although this equipment will probably be discontinued within a few months after the new equipment becomes fully operational, there is a possibility that this terminal can be effectively utilized as a hard copy output device to the DATAPOINT 2200 terminals. As a result of this possibility, we prefer not to make a specific commitment to an exact date of release of this terminal.

IV. Action

Authorization of the University and the State Department of Administration is requested to issue firm orders to the Computer Terminal Corporation of San Antonion, Texas, and the Southwestern Bell Telephone Company for the leasing and installment of the above listed equipment.

The entire cost of this system is to be charged to the Departmental Account Number 682-2192-6002.

Direct inquiries to Professor Earl J. Schweppe, Chairman, Computer Science Department The University of Kansas, Lawrence, Kansas 66044, Telephone Area Code 913, 864-4482.

Requested: Earl J. Schweppe

Earl J. Schweppe
Professor and Chairman

Concurred: Paul J. Wolfe

Paul J. Wolfe, Director
Computation Center

Concurred: William W. Hambleton

William W. Hambleton, Chairman
University Committee for Computing

Concurred: Keith L. Nitcher

Keith L. Nitcher
Vice Chancellor for Business Affairs

Recommended: _____

Kenneth T. Orr
State Director, Data Processing

Approved: _____

Robert F. Brandt
Executive Director
State Department of Administration

THE UNIVERSITY OF KANSAS · LAWRENCE, KANSAS · 66044

OFFICE OF THE
CHANCELLOR
913-864-3131

December 3, 1970

Mr. Robert F. Brandt, Executive Director
Department of Administration
State House
Topeka, Kansas 66612

Dear Mr. Brandt:

I transmit to you herewith a request for terminal and related equipment to be used in the instructional program of the Department of Computer Science. The costs for this equipment were budgeted last spring as part of the "Supplies and Expense" of that department and are fully covered.

This request has my approval and endorsement.

Sincerely,

E. L. Chalmers, Jr.

E. L. Chalmers, Jr.
Chancellor

ELC:FHH:jk

cc: Vice Chancellor Heller
Vice Chancellor Nitcher
Professor Hambleton
Mr. Wolfe
Professor Schweppe

Computer Terminal Corporation
9725 DATAPOINT DRIVE • SAN ANTONIO, TEXAS 78229
PHONE 512/696-4520

AGREEMENT NUMBER 02596

Agreement for the Use and Maintenance of Computer Terminal Corporation Units

Purchase Order Number	Salesman	Branch	Date
	A.R. Tibbetts	Minneapolis	21 Dec 1970

BILL TO:
The University of Kansas
Computation Center
Summerfield Hall, Annex A
Lawrence, Kansas 66044

INSTALL AT:
The University of Kansas
Department of Computer Science
Strong Hall
Lawrence, Kansas 66044

Qty.	Model and Description	Monthly Lease Each	Total Monthly Charge	Purchase Option Price
2	Datapoint 2200 - 8K	$225.	$450.	$7800/ea.
2	Communication I/F with 103A Modem	$45.	$90.	$1500/ea.
		(If exempt indicate) SALES TAX	EXEMPT	
		TOTAL		

Customer agrees to pay lease charges of $ 540. per month for a period of 12 months (not to be less than 12 months). Lease charges are payable for the entire time each machine is in customer's possession.

Lease shall be payable in advance as set forth below:
☐ Annually at 6% discount ☐ Monthly

PURCHASE OPTION: Customer may elect to purchase the equipment herein leased for a price as stated above in the section "Purchase Option Price", plus local taxes, if any, imposed thereon, less the following allowance for total leases.

Lease Period:	Purchase Allowance:
1 - 3 Months	90% of Lease Payments
4 - 6 Months	70% of Lease Payments
7 - 12 Months	60% of Lease Payments
13 + Months	50% of Lease Payments not to exceed 50% of Purchase Price of equipment

Remarks: _____

Name of Bank _____ (Branch) (City) (State) (Contact Officer)

Vendor Reference _____ (City) (State) (Contact)

Signers Name Paul J. Wolfe (Please Print)

Authorized Signature Paul J. Wolfe

Title Director, Computation Center

Date 12/21/70

Accepted By:
COMPUTER TERMINAL CORPORATION

By: _____

HOME OFFICE

FORM 22 Rev. 10/70

THE UNIVERSITY OF KANSAS · LAWRENCE, KANSAS · 66044

DEPARTMENT
OF
COMPUTER SCIENCE
913-UN 4-4482

1971 February 19

TO: Computer Science Faculty and Student Representatives

FROM: Earl J. Schweppe, Chairman

SUBJECT: Schedule for DATAPOINT 2200

The first fifty of these machines are currently in production and should be available for delivery about April 1. The University of Kansas is scheduled to receive two of these first machines. Although the Department of Computer Science has first priority on these first two machines, a number of other people are interested in exploring their usage. The Department should decide soon on whether it wishes to take delivery on both these machines or whether it wishes to share them with others.

On March 17 the Kansas City Chapter of ACM is holding an all afternoon and evening meeting called "Expo 71" at the Glenwood Manor Motel in Overland Park, Kansas. This meeting will include the demonstration of remote computing equipment in the evening. I am conducting a seminar in the afternoon at that meeting on "Remote Terminal Devices" at which terminals similar to the DATAPOINT 2200 will be discussed. Mr. Jonathan Schmidt, Senior Engineering in charge of software for the DATAPOINT 2200, will be at that meeting and CTC will display one of the earlier production prototypes of the DATAPOINT 2200 there. Mr. Schmidt will bring the terminal to Lawrence for demonstration either before or after that meeting.

The software for the DATAPOINT 2200 seems to be progressing quite well. The operating system is now running and includes naming, cataloging, addition, deletion, fetching, and execution of programs on the system tape as well as input-output and other utility macros. The program assembler and editor is almost complete--it is now working from the keyboard and relatively minor modifications to make it work from tape are being made. A bounded self emulator or trace program is now running which allows tracing of programs for debugging and demonstration. Thus emulator displays the registers on the scope and allows one to look at windows in the data or program during execution. A demonstration package will include a one-arm bandit simulator, a more code generator, an ASR 33 Teletype simulator, and several games. Other software is under development.

The first full production runs of the DATAPOINT 2200 are scheduled for early summer. The first programming school on these machines will be conducted in San Antonio starting March 22. Computer Terminal Corporation is planning to locate a service man in the Kansas City area later this spring.

EJS:mmh

cc: Vice Chancellor Francis H. Heller
William W. Hambleton, Chairman, University Committee for Computing
Paul J. Wolfe, Director, Computation Center
Other Interested Persons

1971 April 24

TO: Whom It May Concern

FROM: Earl J. Schweppe

SUBJECT: Datapoint 2200 Seminar

Since the first Datapoint 2200 is scheduled to be delivered next week, it seems desirable to organize an informal seminar to study the programming and operating systems for this machine.

It is proposed that we start this seminar as soon as possible, but I would like to select a time which is available to everyone who is interested. Please indicate your interest and schedule for the next several weeks on the form below and return it to Melissa by Tuesday at 5 p.m.. We will select a time and announce the schedule on Wednesday, April 28.

I am interested. Your name _____

Telephone _____

Address _____

_____

My schedule during the next several weeks is as follows: