

To: Members of the Computer Outreach Committee

From: Sandy Scharf, Director - Computer Support Bureau

Subject: Dial-up Connection to the Legislative Computer System

Date: July 17, 1985

The following questions must be considered before a realistic policy of computer access can be established and costs can be estimated.

1. Will Legislators be permitted to use the dial-up capabilities? How many?
2. Will State Agencies be permitted to use the dial-up capabilities? How many?
3. Will the Private Sector be permitted to use the dial-up capabilities? How many?
4. What type of communication will be available? asynchronous? synchronous? both?
5. What will the charges be for access capability? connect time?
6. What will be the impact on the current system? during session?
7. What staffing requirements will the Computer Support Bureau need to implement and administer the dial-up system?
8. What will be the cost of additional staff and equipment?

There are two different types of communication that can access our Mapper software, asynchronous and synchronous. Certain costs are associated with each one. I will try to list the user/State costs and the advantages/disadvantages associated with each type.

#### ASYNCHRONOUS

- a. Kaufman 8830 Protocol Converter with 8 ports (expandable to 28). State cost \$5,000 (additional ports \$500 per pair).
- b. Telephone line installation. State cost \$50 per line.
- c. Telephone rotary. State cost \$22 per line per month.
- d. Modems. State cost \$545 each (one needed for each line).
- e. Rack mount for cabinet (hold eight modems). State cost \$1,250.
- f. Two Line modules for the DCP (communication processor). State cost \$2,550
- g. I/O Expansion for the DCP. State cost \$14,185 plus \$76 per month maint.
- h. User software costs approx \$250.
- i. User hardware costs: asynchronous modem plus phone time.

#### SYNCHRONOUS

- a. The telephone, modem and DCP charges listed above would be the same for synchronous communication.
- b. Line modules for the DCP. State cost \$1,275 per line.
- c. Step board and software for IBM expansion bus compatible computer. User costs approx. \$750.

The main advantage using synchronous communication is that the user can communicate with the Computer Support Bureau's system without using a converter and use the software(Mapper), to its full extent.

The only advantage of asynchronous communication is many in the user community have asynchronous communication as part of their current configuration. The user would still have to obtain a software package to communicate with the legislative computer.

There are also some disadvantages with asynchronous communication. I have enclosed a letter from Kaufman Data Communication that points out that the user could experience screen manipulation problems depending on the capabilities of the individual device. Also the letter makes it clear that because of different characteristics in each terminal, screen functions will not be the same on all terminals. Another problem is the line speed on an async line is slower than synchronous communication.

The State of Maryland, which uses a Sperry computer, decided to use the step board approach because of the number of various terminals that would use their system. Maryland felt that the inconsistencies would hamper all users from fully utilizing their computer and cause problems with some users not able to connect to Sperry equipment.

I think the approach for the first year should be to let a limited number of users access the system to evaluate the impact on our current equipment and how this affects our operation during session. If too large a group of users are introduced the results may cause problems with our response time during critical time periods.

To effectively monitor users on the system, create the necessary billing procedures and programming needed to capture the information handle the normal day to day business and problem resolution, a staff increase will be a strong probability.

I have also enclosed a letter from the State of Illinois Legislative Information System describing their outside user program. Please note the specific requirements listed on page two regarding equipment and page three for calculation of outside user fees. The Illinois' Legislative Information System currently has a staff of thirty employees.



**PERSONAL COMPUTER ACCESS TO MAPPER  
USING KAUFMAN PROTOCOL CONVERTERS**

The Kaufman Protocol Converters can provide an economical way for a cluster of Personal Computers and low-priced ASCII terminals to access the Sperry MAPPER System. A Kaufman protocol converter eliminates the need for expensive synchronous boards for the PC. Using a Kaufman 871 priced at \$2,624, four PC's with the standard ASCII port and \$195 worth of software can communicate with the 1100. The STEP board approach would be several hundred dollars more. In addition, the Kaufman protocol converters require only one port of a GCS or DCP. The Kaufman Protocol Converters' capacity ranges from four to 28 terminal ports and one to four host links. All ports can be accessed directly or through modems.

There are many combinations of PC's and PC software which have the potential to access MAPPER. The surface has only been scratched in this area. To date, the experience of Kaufman Data and its users has been limited to MAPPER access from the following:

IBM PC  
Sperry PC  
DEC VT100  
HP 2621

Many other ASCII terminals, as well as the HP 150 PC, Tandy 2000 and TRS 80, are used to access 1100's. Many should work with MAPPER, but it will depend on the screen manipulation capabilities of the individual device and, in the case of PC's, the software package used. A list of the terminals supported for the 1100 is attached.

Recent tests of an MS/DOS PC accessing MAPPER revealed the following:

- The PC using a software product called TERETERM emulating a VT 100 performed very well.
- The popular PC software product called Crosstalk did not provide good facilities for MAPPER access.
- One of Kaufman's customers has had good results using the software product VTERM again emulating VT 100.

- MAPPER must be configured for UTS 20 input if the PC/Kaufman combination is to work correctly. In the MAPPER configuration RID, the field after Unit Number should be 2S,T.

- Terminal ports and host ports can be run at different speeds. Many combinations were tried. The only combination which did not work properly was 2400 baud from the terminals and 9600 baud to the host. The reason is not known at this time, but testing will continue. All other tested combinations worked effectively. No attempts were made at rates below 1200 baud or above 9600 baud.

- The basic PC ASCII communications software is not adequate to communicate with a mainframe. That is because a basic PC does not have the sophisticated screen controls necessary to emulate a Uniscope. Thus, a product such as Teleterm or VTERM is needed to emulate a more sophisticated ASCII terminal which, in turn, emulates a Uniscope.

Two general considerations should be kept in mind when accessing MAPPER:

- Because ASCII terminals have different characteristics, it is not expected that all PC's or terminals will provide identical screen functions. For instance, reverse video and visible tabbing are not possible using the VT 100 or HP terminals and with PC's emulating them.

- If 1100 access is via DCP/Telcon, a minor change to Telcon timing is required for the protocol converter to operate properly. The exact change depends on the level of Telcon in use. No throughput degradation is experienced when the change is made.

Technical information concerning Telcon timing is available from Kaufman Data. If a user has dial-up facilities and wants to try accessing his own MAPPER system from an ASCII terminal or PC using PC software not yet tried, he can do so through the Kaufman Data dial-up demo facility in Mountain View, California. For any technical assistance, contact:

Ben Jackson, Manager, Marketing Support  
Mountain View, California  
(415) 962-8811

TELETERM is a product of Telexpress, Inc. It can be ordered through Radio Shack or from Telexpress Inc., Cherry Hill, NJ. Call (609) 877-4900 for information.

VTERM is produced by Techland Systems, Inc., New York City. Call  
(212) 684-7788 for details.

Questions about Kaufman products can be directed to the following:

Gary Polk, V.P. Marketing  
Mountain View, CA (415) 962-8811

Tom Byrne, Midwestern Regional Manager  
Chicago, IL (312) 398-8292

Dave Monk, Eastern Regional Manager  
Philadelphia, PA (215) 648-3926



## OFFICERS

### *Chairman*

Howard W. Carroll  
Senator

### *Vice-Chairman*

Forest D. Etheredge  
Senator

### *Secretary*

Woods Bowman  
Representative

## MEMBERS

### SENATORS

Kenneth V. Suzbee  
Howard W. Carroll  
Forest D. Etheredge  
Beverly Fawell

### REPRESENTATIVES

Woods Bowman  
Dwight P. Friedrich  
Arthur L. Turner  
Sam Vinson

### EX OFFICIO

Phillip J. Rock,  
*Senate President*

James "Pete" Philip,  
*Senate Minority Leader*

Kenneth A. Wright,  
*Senate Secretary*

Edward E. Fernandes,  
*Asst. Senate Secretary*

Michael J. Madigan  
*Speaker of the House*

Lee A. Daniels  
*House Minority Leader*

John F. O'Brien  
*Chief Clerk of the House*

T. Leone  
*Asst. Clerk of the House*

### EXECUTIVE DIRECTOR

Walter J. Kesselman

STATE OF ILLINOIS  
LEGISLATIVE INFORMATION SYSTEM  
705 WILLIAM G. STRATTON BUILDING  
SPRINGFIELD, ILLINOIS 62708  
TELEPHONE: (217) 782-3944

## OUTSIDE USERS SUBSCRIPTION PROGRAM

### INFORMATION BULLETIN

BACKGROUND: 3 Ill. Adm. Code 600.70, Access to Legislative Information System Information states that the System may provide access to the Bill Status information if the following conditions are met:

1. Access shall be by dial-up telephone lines unless means of access is specifically approved by the Board.
2. Access shall be provided only at times when the Bill Status System is available to its regular Legislative Users.
3. Paying users of the Bill Status System shall have access to the system via telephone lines shared with other users.
4. Paying users are not to allow third parties to use the accessing capabilities of the Bill Status System.
5. Paying users, shall in addition to the fee charged by LIS, be responsible for all costs of communicating with the Bill Status System.

DEFINITION OF OUTSIDE USERS: LIS defines Outside Users as all government entities, organizations and private persons not a legislative committee, board, bureau or commission and agencies not receiving annual appropriations of funds for their operations by the Illinois General Assembly.

EQUIPMENT: It is the responsibility of the users to provide the equipment for the access to the LIS Bill Status System. Should you decide to obtain your own equipment for the Outside User Program, please relay the following specifications to your vendor:

## I. 2741 Terminals

1. The equipment must be compatible to an IBM 2741 system.
2. The communicating language must be EBCDIC or CORRESPONDENCE.
3. We have two rates of speed:
  - a. low 134 Baud
  - b. high 300 Baud

## II. TTY Terminals

1. The equipment must be compatible with a Teletype 33/35 system.
2. The communicating language must be ASCII.
3. Only one line speed is available - 300 baud.

INFORMATION AVAILABLE: The information available through the dial-up terminal includes:

1. Condensed Bill Status Inquiry.
2. Complete Bill Status Inquiry.
3. Topic Inquiry.
4. Sponsor Inquiry.
5. Committee Inquiry.
6. User Inquiry.
7. Bills Last Acted on for a Certain Date.
8. Committee Hearings and Commission Meetings.
9. Statute Inquiry.
10. Summary of Public Act.
11. Complete Public Act Information.

ANNUAL CHARGE: The Legislative Information System has established an annual fee of \$550.00 for access to the Bill Status System. This annual fee must be paid and a contract signed prior to access to the system being granted. A separate fee of \$400 per sign-on has been established for subscribers who require additional sign-ons. Also subscription fees for half-year subscriptions will be effective on August 1 this year.

TECHNICAL ASSISTANCE AND TRAINING: Upon request of the user, LIS staff will provide the technical assistance required in the equipment selection or other problems and will provide training for user personnel at our Springfield office.

REPORTS AND SPECIAL REQUESTS: Standard reports will be furnished to users. Special reports must be requested and will be handled on an individual basis.

PRIORITY OF ACCESS: Access to non-Legislative users shall be granted in such a manner that the quality of service available to legislative users of the Bill Status System is in no way reduced.

FOR FURTHER INFORMATION CONTACT: Mrs. Barbara Jamison  
Legislative Information System  
705 Stratton Office Building  
Springfield, Illinois 62706  
(217) 782-4083



July 16, 1984

STATE OF ILLINOIS  
LEGISLATIVE INFORMATION SYSTEM

CALCULATIONS FOR THE OUTSIDE USER FEES  
BILL STATUS SYSTEM

I. Assumptions

- A. The calculations are based on 60 outside user subscriptions.
- B. The computation of salaries are based on the Department of Central Management Services formula for computing hourly salaries. The hourly salaries are computed by adding the monthly salary of all the employees in the section divided by the number of employees times 12 divided by 1957.5 hours. Fifteen percent is then added for fringe benefits.
- C. The monthly cost of a telephone line is \$14. Since there is no outgoing calls this is the complete charge for the line.
- D. The monthly cost of the computer is estimated at \$11 per telephone line.
- E. Costs of reports provided from the system is estimated at \$65 per year for postage and paper.
- F. The cost of leasing one modem is \$18.08 per month. Ten modems are allocated to the outside user program.

II. Computations For Dial-up Access

1. Training and Assistance	
15 hours @ \$9.35 per hour	\$ 140.25
2. Software Specialist Support	
12 hours @ \$17.04 per hour	204.48
3. Report Production and Distribution Costs	65.00
4. Computer and Telephone Costs	60.00
5. Modem Rental Costs	36.16
TOTAL ESTIMATED COSTS	<u>\$ 505.89</u>

III. COMPARISON WITH FEE STRUCTURE

	Dial-up
	<u>Access</u>
Fees Charged	\$ 550.00
Estimated Cost	505.89
Indirect Cost Recovery	<u>\$ 44.11</u>
% Indirect Cost Recovery	8.0%

July 16, 1984

## TRANSACTION REPORTS - BILL STATUS SYSTEM

Attached is a table that presents Bill Status transactions for Fiscal Years 1983 and 1984. We have broken the statistics down into the following categories:

Legislator Dial-up Access - In January 1983 LIS initiated a program to allow Legislators dial-up access to the Bill Status System from their District Offices. The access is provided at no charge except that the Legislator must pay for the equipment and telephone call. At this time there are ten Legislators using this program.

State Agency Dial-up Access - Some State agencies use dial-up access to the Bill Status System rather than direct access through the Department of Central Management Services (DCMS) computers either as back-up for their direct access or because of the inaccessibility of the DCMS terminals. There is no charge for the access but the agency must pay for the equipment and telecommunications costs.

State Agency - DCMS Access - All State agencies that have access to the DCMS computers have access to the LIS computer via a link between the LIS and DCMS computers. There is no charge by LIS to the State agency for access but the agency pays DCMS for each transaction plus the agency pays the associated terminal and telecommunications costs.

Legislative User Access - This category includes all Legislative agencies and staff and all Statewide elected officials. Access is provided by terminals wired directly to the LIS computers. Those organizations required by the LIS Statutes to be provided service and equipment are not charged for their access. Other Legislative commissions are provided access free of charge but are required to provide their own terminals.

Outside User - Dial-up Access - This category included all users who pay a subscription fee for dial-up access to the Bill Status System.

The information provided in the table includes the total number of transactions for each group and the percent of transactions for that month for that group. The data reveals that during no month have the outside users transactions exceeded 15% of the total transactions for that month. Our experience to-date with the Legislator program indicates that it has not had a significant impact on our usage rates.

A review of the funds collected in Fiscal Year 1983 indicates that \$33,000 was collected for subscriptions while our expenditures for all data related communications totaled \$42,451.45. The outside user program recovered 77.7% of our total data related telecommunications expenditures.

In Fiscal Year 1984 LIS collected \$48,590 for subscriptions and while we have not received all data communications bills for Fiscal Year 1984 we estimate our expenditures will be less than the amount collected in subscription fees. This Fiscal Year our outside user program will pay for our total data communications costs.

TABLE I  
 Bill Status System Transaction Statistics  
 FISCAL YEAR 1983

Category	Jul		Aug		Sep		Oct		Nov		Dec	
	#	%	#	%	#	%	#	%	#	%	#	%
Legislator Dial-up	-	-	-	-	-	-	-	-	-	-	-	-
State Agency-Dial-up	487	1.1	253	1.0	168	.6	217	1.1	178	.7	167	.6
State Agency-DCMS Link	8,927	19.5	4,835	19.4	4,648	15.9	961	5.0	1,283	5.1	1,373	5.0
Legislative Users	32,984	72.3	19,151	76.7	23,522	80.5	17,055	89.6	23,274	92.3	25,267	92.6
Outside Users-Dial-up	<u>3,226</u>	7.1	<u>712</u>	2.9	<u>878</u>	3.0	<u>809</u>	4.3	<u>475</u>	1.9	<u>487</u>	1.8
TOTAL	45,624		24,951		29,216		19,042		25,210		27,294	

\*\*\*\*\*

Category	Jan		Feb		Mar		Apr		May		Jun	
	#	%	#	%	#	%	#	%	#	%	#	%
Legislator-Dial-up	-	-	299	.6	437	.4	356	.2	181	.1	93	.1
State Agency-Dial-up	344	1.0	1,083	2.2	3,576	3.7	5,581	3.6	4,549	2.6	4,020	2.5
State Agency-DCMS Link	1,835	5.0	3,153	6.3	9,071	9.4	14,312	9.2	20,171	11.5	20,825	13.0
Legislative Users	32,794	90.2	40,896	81.7	70,965	73.4	112,416	72.7	128,181	72.9	123,402	76.9
Outside Users-Dial-up	<u>1,392</u>	3.8	<u>4,617</u>	9.2	<u>12,657</u>	13.1	<u>22,054</u>	14.3	<u>22,779</u>	12.9	<u>12,048</u>	7.5
TOTAL	36,365		50,048		96,706		154,719		175,861		160,388	

TABLE 2  
 Bill Status System Transaction Statistics  
 FISCAL YEAR 1984

Category	Jul		Aug		Sep		Oct		Nov		Dec	
	#	%	#	%	#	%	#	%	#	%	#	%
Legislator Dial-up	59	.1	30	.1	15	.0	29	.0	43	.1	10	.0
State Agency-Dial-up	2,405	2.8	3,717	7.0	1,466	2.0	1,019	1.5	658	1.4	468	1.6
State Agency-DCMS Link	10,065	11.9	4,876	9.2	6,799	9.4	5,270	7.9	3,928	8.0	2,676	9.0
Legislative Users	66,452	78.6	41,619	78.3	59,902	82.8	57,268	85.6	41,339	84.5	24,954	83.8
Outside Users-Dial-up	5,542	6.6	2,882	5.4	4,207	5.8	3,375	5.0	2,940	6.0	1,682	5.6
<b>TOTAL</b>	<b>84,523</b>		<b>53,124</b>		<b>72,389</b>		<b>66,961</b>		<b>48,908</b>		<b>29,790</b>	
*****												
Category	Jan		Feb		Mar		Apr		May		Jun	
	#	%	#	%	#	%	#	%	#	%	#	%
Legislator-Dial-up	34	.1	19	.0	76	.1	119	.1	137	.1	110	.1
State Agency-Dial-up	902	2.2	1,804	3.8	1,551	2.2	4,993	4.0	3,634	2.3	2,019	1.5
State Agency-DCMS Link	2,843	6.9	2,953	6.2	7,091	9.8	13,784	11.0	17,637	11.2	16,934	12.3
Legislative Users	34,943	82.1	35,767	75.3	54,308	75.3	88,085	70.6	115,479	73.3	105,925	76.9
Outside Users-Dial-up	3,582	8.7	6,987	14.7	9,100	12.6	17,880	14.3	20,580	13.1	12,676	9.2
<b>TOTAL</b>	<b>41,404</b>		<b>47,530</b>		<b>72,126</b>		<b>124,861</b>		<b>157,467</b>		<b>137,664</b>	