

Letter to W. A. Watson, Bunker Ramo, sending requested reports and information

Augmentation Research Center
Stanford Research Institute
Menlo Park, California 94025

William A. Watson
Bunker Ramo
Electronic Systems Division
Government Systems Group
31717 La Tienda Drive
Westlake Village, Ca. 91361

Dear Dr. Watson:

In response to your letter of 17 May (our ref -- 23246,), I am sending a stack of our publications to give you a more up-to-date picture of what we are doing. I shall give brief answers to your specific questions below, but I think we should plan for you to visit our center, if your interest and involvement in these topics is extensive.

1

Which editing commands or features are most useful to the user in the first place depends very much on the nature of his operations and the level of his skill. We have a fair amount of data as to the relative frequency with which different commands are used. For instance, see item cited below in 2i.

1a

The best operand selection techniques depend again on the nature of the job. For a typist updating a marked-up printout draft, it may be best that he designate operands from the typewriter keyboard so that he doesn't have to take his eyes off the marked-up script; for a skilled user doing his studying and modifying, in front of a responsive display, it seems clear that a pointing device is best; we still find our mouse to be the best in our application environment as a pointing device. (See item cited in 2j).

1b

I strongly prefer meaningful command words in contrast to function keys as command specifiers. The simple problem of documenting the functions adds to this preference, and with our chording keyset, the specifications in terms of alphabetic character strings (usually highly abbreviated) provides a very general and flexible command-language environment.

1c

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Learning curves for the chord keyset are very "bumpy". This is due to the very short learning time -- most people master the alphabet within 1 to 2 hours of practice. For its use as an alternate input to the normal typewriter-like keyboard, the keyset provides payoff to a user in our environment by the time he has had about an hour or two of practice.

1d

Unfortunately, we don't have performance standards or standardized tasks. We are currently busily engaged in developing a relatively large clientele of users external to SRI, and as the community becomes large enough and seasoned enough, we expect that this area of experimentation will become meaningfully useful.

1e

Feel free to give me a call after you have scanned the accompanying documents:

2

D. C. Engelbart, R. W. Watson, J. C. Norton, THE AUGMENTED KNOWLEDGE WORKSHOP, paper presented at the National Computer Conference, New York City, June 1973, (IJOURNAL, 14724,)

2a

D. C. Engelbart, COORDINATED INFORMATION SERVICES for a DISCIPLINE- OR MISSION-ORIENTED COMMUNITY, paper presented at the Second Annual Computer Communications Conference, San Jose, California, 24 January 1973, (Journal, dated 12 Dec 72 -- Mjournal, 12445,1: xhmz)

2b

D. C. Engelbart, AUGMENTING HUMAN INTELLECT: A CONCEPTUAL FRAMEWORK, SRI Project AFOSR-3223, October 1962 (XDOC -- 3906,)

2c

D. C. Engelbart and W. K. English, "A Research Center for Augmenting Human Intellect", AFIPS Proceedings, Fall Joint Computer Conference, 1968, Washington, D.C. (XDOC -- 3954,)

2d

J. C. Norton, R. W. Watson, WORKSHOP UTILITY SERVICE FOR THE USE OF KNOWLEDGE WORKSHOP TECHNOLOGY, Technical Proposal to Bell Canada, SRI No. ISC 73-147, October 8, 1973 (Journal -- 19250,)

2e

D. C. Engelbart and ARC Staff, ADVANCED INTELLECT-AUGMENTATION TECHNIQUES, Final Report on NASA Contract NAS1-7897, July 1970 (XDOC -- 5140,)

2f

Engelbart, D. C., AUGMENTING HUMAN INTELLECT: EXPERIMENTS, CONCEPTS, AND POSSIBILITIES -- Summary Report, Stanford

Letter to W. A. Watson, Bunker Ramo, sending requested reports and information

Research Institute, Augmentation Research Center, March 1965, (XDOC == 9691,) 2g

Savoie, R., SUMMARY OF RESULTS OF FIVE-FINGER KEYSER TRAINING EXPERIMENT, Project 8457-21, Stanford Research Institute, Bioengineering Group, 4, p. 29, March 1972, (XDOC == 11101,) 2h

Lee, S., RESULTS OF COMMAND FREQUENCY STUDY, (Journal == 20154,) 2i

D. C. Engelbart, DESIGN CONSIDERATIONS FOR KNOWLEDGE WORKSHOP TERMINALS, paper presented at the National Computer Conference, New York City, June 1973, (Journal == 14851,) 2j

Sincerely,

Douglas C. Engelbart
Augmentation Research Center

DCE/jml

Timetable for NSW Documentation

Result of brief talk with Bill Carlson and one with Dick Watson
6/4/74.

Timetable for NSW Documentation

As working "deadlines" we should shoot for the following:
EBCDIC tape to ASCII sequential file == June 14
AF sequential file to NLS as per (23212,3:9) == June 20
Reinstate AF numbers and names format as per (23212,3:9) == June
25
Fiche format described in AF regulations == June 25
Proof of format from COM == July 3

Their tape has no characters not translatable to ASCII. It will be mailed to EKM June 5. This should be taken as an approximate timetable, not official deadlines.

Timetable for NSW Documentation

(J23261) 4-JUN-74 12:54; Title: Author(s): N. Dean Meyer/NDM;
Distribution: /RWW EKM HGL WEC; Sub-Collections: SRI-ARC; Clerk: NDM;

The New Salesperson from DDSI will be here tomorrow,

The new salesperson from DDSI, Ken Manire, who also has some line authority, has an appointment with me at 9:00 tomorrow, I'm sure he would be happy to talk with any of you who may be interested,

1

The New Salesperson from DDSI will be here tomorrow,

(J23262) 4-JUN-74 13:28; Title: Author(s): Dirk H. Van Nouhuys/DVN;
Distribution: /DPCS([INFO=ONLY]) ; Sub=Collections: SRI=ARC DPCS;
Clerk: DVN;

Phone Log: Gregory Winterhalter, Cyphernetics

Interested in exploring NLS's utility internally, perhaps even as service product.

Phone Log: Gregory Winterhalter, Cyphernetics

Unsolicited call from:

Gregory Winterhalter
 Cyphernetics
 175 Jackson Plaza
 Ann Arbor, Michigan 48106
 (313) 769-6800

He has apparently seen some of the recent AFIPS articles ('73 NCC?), and the general nature of our knowledge-workshop approach appeals to him. He wondered if NLS would run on their PDP-10s (they have both KA-10s and KI-10s, even a multi-processor KI coming up). His interest is in learning more about NLS first, and if it continued to be interesting enough to him, see if he could arrange for them to try using it internally.

I explained how our AKW Utility setup was designed for such application exploration (Note that his company was one of the bidders for providing our Utility service support, but he wasn't with them then). I told him that we wouldn't be ready to talk business for some time yet, with regard to their selling NLS service commercially -- but that we really did look forward to that possibility in the future (non--exclusive franchises, so to speak).

He surmised that if interest were high enough, and if it indeed would be uncomfortably costly or difficult to move NLS onto one of their operating systems, his company wouldn't object to buying from our TYMSHARE-run Utility (but that is downstream conjecture).

Note: When last we had contact with Cyphernetics, perhaps 18 months ago, one of their active services was a combination editing-publishing process. Be interesting to see where they are with that now. Would also be interesting to see how the more-general AKW support service strikes them as a marketing prospect among their type of clientele (TYMESHARE we will be keeping in touch with, the GE T-S representative seemed to feel that it was too exploratory for their clientele, and other commercial T-S service groups we have yet to contact).

I am sending to him the following literature, and will await his further communication -- invited him to visit us if he stays interested:

D. C. Engelbart, AUGMENTING HUMAN INTELLECT: A CONCEPTUAL FRAMEWORK, SRI Project AFOSR-3223, October 1962 (XDOC == 3906.)

D. C. Engelbart and W. K. English, "A Research Center for

Phone Log; Gregory Winterhalter, Cyphernetics

- Augmenting Human Intellect", AFIPS Proceedings, Fall Joint Computer Conference, 1968, Washington, D.C. (XDOC == 3954,) 5b
- D. C. Engelbart and ARC Staff, ADVANCED INTELLECT=AUGMENTATION TECHNIQUES, Final Report on NASA Contract NAS1-7897, July 1970 (XDOC == 5140,) 5c
- D. C. Engelbart, COORDINATED INFORMATION SERVICES for a DISCIPLINE= OR MISSION=ORIENTED COMMUNITY, paper presented at the Second Annual Computer Communications Conference, San Jose, California, 24 January 1973. (Journal, dated 12 Dec 72 == Mjournal, 12445,1: xhmz) 5d
- Augmentation Research Center, ONLINE TEAM ENVIRONMENT; NETWORK INFORMATION CENTER and COMPUTER AUGMENTED TEAM INTERACTION, Final Report on project RADC-TR-72-232, June 1972 (Journal == 13041,) 5e
- D. C. Engelbart, DESIGN CONSIDERATIONS FOR KNOWLEDGE WORKSHOP TERMINALS, paper presented at the National Computer Conference, New York City, June 1973. (Journal == 14851,) 5f
- D. C. Engelbart, R. W. Watson, J. C. Norton, THE AUGMENTED KNOWLEDGE WORKSHOP, paper presented at the National Computer Conference, New York City, June 1973. (IJOURNAL, 14724,) 5g
- J. B. North, EXPERIMENTAL DEVELOPMENT OF A SMALL COMPUTER=AUGMENTED INFORMATION SYSTEM, Annual Report on ONR project N00014-70-C-0302, April 1973 (Journal == 16508,) 5h
- J. C. Norton, R. W. Watson, WORKSHOP UTILITY SERVICE FOR THE USE OF KNOWLEDGE WORKSHOP TECHNOLOGY, Technical Proposal to Bell Canada, SRI No. ISC 73-147, October 8, 1973 (Journal == 19250,) 5i
- Augmentation Research Center, "Output Processor Users' Guide," 23 Aug 73, (Journal == 12209,) 5j

Phone Log: Gregory Winterhalter, Cyphernetics

(J23263) 4-JUN-74 14:06; Title: Author(s): Douglas C. Engelbart/DCE;
Distribution: /JML([ACTION]) JCN([INFO-ONLY]) RWW([INFO-ONLY]
) CHI([INFO-ONLY]) NDM([INFO-ONLY]) DVN([INFO-ONLY]) ;
Sub-Collections: SRI=ARC; Clerk: DCE;

Comments on your contribution to the final report

- (Meyer) comments on Dean's final report contribution 1
- at (1a1d) the last two words do not fit 1a
- branch (1b1a) = I feel the examples in parentheses should be a bit more general, e.g. for content analyzer filters, one which displays only those statements satisfying certain prescribed textual conditions, 1b
- the specific examples could follow or better yet be somewhere in the body of the report when you talk about these again, 1b1
- at (1b1b) again I am not sure if the specific examples are good here in the introduction. Later, yes. Maybe you can describe the set of three programs in more general terms, 1c
- For example, message handling might be facilitated by using a executable program which copies messages delivered by the Operating System into an NLS file. Then, a content analyzer program can edit these messages as well as journal items to form one line views that are compatible. Finally a sort algorithm can be invoked which orders the branches by date. These few aids..... 1c1
- at (1b1b2) see comment above. I don't like this unwieldy sentence. It is too long. Split it up. 1d
- at (1b1c) the sentence is too long. At least put semicolons instead of commas in appropriate places to break the sentence up a bit. Also, the part re 'unconditional program control transfers' doesn't seem to fit; guess it is rather a programming requirement that will not be apparent to the unknowing reader. (I fully agree that it is important and should be mention somewhere, perhaps) 1e
- in (1c1a) at 'tutorial' maybe it should be a noun in which case insert the word 'a' before. It reads better that way, 1f
- in (1c1a) 'develops' this word seems funny here. Perhaps 'takes' is a better and simpler word, 1g
- in (1c1a) 'mcuh' typo, 1h
- in (1c1b1) the last sentence is somewhat repetitive with statement above, 1i
- Overall you did a real good job. I tried to pick it apart but as you can see it was hard. One comment, it seems the reader is assumed rather sophisticated and has knowledge about NLS. Guess this is a fair assumption (being a subpart of a larger report), 1j

Short visit slated by Marshall Turner of Census Bureau

Jim; Dave Brown just informed me that Marshall Turner is visiting SRI's MSD, who in turn are arranging for him to tour ISE next Monday morning, 10 Jun 74. He'd get about 30 minutes in ARC. Dave Brown would be willing to escort him right on through, giving him a basic description. But I told him to assume that you or I would like to handle the visit, since it sounds like an interesting contact,

1

Marshall Turner apparently is in the office of the Director of the Bureau (of Census?), serving within a unit called User Service Staff. The Bureau is in the Department of Commerce,

2

Let's discuss who will host the man.

3

Short visit slated by Marshall Turner of Census Bureau

(J23265) 4-JUN-74 14:39; Title: Author(s): Douglas C. Engelbart/DCE;
Distribution: /JCN([ACTION]) FJG([INFO=ONLY]) ; Sub=Collections:
SRI=ARC; Clerk: DCE;

Visit Log: 4 Jun 74, Evon Greanias, IBM, and Mariluisse Wolfsteiner
and Dick Knock, SRI

Visitor being hosted by LRPS;

1

Evon C. Greanias, IBM Fellow
IBM Corporation
Old Orchard Road
Armonk, New York 10504
(914) 765-6491

1a

SRI representatives:

2

Richard Knock, Program Manager, LRPS: ext 2023

2a

Mariluisse Wolfsteiner, Operations Analyst, ESD: ext 4850

2b

Apparently Greanias is especially intersted in "Office Automation."
We had little more than half an hour; got past the basic DNLS working
mode, brief waves at Journal, Output Processor. He took a copy of
14724.

3

D. C. Engelbart, R. W. Watson, J. C. Norton, THE AUGMENTED
KNOWLEDGE WORKSHOP, paper presented at the National Computer
Conference, New York City, June 1973, (IJOURNAL, 14724,)

3a

I would like to have further contact with him. I'd guess that he
would be a good one to trade ideas with (argue with, perhaps).

4

Visit Log: 4 Jun 74, Evon Greanias, IBM, and Mariluise Wolfsteiner
and Dick Knock, SRI

(J23266) 4-JUN-74 15:47; Title: Author(s): Douglas C. Engelbart/DCE;
Distribution: /JCN([INFO-ONLY]) ; Sub=Collections: SRI=ARC; Clerk:
DCE;

Inconsistency in Sendmail

It seems a little consistent that when in Sendmail and You want to show status, you type "SH" and you get (S)H)ow status when anywhere else you would have to type "SHS" for (SH)ow (S)tatus,

1

Inconsistency in Sendmail

(J23267) 4-JUN-74 15:53; Title: Author(s): Susan R. Lee/SRL;
Distribution: /FDBK([INFO=ONLY]) ; Sub-Collections: SRI-ARC; Clerk:
SRL;

Hosting visitors on Wed 5 Jun

Jim: Hill sent me a copy of the agenda that he apparently had provided you with. I'm assuming that you are to be their host at ARC -- potential clientele -- insofar as fielding the topics cited there is concerned. I guess that Mil has been in close touch with them, and will be communicating independently with them.

1

Mil: Dave Brown and Charley Rosen both asked me about what these visitors wanted to see them about -- apparently on the basis of some calls you had made asking if they'd be at home for the visitors. I told them I knew nothing about Hill and co, wanting to talk with them.

2

My last communication was a link-talk with Hill last night; he said that they'd arrive at ARC about 0900.

3

Hosting visitors on Wed 5 Jun

(J23268) 4-JUN-74 16:43; Title: Author(s): Douglas C. Engelbart/DCE;
Distribution: /JCN([ACTION]) MEJ([INFO=ONLY]); Sub=Collections;
SRI=ARC; Clerk: DCE;

Back Journal Items

Nancy, The following is a list of citations for all Journal items within the recent past which reference NJN, USING, or INFORMAN in any way -- as an author, as an addressee, in a comment, etc. Notice that these citations are somewhat unusual, since I (i.e., my program) not the Journal generated them. In particular, the text of messages are not included, only a citation; and general comments and addressee-specific comments are absent.

AAM 7-NOV-73 06:01 20077
I got this fom Abhay recently, some of you may not have
Location: (LJOURNAL,20077,1:w)

ADD 11-FEB-74 14:24 30069
Comments on a draft CCL
Location: (HJOURNAL,30069,1:w)

ARH 1-FEB-74 07:03 21710
Keep the ball rolling,
Location: (JOURNAL,JRNL18,J21710:w)

CHI 14-JAN-74 20:36 21394
Please add CHI to CCL
Location: (JOURNAL,JRNL17,J21394:w)

DHC 26-DEC-73 06:17 21177
Agenda
cc: neigus at BBN
- - -
Location: (MJOURNAL,21177,1:w)

DHC 9-JAN-74 14:57 21340
Craig's Note, into the journal, to be incorporated in my paper, - - -
-
Location: (GJOURNAL,21340,1:w)

DHC 1-NOV-73 16:50 20005
USING/USERS/used up
Location: (JOURNAL,JRNL15,J20005:w)

DHC 16-NOV-73 15:10 20337

Back Journal Items

Location: (JOURNAL, JRNL15, J20337;w) 9

DHC 2-NOV-73 14:25 20022
 USING 5 and 6 not online
 Location: (JOURNAL, JRNL15, J20022;w) 10

DHC 23-JAN-74 19:53 21592
 Preliminary version of Service Center Report for USING
 Location: (JOURNAL, JRNL17, J21592;w) 11

DHC 28-NOV-73 20:57 20612
 The Life, Death, and Resurrection of N*E*T*E*F!!
 Location: (JOURNAL, JRNL16, J20612;w) 12

DHC 30-NOV-73 17:31 20657
 Netref
 Location: (IJOURNAL, 20657, 1;w) 13

DHC 4-FEB-74 11:58 21782
 Nic-provided Kludge to get clean text from NLS files
 Location: (JOURNAL, JRNL18, J21782;w) 14

DHC 7-FEB-74 17:25 21831
 Possible Virtual Pathname SYNTAX proposal
 Location: (JOURNAL, JRNL18, J21831;w) 15

DHC 9-JAN-74 15:29 21341
 List of Committees Formed at the Second Using Meeting
 Location: (GJOURNAL, 21341, 1;w) 16

DHC DAY ARH MDK 1-FEB-74 16:32 20804
 USING Network Service Report
 Location: (GJOURNAL, 20804, 1;w) 17

DHC NJN JAKE JI 5-NOV-73 20:56 20050 [NWG/RFC# 585]
 Arpanet Users Interest Working Group Meeting
 Location: (LJOURNAL, 20050, 1;w) 18

DLS 19-DEC-73 08:50 20973

Back Journal Items

Instructions on how to use the IMLAC Location: (MJOURNAL,20973,1:w)	19
DVN 11-DEC-73 11:56 20847 Output Processor User's Guide and DDSI Services Location: (MJOURNAL,20847,1:w)	20
DVN 17-DEC-73 21:07 20936 Current Status of Documentation Location: (MJOURNAL,20936,1:w)	21
DVN 19-DEC-73 21:44 21032 Last Call for Comments on Pocket Output Processor Directive Card Location: (JOURNAL, JRNL16, J21032:w)	22
DVN 29-DEC-73 11:26 7390 Project Management Seminar Location: (MJOURNAL,7390,1:w)	23
DVN 4-DEC-73 08:45 8220 Knowledge Workshop Grafitti Location: (JOURNAL, JRNL16, J8220:w)	24
DVN 7-NOV-73 20:34 20094 Dean Meyer Will Make an Output Processor Cue Card Location: (JOURNAL, JRNL15, J20094:w)	25
DVN 8-FEB-74 13:28 7388 Other Sources of Money, Some Thoughts and Leads Location: (HJOURNAL,7388,1:w)	26
FEEDBACK 19-JAN-74 17:59 21511 Preliminar Feedback Committee report [for review] Location: (GJOURNAL,21511,1:w)	27
FGB 14-DEC-73 11:09 20900 Using Meeting Location: (JOURNAL, JRNL16, J20900:w)	28

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HGL 1-FEB-74 14:30 21727
 Away With 037s== We Beat You to Them (Almost), Mike
 Location: (GJOURNAL,21727,1:w) 29

JAKE 14-JAN-74 14:24 21385
 USING Directory and Groups at the NIC
 Location: (GJOURNAL,21385,1:w) 30

JAKE 14-JAN-74 14:43 21386
 Addition to USING Feedback Committee
 Location: (JOURNAL,JRNLI7,J21386:w) 31

JAKE 20-NOV-73 15:30 20420
 USING meeting at the NIC
 Location: (IJOURNAL,20420,1:w) 32

JAKE 6-NOV-73 07:35 20065
 Hostnames List
 Location: (JOURNAL,JRNLI5,J20065:w) 33

JEW 13-DEC-73 13:46 20882
 USING Meeting Attendance; Response to (20874,)
 Location: (JOURNAL,JRNLI6,J20882:w) 34

JEW 8-NOV-73 11:44 20107
 Transferring NLS Files via FTP
 Location: (JOURNAL,JRNLI5,J20107:w) 35

JHB 2-DEC-73 17:28 20673
 Goings on at BBN and SADPR
 Location: (IJOURNAL,20673,1:w) 36

JI 12-NOV-73 20:55 20186
 using preference
 Location: (JOURNAL,JRNLI5,J20186:w) 37

JI 14-DEC-73 03:30 20887
 Location: (MJOURNAL,20887,1:w) 38

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JI 15=JAN=74 07:01 21398 Feedback Committee Preliminary Report Location: (JOURNAL, JRNL17, J21398:w)	39
JI 15=JAN=74 07:09 21399 Feedback Group Location: (JOURNAL, JRNL17, J21399:w)	40
JI 20=JAN=74 09:35 21514 Review of USING Mtg. Article Location: (GJOURNAL, 21514, 1:w)	41
JI 21=NOV=73 18:10 20441 USING Membership Location: (JOURNAL, JRNL16, J20441:w)	42
JI 29=JAN=74 17:54 21655 first feedback committee report Location: (GJOURNAL, 21655, 1:w)	43
JI 29=JAN=74 18:15 21656 Netgripe and Netcomment Idents for FEEDBACK Location: (JOURNAL, JRNL17, J21656:w)	44
JI 4=NOV=73 22:29 20042 Output Processor Cue Card Location: (JOURNAL, JRNL15, J20042:w)	45
JI 9=NOV=73 18:33 20155 ARPANET Newsletter - New Column Location: (JOURNAL, JRNL15, J20155:w)	46
JI DHC NJN 5=NOV=73 20:44 20049 [NWG/RFC# 584] Charter for Arpanet Users Interest Working Group Location: (LJOURNAL, 20049, 1:w)	47
JOC DHC JI AJR 1=FEB=74 14:56 21683 Network User Feedback System Report Location: (GJOURNAL, 21683, 1:w)	48

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KIRK 25-JAN-74 22:00 21626
 Response to Nancy's comments on WAC
 Location: (GJOURNAL,21626,1:w) 49

KIRK 11-JAN-74 20:52 21370
 In addition to Drik's (18367,)
 Location: (JOURNAL,JRNL17,J21370:w) 50

KIRK 9-JAN-74 21:47 21345
 In regards to the ARPANET WEC
 Location: (GJOURNAL,21345,1:w) 51

MAP 26-DEC-73 09:36 21188
 Location: (MJOURNAL,21188,1:w) 52

MAP 28-JAN-74 09:31 21638
 there's a bit of a draft
 Location: (JOURNAL,JRNL17,J21638:w) 53

MAP 31-JAN-74 13:27 21696
 Location: (GJOURNAL,21696,1:w) 54

MDK 12-DEC-73 12:16 20858
 NIC USER COMPUTER SERVICES TO BE TRANSFERRED TO A NEW HOST, OFFICE-1
 Location: (MJOURNAL,20858,1:w) 55

MDK 13-FEB-74 15:32 21884
 Bugs at Office-1
 Location: (HJOURNAL,21884,1:w) 56

MDK 19-DEC-73 14:50 21027
 To NJN: re USING Meeting Jan 3-4
 Location: (MJOURNAL,21027,1:w) 57

MDK 29-JAN-74 08:57 21651
 Comments on <USING>SERVICE,NLS;5
 Location: (GJOURNAL,21651,1:w) 58

Back Journal Items

MDK 7-NOV-73 17:27 20092 USING Meeting Location: (JOURNAL,JRNL15,J20092:w)	59
NJN 1-FEB-74 11:37 21719 udef 2 - - - - Location: (GJOURNAL,21719,1:w)	60
NJN 1-FEB-74 11:39 21720 udef 1 - - - - Location: (GJOURNAL,21720,1:w)	61
NJN 11-JAN-74 10:42 21365 Host Interface Drivers and Receivers - - - - Location: (GJOURNAL,21365,1:w)	62
NJN 11-JAN-74 11:48 21369 USE OF FORTRAN, ALGOL, COBOL, OR PL/I COMPILERS - - - - Location: (GJOURNAL,21369,1:w)	63
NJN 11-JAN-74 11:48 21400 USE OF FORTRAN, ALGOL, COBOL, OR PL/I COMPILERS - - - - Location: (GJOURNAL,21400,1:w)	64
NJN 11-FEB-74 07:19 30065 Comments on pathname syntax Location: (JOURNAL,JRNL18,J30065:w)	65
NJN 12-FEB-74 07:34 30071 Comments on CCL Location: (HJOURNAL,30071,1:w)	66
NJN 12-FEB-74 07:48 30072 INFORMAN Report Location: (JOURNAL,JRNL18,J30072:w)	67

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NJN 12-FEB-74 08:09 30073 Getting started on the INFORMAN draft Location: (JOURNAL, JRNL18, J30073:w)	68
NJN 12-FEB-74 11:48 30074 INFORMAN correction Location: (JOURNAL, JRNL18, J30074:w)	69
NJN 12-FEB-74 11:55 30075 UDEF information? Location: (JOURNAL, JRNL18, J30075:w)	70
NJN 13-DEC-73 07:52 20874 USING Meeting details Location: (MJOURNAL, 20874, 1:w)	71
NJN 13-DEC-73 07:57 20875 USING membership Location: (JOURNAL, JRNL16, J20875:w)	72
NJN 13-DEC-73 08:14 20876 Scheduled USING Meeting Location: (JOURNAL, JRNL16, J20876:w)	73
NJN 16-JAN-74 09:22 21427 Information Management Outline Location: (GJOURNAL, 21427, 1:w)	74
NJN 16-JAN-74 09:56 21428 Defining Users Location: (JOURNAL, JRNL17, J21428:w)	75
NJN 16-NOV-73 08:26 20332 New USER Location: (JOURNAL, JRNL15, J20332:w)	76
NJN 16-NOV-73 08:49 20333 New Dates for the USING meeting Location: (JOURNAL, JRNL15, J20333:w)	77

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NJN 21-DEC-73 07:33 21153 Status of CCL Location: (JOURNAL, JRNL17, J21153:w)	78
NJN 21-DEC-73 08:36 21154 Agenda for Jan 3-4 Location: (JOURNAL, JRNL17, J21154:w)	79
NJN 24-DEC-73 07:16 21175 USING addresses Location: (JOURNAL, JRNL17, J21175:w)	80
NJN 25-DEC-73 08:09 21176 Agenda for USING Meeting Jan 3-4 Location: (MJOURNAL, 21176, 1:w)	81
NJN 25-JAN-74 08:48 21612 Comments on KIRK's WAC Location: (GJOURNAL, 21612, 1:w)	82
NJN 29-NOV-73 06:05 20620 NETREF Location: (JOURNAL, JRNL16, J20620:w)	83
NJN 3-DEC-73 06:39 20677 NETREF, and sundry topics re USING mtg Location: (JOURNAL, JRNL16, J20677:w)	84
NJN 3-DEC-73 06:57 20678 BBN Contacts for NLS-SCHOLAR Location: (JOURNAL, JRNL16, J20678:w)	85
NJN 30-JAN-74 07:20 21671 New committee member Location: (JOURNAL, JRNL17, J21671:w)	86
NJN 5-NOV-73 06:07 20044 USING Notes 5 and 6 Location: (JOURNAL, JRNL15, J20044:w)	87

Back Journal Items

NJN 6-FEB-74 06:22 21805 Next step in User definition Location: (JOURNAL, JRNL18, J21805:w)	88
NJN 6-FEB-74 06:37 21806 Availability of USING documents Location: (JOURNAL, JRNL18, J21806:w)	89
NJN 6-NOV-73 12:45 20070 Proposed USING meeting Location: (JOURNAL, JRNL15, J20070:w)	90
RMS 2-JAN-74 13:59 21265 Status of CCL Location: (JOURNAL, JRNL17, J21265:w)	91

Back Journal Items

(J23269) 4-JUN-74 18:09; Title: Author(s): James E. (Jim) White/JEW;
Distribution: /NJN; Sub=Collections: SRI=ARC; Clerk: JEW;
Origin: <WHITE>NJNMAIL,NLS;4, 4-JUN-74 18:06 JEW ;

Proposal for Research No. ISU 74-84
Network Information Center for the Arpanet

SUBJECT: Network Information Center for the Arpanet

SUMMARY:

The Network Information Center (NIC) of SRI will be restructured to provide a subset of the network-based information services previously provided by the NIC. These services will include the Arpanet Resource Handbook online and in hardcopy, the Arpanet Directory in hardcopy, the Official Host Names List online, and other user-oriented information services as time and funds permit.

Initially these products will follow already established formats, but an attempt will be made to continue their evolution into a more efficient package with respect to both information input and retrieval.

OBJECTIVES:

PRIME OBJECTIVE

The prime objective of this proposed work is to produce hardcopy versions of the Arpanet Resource Handbook and the Arpanet Directory.

SECONDARY OBJECTIVES

Although an important part of the proposed effort, producing and maintaining an online version of the Arpanet Resource Handbook is considered a secondary objective because user access to this product will be limited officially to one host (OFFICE-1) and one user slot. (In actuality other Arpanet users with directories at OFFICE-1 will be able to access the files also.) As time and funding permit, an attempt will be made to introduce design concepts that will lead to more extensive online distribution and access of the contents of this data base.

The NIC will continue to provide the Official Host Names List. This list will be maintained as an ASCII sequential file accessible to all in a well defined, easily readable format (see Refs. 1, 2, 7, and 8).

The NIC will also continue to maintain the SRI-ARC Identfile or other appropriate files that are needed for the production of the Arpanet Directory.

We will produce an abbreviated version of the Arpanet

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News, if time and funds permit, Hopefully this will be produced on a bimonthly basis and contain information supplied by interested parties around the network,

An attempt will be made to further define and standardize procedures for gathering information from information contributors (such as Liaison),

In addition we will contribute to user-oriented design features for the NIC/Query language,

BACKGROUND AND TECHNICAL NEEDS:

The Arpanet working environment has the potential for creating, organizing, distributing, and sharing information more rapidly than ever before. It also has the potential for making computer processing more readily accessible than ever before. On the other hand, the abundance of information and resources available on the network creates a particular need for a mechanism to collect and organize this abundance into a usable entity,

Originally most server sites on the Arpanet maintained their own information and information handling procedures. When users from a given host began trying to use resources on other hosts, it soon became apparent that more information and easier access were needed. Finding the right process or piece of information on the right host, then learning all the commands and procedures needed to locate and access the process or piece of information, presented a task destined to discourage all but the most persistent network users. The result was that users were not very adventuresome about using resources available on hosts other than their own,

During the last two years many new nodes have been added to the Arpanet. The majority of these are users only of the network, and do not have interactive computer resources of their own. Invariably, the first questions asked by these new users are:

- What is there to use on the Arpanet?
- Where is it available?
- How do I go about using it?

These conditions then have brought together three concepts that have been evolving separately throughout the history of the Arpanet. One concept is that of a network information center that gathers and channels information to network users about the people, the computer resources and, the knowhow available

Proposal for Research No. ISU 74-84
Network Information Center for the Arpanet

on the Arpanet. The second concept is that of network information and procedure-handling protocols. The third concept addresses itself to data and resource distribution.

The Arpanet has now arrived at a degree of sophistication and maturity where it becomes advantageous to merge these three concepts into a whole new system of handling information about network resources that is tailored to the unique conditions of the networking environment.

The NIC and the Augmentation Research Center (ARC) of SRI have been involved in furthering all three of these concepts for several years (see Refs. 3 and 4). Both NIC and ARC have contributed substantially to procedures and mechanisms needed to develop the three concepts outlined above. Because of this we feel we can provide ARPA with valuable expertise needed to merge these separate concepts into a new unified concept for making network information available. We propose that this be done through continuation of the NIC by evolving present services into new, more appropriate services based upon user interests and needs.

ACCOMPLISHMENTS:

The Augmentation Research Center has maintained the Network Information Center since its inception in 1969. During this time the NIC performed these five main roles for the Arpanet:

1. Served as a prototypical information center in a networking environment.
2. Supported dialog among the geographically distributed individuals and research teams through use of the SRI-ARC Journal, the Network Working Groups, and the SRI-ARC Ident System.
3. Published and distributed the functional documents, RFCs, and other information vital to the growth of the network.
4. Provided reference information about network resources and facilities both offline and online through use of the user-oriented NIC/Query language.

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Network Information Center for the Arpanet

5. Stimulated the use of and interest in the network by assisting in marketing the Arpanet and by contributing to the development of network protocols.

During this time the NIC has served as the network's information nucleus, and has played a major role in providing for the network's rapidly changing information needs (see Refs. 3, 5, 6, 9 and 10).

PROPOSED EFFORT:

INTRODUCTION

Our experience has shown that users of the Arpanet are primarily interested in three major activities - computation and data structuring, data transmittal, and data storage and retrieval. Successfully carrying out these activities across the network, requires knowledge of and access to network hardware, software, and communication resources. Before a user can proceed to use these resources he must know where to find them, how to use them, and when they are available (see Ref. 11).

His need for information about the Arpanet often ranges from highly specific to global in scope and is best met by his having access to a variety of online and offline products.

For instance a user may want to compose an extensive document online, but he may not want to read a similar length document online. A user may want to use a program online, but unless he is a programmer, he will probably never wish to see a hardcopy printout of the program he is using.

The challenge of the networking environment, then, is to provide a design for handling information and resources that allows the user to easily access as much information or as many resources as he cares to use online, while at the same time permitting him to create, store, transmit, and reproduce information that he would prefer to use offline.

The proposed effort presented below outlines a plan that attempts to meet both the online and offline needs of users with respect to information about the Arpanet.

THE ARPANET RESOURCE HANDBOOK

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Network Information Center for the Arpanet

The Arpanet Resource Handbook data base will be built and maintained online in a series of files corresponding to hosts on the network. Altogether these files will form a compendium of hardware, software, available protocols, and other pertinent information about the Arpanet. The format of these files will be that of a concise outline with well labeled and easily identified data elements.

The online resource handbook data base will provide the following:

1. An easily edited master file containing information about resources available on specific hosts.
2. Information for the online browsing version of the Arpanet Resource Handbook that runs under the NIC/Query language at OFFICE-1.
3. Basic data for production of the host-description portion of the hardcopy version of the Arpanet Resource Handbook.

In addition simple user programs can be applied to this data base to produce the tables that summarize host data.

The online data base will be produced at SRI-ARC using the NLS system since NLS has unique capabilities for fast input and ease of organizing and editing. Initially, the online version will be maintained as an NLS file, but ways will be investigated to distribute part or all of this data base in some other form (as an ASCII sequential file, for instance) compatible with the systems of other hosts on the network that wish to make this data further accessible to their users.

The hardcopy version of the Arpanet Resource Handbook will follow a terse handbook format and will no longer be produced as a loose leaf and continuously updated hardcopy document. Instead, the handbook will be published annually as a bound issue. In the interim new information will be added to the online data base, and important changes will be announced through a newsletter or message medium. (See Arpanet News below.)

THE ARPANET DIRECTORY

The Arpanet Directory will be produced semiannually in

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hardcopy from information taken from both the Resource Handbook files and the SRI-ARC Identfile. We propose that the hardcopy format be similar to the current version of the Arpanet Directory - that is, an inexpensive, widely distributed document designed for easy look-up.

Production of the current directory is contingent upon upkeep of the SRI Identfile. At present information is entered by a clerk as it is received from individuals or hosts. We propose to continue producing the directory in this manner, but we will attempt to implement procedures that will make it easier for users to input and access data.

THE ARPANET OFFICIAL HOST NAMES LIST

The Official Host Names List will be provided online as an ASCII sequential file accessible to all in a well defined and easily readable format (see Refs. 1, 2, 7 and 8). Information will be added as it is supplied to the NIC by the ARPA IPT Office or its designated representative. Other pertinent attributes such as FTP byte, appropriate line length, etc., will be added to this file if time and funds permit.

ARPANET NEWS

An Arpanet News will be produced if time and funds permit. We propose that this newsletter have a brief format and be maintained online in such a fashion that any network user can transfer a copy via FTP or other network procedure to his own host or terminal for viewing. The newsletter should also be made available for distribution to sites that wish to maintain viewing copies in their own systems.

The newsletter will cover such items as new resources; new network programs; notes and memos from ARPA, hosts, and working groups; references to pertinent network documents and papers; and announcements, and will also serve as a mechanism for reporting updates to the Arpanet Resource Handbook.

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RELEVANCE TO DOD/ARPA MISSION AND FUNCTIONS

The present concept of the Arpanet is that of a group of diverse computers being connected by a sophisticated communications network for the purpose of transmitting information and sharing resources. To realize this concept most effectively, there is a need to know who and what is on the network. This is particularly true now because so many new users have recently joined the network. SRI proposes to collect this needed information for the Arpanet while continuing to evolve a more efficient and effective distribution system for this information.

WORK STATEMENT: Covering a one-year period from July 1974 to July 1975

SRI will provide:

1. One hardcopy edition of the Arpanet Resource Handbook the contents of which are contingent upon receipt of valid information from the network host Liaison or other host or ARPA appointed representatives.
2. An online version of the Arpanet Resource Handbook to be available for access through a NIC account on one network slot at OFFICE-1 separately funded by ARPA. (Other Arpanet users of OFFICE-1 may also access this fileset from their own directories.) Production of this fileset will have the same contingency as the hardcopy version.
3. Two hardcopy editions of the Arpanet Directory the contents of which are contingent upon receipt of information from the individuals wishing to be listed within the directory.
4. The official Arpanet Hostname File containing official Arpanet hostnames, nicknames, and host addresses. All information for this file will be provided by ARPA or its appointed representative. The file will meet the criteria outlined in RFC 608 (see Ref. 7). If time and funds permit, other pertinent attributes will be added.
5. Other services and publications, such as production of a brief newsletter, design of a more efficient information gathering and distributing mechanism, etc., will be attempted to the extent that time and funds are available.

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PERSONNEL:

Biographies of personnel likely to be involved with the proposed tasks follow. In addition ARC will hire two to three additional software personnel; one will be assigned to this project.

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REFERENCES:

1. Cerf, V. G. "Standard Host Name Policy Announcement," NIC 20479, ARPANET News, Issue 10, 37-8 (Dec, 1973).
2. Deutsch, L. P. "Host Names On-line," RFC 606, NIC 21246, Palo Alto Research Center, Xerox Corp., Dec. 29, 1973.
3. Engelbart, D. C., et al. "Online Team Environment, Network Information Center and Computer Augmented Team Interaction," final report on SRI Proj. 8457, Augmentation Research Center, Stanford Research Institute, Menlo Park, Calif., June 8, 1972, pp. 109-162
4. Engelbart, D. C. "Co-ordinated Information Services for a Discipline- or Mission-Oriented Community," paper presented at the Second Annual Computer Communications Conference, San Jose, Calif., Jan. 24, 1973.
5. Feinler, E. J. "Resource Notebook - Future plans," NIC 12425, Stanford Research Institute, Menlo Park, Calif., Nov. 29, 1972.
6. Kudlick, M. D. "NIC Programming Needs," NIC 21504, Network Information Center, Stanford Research Institute, Menlo Park, Calif., Jan. 1974.
7. Kudlick, M. D. "Host Names On-Line," RFC 608, NIC 21256, Network Information Center, Stanford Research Institute, Menlo Park, Calif., Jan. 10, 1974.
8. Kudlick, M. D. and Feinler, E. J. "ASCII Text File of Hostnames," RFC 627, NIC 22360, Network Information Center, Stanford Research Institute, Menlo Park, Calif., Mar. 25, 1974.
9. Lehtman, H. G. "New Description of Help Version of Query," NIC 19624, Network Information Center, Stanford Research Institute, Menlo Park, Calif., Oct. 11, 1973.
10. Lehtman, H. G. "Response to Kirk's Note on Things Missing in the Current Version of HELP [NIC/Query]," NIC 22753, Network Information Center, Stanford Research Institute, Menlo Park, Calif., Apr. 18, 1974.
11. Neigus, N. J., et al. "Some Initial Suggestions for Network Information Management", Draft of USING Subcommittee on Network Information Management, to be published.

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Network Information Center for the Arpanet

CONTRACTUAL PROVISIONS:

I ESTIMATED TIME AND CHARGES

The estimated time required to complete this project and report its results is twelve months starting 1 July 1974. The Institute could begin work on receipt of a fully executed contract.

Pursuant to the provisions of ASPR 16-206.2, attached is a cost estimate and support schedules in lieu of the DP Form 633-4. Also enclosed is a signed form complete except for the "Detail Description of Cost Elements."

II CONTRACT FORM

It is requested that any contract resulting from this proposal be written on a cost-plus-fixed fee basis.

III ACCEPTANCE PERIOD

This proposal will remain in effect until 30 June 1974. If consideration of the proposal requires a longer period, the Institute will be glad to consider a request for an extension of time.

IV REPORTS

Production of one issue of the Arpanet Resource Handbook and two issues of the Arpanet Directory within the twelve month period will fulfill the reporting schedule.

V SECURITY CLASSIFICATION

SRI holds a Top Secret facility clearance, which may be verified through the cognizant military security agency: San Francisco Defense Contract Administration Services Region, Attn: Office of Industrial Security, 866 Malcolm Road, Burlingame, California 94010. Staff assignments will be in accordance with the level of security assigned to the work.

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Cost Estimate:

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COST ESTIMATE

(For the one year period starting 7/1/74)

PERSONNEL COSTS

Project supv (1760 hrs @x,xx/hr)	Sxx,xxx
Programmer (582 hrs @x,xx/hr)	x,xxx
Clerical (1480 hrs @x,xx/hr)	x,xxx
Total direct labor	Sxx,xxx
Payroll burden @28,0% *	x,xxx
Total salaries and wages	xx,xxx
Overhead @107% salaries *	xx,xxx
Total personnel costs	Sxx,xxx

DIRECT COSTS

Travel *	\$ x,xxx
Facility costs for NIC staff work	xx,xxx
Computer time	xx,xxx
Line processor	x,xxx
TI terminal @100/mo	x,xxx
Hazeltine terminal @100/mo	x,xxx
Communications	x,xxx
Mailing costs	x,xxx
Report costs *	x,xxx
Total direct costs	\$ xx,xxx
Total estimated cost	\$ xx,xxx
Fixed fee	x,xxx
TOTAL ESTIMATED COST-PLUS-FIXED FEE	Sxxx,xxx

* See following Schedules

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Cost Schedules:

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SCHEDULE A

DIRECT LABOR

Direct labor charges are based on the actual salaries for the staff members contemplated for the project work plus a 4% judgmental factor of base salary for merit increases during the contract period of performance. The precise factor applied is dependent on the estimated period of performance. Frequency of salary reviews and level of merit increases are in accordance with the Institute's Salary and Wage Payment Policy as published in Topic No. 505 of the SRI Administration Manual and as approved by the Defense Contract Administration Services Region.

SCHEDULE B

OVERHEAD AND PAYROLL BURDEN

These rates have been found acceptable by the Department of Defense for billing and bidding purposes for the calendar year of 1974. We request that these rates not be specifically included in the contract, but rather that the contract provide for reimbursement at billing rates acceptable to the Contracting Officer, subject to retroactive adjustment to fixed rates negotiated on the basis of historical cost data. Included in payroll burden are such costs as vacation, holiday and sick leave pay, social security taxes, and contributions to employee benefit plans.

SCHEDULE C

TRAVEL COSTS

2 trips to Washington, D.C, and Boston @416/fare	\$832
5 trips to Los Angeles and San Diego @55/fare	275
Subsistence 5 days at Washington, D.C @42.50/day	213
5 days at Boston @38.00/day	190
10 days at Los Angeles @30.00/day	300
Car Rental 5 days at 15/day	75
Total Travel	\$1,885

Air fares and car rental rates are based on prices established in the current Official Airline Guide. Domestic subsistence rates and travel by private auto are quoted at published standards.

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SCHEDULE D

REPORT COSTS

Report costs are estimated on the basis of the number of pages of text and illustrations and the number of copies of reports required in accordance with the following rates per page which have been reviewed by DCAA:

Editing	\$ 2.29
Composition	2.22
Report coordination	.63
Proofreading	.92
Illustration	19.14
Press and Bindery	.021 per impression

Following is a breakdown of the estimated cost of report production:

Resource Notebook,		
1 issue, 300 pp/issue, 1000 copies/issue	\$x,xxx	
Arpanet Directory,		
2 issues, 50 pp/issue, 1000 copies/issue	x,xxx	
Arpanet News,		
6 issues, 5 pp/issue, xxx copies/issue	xxx	
Total Estimated Report Costs		\$x,xxx

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Proposal for Research No. ISU 74-84
Network Information Center for the Arpanet

1 May 74
SRI-ARC 22849

Proposal For Research
SRI No. ISU 74-84

NETWORK INFORMATION CENTER FOR THE ARPANET

part One--technical proposal

Prepared for:

Information Processing Techniques Office
Advanced Projects Research Agency
1400 Wilson Boulevard
Arlington, Virginia 22209

Attn: Craig Fields

Prepared by:

Elizabeth Feinler
Information Specialist
Network Information Center

Approved:

Douglas C. Engelbart, Director
Augmentation Research Center

Bonnar Cox, Executive Director
Information Science and Engineering Division
Stanford Research Institute

Proposal for Research No. ISU 74-84
Network Information Center for the Arpanet

1 May 74
SRI=ARC 22849

Proposal For Research
SRI No. ISU 74-84

NETWORK INFORMATION CENTER FOR THE ARPANET

Part Two--Contractual Provisions

Prepared for:

Information Processing Techniques Office
Advanced Research Projects Agency
1400 Wilson Boulevard
Arlington, Virginia 22209

Attn: Craig Fields

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Network Information Center for the Arpanet

(J23270) 4-JUN-74 19:49; Title; Author(s): Elizabeth J. (Jake)
Feinler/JAKE; Distribution: /JAKE; Sub=Collections; NIC; Clerk: JAKE;
Origin: <FEINLER>COSTEST,NLS;47, 4-JUN-74 19:46 JAKE ;

Martin,
Phil Geison has said he will drop by to help with video things when you get ready to do them. He will know about zoom lens needs. I'll tell Phil he can start coming over on thursday. I notice there is a "NORMAL / INVERSE" switch on the mixer=fader panel and assumed this could be used in the demo. Rodney said he was going to inverse tasker. This seems a bit too inflexible and too much trouble if that switch works.

(J23271) 4-JUN-74 19:53; Title: Author(s): KirK E, Kelley/KIRK;
Distribution: /MEH([ACTION]) ; Sub=Collections: SRI=ARC; Clerk:
KIRK;

WUC demo reasons

Dick, in response to your messages:

The Whole Universe Catalog Demo is a demonstration of the Whole Universe Catalog. It will be presented to anyone interested in seeing it. It will be for their information only. I'm not sure what you are concerned about and how that relates to "our talk". There has been no talk with the Point Foundation of any proposals if that's what you are concerned about.

I'm somewhat surprised that you are suddenly interested in the Whole Universe Catalog demo. I would very much like to talk to you about it and I'm glad to see you have an interest in it. I have been talking with others about it and working on it for a long time. After the all-ARC meeting before last, I told Doug that I was planning on having people here from the Point Foundation to look at the Whole Universe Catalog. Doug agreed to spend lunch with us if he had the time. Mike Kudlick, Elizabeth Michael, and Dirk VanNouhuys and others have all urged me to give a demonstration of the whole Universe Catalog accessing system. There has long been talk about having ARCers give demonstrations on the little known things for which they use the system.

If I had thought there would be any reason what-so-ever to get a personal ok from you before I planned give such a demonstration, you can be sure I would have done so. I still do not quite understand why I need an ok from you except that you have said you will not allow the demo until you understand my intentions toward the Point Foundation. I intend for them to see a demonstration of a prototype for a Whole Universe Catalog. They were invited to see the demonstration because as the Foundation set up to manage the money from the Whole Earth Catalog, they may be interested in funding development of a Whole Universe Catalog. I don't know at this time if they have any money at all for this purpose.

If you still feel that we need to get together this week, this causes me some inconvenience. The reason I have taken this week's vacation is because I am sleeping 8-5 and working on WUC nights from 7pm to 7am. There is an incredible amount of work that needs to be done before the pototype is demonstrable. I have budgeted my time very closely, and fall behind with every word of this I write. However, sndmsg me if you still want to talk, and I'll come in thursday.

Sincerely, Kirk

WUC demo reasons

(J23272) 4-JUN-74 22:34; Title: Author(s): Kirk E. Kelley/KIRK;
Distribution: /RWW([INFO-ONLY]) JCN([INFO-ONLY]) DCE([INFO-ONLY]) DVN([INFO-ONLY]) EKM([INFO-ONLY]) MDK([INFO-ONLY]) ; Sub-Collections: SRI=ARC; Clerk: KIRK;

This distribution to the architect community is for their use and further dissemination. It can be distributed further (for example with a log on msg) if the architects request that.

A DESCRIPTION OF THE NEW NLS PRIVACY FEATURES 1

By James E. White, Revised by Jim Bair for Office=1 1a

INTRODUCTION 2

A new kind of access control is now available for NLS files, 2a

The present document is basically an introduction to what's been implemented. It is intended for NLS users at Office=1, 2b

VERIFYING THE USER'S IDENTITY 3

Fundamental to any form of access control is a means for assuring that the user is who he says he is. Since NLS identifies the user by NLS ident, rather than by Tenex directory, the logged-in user's ident must be known with certainty. One result of this need is that the EXEC's CHANGE IDENT command has been removed, 3a

USERS WITH THEIR OWN, PERSONAL DIRECTORIES 3b

If a user has been assigned his own, personal directory, the EXEC determines his ident from his directory name at login. If a user logs in as BAIR, for example, the EXEC infers that his ident is JHB, 3b1

Such users can only be impersonated by someone who knows their password, and the system can thus be just as sure of the user's NLS name (his ident) as it can of his Tenex name (his directory), 3b2

USERS WHO SHARE A DIRECTORY 3c

It is currently a practice at both SRI=ARC and OFFICE=1 for users to share a single directory. MIT=MULTICS users, for example, share a single directory at OFFICE=1. And at SRI=ARC, a number of users, though assigned their own, personal directories, sometimes log in as DOCUMENTATION, 3c1

To such directories, no single ident can be assigned and (therefore) inferred at login. The EXEC, therefore, asks for an ident from the user. The EXEC maintains a list of valid idents for each such shared directory, and permits the user to type one of those (and only those) idents, 3c2

Users who share a directory can be impersonated by any of the other users who share that directory (and therefore its password). A MULTICS user, for example, can impersonate any of his colleagues, 3c3

This inability to precisely identify a user assigned to a shared directory results from the fact that the sharing of directories is a perversion of the Tenex access control mechanism. For this reason, we are phasing out shared directories at Office=1.

3c4

NLS ACCESS CONTROLS

4

We have defined two classes of NLS files -- private and public,

4a

A PUBLIC file is one to which no access controls other than the usual, Tenex ones are applied. These are setable from the Exec using the Protection command,

4a1

A PRIVATE file is one to which an NLS access control is applied ON TOP OF (i.e., in addition to) the normal Tenex access controls. To access a private file, a user must meet both Tenex and NLS access requirements,

4a2

When a file is created -- via the Null file command -- it is public. At any time thereafter, the user can make it private. Private files only come into existence at the user's explicit request.

4b

PRIVATE FILES

5

THE IMPLICATIONS OF MAKING A FILE PRIVATE

5a

Access to a private file (i.e., the right to view or modify it with NLS) can be limited to any desired set of users or user groups, identified by their NLS idents. This list of idents is called the file's Access List (described below),

5a1

A user's attempt to access such a file will be honored by NLS if and only if one of the following appears in the access list;

5a2

(1) The user's ident,

5a2a

(2) A group ident whose membership list contains the user's ident,

5a2b

(3) A group ident whose membership list contains a group ident whose membership list contains the user's ident, and so on,

5a2c

In addition, NLS will permit the file to be loaded by a user if the file has no access list assigned to it or the list is improperly constructed,

5a3

Files with improperly constructed access lists will be described with the message: 5a3a

Private file (but with no access list) 5a3a1

by the Execute Status File command, 5a3a1a

A non-existent access list effectively grants access to everyone, 5a3b

PLEASE NOTE that an access list which is specified but has no idents in it grants access to no one, 5a3c

An unauthorized user's attempt to load a private file is declined by NLS with the message: 5a4

Private file; access denied to you 5a4a

HOW A FILE IS MADE PRIVATE 5b

A user makes a file private by doing the following two things: 5b1

(1) Setting a bit in the file which signifies to NLS that the file is private. This bit is internal to the file and cannot be viewed directly through NLS, 5b1a

The private bit is set by the command: 5b1a1

Execute Private File 5b1a1a

and reset with: 5b1a2

Execute Public File, 5b1a2a

This invisible bit can be "seen" by means of the Execute Status File command, 5b1a3

For private files, the message "Private File" will be included along with the usual status information, 5b1a3a

For public files, the message will be absent, 5b1a3b

(2) Storing the desired access list in the file's origin statement. The access list is, of course, visible to the user and is set or modified with normal editing commands, 5b1b

The access list may appear anywhere in the origin statement, but must have the following syntax (exactly): 5b1b1

AccessList: <identlist> ;

5b1b1a

The colon, semi-colon, and upper-case "A" and "L" must appear exactly as shown. The ident list may be any number of individual and/or group idents (in upper-case!), separated by spaces or commas,

5b1b2

Once a file is set private, it remains private until it is explicitly made public. In particular, a private file remains private after any of the following is executed:

5b2

- (1) The UPDATE FILE command,

5b2a

Like any other file modification, the setting of the privacy bit by SET PRIVATE/PUBLIC (Execute Private/Public) can be "undone" by using the command Execute UNLOCK before the file is updated,

5b2a1

- (2) Output File command,

5b2b

- (3) The EXEC's Copy file command,

5b2c

- (4) A Network transfer (e.g., from SRI=ARC to OFFICE=1),

5b2d

A USER'S USE OF PRIVATE FILES

5c

Any NLS file to which a user has Tenex write access can be made private,

5c1

THE JOURNAL'S USE OF PRIVATE FILES

5d

PRIVATE DIALOG CAN NOW BE CONDUCTED VIA THE JOURNAL

5d1

Just as there are both private and public files, there are both private and public Journal documents. This new ability to conduct private dialog via the Journal is the principal reason for implementing file access controls within NLS,

5d1a

THE IMPLICATIONS OF MAKING A DOCUMENT PRIVATE

5d1b

RESTRICTED ON-LINE ACCESS

5d1b1

Private documents are always stored as private files in the system. They will be delivered as citations,

5d1b1a

A private document's access list is the combination of:

5d1b1b

- (1) clerk

(2) author(s)
 (3) address of receivers 5d1b1b1

Therefore, a private Journal document can be read only by the clerk, author(s) or receivers, 5d1b1c

NO OFF-LINE ACCESS 5d1b2

No copies of private documents are printed for reference at ARC or Office-1, but at present documents will be mailed to the receivers of hardcopy only (individuals who are not online), 5d1b2a

Private documents are excluded from hardcopy catalogs (e.g., the NIC catalog), 5d1b2b

RESTRICTED SECONDARY DISTRIBUTION 5d1b3

Only users who already have access to a private document can perform secondary distribution on it, 5d1b3a

THE MANNER IN WHICH A DOCUMENT IS MADE PRIVATE 5d1c

A document is declared private at the time of submission by typing the PRIVATE command in the Journal subsystem 5d1c1

The PUBLIC command sets the document public, This is the default, 5d1c1a

If a document has been declared private, the Status command in the Journal subsystem will include the tag "Private" along with the usual status information; for public documents, this tag will be absent, 5d1c2

SOME JOURNAL SYSTEM FILES WHICH ARE NOW PRIVATE 5d2

The Journal's on-line catalog and working files have been made private, and only system personnel are granted access to them. Any previously-written user programs which interrogate these catalogs will no longer function, 5d2a

SOME NICE SIDE EFFECTS IN THE IDENT SYSTEM 6

The ident system now maintains in each user's ident entry a list of those groups of which the ident is a member. This list is called the GROUPS field, and is automatically updated by the system in response to changes to the MEMBERSHIP fields of other idents. The GROUPS field can be displayed in the same manner as other ident entry fields, 6a

This feature was added to the Ident system to reduce the amount of processing time required to verify a user's access to a private file. With the aid of the logged-in user's GROUPS field, NLS can immediately (i.e., without consulting the ident file) verify the user's access to a file.

6b

The GROUP list must, of course, be retrieved from the ident file the first time it's needed, but is immediately available in all subsequent references.

6b1

The list is retrieved and saved the very first time the system has occasion to load the logged-in user's ident file entry. If this happens to occur in connection with the first attempt to retrieve a private file, then the completion of that first access check will be delayed while the list is retrieved.

6b1a

(J23273) 5-JUN-74 08:21; Title: Author(s): James H. Bair/JHB;
Distribution: /KWAC([ACTION]) RMS2([ACTION]) RWW([INFO-ONLY]
) MDK([INFO-ONLY]) JEW([INFO-ONLY]) RLL([INFO-ONLY]) JAKE([
INFO-ONLY]) ; Sub=Collections: SRI=ARC KWAC; Clerk: JHB;
Origin: (BAIR, PROTECT,NLS;3,), 5-JUN-74 08:05 JHB ;####;

Recommended Defaults for User Settable Options in New NLS

For implementation

Recommended Defaults for User Settable Options in New NLS

BASIC DEFAULT MODULE for New NLS; Revised

1

These are the recommended defaults for user settable options as requested by CHI, including the recommendations from ARC staff and the Architect Community (in response to -- 1journal,22754,). Recommendations and comments received online are cited at the end. Note also the summary. (Changes from the current default are noted by *change)

1a

These defaults are temporarily for all users until the the NLS modules are built. It is expected that at that time there will be a different set of defaults for each module (there are five modules currently being defined which will each be a separate subsystem). Thus, the reset command would restore the defaults for that module, which is certainly more desirable than returning to entry level NLS every time one does a reset. The reset viewspecs should, however, restore the user's useroption set, not the basic default for the module.

1b

Feedback mode: VERBOSE (50 characters max) (alternatives: terse, length, indenting)

1b1

Prompt mode: PARTIAL (alternatives: off, full)

1b2

No prompt for options.

1b2a

Recognition mode: FIXED (alternatives: anticipatory, demand, expert)

1b3

JMB: You get all alternatives with ?, you always type 3 letters, and the repetitive typing imprints the word on one's mind,...

1b3a

Herald mode: VERBOSE, length: 4 (*change) (alternative: terse, "**")

1b4

Current context length: 7

1b5

Jump return: 10 filereturn: 10

1b6

Level adjust prompting: Off, no field (*change)

1b7

Viewspecs

1b8

levels: ALL, lines: ALL,
hjm(*change)puy(*change)B(*change)CE(*change)HJLP

1b8a

viewspec prompting: Off (*change, no field)

1b8b

Recommended Defaults for User Settable Options in New NLS

Control Characters:	1b9
Standard Definitions (non=alterable):	1b9a
CA:<"D>, CD:<"X>, RPT:<"B>, INSERT:<"E>, BC:<"A> or DEL(RUBOUT), BW:<"W>,	1b9a1
BS:<"Y> (*change), LITESC:<"V>, IGNORE:<"S>, SC:<"S>, SW:<"G>, TAB:<"I>	1b9a2
Skip print statement: <"S>	1b9a3
User Definitions (alterable):	1b9b
33ASR CA:[<EOL>,<NUL>] RPT:[<I>,<"B>]	1b9b1
35ASR CA:[<EOL>,<NUL>] RPT:[<I>,<"B>]	1b9b2
37ASR CA:[<EOL>,<NUL>] RPT:[<I>,<"B>]	1b9b3
TI/EXECUPORT CA:[<EOL>,<NUL>] RPT:[<I>,<"B>]	1b9b4
NVT CA:[<EOL>,<NUL>] RPT:[<I>,<"B>]	1b9b5
ALL DEL or RUBOUT: [<"A>,\character] (*change)	1b9b6
Print Options	1b10
Margins left: 0, right: 72 (will vary if the terminal is not able to handle this width), bottom: 63	1b10a
page size: 66, indenting per level: 3	1b10b
tabstops: 8,16,24,32,40,48,56,64,72,80,88,96,104	1b10c
Statement Name Delimiters (currently settable on a file basis)	1b11
Suggested left: <NUL> right: ; (*change) Eventually settable on a directory basis if possible,	1b11a

There was a lot of discussion about this, and many alternatives were suggested. The one that seems to be consistent with the majority is recommended here. Others were: left: <NUL>, right: ; (MDK); left: <NUL>, right: <NUL> (KIRK); quotation marks, spaces, etc. It is necessary to avoid spurious names in a file causing erroneous hits and increased processing overhead. The purpose of the change is to allow the novice user to use default delimiters that when printed do not significantly

Recommended Defaults for User Settable Options in New NLS

mar the text. Turning off statement names presently requires that whatever information the name contained be duplicated in the remaining text of the statement, and that this concept be taught to novices. The new defaults will allow the user familiar only with links to use names to address,

1b11a1

Summary:

1c

The new user who has had no training or prior NLS exposure would not see viewspecs, hierarchical levels, or variable character recognition (or the prompts for these). A mechanism will have to be set up whereby he can easily advance beyond this limitation, probably by contacting UD, who will change the option settings, or (when developed, see below) select a pre-set package of useroptions by calling a subsystem such as "NLS2",.

1c1

The application purpose of this limited offering is to enable a user to prepare and send text. Thus, we offer that basic capability as a concrete response to the criticism that NLS is too complex, etc. Some changes are necessary in the command set available, but this will require programming modification and a complete set of graduated NLS modules from basic default through total capability (design recommendations forthcoming),

1c2

Addendum: Changes recommended by Staff and Users (Responses feedback to original proposal):

1d

CHI: Changes for User=Profile defaults: 1) herald length = 4 (gives one EDIT, HELP, CALC, etc.), 2) include viewspec E (print pagination), 3) "Q cannot be BS (Backspace Whole Typein) since it invokes HELP, 4) we should come up with some reasonable defs for INSERT and CD for the common devices we support, and 5) the right margin setting should be based on the device, not just set at 72,

There will be a different set of defaults in force when we bring the new NLS up at ARC so that people get default recognition modes more consistent with old NLS,

1d1

KIRK 16-MAY-74 12:47 23022

Please change the default setting for ESCAPE in TNLS back to be ESCAPE

Message: Currently it is defined to be <"B>. There is no way for a default TNLS user to use Ken's file recognition feature, <"B> doesn't do in the new system what it did in the old so people certainly aren't used to it as it is. I suggest this be

Recommended Defaults for User Settable Options in New NLS

changed in your default useroption parameters specification. Also, is there any way you could submit some of your specifications now so they can be implemented while we wait for resolution of the others? ,

*****Note: [ACTION] *****

1d2

Comments: The current implementation makes it impossible for NLS to be self-teaching.

1d2a

DHC 22-APR-74 18:27 30518

Proposed default user options

Message: I just read (22754,) and like the proposed user options. I expect that users will find life much easier with them. A minor point: how about having viewspec E (pagination) as the default?

A minor tangential point: why doesn't OFFICE Nls pay attention to Terminal Type Scope and pause after a screenful has been output (without any input)?

Dave,Dave,

1d3

JMB 20-APR-74 18:49 22813

Comments/Questions from the documenter of USEROPTIONS

Location: (LJOURNAL, 22813, 1:w)

*****Note: * action * *****

1d4

CHI 2-MAY-74 08:54 22886

Some recommendations for new users of the new NLS

Message: I recommend that new users of the new NLS set their prompting to "PARTIAL" and their recognition mode to EXPERT ANTICIPATORY. Further, I recommend that TNLS users set their HEARALD LENGTH to 4 or that they set their HERALD to TERSE. These are all accomplished by using the USEROPTIONS subsystem. I give the following as an example: EXECUTE <command in subsystem> USEROPTIONS RECOGNITION <mode> EXPERT <secondary mode> ANTICIPATORY CA.

1d5

DLS 22-APR-74 06:23 30503

Default settings for new NLS users

Location: (JJOURNAL, 30503, 1:w)

1d6

Recommended Defaults for User Settable Options in New NLS

(J23274) 5-JUN-74 08:43; Title: Author(s): James H. Bair/JHB;
Distribution: /CHI([ACTION]) RWW([ACTION]) HGL([ACTION])
SRI-ARC([INFO-ONLY]) ; Sub=Collections: SRI-ARC; Clerk: JHB;

New NLS Bug

When I deleted a statement by bugging it as a frozen statement, it was removed from the frozen st. window, but not from the file. The statement in the file was "bad statement identifier". An Update compact removed the statement and those immediately adjoining it as well. I have deleted and edited frozen statements successfully in old NLS,

1

New NLS Bug

(J23275) 5-JUN-74 10:47; Title: Author(s): James H. Bair/JHB;
Distribution: /FDBK([ACTION]) BUGS([ACTION]) HGL([ACTION] in
case you're interested) ; Sub=Collections: SRI=ARC BUGS; Clerk: JHB;

tTelephone Contact; Joe Brazey of Air University

On Friday Captain Joe Brazey of Headquarters, Air University, Maxwell Airforce Base, Al, 36112 called. He had Dean Meyer's name and Jim Bair's number. I answered the phone and ended up talking with him. Air University is next to some of the people who are going to use NSW and he had been talking with them, Lt. Col Schelonka, and with Col Kibbler. On the basis of those conversations he wanted to investigate our "editing system" to prepare documentation, particularly for extension courses for air officers. I answered questions briefly about NLS, and possible access to it through ARPA's share of the Utility, and sent him a TNSL and a DNL manual, our most recent report (Journal, 13041,) and Doug's two most recent papers [Augmented Workshop (Journal, 14724,) and Coordinated Information Services (Journal, 12445,)]. He planned to call when he had studied the paper and hopes to visit. I suggested that when he called again he try to get in touch with Jim Bair.

1

DVN 5-JUN-74 12:26 23276

Telephone Contact: Joe Brazey of Air University

(J23276) 5-JUN-74 12:26; Title: Author(s): Dirk H. Van Nouhuys/DVN;
Distribution: /JHB([ACTION]) JCN([INFO-ONLY]) RWW([INFO-ONLY]
) NDM([INFO-ONLY]) ; Sub=Collections: SRI=ARC; Clerk: DVN;

My Interest in WUC DEMO

Kirk, Thanks for your reply. I generally want to know in advance when people want to hold a seminar because they require resources and ours are in short supply. In the case of your giving a WUC seminar I think that is good. You have worked hard on it and many including me do not fully understand its advantages and disadvantages relative to other things going on. However when possible proposals are involved as I understand is the case here then I need to know what is being represented to who. That's part of my job. Even though this is your personal thing ARC is involved in various ways and I have a responsibility to see its interests represented relative to the outside world as we discussed before when you were talking about wanting to contact ARPA. In reading your note (23188,) asking to get the projector set up and tuned up (a resource) you state "I plan to give a demonstration to ARC and the Point Foundation towards getting funds for the Whole Universe Catalog." This type of intension requires my being in on the act at least to the extent of knowing clearly what you are thinking and planning. The goal here is not to make life hard on you but to keep the communications needed by any organization flowing in appropriate channels especially concerning interactions with the outside world. We still need to get together and talk. Dick

1

My Interest in WUC DEMO

(J23278) 3-JUN-74 15:03 5-JUN-74 14:57; Title: Title: Author(s):
Richard W. Watson/RWW; Distribution: /KIRK([ACTION]) JCN([
INFO-ONLY]) DCE([INFO-ONLY]) DVN([INFO-ONLY]) EKM([INFO-ONLY
]) MDK([INFO-ONLY]) ; Distribution: /JCN([INFO-ONLY]) DCE([
INFO-ONLY]) HGL([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk:
RWW;
Origin: (WATSON, DIF,NLS;1,), 14-MAY-74 09:07 RWW ;####;

Notes on Documentation Planning Meeting between DVN and RW on 6/4,

- Issues Top Level, Outcomes Second Level: 1
- What Kind of Documentation does the Utility Need when new NLS comes up there? 2
 - Command summary 2a
 - Like (userguides, commands,) but more readable to the uninitiated, Probably for COM, 2a1
 - Primer 2b
 - A nearly finished draft (ljournal, 19759,) exists, It will be in COM form, 2b1
 - Q-card 2c
 - Partly done by Katie Carey 2c1
 - Others? 2d
 - Documentation people should talk with Jim Bair about these items, 2e
 - Should the command Summary be hand made as in (gjournal, 23185,) generated automatically from the Data Base, or generated from CML? 3
 - I depends basically on how much work is involed in each process, Other things beeing equal the most automatic rout has the greatest long-term interest, DVN is to try to figure the labor involved and suggest a discision, 3a
 - CHI later estinted that the programming for a device to supply the hardcopy and also take the place of the Syntax branches in the HELP Data base would be 1-1,5 person days, 3b
 - What sort of documentation will NSW Need? 4
 - For the Front End System; a HELP Data Base and a Q-Card-like thing, The volume of information will be about he size of the Tip User's Guide, 4a
 - For new NLS subsystems or subsystem-like-things, such as for secrataries or COBOL programers; addtions to the HELP Data Base and possibly special command summaries and primers, 4b
 - Documenation for Protocols, Probably drafted by the protocol author and edited by a writer, 4c

Notes on Documentation Planning Meeting between DYN and RW on 6/4,

For NSW Host Connection: User documentation, perhaps some overviews,

4d

Should the command Summary be hand made as in (gjournal,23185,), generated automatically from the Data Base, or generated from CML?

5

I depends basically on how much work is involved in each process. Other things being equal the most automatic rout has the greatest long-term interest. DYN is to try to figure the labor involved and suggest a discision.

5a

CHI later estimated that the programming for a device that supplied the hardcopy and also took the place of the Syntax branches in the HELP Data base would be 1-1.5 person days,

5b

What Sort of Work Still Needs to be Done On the Help Data Base?

6

Something like 2 person weeks remian to fill up the blanks. Another week or so could well be devoted to cleaning up writing, adding or subtracting from menues, etc, by trial. After the next round of software reprogramming we sould let the structure of (documentation,help,) lie for about a mounth to see how it works befor any futher substantial revision,

6a

Where will support come from?

7

Utility plans and the NSW proposal ask for enough money to support three people for the year following July. It is not clear that we will get what we have asked for,

7a

Notes on Documentation Planning Meeting between DVN and RWV on 6/4,

(J23281) 5-JUN-74 21:52 5-JUN-74 21:53 5-JUN-74 21:55 6-JUN-74 08:06;
Title: Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution:
/DIRT([INFO-ONLY]) ; Distribution: /DIRT([INFO-ONLY]) ;
Sub-Collections: SRI=ARC DIRT; Clerk: DVN;

VANNOUHUYS[SEND=MAIL].DYN;1 is in browse mode

Last night hwne I went to send a journal itme I got that message,I had some time before set modifications temporary to read a message in my initial file that was more than one screenful, I went back to my intial file and reset modifications but when I went to send the journal item, I got the same message and no completion,

1

DVN 6-JUN-74 08:11 23282

VANNOUHUYS[SEND-MAIL],DVN;1 is in browse mode

(J23282) 6-JUN-74 08:11; Title: Author(s): Dirk H. Van Nouhuys/DVN;
Distribution: /NEWNLS([ACTION]); Sub-Collections: SRI-ARC NEWNLS;
Clerk: DVN;

Bug: Move Character

BUG: try moving character from a particular point to the same point. It copies the character instead of doing nothing. Ture it is a silly thing to do but copying makes matters worse.

1

Bug: Move Character

(J23283) 6-JUN-74 09:51; Title: Author(s): Robert N. Lieberman/RLL;
Distribution: /FDBK([ACTION]); Sub-Collections: SRI=ARC; Clerk:
RLL;

Visit Log: D. Donnelly and R. Larkin, about TREE META

Dave Connely and Bob Larkin of the U.S. Army Electronics Command at Fort Monmouth N.J. came to ARC to talk with DIA about TREE META on June 5, 1974.

1

They plan to use our TREE META to build a compiler for a graphics system on a Varian 620.

2

They have access to BBN's TENEX and the ARPANET.

3

Visit Log: D. Donnelly and R. Larkin, about TREE META

(J23284) 6=JUN=74 10:00; Title: Author(s): Don I. Andrews/DIA;
Sub-Collections: SRI=ARC; Clerk: DIA;

Ron Short, SRI, AI and Industrial Automation

Initial talk, he just dropped by. He is relatively new to SRI, involved in industrial automation work in AI group, becoming involved in some sort of study of the management information system relationship to the production process. Gave him copies of the following: He'll get in touch later, e.g. we can have lunch together.

D. C. Engelbart, AUGMENTING HUMAN INTELLECT: A CONCEPTUAL FRAMEWORK, SRI Project AFOSR=3223, October 1962 (XDOC == 3906,) 1

D. C. Engelbart and W. K. English, "A Research Center for Augmenting Human Intellect", AFIPS Proceedings, Fall Joint Computer Conference, 1968, Washington, D.C. (XDOC == 3954,) 2

D. C. Engelbart, "Intellectual Implications of MULTI-ACCESS COMPUTER NETWORKS", A paper for the Proceedings of The Interdisciplinary Conference on Multi-Access Computer Networks in Austin, Texas, April 1970. (XDOC == 5255,) 3

D. C. Engelbart, COORDINATED INFORMATION SERVICES for a DISCIPLINE-OR MISSION-ORIENTED COMMUNITY, paper presented at the Second Annual Computer Communications Conference, San Jose, California, 24 January 1973. (Journal, dated 12 Dec 72 == Mjournal, 12445,1: xhmz) 4

D. C. Engelbart, R. W. Watson, J. C. Norton, THE AUGMENTED KNOWLEDGE WORKSHOP, paper presented at the National Computer Conference, New York City, June 1973. (IJOURNAL, 14724,) 5

Ron Short, SRI, AI and Industrial Automation

(J23286) 6-JUN-74 10:27; Title: Author(s): Douglas C. Engelbart/DCE;
Distribution: /RWW([INFO-ONLY]) BC([INFO-ONLY]) JCN([INFO-ONLY
]) ; Sub-Collections: SRI=ARC; Clerk: DCE;

Comments on Scene 6 of Movie

Looks like you've got a good thing. Good luck in shooting; I'll be anxious to see it. Don't feel obliged in any way to do more than consider these suggestions; I like what you have,

Comments on Scene 6 of Movie

- Good stuff! A few quick suggestions: 1
- (5F6) FY75 file could become document described in (5F7) after a few quick edits, then eliminate (5F7); i.e. slow there, so maybe combine two scenes 2
- (5F9A) how about split screen, with McMan copying peoples branches (which we saw being written) into outline of (5F6)=(5F7) 3
- (5F10) didn't seem to fit and may not be necessary; should keep scene moving quickly and keep up their level of amazement 4
- (5F11) maybe use the video projector instead=of/with blackboard 5
- (5F12) big deal; doesn't seem necessary 6

Comments on scene 6 of Movie

(J23287) 6-JUN-74 13:17; Title: Author(s): N, Dean Meyer/NDM;
Distribution: /RLL; Sub=Collections: SRI-ARC; Clerk: NDM;
Origin: <MEYER>S6,NLS;1, 6-JUN-74 13:13 NDM ;

Guest account at OFFICE=1

The Arpanet Directory will be mailed out next week. In accordance with JCN's instructions, I put a section in it telling NIC users that a 'nicguest' account will be available.

What is needed is the following:

- <GUEST> should be changed to <NICGUEST> with access to anyone having access to the ARPAnet,

- The old <GUEST> should disappear. Users trying to login as <GUEST> should get the following message:

"OFFICE=1 will no longer support a free <GUEST> account. Users may view Network Information Center (NIC) reference files at OFFICE=1 by typing:

```
[@]log <SP> nicguest <SP> arpa <SP> 3 <CR>
[@]nic <CR>
```

This account permits users to view NIC/Query files only. No write access or use of NLS is available through this account.

[We may want to add a sentence about contacting JCN for a paid account.]

- <NICGUEST> needs to have the following restrictions:

- no write access; read only

- no file saving

- no connecting from other directories

- no ability to access the journal, catalogs, etc., except from NIC/Query through hidden links (or whatever)

- no access to NIC/Query other than by typing:


```
[@]nic <CR>
```

- If possible, I would like to have a weekly or monthly tally of who logs into this account and how long they stay on. I understnad superwatch may be able to do this.

Since this is reasonable urgent (assuming, that is, that there is any reasonableness in urgency) can you let me know, Jim, if this is agreeable; and, if so, can you let me know, Ferg, when it will happen. Thanks, JAKE

JAKE 6-JUN-74 13:35 23288

Guest account at OFFICE=1

(J23288) 6-JUN-74 13:35; Title: Author(s): Elizabeth J. (Jake)
Feinler/JAKE; Distribution: /WRF JHB(fyi) JCN MDK; Sub=Collections: NIC;
Clerk: JAKE;
Origin: <FEINLER>NICGUEST,NLS;1, 6-JUN-74 13:15 JAKE ;

Catalog Program File Size

21-MAR-74 1111-PDT HARDEMAN: Catalog File Sizes
 Distribution: VANNOUHUYS, Hardeman
 Received at: 21-MAR-74 11:11:14

1

DIRK, THE FOLLOWING REPRESENTS THE MINIMUM SET OF FILES REQUIRED FOR SUCCESSFUL NICJ AND ARCJ RUNS AT OFFICE-1. THE SET MAY HAVE TO BE EXPNDED DEPENDING OF WHERE AND HOW THE SOURCE FILE IS CONSTRUCTED. THE BELOW ASSUMES IT WAS CREATED OVER HERE AND PASSED OVER THERE TO BE PROCESSED.

FILE	SIZE
APROGS	21
ARCJPROGS	6
CPPPROG.REL	16
CPPPROG.NLS	36
CPPTABLES	44
JPROGS	18
KEYPROGS	5
NICJPROGS	5
NPROGS	10
TPROGS	38
UNKEY	1
UPTABLES	4

	204
SOURCE FILE	+

1a

Catalog Program File Size

(J23290) 6-JUN-74 14:55; Title: Author(s): Beauregard A.
Hardeman/BAH(FOR THE RECORD AGAIN); Distribution: /JCN([INFO=ONLY])
MEJ([INFO=ONLY]) JBN([INFO=ONLY]) JDH([INFO=ONLY]) ;
Sub=Collections: DEIS DPCS SRI=ARC NIC; Clerk: DVN;

secondary distribution of journal item 22822

In the absence of a secondary distribution command in the new journal system, see (ljournal,22822,1) for our contact structure and philosophy.

Copy of message to J. Burchfiel (at BBN)

Jerry:

A while ago you sent me a message in which you stated that most of the changes which are in our EXEC are local idiosyncracies, and not of general interest to the TENEX community. I would like to discuss this further with you, as I feel that many other sites would like some capabilities offered in our EXEC. The implimentation can of course be different, but some other sites, notably ISI, have already built similar mechanisms.

You pointed out that the original agreement with Ken Victor was to put all changes under assembly switches, and localize them in the initialization and command table routines. Ken was aware of this, but did not do so because our changes are simply too extensive to do that way.

However, I want to stress that we do want to bring our's and BBN's EXEC closer together. The extent of our changes makes it imperative to have some close collaboration on bringing the EXEC's together.

To make the initial process of considering which ARC features are of general usage, and should (could?) be supported by BBN, I have prepared a breakdown of our changes and their importance to us. Also, I think that all the items in Group B will be of use to other sites.

APPENDIX - ARC=BBN EXEC Differences

- | | | |
|----|--|------|
| A. | Changes which BBN has already accepted | 7a |
| 1) | SRI=ARC change password of login directory command | 7a1 |
| 2) | SRI=ARC DOWNTIME command | 7a2 |
| | copies file <SYSTEM>SCHEDULED=DOWNTIME, 0 to primary output file | 7a2a |
| 3) | SRI=ARC DISCUSE command | 7a3 |
| | tells total system pages free and in use | 7a3a |
| B. | Changes which we consider NECESSARY to our working environment | 7b |
| 1) | SRI=ARC network modifications | 7b1 |
| | includes: | 7b1a |
| | NETWHEEL and NETUSER option to "E PRINT and "E CREATE | 7b1b |
| | restricts commands to network users | 7b1c |
| | (unless they are NETWHEELS) | 7b1d |
| | and defaults to <NETSYS> for programs | 7b1e |
| 2) | SRI=ARC commercial user modifications | 7b2 |
| | includes: | 7b2a |
| | COMUSER option to "E PRINT and "E CREATE | 7b2b |
| | restricts commands to commercial users | 7b2c |

Copy of message to J. Burchfiel (at BBN)

- and defaults to <COMSYS> for programs
- 3) SRI=ARC group allocation scheme
 - includes:
 - login restrictions
 - GROUPSTAT and ELOG commands
 - 4) SRI=ARC autologout of inactive jobs stuff
 - includes:
 - *E REFUSE and *E RECEIVE commands
 - DDT autologout not allowed stuff
 - other inactive autologout stuff (requires sriarc jsys ATLJB)
 - 5) SRI=ARC terminal types IMLACs and LINEPROCESSOR
 - IMLACs are terminal types 5 (no long vectors) & 6 (long vectors)
 - LINEPROCESSORS are terminal type 13
 - this also assumes TENEX has the needed terminal types
 - 6) SRI=ARC FILSTAT command
 - always prints connected directory
 - 7) SRI=ARC COMMAND ACCEPT feature
 - treats COMMAND ACCEPT (*D) as equivalent to EOL in exec
- C. Changes which are nice user features, but which we could eliminate if forced.
- 1) SRI=ARC ident stuff
 - includes:
 - setting ident at login time (requires sriarc jsies SJBST and RJBST)
 - 2) allow user to login without typing LOG
 - 3) tell user about new journal mail at login time
 - 4) SRI=ARC MESSAGE command
 - shorthand for using READMAIL subsystem
 - 5) SRI=ARC q4 changes to the scheduler
 - this is meaningless unless the proper changes have been made to the scheduler
 - 6) SRI=ARC BYE command
 - this is equivalent to the BREAK (LINKS) command
 - 7) SRI=ARC SYSTAT command
 - doesn't type entire systat if load too high unless user is a network user or an enabled wheel

As I mentioned, It is not necessary to have the exact features stated in Section B, but the following general goal should be accomplished. Items 1 and 2 concern the ability to restrict EXEC commands and subsystem usage on the basis of some data base (a file, information in the DDB, etc.) The Operator and Wheel capabilities are a step in this direction, but are too limited to accomplish this goal completely. We have defined users as local, network, or commercial. ISI has used a GLOG vs. LOG distinction.

Copy of message to J. Burchfiel (at BBN)

Items 3 and 4 concern some tpe of background job which controls user login access to the system. With the advent of the pie-slice scheduler, this background process will be useful to keep monitor overhead (especially scheduling) at a reasonable level. Again, ISI has already adopted a Group Allocation process,

9

Item 5 is of use as several sites may wish to run either Imlacs or Line-processors in the future, and such devices should be supported by the EXEC. (This change would actually be part of the broader issue of getting Big Character Input into TENEX,)

10

Items 6 and 7 are very simple changes of major significance in terms of convenience. It would be unfortunate to have these features, especially the FILSTAT change, go away,

11

I would like t talk with you about these changes after you have had a chance to read this paper. We at ARC would be willing to make a major effort to include these features in a manner useful to all TENEX sites,

12

Sincerely,
Bill Ferguson
(FERGUSON@ARC)

13

WRF 6-JUN-74 17:11 23293

Copy of message to J. Burchfiel (at BBN)

(J23293) 6-JUN-74 17:11; Title: Author(s): William R. (Ferg)
Ferguson/WRF; Distribution: /JCN KEV; Sub=Collections: SRI=ARC; Clerk:
WRF;
Origin: <LJOURNAL>22835,NLS:1, 25=APR=74 14:22 WRF ;

New recognition mode = True exPeRt=exPeRt

Please comment ; will send to fdbk after your personal response,
Believe this to be a very important improvement in the system,

New recognition mode = True expert=expert

(expert=mode)

1

I very strongly urge the adoption of the following recognition mode,

1a

a true expert=expert mode

1b

Example;; there are three commands beginning with the letter S (Substitute, set, show) It would be consistent and very much preferred by users (I think) to have S = Substitute, <sp>S= Show, <SP><SP>S = Set,

1c

The mental and physical pain to learn S, SE, SH is far greater. Additionally, the space chord on the keyset is extremely easy. I will defer to Jim Bair for psychological support to this opinion,

1d

Once having primary mode expert, than one may get secondary mode expert. Moreover, secondary mode expert will in effect give expert mode for all levels. There would still only be two recognition levels,

1e

New recognition mode = True expert=expert

(J23294) 6-JUN-74 18:01; Title: Author(s): Robert N. Lieberman/RLL;
Distribution: /JHB([ACTION]); Sub=Collections: SRI=ARC; Clerk:
RLL;

George Fischer, Tibor Harsanyi, and NSDG, Newspaper System
Development Group

Dean, expect a visit.

George Fischer, Tibor Harsanyi, and NSDG, Newspaper System
Development Group

The Newspaper System Development Group (NSDG) is a cooperative association formed by a number (8 I think) of large newspapers and chains. Tibor Harsanyi, of SRI, Ext 3953, learned of the group's existence during a study he is making on computer-aided photo typesetting. He had met George Fischer in Norfolk, Va., where he is the computer-systems man for the newspaper. That newspaper is one of the NSDG, and Fischer has been very active in the Group (a past chairman). Harsanyi felt that our work would be of interest to the NSDG, had mentioned ARC to Fischer, and urged me to call him to make contact.

George I. Fischer, (804) 446-2000, Fischer's nickname is "Gif". His newspaper is part of Landmark Communication, Inc.

Harsanyi related that NSDG is apparently developing a super, computerized newspaper-production system, involving large IBM machinery, cooperative utilization, etc. Something like \$9 million over next 4 years committed to the development.

I located Fischer in Toronto, working on NSDG business. We talked briefly -- to him we are an unknown. He mentioned that IBM's Federal Systems Division in Gaithersburg is the prime computer-systems contractor, and that Singer (I gather this to be the Link Division in Sunnyvale) has a sub-contract to develop a special composition and editing terminal (Fischer described windowing, comparing stories A and B, and copying material into a third window where the user's story was being constructed).

We agreed that NSDG would need to get acquainted with us and our stuff a bit before further mutual-interest discussion was relevant. Ended by arranging that he will have some system guy belonging to the NSDG try to contact Dean Meyer at SRI Washington sometime in the next several weeks, for a bit of description and demo.

(Dean, he said he'd have the man introduce the names of Fischer and Engelbart to you as a sort of recognition key. The guy likely won't be from the Norfolk paper.

George Fischer, Tibor Harsanyi, and NSDG, Newspaper System
Development Group

(J23295) 6-JUN-74 18:21; Title: Author(s): Douglas C. Engelbart/DCE;
Distribution: /NDM([ACTION]) JCN([INFO-ONLY]) SWM([INFO-ONLY]
) BC([INFO-ONLY]) TLH([INFO-ONLY]) DVN([INFO-ONLY]);
Sub-Collections: SRI=ARC; Clerk: DCE;

WUC demo today (fri) at 4:00

Richard Fikes has asked me to demonstrate NLS and in particular, the Whole Universe Catalog, to his Berkeley AI class tomorrow (fri) afternoon. I said I would notify the people necessary to OK the demo (RWW and JCN) and set up the conference room projector (splitter camera?) (SLJ MEH) but that I could not guarantee anything on such short notice. I will be in at 4:00 in case everything works out. -- Kirk,

1

6-JUN-74 04:39:00,496
Net mail from site SRI=AI rcvd at 6-JUN-74 04:38:59
Date: 6 JUN 1974 0048=PDT
From: FIKES at SRI=AI
Subject: Demo
To: Kelley at SRI=ARC, Kelly at SRI=ARC

2

Kirk,
I am teaching a class at Berkeley on AI Programming Languages, and they are going to visit SRI Friday afternoon. They would enjoy seeing NLS in action and particularly your Whole Universe Catalog. Any chance you would be available to show it to them? They will be around all afternoon after 2:30,
Rich

2a

WUC demo today (fri) at 4:00

(J23296) 6-JUN-74 21:00; Title: Author(s): Kirk E. Kelley/KIRK;
Distribution: /RWW([ACTION]) SLJ([ACTION]) JCN([ACTION])
MEH([ACTION]) DVN([INFO-ONLY]) ; Sub=Collections: SRI=ARC;
Clerk: KIRK;

at-sign @ no longer valid character in statement names

At-sign is the alphabetic zero and should be available for use in statement names as in oldnlis. Ampersand & should also be available, but that's another issue. Is the fact that @ does not work in the new system a bug or a feature?

1

at=sign @ no longer valid character in statement names

(J23297) 6-JUN-74 21:48; Title: Author(s): Kirk E. Kelley/KIRK;
Distribution: /BUGS([ACTION]) KEV([ACTION]) DCE([INFO-ONLY])
; Sub=Collections: SRI=ARC BUGS; Clerk: KIRK;

Response to (23294,) RLL:New recognition mode

I think secondary and tertiary command level recognition by spaces instead of unique spelling is worthy of serious experimentation. From a psychological viewpoint, the suggested operation is far more consistent in psychomotor operation. Further, experiments have shown that short term memory is more efficient utilizing character consistency rather than alternatives (as it would be using all numbers or all characters rather than the combination). Whether this will affect long term memory of keystrokes for command recognition can only be projected from the work on STM. I recommend that this alternative be implemented as soon as possible and that it be integrated with MDK's proposed online command presentation scheme. It should be substituted for the present expert/expert mode.

1

Response to (23294,) RLL;New recognition mode

(J23298) 6-JUN-74 22:56; Title: Author(s): James H. Bair/JHB;
Distribution: /RLL([ACTION]) MDK([INFO-ONLY]) FDBK([INFO-ONLY
]) DVN([INFO-ONLY]) ; Sub-Collections: SRI=ARC; Clerk: JHB;

exceed capacity with verify file.

In my file (kelley,bad,) a verify file results in an error called from rcpsb where st = the address of a stack or ring buffer, st,systkt = 1 . This also causes a content analyzer to result in the message: "fst entry nonexistant". There seems to be a stack overflow. The file has 31 levels of depth. Is this my problem? I have been requested to give a demonstration at 4:00 today (fri) in which I will need to use this file using content analyzer patterns at least to that level in depth. Please let me know if this bug cannot be fixed before then. Kirk. (PS: I had planned to use the experimntal system as that is the only place ,r remembers viewspecs.)

1

exceed capacity with verify file,

(J23299) 7-JUN-74 02:34; Title: Author(s): Kirk E, Kelley/KIRK;
Distribution: /BUGS([ACTION]); Sub=Collections: SRI=ARC BUGS;
Clerk: KIRK;

TNLS still losing instituted CONAN program

This morning, using TNLS, found same trouble as before. My program <engelbart>m.xa loads all right, says its being instituted as content analyzer. But, leave PRO and try applying it and no effect. Return to PRO, Do Show Status == not instituted. Do an Institute Program m as Content Analyzer, Do Show Status to verify == yes it is instituted. Quit to EDI, try printing with VSPEC i == no effect. Return to PRO, Show Status, and lo, it is not instituted any longer,

1

TNLS still losing instituted CONAN program

(J23300) 7-JUN-74 07:37; Title: Author(s): Douglas C.
Engelbart/DCE; Distribution: /FDBK([ACTION]); Sub=Collections:
SRI=ARC; Clerk: DCE;

Brief Outline of What I cover in a Demo

Console	1
display: window to any file(s) in system	1a
mouse: ability to point to any char in window	1b
keyboard: specify commands and type text	1c
keyset: to input any char on keyboard with one hand, leaving other hand on mouse	1d
Files	2
structure	2a
Reading	3
jumping	3a
to structure	3a1
to link	3a2
to file return	3a3
viewspecs	3b
links	3c
catalogs	3d
content analysis	3e
Creating documents	4
structure of commands: verb=noun	4a
verbs	4a1
entities: structural and intra=statement	4a2
extensibility of files	4b
sorts	4c
cross file edits	4d
split screen	4d1

Brief Outline of What I cover in a Demo

Dissemination	5
Storage	5a
protection: TENEX, ident	5a1
common group databases	5a2
archival databases	5a3
Output	5b
printer, free terminal	5b1
output processor -- formatting	5b2
COM, photo-offset	5b3
Dialog Support	5c
journal	5c1
citations	5c1a
cataloging	5c1b
privacy	5c1c
ident system: individual and group	5c2
messages	5c3
network delivery and submission	5c4
E.g. Dealing with mail	6
reading	6a
manipulating	6b
sorting	6c
indexing	6d

Brief Outline of What I cover in a Demo

(J23301) 7-JUN-74 08:57; Title: Author(s): N. Dean Meyer/NDM;
Distribution: /IMM([INFO=ONLY]) RLL([INFO=ONLY]) JCN([INFO=ONLY]) RJ([INFO=ONLY]) ; Sub-Collections: SRI=ARC; Clerk:
NDM;

New recognition mode: a true expert=expert,

Please read (23294,) and (23298,) for suggestion on an additional recognition mode. I would not replace the expert=expert mode but have this new mode made in addition,

1

New recognition mode: a true expert=expert.

(J23302) 7-JUN-74 09:38; Title: Author(s): Robert N. Lieberman/RLL;
Distribution: /FDBK([ACTION]) SRI=ARC([ACTION]) ;
Sub=Collections: SRI=ARC; Clerk: RLL;

Second pass corrections to your final report contribution

Just a few more corrections, I will leave content review to Dirk and others,

at (1a1d) the word "and" I think is grammatically correct. Also maybe commas should be placed after each of the items. A period at the end of (1a1d) is also needed,

at (1a3a) usefulness has one "l",

at (1b1a4) suggest parenthesis be moved from before the "which" to before the "e.g.". This would, then, be in parallel with previous items,

at (1b1b1) break statement at "by date.". New statement begins "These few",

at (1b1b2) third sentence. Verb construction; "can insert directives..." and ", and creates". Comma should be deleted; verb "creates" should be "create" (it goes with "can"). Alternative; drop the word "can" and have both "insert" and "create" be "inserts" and "creates". Just reread it. Maybe "creates" is in parallel with "to format", in which case delete the comma and insert the word "to" in order to emphasize the structure,

at (1b1b2) delete "of a" in "according to any of a number of",

at (1b1c1) last comma, I think it should be deleted,

at (1b2a) the comma before "if it does not find the ", I think it should be deleted. These conditional phrases are offset by commas when at the beginning of a sentence or very peripheral to the central thought of the sentence (not this case),

at (1b3b) word "a" should be "an" before "one",

at (1b3b) cannot read if character after "1,x)" is a semicolon. It should be if not,

Really looking good. Have fun in Montreal. Robert

second pass corrections to your final report contribution

(J23303) 7-JUN-74 10:35; Title: Author(s): Robert N. Lieberman/RLL;
Distribution: /NDM([ACTION]); Sub=Collections: SRI-ARC; Clerk:
RLL; Origin: (LIEBERMAN, PP.NLS;2,), 7-JUN-74 10:34 RLL ;####;

Made a change in Help

Minor thing; just to let you know what I did in case you run into it

Made a change in Help

I changed the function branches that are named by the Nouns STRING and STRUCTURE (for example==documentation, help, move !string:eps) so that user sees what STRUCTURE stands for immediately, and I changed the old "Nouns for STRUCTURE" statement so that it still goes to the same place but is introduced by "definitions for STRUCTURES" so that user can find out more about each of them while having already seen a list at the very top of the node. I eliminated the "SHOW also: STRUCTURE" too,

1

Same for STRING

2

Made a change in Help

(J23304) 7-JUN-74 15:07; Title: Author(s): Jeanne M. Beck/JMB;
Distribution: /KIRK([INFO=ONLY]) DVN([INFO=ONLY]);
Sub-Collections: SRI=ARC; Clerk: JMB;