KEV 15-FEB-73 15:34 14450

please contact me

please get in touch with me about the file <IMLAC>IMLOAD.NLS For some reason this file is locked by you

14450 Distribution Owen, A. D. (Buz), please contact me

(J14450) 15-FEB-73 15:34; Title: Author(s): Victor, Kenneth E. (Ken) /KEV; Distribution: /ado ; Sub-Collections: SRI-ARC; Clerk: KEV;

Two free DEX terminals no longer available.

This message supercedes the message I sent Tuesday Feb 13 about DEX.

Two free DEX terminals no longer available.

All of the free DEX terminals have been eliminated. One was moved into Doug's Office, the two in the Parsley room were taken down in order to supply T-I's to people who did not want termicettes attached. There are consequently two unused termicettes in the storage room for you if you want to help lower the load average during working hours or if you want to be able to work even if you can't get online.

1

Also, my terminal is still available mornings.

14451 Distribution

Van Nouhuys, Dirk H., Victor, Kenneth E. (Ken), Wallace, Donald C. (Smokey), Watson, Richard W., Andrews, Don I., Hoffman, Carol B., Lee, Susan R., Michael, Elizabeth K., Dornbush, Charles F., ARC, Guest O., Feinler, Elizabeth J. (Jake), Handbook, Augmentation Research, Kelley, Kirk E., Meyer, N. Dean, Byrd, Kay F., Prather, Ralph, White, James E. (Jim), Vallee, Jacques F., Kaye, Diane S., Rech, Paul, Kudlick, Michael D., Ferguson, Ferg R., Lane, Linda L., Auerbach, Marilyn F., Bass, Walt, Engelbart, Douglas C., Hardeman, Beauregard A., Hardy, Martin E., Hopper, J., D., Irby, Charles H., Jernigan, Mil E., Lehtman, Harvey G., North, Jeanne B., Norton, James C., Paxton, William H., Peters, Jeffrey C., Ratliff, Jake, Van De Riet, Edwin K.

Iwo free DEX terminals no longer available.

(J14451) 14-FEE-73 21:23; Title: Author(s): Kelley, Kirk E. /KIRK; Distribution: /sri-arc; Sub-Collections: SRI-ARC; Clerk: KIRK;

Locator Meeting

(J14452) 15-FEB-73 16:17; Title: Author(s): Kudlick, Michael D. /NDK; Distribution: /JBN DVN RWW; Sub-Collections: SRI-ARC; Clerk: KIRK;

14452 Distribution North, Jeanne B., Van Nouhuys, Dirk H., Watson, Richard W.,

DNLS NP Augmented Insert and Combined Move & Replace command plan.

How many times have you gotten ready to insert something and realized that you already had it somewhere else on the screen or on line, and could copy it if only you could point to it with the mouse?

1

Instead, you either resigned youself to inserting it by hand, or did a CD and typed "Copy" whatever when you could have done everything you wanted with the Insert Command if it only had the same option of bugging that the Replace Command has.

1a

And how many times have you wanted to "Move on" something deleting what was there. Or another way of putting it: Combined Move and Replace?

2

Instead, you either had to replace what you didn't want with what you wanted, and then go back and delete it from where it was, or else, you had to move it to where you wanted it to be and delete what you wanted to replace. (Or some other combination of these commands).

2a

The way I understand it, we can't have the "Combined Move and Replace" command because there is no Mnemonic Letter for it unless we get rid of a command like "Copy".

3

And we can't get rid of the "Copy" command by giving Insert the same option that "Replace" has because there would be confusion when people tried to insert a statement with a space at the beginning as this is the signal for an address in DNLS.

4

Is any DNLS address specification signal being considered as a replacement for SP? I'm sure the Copy command and pointing are used much more than address specifications. I certainly would much rather have a different character than SP be the signal for an address specification if I could be much more augmented in return.

4a

Lets make full use of our pointing facilities to help the user do more with fewer commands instead of doing less with more. The augmented Insert command, and the new Combined Move and Replace command would improve the editing speed and power of DNLS so much I really can't understand why they were not implemented in the system originally. Is there some reason I don't know about?

14453 Distribution

Irby, Charles H., Lehtman, Harvey G., Van Nouhuys, Dirk H.,
Auerbach, Marilyn F., Rech, Paul, North, Jeanne B., Norton, James
C., Kudlick, Michael D., Bass, Walt, Andrews, Don I., Kaye, Diane
S., Victor, Kenneth E. (Ken), Watson, Richard W., Engelbart,
Douglas C., Hopper, J. D., Michael, Elizabeth K., Feinler,
Elizabeth J. (Jake), Dornbush, Charles F., Vallee, Jacques F.,
Hardeman, Beauregard A., Watson, Richard W., Stone, Duane L.,
Lawrence, Thomas F., Bair, James H., Irby, Charles H.,

DNLS NP Augmented Insert and Combined Move & Replace command plan.

(J14453) 15-FEB-73 16:59; Title: Author(s): Kelley, Kirk E. /KIRK; Distribution: /CHI HGL DVN MFA PR JBN JCN MDK WLB DIA DSK KEV RWW DCE JDH EKM JAKE CFD JFV BAH RWW DLS TFL JHB NP; Sub-Collections: SRI-ARC NP; Clerk: KIRK;

thanks for respondig . please do send the tr relating to the simulation of hardware that yo thought you might dig up. we are interested in anything remotely in that field. by the way, would you have a manual on planner - the ai language - i think it is an mit language and we are interested in the dynamic call mechanism.

14454 Distribution Padlipsky, Michael A.,

(J14454) 15-FEB-73 12:22; Title: Author(s): Kim, Karen /KK; Distribution: /MAP; Sub-Collections: NIC; Clerk: KK;

For those few users who wish to attach special protection to their files, I think it would be worthwhile for Update to put the same protection on the new version rather than having the user type it in each time (not to mention having to type the file name too).

14455 Distribution Irby, Charles H.,

(J14455) 15-FEB-73 11:18; Author(s): Deutsch, L. Peter /LPD; Distribution: /NP; Sub-Collections: NIC NP; Clerk: LPD;

(More on protected files.) I think Execute Status File, Update, and perhaps all commands that print a file name should use the TENEX convention that the protection is printed if it is non-standard. Alternatively, have only Execute Status File print the protection, but in a more resonable form, and have new commands to set the protection. -- I suggest that the whole question of protecting NLS files be placed somewhere fairly high on a list of things to consider for the Utility set-up....

(J14456) 15-FEB-73 17:58; Author(s): Deutsch, L. Peter /LPD; Distribution: /NP CHI RWW; Sub-Collections: NIC NP; Clerk: LPD;

14456 Distribution Irby, Charles H., Watson, Richard W.,

Draft of Resource Notebook Position Statement

Bruce ... This is a draft of the NIC's position on the Resource Notebook. We have talked at length with Ed Schelonka, who will call you shortly on this subject. Would appreciate your earliest review and comments. Ed's call will be 16 February. ... Mike Kudlick

(f . h (n . . e.

Introduction					1
The number	of this DEC	is to prose	nt a Unacit	ion paper" by	
	Information				1a
		removed the second second			
	tion we are t				
				et up and used	
	the pitfalls				3 3
prolifer	ation of inde	pendent eff	orts in thi	s field.	1a1
This paper	is organized	as follows:			1 b
Proposal					
History					
Current	State of Affa	irs			
Attachme	nt: NIC Resou	rce Noteboo	k Data		151
The IIPropes	all continu	uacanta a m	athed for a	oordinating all	
				the section of the se	
	and data gat otebook" type				
	helm the site				
	information.		nnet supply	ing the	1 c
much-needed	iniormation,				LC
The "History	y" section de	scribes wha	t has happe	ned to date,	
	e period from				1 d
					State .
The "Curren	t State" sect	ion describ	es what the	NIC has	
accomplished	d in this are	a, what dat	a it has co	llected, and	
what state	the data is i	n. It also	describes	what we know	
about the e	fforts of oth	ers to gath	er data for	similar	
purposes.					1 e
				of the type of	
		esiding in	or being co	llected for the	
NIC Resource	e Notebook.				1 f
Proposal					2
Our proposa	l has several	components	:		2a
1) A user's	group should	be set up	as soon as	possible under	
	es, to coordi				
	the task of				
	ng informatio		The second secon		2b
The effo	rts we envisi	on fall int	o three mai	n categories:	2b1
a) data	collection.				252

This is the most difficult task in terms of time and	
number of persons involved, and some plan has to evolve to take the burden of data collection off just one site.	2b2a
We at the NIC would be glad to help coordinate the	
efforts to collect information, but know that with	
present resources we can not do the whole job ourselves.	21.21
Probably neither can any other single site.	2b2b
b) building and maintaining the "complete resource	
notebook" data base.	2b3
We propose that this be the responsibility of the NIC,	
in line with its other responsibilities of maintaining	
central files of information for the Network.	2b3a
c) preparing different "views" of the basic data for	0. 4
special needs.	2b4
Our proposal is that regardless of which groups on the	
Network are given responsibility for preparing different	
"views" of the complete resource notebook data base,	
these views should be available on-line at the NIC as	
well as off-line.	2b4a
2) The time to begin the effort to coordinate and collaborate	
among groups needing special resource information or special	
views of the information is now, since	2c
a) there has evolved a growing recognition of the need for	0.1
such information, and	2c1
b) there are currently underway at least three, possibly	
more, efforts to compile resource notebook type of	
documents.	2c2
3) With this RFC, we are announcing a meeting to be held at	
SRI-ARC to discuss the whole problem area.	2d
one had to descuss the whole problem dreas	200
We expect that out of this meeting there will result:	2d1
a) designation of the chief coordinating person for all	
network resource type of activities;	2d1a
notation type of activities,	aut a
b) guidelines for what the resource notebook goals are,	
and who should be responsible for what aspects of these	
goals;	2d1b

c) formal recognition of the user's group for this	
activity;	2d1c
d) a schedule for periodic review meetings by the user's	
group to ensure that collaboration and cooperation don't	
lag, and that snags in the system are dealt with in a	
timely manner.	2d1d
It is proposed that the meeting be held on	2d2
Friday March 22 and 23, 1973, at 8:30 AM	
in the SRI-ARC Conference Room.	2d2a
Please let us have your feedback as to the desirability of	
the meeting, and the desirability of the date. We will	
then send out an RFC to confirm or reschedule the meeting	
time.	2d3
You may contact us at	2d3a
rod may contract as at	
(415) 326-6200, ext 4775	
care of Mil Jernigan.	2d3a1
cure of all beiniguns	D. C. C.
History	3
nistory	
As most of you know, the concept of a "resource notebook" was	
decided upon in January 1971 and announced at a Network	
Working Group meeting, following earlier discussions between	
BBN and ARPA.	За
BBN and ARPA.	Ja
The connect envisioned a single source decument of	
The concept envisioned a single source document of	
information about facilities available on the Network at	2-1
the various sites.	3a1
Steve Crocker of ARPA asked Alex McKenzie of BBN to take on	
the task of preparing questionnaires, designing the	
documents, and gathering the data. Steve also asked the	
NIC to place the material on-line and distribute it	
off-line.	Ja2
The first questionnaires were sent to sites in January and	
February.	3ь
A first hardcopy issue of writeups for a number of sites	
was finished in April.	3b1
The notebook was reviewed in the Summer and a more complete	
version came into existence by Fall of 1971.	3b2

Evolution of the Notebook continued under BEN editorial control with NIC assistance, by addition of material from sites not previously responding, by updating of information, and by the typing of the material on-line at the NIC.

ЗьЗ

A revision was issued in March of 1972.

3b4

Dick Watson of SRI-ARC was instrumental in having the responsibility for the Resource Notebook shifted to the NIC, as the logical place to evolve, store, maintain, and distribute the document.

Зс

BBN was also interested in this, because the maintenance of the Resource Notebook was not in direct line with the direction BBN was taking with respect to Network development and the computer field in general.

3c1

The shift in responsibility took place in late Spring of 1972, also, as did the preparation of the first index to the Notebook (an index which is now out of date).

3c2

In the Summer of that year, the NIC proceeded to search for a qualified person to work full time on the Resource Notebook, and in August we hired Elizabeth Jake Feinler to fill this role.

3e3

In September 1972 a ten-page questionnaire was sent to over twenty server sites on the Network in order to update the Resource Notebook for the ICCC.

3d

By the time of the ICCC a partially completed third version of the Resource Notebook was available primarily on-line through the NIC Query Language.

3d1

The on-line version proved to be popular with users at the ICCC, and they requested that we expand this approach. Also, it was recognized at ICCC that the third version still did not contain as many data elements as users needed.

3dla

Therefore, after ICCC several weeks were spent by NIC in coordinating the on-line and off-line versions of the Resource Notebook, expanding the capabilities of the query language, redefining the data elements needed, and entering and editing the results from the questionnaires, some of which we still have not received.

3d1b

Additional time (of the order of several weeks also) was spent in planning the next stages of the Resource Notebook, outlining the sequence of events that would have to take place, and planning how to improve the then current procedures.

3d1b1

(Note: The responsibility for keeping each site description current rests with the site, so that the maintenance of the Notebook is a continual task for all concerned.)

3d1c

At the present time the NIC is issuing a draft copy to all the sites of the data received from the questionnaires. This draft is organized according to the expanded format. At the same time, we are requesting that each site liaison update and approve the material received so that a final version can be disseminated.

3d2

The lesson to be learned from the above brief history is that a considerable amount of time is required in the task of establishing a resource notebook, even to reach the present, still incomplete state.

3e

This time has been devoted to design, data gathering, editing, data input, proofing --- the usual information handling cycle --- and the effort has been compounded by the design evolution of an improved query system for on-line user access.

3el

Current State of Affairs

Status at the NIC

4 a.

General Remarks

4a1

Since the ICCC in October, 1972, the NIC has been updating the content of the resource notebook based on information it has collected from over twenty servers. Users and TIP sites have not been solicited for information as concertedly as have servers.

4a1a

The goal of the NIC Resource Notebook effort has been to make available to all Network users as complete a set of documents describing the various resources available on the Network as it is practicable to do.

4alb

This specifically means that the NIC Resource Notebook is a guide to what is available, where it

is, how to use it, and who to contact for more	
detailed advice on any particular subject.	4a1b1
However, the Resource Notebook is not meant to be a collection of all detailed documentation. That latter responsibility presently rests with the sites	
and other relevant persons.	4a1b2
In general, the types of information covered by the NIC	
are:	4a1c
a) indexes to all dialogue carried on through the NIC Journal;	4a1c1
b) indexes to all off-line papers collected at NIC on the general subject of Network research, development,	
and usage, as well as papers and reports of interest to the Network community;	4a1c2
c) a directory of Network participants;	4a1c3
d) documentation (for example, training manuals) for the use of NIC services;	4a1c4
e) documentation on Network protocols;	4a1c5
f) detailed summarization of hardware and software	
facilities available on the Network.	4a1c6
The NIC Resource Notebook is the document that contains the information in category f). It is in this area that	
duplication of effort seems most likely to occur, and it	
is to this area that this RFC is addressed.	4a1d
In the attachment we list the types of information that the current Resource Notebook is designed to contain.	4a1e
Resource Notebook Status	4a2
The principal category of data that we have collected is	
that for the servers. We feel that these data are beginning to reach a satisfactory condition. Much of	
the data has been collected, entered, and is being	
upgraded by the originators.	4a2a
manufacture and the second sec	

The data that we have collected presently exists both on-line, in the file (Netinfo) Netinfo, and in hard-copy form. The information is considered to be a "draft", in

that it is now undergoing verification by the contributing servers, and needs additional editing.

4a2b

The most important information item for which data is not yet fully available is a complete categorized list of programs available for Arpanet users. Few sites adequately supplied this information in answering the questionnaire.

4a2b1

The information that we sought is the program name, the type of program (compiler, editor, etc), the person responsible for the program, a description of the program's capabilities, a list of reference citations to relevant documentation, and a comment on restrictions as to the program's use on the Network.

4a2bla

(Unanswered for the present is the question of whether the NIC should contain and make available (on microfiche, for example) a complete set of documentation for all systems on the Network.)

4a2b1b

Other important information that users have asked for but is lacking in the current edition of the resource notebook, is information on 1) documentation and 2) date bases.

4a2b2

The latter category was not requested in the current NIC questionnaire, but will be made available through the cooperation of MITRE Corporation, as they are gathering that type of information.

4a2b2a

Documentation was requested in the NIC questionnaire, but the information received was not satisfactory.

4a2b2b

Problems that arise in compiling this or any information of a similar type include the tasks of editing, indexing, printing, and dissemination, as well as the task of convincing people it is worth it to them to respond to the questionnaire.

4a2b3

Despite the above problems and the "draft" status of the resource notebook, and despite the lack of certain key information items such as "programs" and "data bases" and "documentation", we feel the resource notebook is beginning to represent a solid data base which can be

4b3a1c

used throughout the Network community for the purpose intended. 4a2c A final note on the current state: implementation is nearly completed on extending the capabilities of the NIC Query Language facility demonstrated at the ICCC conference. This will make it quite easy for people inexperienced with NLS or computer systems generally to interrogate the resource notebook (and other NIC documents) on-line. 4a2d Other "Resource Notebook" Projects 4b There are two other projects that we know of which are oriented towards providing "resource notebook" type of 451 information. One is at MITRE, the other jointly at UCLA-NMC and BBN. 452 We are more familiar with the MITRE effort, having recently spent a very pleasant afternoon with Susan Poh exchanging 4b3 thoughts and reviewing each other's overall goals. MITRE's goals (as we understand them) are to develop three main sets of information for new and potential new users of the ARPA Network. They are doing this work 4b3a under contract to ARPA. The purpose of the three-tiered structure is to provide three different classes of information to 4b3a1 such users: 1) a rough overview, giving general information about what types of facilities are available on 4b3a1a the Network; 2) a user-oriented document (or set of documents) that would provide in matrix form the types of data users need to know --- hardware types and locations, program types and locations, control-character information, accounting mechanisms, special services such as data management packages and modeling programs, etc.; 4b3a1b

3) a document giving some detail about the Network technology itself, e.g., hardware and software

protocols, design aspects, etc.

We think the effort is well conceived, and are really delighted to be in contact with Susan Poh, who recognizes the dimensions of the task as clearly as anyone we've talked to.

4b3a2

For references on the MITRE effort, see NIC 13842 and NIC 14063.

4b3a3

The aspect of the problem which we discussed with Susan, and which concerns us most in this position paper, is the difficulty of collecting the information that will comprise the data bases for the "resource notebooks" MITRE and the NIC are compiling.

4b3b

It is singularly difficult to convince anyone that it is worth his while to provide the information requested in a twenty page questionnaire. To actually obtain the required information in timely fashion is also a non-trivial task, as anyone who has attempted this will readily acknowledge.

46361

These difficulties are inordinately compounded when two different organizations solicit the same or similar information from a given person or group.

4b3b2

Therefore, it was agreed that the only way to attain the goals desired is through collaboration and cooperation, not independent action.

46363

The UCLA-NMC/BBN effort is less well known to us.

4b4

We had brief phone conversations with Dave Crocker (UCLA) and Nancy Neigus (BBN) and learned that they too are beginning to put together a succinct summary of network resources. Their end-users are the experienced Arpanet users.

4b4a

We received a draft from Dave of a data organization outline which paralleled that developed at the NIC, and were asked to review it. That is what led us to realize that, among those interested in the problem, there was not enough communication as to what was going on around the Network in this area.

4b4b

To date, Dave and Nancy haven't expended too much effort at collecting the information from various network sites, but recognize the scope of the problem and the wisdom of collaboration and cooperation.

Therefore, from their standpoint as well as	ours and
MITRE's, it is timely to discuss the proble	m of
coordination.	46462
Attachment: NIC Resource Notebook Data	5
Since the 1000 is Ostales 1070 the NIO testing	
Since the ICCC in October, 1972, the NIC has been up content of the Resource Notebook based on information collected from over twenty servers. Users and TIP	n it has sites have
not been solicited for information as concertedly as servers.	5a
The data is organized essentially as follows.	5ъ
Servers	5b1
The servers we have contacted are the following	g: 5bla
AMES 67 NASA Ames Research Center	
Computation Division	5b1a1
BBN-TENEX Bolt Beranek And Newman, I	nc.
Research Computer Center	5b1a2
BBN-TENEXB Bolt Beranek And Newman Inc	c. 5b1a3
CASE-10 Case Western Reserve Univer Computing And Information	
Div.	5b1a4
CMU-10A Carnegie-Mellon University	5b1a5
CMU-10B Carnegie-Mellon University	
Department Of Computer Sci-	
HARV-10 Harvard University	
Aiken Computation Laborato	5b1a7
LL-67 Massachusetts Institute Of	
Technology	
Lincoln Lab 67 Group	5b1a8
LL-TX2 Massachusetts Institute Of	
Technology	
Lincoln Lab, TX-2 Group	5b1a9
MIT-AI Massachusetts Institute Of	

Technology	Artificial Intelligence Laboratory	5b1a10
MIT-DMCG Technology	Massachusetts Institute Of	
Technology	Dynamic Modeling/Computer Graphics	5b1a11
MIT-ML Technology	Massachusetts Institute Of	
100000	Mathematics Laboratory	5b1a12
MIT MULTICS Technology	Massachusetts Institute Of	
recumorogy	Project Mac, Multics Group	5b1a13
SDC-ADEPT	System Development Corporation	
	Applied Research Department	5b1a14
SRI-AI	Stanford Research Institute	
	Artificial Intelligence Group	5b1a15
SRI-ARC	Stanford Research Institute	
	Augmentation Research Center	
*	Network Information Center	5b1a16
SU-AI	Stanford University	
	Artificial Intelligence Group	5b1a17
UCLA-CCN	University Of California, Los	
Angeles		
	Campus Computing Network	5b1a18
UCLA-NMC Angeles	University Of California, Los	
	Network Measurement Center	5b1a19
UCSD-CC	University Of California, San Diego	
	Computer Center	5b1a20
UCSB-MOD75	University Of California, Santa	
Barbara		
	Computer Systems Laboratory	5b1a21
USC-ISI	University Of Southern California	
	Information Sciences Institute	5b1a22
UTAH-10	University Of Utah	
	Computer Science Division	5b1a23

For each server, the principal information we have solicited is:

3111

Function Address

Personnel: 5b1b1

Station Agent Liaison Accounts Software Contact Hardware Contact Operator

Manager 5b1b1a

Account Parameters Service Schedule Hardware:

5b1b2

Computer Peripherals Terminals

Software:

5b1b2a

Operating System:

5b1b3 5b1b3a

Description
Login
Logout
Control Characters

Help Commands

5b1b3a1

User Programs:

5b1b3b

Program Name
Type
Contact
Description
Login
Network Use Parameters
Documentation

5b1b3b1

Network Operations:

5b1b3c

Server Protocols

User Protocols	
NCP Interface From Local Programs	5b1b3c1
Interests	
Documentation	5b1b4
References	5b1b4a
Order Information	5b1b4b
Users	552
For each user, we are soliciting the following	
information:	5b2a
Address	
Personnel	
Hardware	
Software	
Interests	
Documentation	5b2a1
TIP Sites	5b3
The data sought for the TIP sites are:	5b3a
Function	
Address	
Personnel	
Hardware	5b3a1

Draft of Resource Notebook Position Statement

(J14457) 15-FEB-73 15:49; Title: Author(s): Kudlick, Michael D. /MDK; Distribution: /bad; Sub-Collections: SRI-ARC; Clerk: MDK; Origin: <KUDLICK>HISTORY.NLS; 15, 15-FEB-73 14:19 MDK;

14457 Distribution Dolan, Bruce A., Bruce ... This is a companion document to the NIC position paper on the Resource Notebook. I am sending it to illustrate the scope of the problem of data collection referred to in the position paper. Ed Schelonka also has a copy.

SITE QUESTIONNAIRE

	1

幸本本本本	2
INSTRUCTIONS	3
Sites may fill out this questionnaire either offline or online in NLS.	
	4
(ONLINE)	5
Make a copy of this file in your own directory. YOU CANNOT WRITE ON THIS FILE Then proceed to fill in the blanks. Where the instructions call for added sheets substitute new branches of text. When you have finished, journalize the file and send it to Jake Feinler (IDENT = JAKE) at SRI-ARC.	
	5а
If you copy the file into your own system, proceed according to the rules of the system you are using.	5 b
NOTE: Spaces between lines in this file are generated by a series of carriage returns.	5e
(OFFLINE)	6
Request a copy of the questionnaire from Jake Feinler, Network Information Center, Stanford Research Institute, Menlo Park, Calif. 94025, (415)329-0740. When the questionnaire is completed, return it to the same address.	
	6a
(SAMPLE QUESTIONNAIRE)	7
A sample questionnaire is included in this file and/or packet so that you can more clearly see the format.	7 a

(SITE-NAME) Give site name in full along with div., section, dept.,
etc. if significant. (Ex.: Stanford Research
Institute,
Augmentation Research Center)

43

(FUNCTION)

9a

Insert a one paragraph statement of what your primary function is ON THE ARPANET.

9al

Do you perform any specialized network function (such as Network Measurement Center, etc.)

9a2

USER? SERVER? TIP? (circle one)

9a3

Host # Host Addr. IMP # TIP #

9a4

(ADDRESS)

96

Give complete mailing address including zip; also give general phone no.

961

(PERSONNEL)

9c

Full Name	Network Ident	Phone No.	Ext.	9c1
(1	f none mark "NONE	")		9c2
(STATION-AGENT)				
				9c3
(LIAISON)				
				9c4
(ACCOUNTS)				
				9c5
(SOFTWARE-CONTACT	Γ)			
				9c6
(HARDWARE-CONTAC	r)			
				9e7
(OPERATOR)				
				9c8
(MANAGER) Div.,	dept., section, e	tc., head		
				9 c 9
(OTHER) such as whatever	consultant, caret	aker, documentati	on, or	

9c10

(ACCOUNT-PARAMETERS)

9d

Give user detailed information on how to open an account. Give contact, mention whether there is any free useage for Arpanet members; whether files can be retained after logout, and if so, for how long; how user will be billed; or any other information pertinent to opening an account or to free useage of your system.

(SERVICE-SCHEDULE)

9e

Give times when your system is available for ARPAnet users. Include times when system is available but not guaranteed; maintenance periods, times when use is forbidden, etc.

TYPICAL LOAD:						9e2
						064
MAXIMUM NO. U	SERS:(combi	ned loca	land	network	users)	9e3
NUMBER NETWOR	K SLOTS:					
NORDEN DECEM						9e4
(HARDWARE)						9 f
(COMPUTER)						9f1
MAKE	CORE A	MOUNT	CORE	SPEED	WORD	
LENGTH						
						9f1a
(PERIPHERALS)						912
(DISKS)						9f2a
HOW MAN	Y TYPE	R KIND		MAKE	MODEL	

(DRUMS) 9f2b

HOW MANY TYPE OR KIND MAKE MODEL

9f2b1

(TAPES) 9f2c

HOW MANY TYPE OR KIND MAKE MODEL

9f2c1

(PRINTERS) 9f2d

HOW MANY TYPE OR KIND MAKE MODEL

9 £ 2 d 1

(OTHER) 9f2e

HOW MANY TYPE OR KIND MAKE MODEL

9f2e1

If any of the above peripherals have special modifications or unusual features, please specify.

9121

(TERMINALS) 9f3

HOW MANY TYPE OR KIND

MAKE

MODEL

9f3a

If any terminals have special modifications or unusual features please specify.

9f3b

IF TIP, give port assignments:

913c

(SOFTWARE)

9g

(OPERATING-SYSTEM)

9g1

(DESCRIPTION)

9g1a

Briefly describe your operating system including such information as name, type, batch or timesharing, etc. Limit to one paragraph if possible.

OGIN)	9g1b
TELNET INFO:	9g1b1
. Appropriate transmission mode =	9g1b2
. Appropriate echo mode =	9g1b3
. For mapping between NVT and local character set	
	9g1b4
. Can user declare his terminal to the system? If so, how.	
	9g1b5
. Other?	
	9g1b6
USER INFO:	9g1b7
(Give Information needed for experimental use of your system. If information below is not needed write "none needed" in the space provided.)	
• IDENT -	9g1b8
• PASSWORD -	9g1b9
. ACCOUNT NO	9g1b10
. DOES SYSTEM RECOGNIZE LOWER-CASE LETTERS?	9g1b11
LOGIN:	9g1b12

herald, and subsystem prompt character, as well as

carriage returns, line-feeds, spaces, etc.

9g1b12a

SUBSYSTEM INTERRUPT =

9g1b13

SUBSYSTEM RESUME =

9g1b14

(LOGOUT)

9g1c

LOGOUT:

9g1c1

Give complete logout procedure.

9g1c1a

AUTOLOGOUT:

9g1c2

Does system have autologout feature? YES NO After how long?

If yes, how can system be reacquired?

Does breaking network connections log the user out?

YES NO

9g1c2a

(CONTROL-CHARACTERS)

9g1d

Give at least the following Control Characters for your system, if they are available:

9g1d1

Delete Last Character:

Delete Word:

Abort Command:

Abort print:

Retype Edited Command:

Prompt (such as Altmode):

Online help:

Are-You-Still-There?

Other?

9g1d2

(HELP)

9g1d3 9g1e

What is the procedure for accessing "Help" or a similar routine online. If none is available, type "none".

9g1e1

(COMMANDS)

9g1f

Give commands and scenarios to do the following:

9g1f1

(LIST-ACTIVE-USERS)

9g1f2

(NETWORK-STATUS-INFO)

9g1f3

(CONVERSE-WITH-ACTIVE-USERS)

9g1f4

(SEND-MESSAGE)

9g1f5

(RETRIEVE-MESSAGES)

9g1f6

(TALK-TO-OPERATOR)

9g1f7

9g2b6a

(USER-PROGRAMS) 982 Describe EACH User Program (defined here as a program available for Network use) by giving the information outlined below. Put each program on a separate sheet and include as many sheets as is necessary to provide the information. (Even though some of you have dozens of programs available, we hope you will include this information for EACH one of them, as this is the information users would most like to have in detail.) 9g2a (PROGRAM ACRONYM) 9g2b Also give full name of program if different from acronym 9g2b1 (CONTACT) 9g2b2 Caretaker or consultant for program, if any. 9g2b2a (TYPE) 9g2b3 Such as compiler, text-editor, demo, game, etc. 9g2b3a (DESCRIPTION) 9g2b4 Give a brief description of what the program's capabilities are; one paragraph if at all possible. 9g2b4a (PROGRAM-LOGIN) 9g2b5 Give enough information for entry into the program. (You may want to refer the user to a consultant here.) 9g2b5a (NETWORK-USE-PARAMETERS) 9g2b6 Mention any restrictions that may apply to access

or use of this program

(DOCUMENTATION)

9g2b7

Give complete reference citations including such things as author, title, document number, place published, date published, etc. Also indicate where the document can be obtained and how much it costs.

9g2b7a

NOTE: SRI-ARC would like to receive 2 copies of all such documentation for the Network Information Center. Send to Jake Feinler, Network Information Center, Stanford Research Institute, Menlo Park, Calif., 94025.

9g2b7b

(DATA-BASES)

983

Describe EACH Data Base available for Network use by giving the information outlined below. Describe each Data Base on a separate sheet and include as many sheets as is necessary to provide the information. (Even though some of you have dozens of Data Bases available, we hope you will include this information for EACH one of them, as this is the information users would most like to have in detail.)

9дЗа

(DATA-BASE ACRONYM) Give full name if different from acronym.

9g3b

(TYPE)

9g3b1

(CONTACT)

9g3b2

(DESCRIPTION)

9g3b3

Give a brief description of the contents and format of the data base.

9д3ьЗа

(DATA-BASE ACCESS)

9g3b4

How can the data base be accessed by a network

user?

9g3b4a

(NETWORK-USE PARAMETERS)

9g3b5

What restrictions are there on use of the data base; is there a charge for access; is there any experimental use available; etc.

9g3b5a

(DOCUMENTATION)

9g3b6

(NETWORK-OPERATIONS)

9g4

(SERVER-PROTOCOLS)

9 g 4 a

What network Server Protocols are currently implemented in your host? Give protocol name, whether it is standard or private, its socket number, reference, etc.

9g4a1

(USER-PROTOCOLS)

9g4b

What Network User Protocols are currently implemented for your local users.

9g4b1

(NCP-INTERFACE-FROM-LOCAL-PROGRAMS)

(INTERESTS)

9h

What are the current interests of your site and/or organization? (We would like to have one concise paragraph for inclusion under "Brief Description" in the online query program. This paragraph can be further expanded under an "Expanded Description" option to whatever length you would like.)

9h1

BRIEF DESCRIPTION

9hla

EXPANDED DESCRIPTION

9h1b

(DOCUMENTATION)

91

(REFERENCES)

911

What documentation is available to describe your host activities? Do NOT include references cited under USER PROGRAMS above. Please give a complete reference including: author(s), title, ordering and/or identifying numbers, if any; NIC mumber; publisher; place published; date published; and cost, if any.

(ORDER-INFORMATION)

912

9i2f3a

Where can documentation be obtained? Who is the contact? How will the purchaser be billed? Etc.

912a NOTE: The Network Information Center (NIC) needs two copies of all pertinent documentation for reference. If you have not sent us these, or if new versions of documents you have sent us are availale, may we have two copies. 912b ************** **** 912c SAMPLE QUESTIONNAIRE 9i2d ******** **** 912e (UCSB-MOD75) University of California, Santa Barbara Computer Systems Laboratory 912f Choose one by typing, for ex.: s[how] personnel CR 912f1 (FUNCTION) 912f2 SERVER COMPUTER: IBM 360/75 HOST #0, HOST ADDR. 3, IMP #3 912f2a (ADDRESS) 91213 Computer Systems Laboratory University of California Santa Barbara, California 93106

(805) 961-2261

(PERSCNNEL)			912f4	
(STATION	V-AGENT)				
(54,1110)	Connie Rosewall (CDR)	(805)	961-3221	912f4a	
(LIAISON	()				
	Ron Stoughton (RMS)	(805)	961-3793	912f4b	
(ACCOUNT	rs)				
	Sue Kadner (xxx)	(805)	961-2261	912f4c	
(SOFTWAL	RE-CONTACT)				
	Ron Stoughton (RMS)	(805)	961-3793	912f4d	
(HARDWA)	RE-CONTACT)				
	Bob Ploger (BP)	(805)	961-2669	912f4e	
(OPERATO					
	Steve Neumann (SN)	(805)	961-2274	912f4f	
(OTHER)					
	CONSULTANT:		074 4045	0.0.1	
	Ed Fach (EDF)	(805)	961-4047	912f4g	
(MANAGER	2)				
	David Harris (DOH)	(805)	961-2534		
	Charles Loepkey (CRL)	(805)	961-2261	912f4h	
(ACCOUNT-PA	RAMETERS)			912f5	
(SERVICE-SO	CHEDULE)			912f6	
The Comp	outer Center is open 24 h	ours a	day, seven		
	week. While classes are		sion, the		
prime-ti	me schedule is typically	7:		9i2f6a	
Mon-Fri	- 0900-2400				
Sat	- 1200-1800 (Pacific	time:)	a 11 a 11 a 11	
Sun	- 1600-2400			912f6b	
	ining hours are devoted	The state of the s			
	ment. During summer and				
	me hours are usually cut				
	development. However, n is often available to Ne				
	e-time hours.	LWUIK	users during	912f6c	

AVERAGE BATCH T	URNAROUND DURING P	PRIME-TIME = 50	912f6d
TYPICAL LOAD =			912f6e
AVERAGE NUMBER	USERS ON OLS = 15		912f6f
MAXIMUM NUMBER	USERS = 64 local,	32 Network	912f6g
NUMBER NETWORK	SLOTS = 32		9i2f6h
(HARDWARE)			91217
Choose one by t	yping, for ex.: s	fhowl periphera	La
CR	, Paris, and	Litery perspinors	91217a
(COMPUTER)			9i217b
TYPE CORE AM	OUNT CORE SPEE	D WORD	
IBM 512K	750 nsec	32 bit	
360/75	2048K	8 microsec	
32 bit			912f7b1
(PERIPHERALS)			912f7c
(DISKS)			9i2f7c1
HOW MANY	TYPE	MAKE	
MODEL			
16	moveable	heads	
IBM	2314		
	28M bytes each		9i2f7c1a
(DRUMS) none			9i2f7c2
(TAPES)			912f7c3
HOW MANY	TVDE	MAKE	
MODEL	LIFE	MAKE	
2	7/9 trac	1.	
IBM	2415	K	
100	800 bpij		
4*	9 track		
Potter	3 track		
Fotter	1600 bpi		
	1000 bp1		9i2f7c3a
			01211CO

91218

*One Potter tape is dual density, 800/1600 bpl. 912f7c3b (PRINTERS) 912f7c4 HOW MANY TYPE MAKE MODEL 2 132 columns, 1100 1pm 1403 IBM PN/TN print trains 912f7c4a (OTHER) 912f7c5 HOW MANY TYPE MAKE MODEL 1 card reader/punch IBM 2540 1000 cpm read 300 cpm punch 1 incremental plotter Houston 6650 1 multi-line controller (MLC) *The UCSB-MOD75-designed Multi-line Controller (MLC) is a general purpose interface connecting a variety of peripherals - terminals, mini-computers, plotters. etc. - to the IBM 360/75. 912f7c5a (TERMINALS) 912f7d HOW MANY TYPE MAKE MODEL stored graphics Tektronix 1 4002A 1 refreshed graphics Imlac PDS-1D 1 refreshed Graphics NIH GPGT stored graphics *UCSB-MOD75 designed; similar to ARDS or Tektronix; some hard-wired, some acoustically 912f7d1 coupled.

(SOFTWARE)

Choose one by typing, for ex.: s[how] user-programs CR

912f8a

(OPERATING-SYSTEM)

912f8b

Choose one by typing, for ex.: s[how] login CR

(DESCRIPTION)

912f8b1 912f8b2

The current operating system is IBM's Release 21 of OS-MVT. OS-MVT is a batch system which supports multi-programming in variable-sized regions. HASP ver. 3.0 controls scheduling of batch jobs and spooling of batch input/output. The only interactive system currently available at UCSB is the Culler-Fried system. The Culler-Fried system (OLS) is a time-shared mathematical system with graphics which is very similar in capability to APL. On-line text creation, remote job submission, and Network access is also available to OLS users.

912f8b2a

(LOGIN)

9i2f8b3

TELNET INFO:

912f8b3a

- For mapping between NVT and local character set,
 - see RFC 216 (NIC 7546).
- . Appropriate transmission mode = Character-at-a-time
- . Appropriate echo mode = Half-duplex
- . Terminal type is implicit in the choice of

login socket 912f8b3b

USER INFO:

912f8b3c

. USERNUMBER = 196

912f8b3d

• PASSWORD = 57372

912f8b3e

. PRIGRITY = one of the letters "A", "B", "C", or "D"

. JOBNAME = 1-16 characters

912f8b3g

912f8b3f

LOGIN:

To log in to OLS: 9i2f8b3i

[enter user number] USERNUMBER CR
[id code =] PASSWORD CR
[username =] USERNAME CR
[priority]= PRIORITY CR

[jobname =] JOBNAME CR 9i2f8b3j

SYSTEM INTERRUPT: None given 912f8b3k

SYSTEM RESUME: None given 912f8b3l

(LOGOUT) 9i2f8b4

Logging out of OLS breaks the user's network connections. An idle job will be logged out automatically after 30 min. For instructions on recovery after a system crash, consult the OLS User's Manual (NIC 7970)

9i2f8b4a

912f8b3h

(CONTROL-CHARACTERS)

9121855

The operating system for the IBM 360/75 is batch-, rather than terminal-oriented. 912f8b5a

The Culler-Fried System (OLS), which runs as a job under OS-MVT, is NOT a generalized time-sharing system and requires a special function keyboard for communicating commands to the system. Although most of the functions implemented as control characters in teletype-oriented sytems (backspace, line delete, etc) are available in OLS, a description of their use would be cryptic without any accompanying discussion of the general structure of OLS. The user is advised to consult the OLS User's Manual (NIC 7970).

9i2f8b5b

(HELP)

9121856

Consult the OLS User's Manual (NIC 7970). 912f8b6a

(COMMANDS)

9121857

С	onsult the OLS User's Mo	anual (NIC 7970).	912f8b7a
(USER-P	ROGRAMS)		9i2f8c
(ALG	OL)		9i2f8c1
(CONTACT)		9i2f8c1a
	Randy Wilcox	(805) 961-2476	912f8c1a1
(DESCRIPTION)	¥	9i2f8c1b
(PROGRAM-LOGIN)		912f8c1c
	From batch via cards,	or on-line via O	LS
	(see OLS User's Manua	l (NIC 7970))	912f8c1c1
(NETWORK-USE-PARAMETERS)		912f8c1d
(DOCUMENTATION)		912f8c1e
(ALG	OL-W)		9i2f8c2
(TYPE)		912f8c2a
(CONTACT)		9i2f8c2b
	Randy Wilcox (xxx)	(805) 961-2476	9i2f8c2b1
(DESCRIPTION)		9i2f8c2c
(PROGRAM-LOGIN)		9i2f8c2d
	From batch via cards,	or on-line via O	LS
	(see OLS User's Manua		
(NETWORK-USE-PARAMETERS)		9i2f8c2e
(DOCUMENTATION)		9i2f8c2f
(ASS	EMBLER-F&G)		912f8c3
(TYPE)		912f8c3a
(CONTACT)		9i2f8c3b
	Randy Wilcox (xxx)	(805) 961-2476	912f8c3b1

9i2f8c5a

9i2f8c5b

912f8c5c

912f8c5d

(DESCRIPTION) 912f8c3c (PROGRAM-LOGIN) 9i2f8c3d From batch via cards, or on-line via OLS (see OLS User's Manual (NIC 7970)) 9i2f8c3d1 (NETWORK-USE-PARAMETERS) 9i2f8c3e (DOCUMENTATION) 9i2f8c3f (BIOMED) 912f8c4 (TYPE) 912f8c4a (CONTACT) 912f8c4b Randy Wilcox (xxx) (805) 961-2476 912f8c4b1 (DESCRIPTION) 9i2f8c4c UCLA'S BIOMED series of statistical routines for Fortran users. 912f8c4c1 (PROGRAM-LOGIN) 912f8c4d From batch via cards, or on-line via OLS (see OLS User's Manual (NIC 7970)) 912f8c4d1 (NETWORK-USE-PARAMETERS) 912f8c4e (DOCUMENTATION) 91218c4f (COBOL) 912f8c5

From batch via cards, or on-line via OLS (see OLS User's Manual (NIC 7970)) 912f8c5d1

Randy Wilcox (xxx) (805) 961-2476 912f8c5b1

(TYPE)

(CONTACT)

(DESCRIPTION)

(PROGRAM-LOGIN)

(NETWORK-USE-PARAMETERS)

912f8c5e

(DOCUMENTATION)

912f8c5f

(COL)

912f8c6

(TYPE)

912f8c6a

(CONTACT)

912f8c6b

(DESCRIPTION)

912f8c6c

COL (Card-Oriented Language) is a non-mathematical subsystem of OLS provided for creating and manipulating character strings, records, and files. Using COL, the user can:

- Create, access, and modify user files residing on the installation's direct access storage devices.
- Submit for batch processing programs coded in any language supported at UCSB and access output generated by them.
- Obtain punched and printed copy of files.
- 4) Manipulate character strings an substrings.

91218c6c1

MOL and COL may also be used in conjunction with each other. For example, a Fortran program may be created and submitted for batch processing using COL, and during execution, the user can interact with that program using MOL. This has proven to be an effective method of extending on-line control of computational processes to the batch processing system.

9i2f8c6c2

(PROGRAM-LOGIN)

912f8c6d

(NETWORK-USE-PARAMETERS)

912f8c6e

(CROSSTABS)

9i2f8c7

(TYPE)

912f8c7a

(CONTACT)

9i2f8c7b

Randy Wilcox (xxx) (805) 961-2476 912f8c7b1 (DESCRIPTION) 912f8c7c Routines for cross-tabulation and 912f8c7c1 frequency count. (PROGRAM-LOGIN) 912f8c7d From batch via cards, or on-line via OLS (see OLS User's Manual (NIC 7970)) 912f8c7d1 (NETWORK-USE-PARAMETERS) None given 912f8c7e (DOCUMENTATION) 912f8c7f (CSMP) 912f8c8 (TYPE) 912f8c8a (CONTACT) 912f8c8b Randy Wilcox (xxx) (805) 961-2476 912f8c8b1 (DESCRIPTION) 9i2f8c8c (PROGRAM-LOGIN) 912f8c8d From batch via cards, or on-line via OLS (see OLS User's Manual (NIC 7970)) 912f8c8d1 (NETWORK-USE-PARAMETERS) 912f8c8e (DOCUMENTATION) 9i2f8c8f (EXTERMINATOR-2) 912f8c9 (TYPE) 912f8c9a (CONTACT) 912f8c9b Randy Wilcox (xxx) (805) 961-2476 9i2f8c9b1 (DESCRIPTION) 912f8c9c FORTRAN IV program for solving multi-group two-dimensional neutron diffusion equations. 912f8c9c1

(PROGRAM-LOGIN)

9i2f8c9d

From batch via cards, or on-line via OLS (see OLS User's Manual (NIC 7970)) 912f8c9d1

(NETWORK-USE-PARAMETERS)

91218c9e

(DOCUMENTATION)

9i2f8c9f

(ANISN)

9i2f8c10

(TYPE)

912f8c10a

(CONTACT)

912f8c10b

Randy Wilcox (xxx) (805) 961-2476 912f8c10b1

(DESCRIPTION)

9i2f8c10c

Program which solves one-dimensional Boltzmann transport equation for neutrons or gamma rays in slab, sphere, or cylinder geometry. 9i2f8c10c1

(PROGRAM-LOGIN)

9i2f8c10d

From batch via cards, or on-line via OLS (See OLS User's Manual (NIC 7970)) 912f8c10d1

(NETWORK-USE-PARAMETERS)

912f8c10e

(FORTRAN-IV-GEH)

912f8c11

(TYPE)

912f8c11a

(CONTACT)

912f8c11b

Randy Wilcox (xxx) (805) 961-2476 912f8c11b1

(DESCRIPTION)

9i2f8c11c

(PROGRAM-LOGIN)

912f8c11d

From batch via cards, or on-line via OLS (see OLS User's Manual (NIC 7970)) 9i2f8c11d1

(NETWORK-USE-PARAMETERS)

912f8c11e

(DOCUMENTATION)	9i2f8c11f
(GPSS)	9i2f8c12
(TYPE)	912f8c12a
(CONTACT)	912f8c12b
Randy Wilcox (xxx) (805) 961-26	176 912f8c12b1
(DESCRIPTION)	912f8c12c
(PROGRAM-LOGIN)	912f8c12d
From batch via cards, or on-line vi (see OLS User's Manual (NIC 7970))	
(NETWORK-USE-PARAMETERS)	912f8c12e
(DOCUMENTATION)	912f8c12f
(IMS-1)	91218c13
(TYPE)	912f8c13a
(CONTACT)	912f8c13b
Randy Wilcox (xxx) (805) 961-24	176 912f8c13b1
(DESCRIPTION)	912f8c13c
7	
An IBM program product used in mana large data bases.	912f8c13c1
(PROGRAM-LOGIN)	912f8c13d
Prom betch wis condo on an line wi	- 015
From batch via cards, or on-line vi (see OLS User's Manual (NIC 7970))	912f8c13d1
(NETWORK-USE-PARAMETERS)	9i2f8c13e
(DOCUMENTATION)	912f8c13f
(MOL)	912f8c14
(TYPE)	9i2f8c14a
(CONTACT)	912f8c14b

(DESCRIPTION)

912f8c14c

MOL (Mathematically Oriented Language) is a subsystem of OLS which prvides the capability for sophisticated mathematical analysis for use in solving problems where human interaction is either necessary or desired. MOL accepts both real or complex numbers (scalars) as operands as well as multi-dimensional lists of such numbers (vectors, arrays). Operations performed on scalars produce scalar results, which can be numerically displayed. Operations on vectors and arrays produce vector and array results and can be displayed either numerically and graphically. Operands can be stored and used as required. Operators include the analytic functions (sin, cos, ln, exp, atan), function composition, masking, differentiation, and integration to name a few. All operations are provided in a real and complex form. Facilities are provided for interaction between operands of different types (e.g. vectors and scalars). In addition, a limited set of operations manipulate integers used in subscripting. 9i2f8c14c1

Any attempt to delineate the limitations of the system's applicability would be unfair, since such limits are largely determined by one's ingenuity in using the system. Mathematical simulation, on-line control of experimental systems, and statistical analysis are but three examples of areas outside that of classical mathematical analysis in which the system has been applied. In many instances, a problem which appears to be completely inappropriate for MOL can be resolved by imploying some facet of the OLS structure in a slightly different 912f8c14c2 fashion.

MOL and COL may also be used in conjunction with each other. For example, a Fortran program may be created

and submitted for batch processing using COL, and during execution, the user can interact with that program using NOL. This has proven to be an effective method of extending on-line control of computational processes to the batch processing system.

9i2f8c14c3

0122001700

(PROGRAM-LOGIN)

9i2f8c14d

(NETWORK-USE-PARAMETERS)

912f8c14e

(DOUMENTATION)

9i2f8c14f

(OLS)

9i2f8c15

(TYPE)

912f8c15a

(CONTACT)

912f8c15b

(DESCRIPTION)

912f8c15c

The UCSB On-line System (OLS) is a time-sharing system currently supporting up to 64 active users at one time. The user interacts with the system through a terminal which consists minimally of a dual keyboard and storage CRT. Terminals may be further equipped with graphic input devices such as Rand tablets, digital plotters, and teletypes for hard-copy output. The lower portion of the dual keyboard, or operand keyboard, is similar to a standard typewriter keyboard and is used to create messages. name files, enter parameters, etc. The upper portion, or operator keyboard, is layed out in a similar fashion with respect to key placement and is used to send commands to the system such as changing levels, invoking software operators, initiating looping and branching, and creating and managing user programs and files. 9i2f8c15c1

OLS is designed around the concept of "levels." A level may be viewed as a collection of operators (software

which the operations are directed.

Hence, changing levels in OLS redefines the operators invoked by upper keyboard buttons along with the data elements which take part in those operations. For example, CONV on level I might compute the greatest integer of a floating point scalar, where on level II the same keypush might compute the convolution integral of a list of floating point numbers. A "subsystem" of OLS is a set of levels together with a collection of basic routines common to all subsystems. Two such subsystems are described below.

9i2f8c15c2

Although OLS normally reacts in direct computational response to each user request (keypush), a button sequence may be defined, named, and stored for later execution. Such a sequence of keypushes is called a "user program." Convenient means are provided for editing user programs. Lists of keypushes to be executed can include programmed pauses, thus allowing manual and programmed activity to be interfaced. Branching based upon computational results as well as Fortran-like looping capabilities are also provided. These user programs can be executed at any time. It is also possible for one user program to call another creating a pyramiding feature, which makes it possible to construct programs of virtually unlimited 912f8c15c3 complexity.

Messages can be composed of alphameric, Greek, and special characters, and displayed. Those characters not specifically provided by OLS may be designed by the user and stored, and then are available for use. A collection of user programs together with user-generated characters is called a "user system." User systems are named and can be permanently stored and later retrieved. Portions of user systems may

be transferred between systems, and systems can be transferred between users.
User data can also be named, stored, and retrieved for later use.
912f8c15c4

(PROGRAM-LOGIN) 912f8c15d

(NETWORK-USE-PARAMETERS) 912f8c15e

(DOCUMENTATION) 912f8c15f

(OSIRIS-40) 912f8c16

(TYPE) 9i2f8c16a

(CONTACT) 9i2f8c16b

Randy Wilcox (xxx) (805) 961-2476 9i2f8c16b1

(DESCRIPTION) 9i2f8c16c

Organized set of integrated routines for investigation with statistics, oriented toward the social sciences. 912f8c16c1

(PROGRAM-LOGIN) 912f8c16d

From batch via cards, or on-line via OLS (see OLS User's Manual (NIC 7970)) 912f8c16d1

(NETWORK-USE-PARAMETERS) 912f8c16e

(DOCUMENTATION) 912f8c16f

(PL/1) 9i2f8c17

(TYPE) 912f8c17a

(CONTACT) 912f8c17b

Randy Wilcox (xxx) (805) 961-2476 9i2f8c17b1

(DESCRIPTION) 9i2f8c17c

(PROGRAM-LOGIN) 91218c17d

From batch via cards, or on-line via OLS (see OLS User's Manual (NIC 7970)) 9i2f8c17d1

(NETWORK-USE-PARAMETERS)	912f8c17e
(DOCUMENTATION)	9i2f8c17f
(PL/C)	9i2f8c18
(TYPE)	912f8c18a
(CONTACT)	9i2f8c18b
Randy Wilcox (xxx) (805) 961-2476 9i2f8c18b1
(DESCRIPTION)	912f8c18c
(PROGRAM-LOGIN)	912f8c18d
From batch via cards, or on	
(see OLS User's Manual (NIC	7970)) 912f8c18d1
(NETWORK-USE-PARAMETERS)	9i2f8c18e
(DOCUMENTATION)	912f8c18f
(RPG)	9i2f8c19
(TYPE)	9i2f8c19a
(CONTACT)	912f8c19b
Randy Wilcox (xxx) (805) 961-2476 912f8c19b1
(DESCRIPTION)	912f8c19c
(PROGRAM-LOGIN)	912f8c19d
	1
From batch via cards, or on (see OLS User's Manual (NIC	
(NETWORK-USE-PARAMETERS)	912f8c19e
(DOCUMENTATION)	9i2f8c19f
(SNOBOL)	9i2f8e20
(TYPE)	9i2f8c20a
(CONTACT)	912f8c20b

912f8c22c1

Randy Wilcox (xxx) (805) 961-2476 912f8c20b1 (DESCRIPTION) 9i2f8c20c (PROGRAM-LOGIN) 912f8c20d From batch via cards, or on-line via OLS (see OLS User's Manual (NIC 7970)) 912f8c20d1 (NETWORK-USE-PARAMETERS) 9i2f8c20e (DOCUMENTATION) 912f8c20f (SORT/MERGE) 9i2f8c21 (TYPE) 9i2f8c21a (CONTACT) 9i2f8c21b Randy Wilcox (xxx) (805) 961-2476 912f8c21b1 (DESCRIPTION) 912f8c21c A program for sorting and merging of data 9i2f8c21c1 sets. (PROGRAM-LOGIN) 912f8c21d From batch via cards, or on-line via OLS (see OLS User's Manual (NIC 7970)) 912f8c21d1 (NETWORK-USE-PARAMETERS) 912f8c21e (DOCUMENTATION) 912f8c21f (SPSS) 91218c22 (TYPE) 9i2f8c22a (CONTACT) 912f8c22b Randy Wilcox (xxx) (805) 961-2476 9i2f8c22b1 (DESCRIPTION) 912f8c22c A set of statistical routines oriented

toward the social sciences.

(PROGRAM-LOGIN)	912f8c22d
From batch via cards, or on-line v	la OIG
(see OLS User's Manual (NIC 7970))	
(NETWORK-USE-PARAMETERS)	9i2f8c22e
(DOCUMENTATION)	9i2f8c22f
(TSP)	912f8c23
(TYPE)	912f8c23a
(CONTACT)	912f8c23b
Randy Wilcox (xxx) (805) 961-2	476 912f8c23b1
(DESCRIPTION)	912f8e23e
A set of standard and specialized econometric regression routines.	912f8c23c1
(PROGRAM-LOGIN)	9i2f8c23d
From batch via cards, or on-line v	1 010
(see OLS User's Manual (NIC 7970))	
(NETWORK-USE-PARAMETERS)	9i2f8c23e
(DOCUMENTATION)	912f8c23f
(UC/360)	912f8c24
(TYPE)	912f8c24a
(CONTACT)	912f8c24b
Randy Wilcox (xxx) (805) 961-2	476 9i2f8c24bi
(DESCRIPTION)	912f8c24c
A set of file maintenance routines	. 912f8c24c1
(PROGRAM-LOGIN)	9i2f8c24d

From batch via cards, or on-line via OLS

(see OLS User's Manual (NIC 7970)) 912f8c24d1

(NETWORK-USE-PARAMETERS)		912f8c24e
(DOCUMENTATION)		912f8c24f
(WATFIV)		912f8c25
(TYPE)		912f8c25a
(CONTACT)		9i2f8c25b
Randy Wilcox (xxx)	(805) 961-2476	9i2f8c25b1
(DESCRIPTION)		912f8c25c
(PROGRAM-LOGIN)		912f8c25d
200 200 200 200 200	4.2	
From batch via cards,		
(see OLS User's Manual	(NIC 7970))	912f8c25d1
(NETWORK-USE-PARAMETERS)		9i2f8c25e
(DOCUMENTATION)		912f8c25f
(WATFOR)		912f8c26
(TYPE)		9i2f8c26a
(CONTACT)		9i2f8c26b
Randy Wilcox (xxx)	(805) 961-2476	912f8c26b1
(DESCRIPTION)		912f8c26c
(PROGRAM-LOGIN)		9i2f8c26d
Para tata atau atau		0.1.0
From batch via cards,		
(see OLS User's Manual	(NIC 7970))	912f8c26d1
(NETWORK-USE-PARAMETERS)		9i2f8c26e
(DOCUMENTATION)		912f8c26f
(XTAB/FREO)		9i2f8c27
(TYPE)		912f8c27a
(CONTACT)		912f8c27b

912f8d2f

Randy Wilcox (xxx) (805) 961-2476 9i2f8c27b1 (DESCRIPTION) 912f8c27c Programs for cross-tabulation and frequency count. 912f8c27c1 (PROGRAM-LOGIN) 912f8c27d From batch via cards, or on-line via OLS (see OLS User's Manual (NIC 7970)) 9i2f8c27d1 (NETWORK-USE-PARAMETERS) 912f8c27e (DOCUMENTATION) 9i2f8c27f (NETWORK-OPERATIONS) 91218d Choose one by typing, for ex.: s[how] user-protocols CR 9i2f8d1 (SERVER-PROTOCOLS) 9i2f8d2 PROTOCOL TYPE SOCKET NAME DOCUMENTATION 912f8d2a Telnet Network 1 RFC216 (NIC7546.) Standard 912f8d2b Remote Job Private x 201 RFC105 (NIC5775) Entry (RJE) Standard 91218d2c Remote Job x 13011 Network RFC396 Entry (RJE) Standard 912f8d2d Simple-Minded Private x'401' RFC122 (NIC5834) File System RFC399(NIC11917) (SMFS) 912f8d2e Data Recon-Network x 17051 figuration Standard

Service (DRS)

Level C Network Network Standard Protocol

x 1705

912f8d2g

UCSB On-Line Private RFC398(NIC11911) System(OLS)

x 17011,

x 17031,

x'707', x'709', x'801'

912f8d2h

(USER-PROTOCOLS)

Graphics

91218d3

User Telnet, see: RFC 121 (NIC 5833) and RFC 206 (NIC 7176)

912f8d3a

(NCP-INTERFACE-FROM-LOCAL-PROGRAMS)

912f8d4

The NCP can be interfaced to an assembly language, Fortran, and PL/1. See: NIC 5480, RFC 119 (NIC 5832), and RFC 120 (NIC 58832), respectively, for documentation.

912f8d4a

(INTERESTS)

91219

The UCSB Computer Systems Laboratory is an organized research unit within the University of California. Much of our effort in the past was devoted to the development of the Culler-Fried On-line System. More recently, the emphasis has been on the development of Network resources. Projects currently in progress include Network Conferencing, Data Reconfiguration Service, STP (a software system designed to act as intermediary for TIP users), and implementation of Network server protocols (RJS,FTP,NGP,etc).

912f9a

(DOCUMENTATION)

912110

(REFERENCES)

912f10a

"UCSB On-Line System Manual"
Univ of. Calif., Santa Barbara, Calif.,
(Jan 1 72) NIC 5748

9i2f10a1

(ORDER-INFORMATION)

912f10ь

(J14458) 15-FEB-73 15:57; Title: Author(s): Kudlick, Michael D. /MDK; Distribution: /bad; Sub-Collections: SRI-ARC; Clerk: MDK; Origin: <FEINLER>OUTLINE.NLS; 6, 8-FEB-73 23:57 JAKE;

14458 Distribution Dolan, Bruce A. ,

Harvey: After one minor correction, your L10 program which deletes directives works nicely, and up to 40% faster than my program. I copied it into my directory, so you can delete it from your directory if you wish. (I will maintain it until someone suggests a permanent home for it.) Thank you very much for your help.

P.S. How's the car situation?

1

14459 Distribution Lehtman, Harvey G., Memo on DELDIR

(J14459) 15-FEB-73 12:06; Title: Author(s): Meyer, N. Dean /NDM; Distribution: /HGL; Sub-Collections: SRI-ARC; Clerk: NDM;

Deleting Cutput Processor Directives

Harvey and I have written an L10 program which deletes Output Processor directives from NLS files. It is reasonably accurate and runs at a reasonable speed. It presently exists as <MEYER>DELDIR.NLS Please feel free to contact me for help with its use.

1

(J14460) 15-FEB-73 12:12; Title: Author(s): Meyer, N. Dean /NDM; Distribution: /SRI-ARC; Sub-Collections: OPIG SRI-ARC; Clerk: NDM;

14460 Distribution

Van Nouhuys, Dirk H., Victor, Kenneth E. (Ken), Wallace, Donald C. (Smokey), Watson, Richard W., Andrews, Don I., Hoffman, Carol B., Lee, Susan R., Michael, Elizabeth K., Dornbush, Charles F., ARC, Guest O., Feinler, Elizabeth J. (Jake), Handbook, Augmentation Research, Kelley, Kirk E., Neyer, N. Dean, Byrd, Kay F., Prather, Ralph, White, James E. (Jim), Vallee, Jacques F., Kaye, Diane S., Rech, Paul, Kudlick, Michael D., Ferguson, Ferg R., Lane, Linda L., Auerbach, Marilyn F., Bass, Walt, Engelbart, Douglas C., Hardeman, Beauregard A., Hardy, Martin E., Hopper, J., D., Irby, Charles H., Jernigan, Mil E., Lehtman, Harvey G., North, Jeanne B., Norton, James C., Paxton, William H., Peters, Jeffrey C., Ratliff, Jake, Van De Riet, Edwin K.

Home for DELDIR

Dirk: Harvey's L10 program DELDIR runs nicely. I have transferred it to my directory to get it out of Harvey's way. Can you suggest a more permanent home. It will change along with the Output Processor, so, while a journalization is a good idea, there probably should be a place where it can be updated and the current version available to users.

1

14461 Distribution Van Nouhuys, Dirk H.,

Home for DELDIR

(J14461) 15-FEB-73 12:17; Title: Author(s): Meyer, N. Dean /NDM; Distribution: /DVN; Sub-Collections: SRI-ARC; Clerk: NDM;

Re history and mtg date

Mike -- I read your paper and Jean Iseli's and I agree the meeting is important. In addition to Fri., Mar. 16, the dates Mar. 23 to Apr. 2, inclusive, are also bad for me. So far any other time is fine with a preference for March over April. If you want to have the meeting earlier in March (like around the 9th as you suggested in your paper) you could send out an advance journal message to NLG and NSAG announcing the meeting and the imminent RFC. That would give people time to make plans or alternate suggestions. -- Nancy

1

Re history and mtg date

(J14462) 15-FEB-73 15:04; Title: Author(s): Neigus, Nancy J. /NJN; Distribution: /MDK; Sub-Collections: NIC; Clerk: NJN;

14462 Distribution Kudlick, Michael D.,

A .. .

WE TRIED AND FAILED TO READ INFOPRO FILE. SAID IT IS OFFLINE??

(J14463) 15-FEB-73 17:33; Author(s): Braden, Robert T., Wolfe, Stephen M. /RTB SMW; Distribution: /EFH; Sub-Collections: NIC; Clerk: RTB;

An Old Journal NP for Your Consideration

(J14464) 15-FEB-73 15:07; Title: Author(s): Bass, Walt /WLB; Distribution: /dce jdh chi dsk mdk rww jcn ; Sub-Collections: SRI-ARC; Clerk: WLB;

Now that we are officially into a pushed state of planning and design I would like to resubmit a Journal NP that has been kicking around for a long time. There need to be much more flexible ways of specifying distribution lists for Journal submissions. Now you are only allowed to distribute to an ORed set of groups and individuals. Clearly you should be able to specify ANDed sets (e.g. nwg AND usc-isi) and EXCLUDED sets (npg-wlb) as well. Furthermore, you should be able to refer to the distributon list of any existing (or at least recent) Journal document so that you can send items to the same set of people without having to explicitly lookup and copy the distribution list manually (just typing in the number as part of the new distribution list should be syntacticly unambiguous and graciously mnemonic).

14464 Distribution
Engelbart, Douglas C., Hopper, J. D., Irby, Charles H., Kaye,
Diane S., Kudlick, Michael D., Watson, Richard W., Norton, James
C.,

Memo to JI

The following are relatively random thoughts which occurred to me while reading "INFOPRO"

1a

Tom Pyke of NBS once said that NBS was considering producing a "Consumers Reports" for network users. It would do such things as comparitive evaluations of FORTRAN, COBOL, file storage systems, etc. In addition to actual capabilities, it would pay attention to such issues as cost, system availability, quality of documentation, level of consulting support available to network users, etc. I don't know if NBS is still thinking about this, but it seems the right sort of direction to go in providing what you are proposing.

1a1

I can't see how it will make a site provide better or more up-to-date information by asking them to construct an "information protocol" program or other system pieces. problem right now is that the people who have informatiom in their heads think they are to busy to even dictate it to a secretary for typing and sending to the NIC (the NIC, after all, has volunteered to type such info into the on-line system). It setms to me that, at one level, the rate at which the server organizations are willing to supply info to the Resource Notebook (or similiar document) is some indication of the level of OTHER user support that is offered. At another level, it is clear that any prospective user needs some sort of shopping list of system facilities if he's going to even start using the network at all; I fear that the only way such a list will ever get provided by most sites is if Susan Poh, or someone like her, physically camps on every doorstep until she is provided with information.

la2

All specifications for on-line information are based on an unstated premise that someone is available to type the information into some system. It has taken ME 40 minutes of elapsed time to type to the beginning of this sentence; I could have written the same amout in longhand for my secretary to type in about 5 minutes. Further, I wouldn't have to have access to a network terminal to do so. (We have ttied teaching our secretaries to use various on-line text-editing systems including the NIC; it has never worked.) Therefore, I personally am biased against any system that requires the originator of information to have to type it; I also don't get to excited about the idea of

"tele-conferencing" if it means I have to type instead of speaking.

1a3

I doubt if an "Information Working Group" will be able to attract a representative from EVERY server site, or to agree on anything at all if it does. If it turns into a smaller group, it will then have the problem of getting everyone to implement what it specifies.

1a4

One problem (or advantage) of the current network setup is that it acts like a set of competitive systems rather than like a cooperative community. Perhaps what the users really need is a thing like the "Resource Sharing Executive" that the BBN TENEX group is experimenting with. Whether network-wide specifications for such a system can ever be arrived at, and (if so) whether all the Hosts will be willing to surrender a sufficient degree of auronomy to build the "standard" command language etc. remains to be seen. It seems to me, however, that this is the only path to follow that will really free the naive user from the kinds of problems that he currently faces.

1a5

I hope I don't sound too much like a wet blanket. I am only trying to give you the advantage(?) of my perceptions of what actually happens in the network community.

Regards, Alex McKenzie

1 b

(J14466) 16-FEB-73 12:10; Title: Author(s): McKenzie, Alex A. /AAM; Distribution: /JI; Sub-Collections: NIC; Clerk: AAM;

User Power

Nancy -- talked with Susan Poh wed, and jean iseli several times in ppast few days, as well as mike kudlick. They've indicated they've talked to you. looks like things are happening. Kudlick is issuing rfc about NIC role in user issues and jean and I are issuing one at same time. They are probably going out Monday. Please peruse and comment, if you can. (kudlick, history,) and (ucla-nmc, nurfc, 2).

How's the weather?

Later. -- dave.

1

User Power

(J14467) 16-FEB-73 10:22; Title: Author(s): Crocker, David H. /DHC; Distribution: /NJN; Sub-Collections: NIC; Clerk: DHC;

14467 Distribution Neigus, Nancy J., TITLE

THIS IS TO TEST THE YOU HAVE JOURNAL MAIL MESSAGE

1

14468 Distribution Stern, Dale H., Morris, Martin G., (J14468) 16-FEB-73 12:26; Title: Author(s): Stern, Dale H. /DHS; Distribution: /DHS MGM; Sub-Collections: NIC; Clerk: DHS;

First ARC Photo Selection

Flease see the array of photos outside of Walter's office. Vote for ten before 3:00 PM Friday, 23 February.

The first in the series of photographs of ARC activities taken by Ken Victor have arrived. Approximately 50 photos were chosen to be made into 3X5 prints from several hundred on the first contact sheets by the photo review and seletion committee (DSK, LLL, DVN and HGL). From these about 15 will be blown up.

1

There will be other pictures taken; in fact, we received just this week the second set of contacts, but they have not been put into 3X5*s.

1a

We have decided to make the selection of the blow-ups as democratic as possible. We have mounted the photos outside of Walter's office. From these, each interested ARC member will have the opportunity to vote for 10 prints. From those with the hightest votes, the selection committe will commission Ken to make blow-ups.

2

This process not being totally democratic, the selection committee is free to slightly vary selections and Ken exercises veto power over them.

2 a

In making your selections, please note the following:

3

Ken is able to adjust for contrast and for composition in the final prints. Thus, a picture may be slightly lopsided in the 3X5 prints.

3a

Vote for ten prints only. Note the goal is to get photographs reflecting typical ARC activities. Note also that some people or activities are not represented in this set of prints. Ken has assured us that he will attempt to balence these ommissions in later sets. (Please make suggestions for new pictures to Ken or any member of the selection committee.)

36

Vote by placing marks near your favorite photos.

3c

Voting will end next Friday, 23 February, at 3:00.

3d

Vote early and often.

3e

(J14469) 16-FEB-73 10:47; Title: Author(s): Lehtman, Harvey G. /HGL; Distribution: /sri-arc; Sub-Collections: SRI-ARC; Clerk: HGL; Origin: <LEHTMAN>MESS.NLS; 1, 16-FEB-73 10:15 HGL;

14469 Distribution

Van Nouhuys, Dirk H., Victor, Kenneth E. (Ken), Wallace, Donald C. (Smokey), Watson, Richard W., Andrews, Don I., Hoffman, Carol B., Lee, Susan R., Michael, Elizabeth K., Dornbush, Charles F., ARC, Guest O., Feinler, Elizabeth J. (Jake), Handbook, Augmentation Research, Kelley, Kirk E., Meyer, N. Dean, Byrd, Kay F., Prather, Ralph, White, James E. (Jim), Vallee, Jacques F., Kaye, Diane S., Rech, Paul, Kudlick, Michael D., Ferguson, Ferg R., Lane, Linda L., Auerbach, Marilyn F., Bass, Walt, Engelbart, Douglas C., Hardeman, Beauregard A., Hardy, Martin E., Hopper, J. D., Irby, Charles H., Jernigan, Mil E., Lehtman, Harvey G., North, Jeanne B., Norton, James C., Paxton, William H., Peters, Jeffrey C., Ratliff, Jake, Van De Riet, Edwin K.

4a2

Herewith comments and suggestions for the General Purpose Handout 1 Cover --2 A picture of someone working at a display is very ho-hum and does little to indicate we have anything at all different going on here. 2a I suggest trying to show the interaction of geographically separated workers. E.g., by a photo of one person on the right hand side of the cover at an identifiable display of text, separated in some graphic way from a person on the left hand side of the page at an identical display, both working with headsets, obviously linked in their activity. 2bIf the interaction of knowledge workers is not to be stressed, then how about a cover which carries out the utility concept. 2c 3 Style --In general, I find the text to be by turns too wordy and too cryptic. I feel the handout needs to be much longer, perhaps 8 to 10 pages, in order to say enough to be informative. I find a mixture of jargon and primer style. Is the target clear, and is this effort to produce a general purpose handout going to be successful? 3a Information Content Specifics --ARC's Function 4a The machine shop analogy gives the idea of a utility, but I am not at ease with this analogy to carry the ideas of various tool capabilities and of cooperative activity. When I worked in a machine shop, it is true that my machine was run from a central power source, but I had to move from a lathe to a shaper to a grinder, etc. to accomplish different processes, and I was not able to cooperate with another worker in a way analogous to shared screens. 4a.1 I admit I can't find a substitute analogy, but it seems possible that there is no good analogy from the machine age. The cooperative building of files of ideas, with accompanying dialogue, may have no counterpart in machine-related activity. ARC's design may be without satisfactory parallel in that social activity characteristic of a nonmechanized society has been made

possible for people using machines.

Aspects of our online system	4b
The text here doesn't do justice to the Journal system, the Catalog capability, etc.	4b1
As an aside, when we are talking about library-type	
catalogs, we spell it catalog, not catalogue.	4b1a
Bootstrapping	4c
Is bootstrapping inconsistent with solving particular problems? How about telling how the bootstrapping has worked?	4c1
Another aside: In this discussion and in the following section, use the name: ARPA Network Information Center. Also, the word "Advanced" should be inserted in the name of ARPA, preferably replacing the word "Defense",	
which we do not use.	4c1a
Network Information Center	4 d
This section is really poor, in its information and in its writing quality.	4d1
Another aside: "Our largest sponsor" is ambiguous.	4d1a
SEAS	4 e
What is SEAS an abbreviation or acronym for? Should state here as well as above? What is the nature of the community? Is it at ARC or does it include outsiders?	4e1
An unsupported statement about the social value of NLS etc. seems bumpy.	41

Handout, General Purpose, Comments on

(J14470) 16-FEB-73 10:13; Title: Author(s): North, Jeanne B. /JBN; Distribution: /dvn wlb jcn mfa chi dls mdk rww dce; Sub-Collections: SRI-ARC; Clerk: JBN; Origin: <NORTH>HANDOUTCOM.NLS; 2, 16-FEB-73 8:42 JBN;

14470 Distribution

Van Nouhuys, Dirk H., Bass, Walt, Norton, James C., Auerbach, Marilyn F., Irby, Charles H., Stone, Duane L., Kudlick, Michael D., Watson, Richard W., Engelbart, Douglas C.,