DCR2 5-SEP-75 20:25 33417

SAI TASKS 76-03, 76-04

Attached for your information are two fy76 tasks for SAI under AO 2886 as amended. Task statements on tasks 76-01 and 76-02 will follow separately. 1

DAVID C. RUSSELL
COLONEL USA
DIRECTOR
INFORMATION PROCESSING TECHNIQUES
OFFICE
ARPA 2

TASK 76-03 Statement of Work 3

Secure Program working Group Support (Third Meeting) 4

OBJECTIVE: Support the ARPA IPT office by providing a referencable record that adequately expresses the technical content of the 21 and 22 August 1975 meeting of the ARPA Secure Program Working Group. 5

BACKGROUND: The third meeting of the ARPA Secure Program Working Group will be held at the Information Science Institute (ISI) on 21 and 22 August 1975. The purpose of the meeting is to discuss goals for the Secure Program and to review progress in security programs. A technically accurate record of the presentations at the meeting is required for later reference. 6

TASK: Record the proceedings of the 21 and 22 August 1975 Secure Program Working Group. Produce a technically accurate written record of the proceedings and coordinate it with the attendees to the meeting to insure its accuracy. Produce a final, acceptable version for distribution. 7

RESOURCES: It is estimated that 2 man weeks of professional staff effort, and $530 of travel expenses will be required. The estimated cost of these services is $4300. 8

9

Task 76-04
BACKGROUND 9a

Message systems have spontaneously appeared in the ARPANET community out of a simple marriage of need plus basic capability. As a result various message handling systems have been implemented with differing philosophies, procedures, and conventions. This situation has led to establishment of the MsgGroup, an informal collection of interested

persons, to deliberate the desired capabilities of future message systems.

MsgGroup constitutes an experiment in "Concept Development by Teleconference" using the ARPANET SNDMSG/MAILSYS/MSG capabilities. It is important here to note that SNDMSG Teleconference techniques are neither well developed nor well understood, and that concept development by teleconference is not well understood either.

A primary objective of the MsgGroup teleconference is to close on an agreed upon common framework for delineation of message system problems so that the various involved interests can work together to solve the problems in a common framework.

This requires the assistance of what is often called an ""expediter"" in TeleConferences. A person who monitors the activity and interacts to move the discussion toward closure on such a common framework.

It is the objective of this proposal to provide this kind of assistance to MsgGroup.

APPROACH

To expedite the work of MsgGroup, and to facilitate closure of group discussions on a common framework for delineation of Message System problems, a series of four "Situation" Reports are to be prepared.

A "Situation" Report embodies an attempt to capture the sense of the total group's thinking in its more global terms and to crystalize group discussions into a common conceptual structure which might be acceptable to the entire group. It consists of a "snapshot" of the status of significant issues faced by the group.

Presentation of each Situation Report to the group should lead to focussed discussion of the documented issues, and to subsequent revision of the group's understanding of the issues with each successive Report. The process is analogous to the method of successive approximations which is so successful in solution of indeterminate systems in other fields.

Preparation and distribution of the Situation Reports is to be the primary effort in expediting the work of MsgGroup. Other tasks are subordinate to this.

STATEMENT OF WORK

Facilitate development of MsgGroup consensus on the problems and

issues of message systems development by performing the following tasks: 21

1. Follow the MsgGroup discussions and participate in the group dialogue. 21a

2. Prepare some brief discussion papers on important emerging issues. 21b

3. Develop and recommend policies and procedures to facilitate MsgGroup dialogue and management of the MsgGroup Proceedings. 21c

4. Prepare a sequence of four "Situation" Reports to identify and delineate the primary issues before the MsgGroup. 21d

5. Attend a one day meeting of the MsgGroup in Washington, D.C. 21e

RESOURCES 22

One-half of this effort will be accomplished under this task statement and the remainder is expected to be funded later under a new task number. Resources authorized for one-half of the effort to cover a three month period is as follows: 23

CONSULTANT	$5667
SAI (Professional)	1425
SAI (Technical Typist)	220
Miscellaneous Expenses	188
TOTAL	$7500

24

SAI TASKS 76-03, 76-04

(J33417) 5-SEP-75 20:25;;;; Title: Author(s): David C. Russell/DCR2; Distribution: /EJK([ACTION]) DCR2([INFO-ONLY]) STW([INFO-ONLY]) EWS([INFO-ONLY]) ; Sub-Collections: NIC; Clerk: DCR2; Origin: < RUSSELL, SAI/TASK/76-03/04.NLS;1, >, 5-SEP-75 19:56 DCR2 ;;;;####;

33417 Distribution
Edmund J. Kennedy, David C. Russell, Stephen T. Walker, Eugene W. Stubbs,

DCE 6-SEP-75 09:35 33418

Watson to settle issue of attendance at WP Conf

A number of Journal items have dealt with the possibility of ARC covering the WP Conference slated for Sep 16 in SF -- SGR DVN (26374,), IRBY (SNDMSG, 4-SEP-75 1301-EDT), and RLL (26392,). Sounds as though at least one person from ARC should go. Should do a little scouting to see if it is slanted to developers or users/marketeers to see which kind of ARC person would bring us best benefit by later integrating the results into our working life. 1

I really don't think that the cost is an issue, compared with the direct cost anyway of the person(s)' time, and the indirect costs of taking him/her away from what we need doing here. 2

I'd like for Dick Watson to settle the issue -- I'll be travelling this next week. 3

DCE 6-SEP-75 09:35 33418

Watson to settle issue of attendance at WP Conf

(J33418) 6-SEP-75 09:35;;;; Title: Author(s): Douglas C. Engelbart/DCE; Distribution: /RWW([ACTION]) SRI-ARC([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: DCE;

33418 Distribution

James E. (Jim) White, Douglas C. Engelbart, Martin E. Hardy, J. D. Hopper, Charles H. Irby, Harvey G. Lehtman, James C. Norton, Jeffrey C. Peters, Dirk H. Van Nouhuys, Kenneth E. (Ken) Victor, Richard W. Watson, Don I. Andrews,
Richard W. Watson, David C. Smith, Mary Ann Kellan, Buddie J. Pine, Andy Poggio, David L. Retz, Laura J. Metzger, Karolyn J. Martin, Jan A. Cornish, Larry L. Garlick, Priscilla A. Wold, Pamela K. Allen, Delorse M. Brooks, Beverly Boli, Rita Hysmith, Log Augmentation, Joseph L. Ehardt, Raymond R. Panko, Susan Gail Roetter, Robert Louis Belleville, Rene C. Ochoa, Ann Weinberg, Adrian C. McGinnis, Robert S. Ratner, David S. Maynard, Robert N. Lieberman, Sandy L. Johnson, James H. Bair, Jeanne M. Leavitt, Rodney A. Bondurant, Jeanne M. Beck, Marcia L. Keeney, Elizabeth K. Michael, Jonathan B. Postel, Elizabeth J. Feinler, Kirk E. Kelley, N. Dean Meyer

JHB 6-SEP-75 11:58 33419

Reply to Feedback re: *Letter documentation* and JMB Journal:
(26358,)

Help at O-1 has been updated to reflect the current Letter program.
We need someone to update Help 8,0 at BBNB -- volunteer? Currently
there is no mechanism for upating other Helps. Other changes (minor)
I have made to O-1 Help can be filtered out using signatures and
copied to BBNB. All we need is someone to do it.

Reply to Feedback re: *Letter documentation* and JMB Journal:
(26358,)

Reply to Feedback re: *Letter documentation* and JMB Journal:
(26358,)

1

The existance of the Letter Program as an attachable subsystem was announced in the A BRIEF GUIDE TO USER PROGRAMS AVAILABLE IN NLS-8 (32874,1:wznC):

1a

< HJOURNAL, 32874.NLS;1, >, 30-JUN-75 09:34 XXX ;;;; Title: Author(s): Stanford Research Institute /&SRI-ARC; Distribution: /US([ACTION]) DIRT([INFO-ONLY]) SRI-ARC([INFO-ONLY]) KWAC([INFO-ONLY] a copy will be mailed to you for your site notebook) ; Sub-Collections: NIC US DIRT SRI-ARC KWAC; Clerk: JHB; Origin: < USERGUIDES, USER-SUBSYSTEM-GUIDE.NLS;2, >, 30-JUN-75 08:41 JHB ;;;;####;

JHB 6-SEP-75 11:58 33419

A BRIEF GUIDE TO USER PROGRAMS AVAILABLE IN NLS-8

A new user programs subsystem has been brought up at Office-1. It is called LETTER and replaces the former runable program, Letter. A description of the new LETTER and all other user attachable programs is contained in this document which replaces the earlier document of the same name. The new Guide will be available in hardcopy from FEEDBACK and online in the directory USERGUIDES (as well as via the Journal). 1a1

It was decided that to announce LETTER separately was inappropriate because very few, if any, users were familiar with LETTER as a program. It was pointed out that this document mentioned new capabilities. This item is in response to the following messages which are included here for the record. 1b

4-SEP-75 1828-PDT FEEDBACK(FEED) at OFFICE-1: *Letter message #2*
Distribution: , JHB(BAIR)
Received at: 4-SEP-75 18:28:12 1c

2-SEP-75 1907-P JMB: Re--33391,>>>How do you use Letter?
Distribution: JMB FEEDBACK DVN BEV KIRK DSM Received at:
2-SEP-75 18:31 Location: (JOURNAL, JRNL29, J26358:gw) 1c1

Message: 1c2

Was the change of Letter from a program to a subsystem noted ANYWHERE? Can an announcement be made now? Distributed to those who authorize and direct changes to documentation. Which versions of NLS was the change made in? 1c2a

4-SEP-75 1827-PDT FEEDBACK(FEED) at OFFICE-1: *Letter message #1*
Distribution: , JHB(BAIR)
Received at: 4-SEP-75 18:27:21 1d

2-SEP-75 1252-P DVN: My Problem with the Letter Program was I believed Help Distribution: DVN FEEDBACK JMB KIRK BEV DSM
Received at: 2-SEP-75 16:32 Location: (JOURNAL, JRNL29, J33391:gw) 1d1

Message: 1d2

My memory and Help agreed that Letter was not a subsystem, but it has been changed into a subsystem without the change being noted in Help. 1d2a

4-SEP-75 1826-PDT FEEDBACK(FEED) at OFFICE-1: *Letter documentation*
Distribution: , JHB(BAIR), FEED(FEEDBACK)
Received at: 4-SEP-75 18:26:12 1e

Jim, I will be sending copies of two messages to you that are from jeanne and Dirk. I think you may be interested in them. As per Dirk's message, can Help be changed? And do you have plans for formal announcements of new features and changes in features? Regards, Pam 1e1

A BRIEF GUIDE TO USER PROGRAMS AVAILABLE IN NLS-8

4-SEP-75 1821-PDT FEEDBACK(FEED) at OFFICE-1: *Letter documentation*
Distribution: , JMB(BECK at BBN-TENEXB), FEED(FEEDBACK), JHB(BAIR)
Received at: 4-SEP-75 18:21:41 1f

In reply to your message of 2-SEP-75 1907-P JMB Journal: (26358,) Subject: Re--33391,>>>How do you use Letter? 1f1

Jeanne, Letter is documented in Brief Guide to Userprograms, But as far as I know thaere was no announcement about the change from program to sussystem, I will forward your message to Jim Bair along with Dirk's, Pam 1f1a

JHB 6-SEP-75 11:58 33419

Reply to Feedback re: *Letter documentation* and JMB Journal:
(26358,)

(J33419) 6-SEP-75 11:58;;;; Title: Author(s): James H. Bair/JHB;
Distribution: /JMB([ACTION]) FEEDBACK([ACTION]) DVN([ACTION]
didn't you get a copy of this as a member of DIRT?) BEV([INFO-ONLY])
KIRK([INFO-ONLY]) DSM([INFO-ONLY]) JCN([INFO-ONLY]) SGR([
INFO-ONLY]) LJM([INFO-ONLY] just to keep you up on things) ;
Sub-Collections: SRI-ARC FEEDBACK; Clerk: JHB;

33419 Distribution
Jeanne M. Beck, Special Jhb Feedback, Dirk H. Van Nouhuys, Beverly Boli, Kirk E. Kelley, David S. Maynard, James C. Norton, Susan Gail Roetter, Laura J. Metzger,

JHB 6-SEP-75 12:17 33420

The mysteries of <CTRL E>, or OKINSERT, or Enter Mode, or the INSERT button on your keyboard

Comments: Help at O-1 has been updated to reflect the current Letter program. We need someone to update Help 8,0 at BBNB -- volunteer? Currently there is no mechanism for upating other Helps. Other changes (minor) I have made to O-1 Help can be filtered out using signatures and copied to BBNB. All we need is someone to do it. 1

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< HJOURNAL, 32874,NLS;1, >, 30-JUN-75 09:34 XXX ;;;; Title: Author(s): Stanford Research Institute /&SRI-ARC; Distribution: /US([ACTION]) DIRT([INFO-ONLY]) SRI-ARC([INFO-ONLY]) KWAC([INFO-ONLY] a copy will be mailed to you for your site notebook) ; Sub-Collections: NIC US DIRT SRI-ARC KWAC; Clerk: JHB; Origin: < USERGUIDES, USER-SUBSYSTEM-GUIDE,NLS;2, >, 30-JUN-75 08:41 JHB ;;;;####;

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A BRIEF GUIDE TO USER PROGRAMS AVAILABLE IN NLS-8

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Distribution: , JMB(BECK at BBN-TENEXB), FEED(FEEDBACK), JHB(BAIR)
Received at: 4-SEP-75 18:21:41 2f

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TITLE: The mysteries of <CTRL E>, or OKINSERT, or Enter Mode, or the INSERT button on your keyboard
AUTHOR(S):JHB
DISTRIBUTE FOR ACTION TO: FEED
DISTRIBUTE FOR INFO-ONLY TO: ARC-APP DVN CHI(intended?)

MESSAGE: I expected that pressing the insert button on a DM keyboard would allow me to enter a statement after the statement on the top of the screen since that is where the marker is supposed to be in DNLS (until you bug something). I also expected that <CTRL E> would leave me in the enter mode until I hit a CD. In the latter case, you may only use <CTRL E> to get into the enter mode after inserting a statement. Otherwise it merely lets you insert 1 statement unless you hit it again. Oh well, not my expectations but no big deal. The former expectation may be a supprise to others besides myself: <CTRL E> (or hiting the insert button as a novice could really like to do) inserts the statement after the statement you last edited. So remember where your last delete character or whatever was if you might like to use this nice feature. Teaching it may be somewhat tenuous.
BRANCH AT:
PLEX AT:
GROUP AT:
FILE:
SEND THE MAIL. 3

Thanks for Assisting in the AKW Seminar 4

I've been getting a good bit of positive feedback about the Seminar that I want to share with you because of your parts in it. The cooperation I received was great and the contributions made by all of us are what made it work. Thanks! Jim 4a

DCE JCN RLL SGR POOH MEH DVN RA3Y NDM DAP LJM RWW(for your info) 4b

A BRIEF GUIDE TO USER PROGRAMS AVAILABLE IN NLS-8

Why are you so long winded, jim? It would seem that you could have accomplished the same thing with many fewer words. 5

Your so called help, was anything but that. The instructions were not clear to an occassional user. 6

Only if one has a frequen user by his side will he get very far on this system. 7

So there! 7a

COMMENTS: 8

This ten page description of the application of NLS at ETS is a prototype of application assessments. It is hoped that they will have both documentary and instructional value.
It was originally published as (HJOURNAL, 32576, 1:w) for SRI-ARC, 21 May 75. It was subsequently modified, revised and added to by DAP as (HJOURNAL, 32885, 0:w), "NLS at ETS", 2 July 75, for use within ETS. The present document represents an up-dated combination of the previous versions. 8a

This study was done by Elizabeth Riddle, Air Force Data Services Center, for the Air Force in conjunction with the NSW project. We were generously given the opportunity to review a prepublication version. We found several areas in which the capablities of NLS were not included, or the technical description was one we disagreed with, although the overall document was very impressive. After review by EKM, JCN, and JHB, it was decided to repond by adding comments as third level statements to an NLS version of the report put online by JML. This annotated version was then delivered to Liz Riddle and Betty Finney in Wash. D.C. by JCN and JHB (July 28) before the report was forwarded through Air Force channels (a review of Wylbur was also being included). 9

Thank you for pointing out the potential misinterpretation of the word "confidential" in the announcement of updated Journal indices. We will use the term "private" in future announcements.
Thanks again,
Jim Bair 10

Laura, Thanks forproofreading the IFIP thing -- that's all I wanted. Good about the Letter production and distribution document. It should oriented toward a user who has completed the second course(they have had it but may not remember everything...). The distribution should explain what to do in the case of NLS users and those not in the system....I think that's what you mean. You may want to make up a couple of people and/or use ours for examples. I'd like to see a printout when you ar ready to do that. yes, I'd like a

discussion of producing labels, perhaps mention the 3 alternatives we know about.
No problem with the using the day to take a friend around, that's pretty special (all the way out here from the East?) See you , Jim 11

Bob, Far out! Life sounds pretty exciting and good to you. The proud father and pooch breeder.... Give our best to Rita. I presume everything is still well with the new Sheppard (Kaitlin is a neat name).
Maria and I have thought about your idea about trading houses. We are interested, although the logistics seem formidible. We would have to trade cars too, which doesn't bother us if you don't mind feeding ours. Of course, we would want to do it in the fall -- and wondered if you would be willing to leave New England for a week or 2 at that time (doesn't have to be in the height of the color). All in all it would be a blast if we could pull it off. We are still heavily engaged in remodeling, but should have the place in a lot better shape by Sept.
I'm thinking about joining the local camera club, although they are heavily oriented toward dark room stuff. Could be fun.
Well, my congratulations to you both again. Best, Jim 12

Some months ago I was asked what the state-of-the-art was in "computer aided instruction" by a group external to ARC. This 7 page paper is my necessarily brief answer. It also relates to one of the areas of investigation for the Applications Development Group which is concerned with new instructional methods and tools for NLS training. It is intended for persons with a background in computers but not necessarily programmers, although it may be interesting anyway. 13

Teleconferencing 14

1. FILES 14a

New files 14a1

(2) To work in another file: 14a1a

BASE C: Load C: File T: FILENAME CR

14a1a1

(2) To see a list of all your files: Show Directory: 14a1b

BASE C: <SP>SHow C: Directory (of) T/OK: CR OK: CR OK: 14a1b1

Then to support "real-time" remote dialogue (teleconferencing), we have the following facility: Any two DNLS users can "link up"

at any time, so that each party sees a common display view, including both his and the other person's cursor; either party is able to point or control, and they mutually have access to the full range of workshop functions, over any of the online information. 14b

The origin statement
[no number, contains the file name - don't edit] 14b1

The initials file -- automatically your first file, named after your initials [also one of your mailboxes] 14b1a

Any system in the universe must maintain a limited arc of occilation in order to survive. This arc is established by the system's control mechansim through the comparator function. The parameters of the comparator are established through the process of evolution, whereby all systems that do not adequately monitor feedback are eliminated from existance as identifiable entities in the universe. Noise in the feedback channels therefore acts to establish antivital parameters, resulting in excessive occilation and an ultimately entropic state. 15

The organizational or life force is counter entropic, and is typical of organic formulations, and manifests itself as a perpetual persuit of the ideal state of homestasis.... Perturbations of the communication system are as equally reactive as the physical system since the latter is only known through former. Any perturbations are by definition minimized inasmuch as they are sources of dissonance and counter vital.... 16

from, "Toward of Definition of Cybernetics", J H Bair, PSU Dept. of Communication Report, 1966 16a

JHB 6-SEP-75 12:17 33420

The mysteries of <CTRL E>, or OKINSERT, or Enter Mode, or the INSERT button on your keyboard

(J33420) 6-SEP-75 12:17;;;; Title: Author(s): James H. Bair/JHB; Distribution: /FEED([ACTION]) ARC-APP([INFO-ONLY]) DVN([INFO-ONLY]) CHI([INFO-ONLY] intended?) ; Sub-Collections: SRI-ARC ARC-APP; Clerk: JHB;

33420 Distribution

Special Jhb Feedback, Buddie J. Pine, Laura J. Metzger, Priscilla A. Wold, Pamela K. Allen, Rene C. Ochoa, Jeffrey C. Peters, Marcia L. Keeney, Jeanne M. Beck, Geoffrey S. Goodfellow, Rodney A. Bondurant, Douglas C. Engelbart, Jeanne M. Leavitt, Susan Gail Roetter, Raymond R. Panko, Adrian C. McGinnis, James C. Norton, J. D. Hopper, Elizabeth J. Feinler, James H. Bair, Robert N. Lieberman, N. Dean Meyer, Sandy L. Johnson, Martin E. Hardy, Dirk H. Van Nouhuys, Charles H. Irby,

IMM 6-SEP-75 12:34 33421

Additional item to the KWAC agenda

A couple of items to add to DAP's note on the Output Processor..

1. footnotes capabi.capability (doesn't exist at the moment)
2. COM..a few things you should know if you are going to use this service.

1

IMM 6-SEP-75 12:34 33421

Additional item to the KWAC agenda

(J33421) 6-SEP-75 12:34;;;; Title: Author(s): Inez M. Mattiuz/IMM;
Distribution: /KWAC([ACTION]) ; Sub-Collections: BELL-CANADA KWAC;
Clerk: IMM;

33421 Distribution

Marilynne A. Sims, Elizabeth F. Finney, Lawrence A. Crain, E. S. VonGehren, Glenn A. Sherwood, Kathey L. Mabrey, Jeanne M. Beck, David A. Potter, Robert N. Lieberman, Terry H. Proch, Ronald P. Uhlig, Susan Gail Roetter, Michael A. Placko, Stanley M. (Stan) Taylor, Elizabeth J. Feinler, Rudy L. Ruggles, Frank G. Brignoli, Robert M. Sheppard, Richard W. Watson, Douglas C. Engelbart, James C. Norton, James H. Bair, Duane L. Stone, Inez M. Mattiuz, Connie K. McLindon,

DCE 6-SEP-75 18:03 33422

Note on concept of Link vs that of Address, cf (32811,)

About an issue raised by JHB in June -- hopefully, better late than never.

DCE 6-SEP-75 18:03 33422

Note on concept of Link vs that of Address, cf (32811,)

Jim: I set (HJOURNAL, 32811,) aside way back in June, to talk to you about. Just ran across it. File not online anymore, and so without studying it, I just wanted to drop you a comment. Please check with me about what's happened with respect to this issue since you wrote the Journal item, and how this note fits. 1

A link is a formalized citation, to be used as such to point unambiguously to any NLS entity in any file. In the future, we should expectto evolve conventions for identifhing text strings and groups, where more than a single address will be involved. Also, it is expected that any other entity evolving into our vocabulary will be unambiguously identifiable via a link -- e.g. any graphic entity that is part of an illustration. 2

Inclusion of viewspec is part of the "entity" concept, where the link really points to a particular portrayal; same for including content-analyzer pattern. 2a

So, in tis sense, of a link being an explicit citation for an NLS entity or for a portrayal generated via specific view/filtering control, it really is different from an address. The latter is an important sub-element of a link, but they are not equivalent. 3

DCE 6-SEP-75 18:03 33422

Note on concept of Link vs that of Address, cf (32811,)

(J33422) 6-SEP-75 18:03;;;; Title: Author(s): Douglas C. Engelbart/DCE; Distribution: /JHB([ACTION]) SRI-ARC([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: DCE;

33422 Distribution

James E. (Jim) White, Douglas C. Engelbart, Martin E. Hardy, J. D. Hopper, Charles H. Irby, Harvey G. Lehtman, James C. Norton, Jeffrey C. Peters, Dirk H. Van Nouhuys, Kenneth E. (Ken) Victor, Richard W. Watson, Don I. Andrews,
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JHB 7-SEP-75 10:35 33423

JOURNAL SEARCHING DOCUMENTATION

response to Vongenren/Feed/JHB sndmsg 4 Sept 75

JHB 7-SEP-75 10:35 33423

JOURNAL SEARCHING DOCUMENTATION

Searching the Journal indexes is covered in the Third TNLS course and should be taught and demonstrated there. However, it seems that it would be very valuable to have instructions associated with the Locator or indexes. The indexes are prepared by an operator-run program periodically, and it would take some heavy attention to ensure that the instructions were in each new release. I will see what I can do to have instructions incorporated into the Locator. Thanks for the inquiry, Jim 1

JOURNAL SEARCHING DOCUMENTATION

(J33423) 7-SEP-75 10:35;;;; Title: Author(s): James H. Bair/JHB; Distribution: /JMB([ACTION] please add this your tasks, afteryou have a short blurb, let's meet to see how to incorporate it) ESV([INFO-ONLY]) FEED([INFO-ONLY]) DIRT([INFO-ONLY]) US([INFO-ONLY]) ; Sub-Collections: SRI-ARC DIRT US; Clerk: JHB;

33423 Distribution

Jeanne M. Beck, E. S. VonGehren, Special Jhb Feedback, Jonathan B. Postel, Priscilla A. Wold, Rita Hysmith, Pamela K. Allen, Delorse M. Brooks, Elizabeth F. Finney, Beverly Boli, Lawrence A. Crain, Kirk Sattley, Susan Gail Roetter, Robert N. Lieberman, Ann Weinberg, Kenneth E. (Ken) Victor, Douglas C. Engelbart, James H. Bair, Elizabeth K. Michael, Richard W. Watson, Elizabeth J. Feinler, Harvey G. Lehtman, Kirk E. Kelley, Laura E. Gould, Jeanne M. Beck, Dirk H. Van Nouhuys, James C. Norton, Susan Gail Roetter, Priscilla A. Wold, Jeanne M. Beck, Pamela K. Allen, Rita Hysmith, Sandy L. Johnson,

JHB 7-SEP-75 10:49 33424

Old Contact wih potential clients in the area

These people were really hot when they visited way back then. It seems a high potential marketing contact now. Let me know what happens, Rob.

JHB 7-SEP-75 10:49 33424

Old Contact wih potential clients in the area

1. Ed Fiegenbaum (<SU-HP>), after 2 Utility service and Penny N. Bryant (327-9333) Systems Control, Inc. , Palo Alto(?) Here on 14 Feb.74 WILL CALL. 1

JHB 7-SEP-75 10:49 33424

Old Contact wih potential clients in the area

(J33424) 7-SEP-75 10:49;;;; Title: Author(s): James H. Bair/JHB; Distribution: /RLL([ACTION]) JCN([INFO-ONLY]) DCE([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: JHB;

33424 Distribution
Robert N. Lieberman, James C. Norton, Douglas C. Engelbart,

JHB 7-SEP-75 11:26 33425

The location of the Command Marker after certain editing

The location of the Command Marker after certain editing has been an issue for some time. I found the following comment (never sent for some reason...) while cleaning out my initials file and offer it in support of JAC3 4-AUG-75 26230, NLS IS SUPPOSED TO BE AN INTUITIVE SYSTEM. 1

LOCATION AFTER MOVE, COPY, etc: , comment dated 12 Nov 73 2

> The marker in TNLS or the display in DNLS should remain in the same area, as close as possible to the original position, that it was at the beginning of the particular command. This is based on the observation that a user very rarely wishes to move with his textual entity to the new location but rather wishes to remain in the same file and position to continue the editing /manipulation that he had underway at the time. 2a
>
> In addition, I think it is more sound to require a positive action to change the position of the marker or display rather than having it changed (essentially) by an editing command. 2b

The location of the Command Marker after certain editing

(J33425) 7-SEP-75 11:26;;;; Title: Author(s): James H. Bair/JHB;
Distribution: /FEED([ACTION]) SRI-ARC([INFO-ONLY]) ;
Sub-Collections: SRI-ARC; Clerk: JHB;

33425 Distribution

James E. (Jim) White, Douglas C. Engelbart, Martin E. Hardy, J. D. Hopper, Charles H. Irby, Harvey G. Lehtman, James C. Norton, Jeffrey C. Peters, Dirk H. Van Nouhuys, Kenneth E. (Ken) Victor, Richard W. Watson, Don I. Andrews,
Special Jhb Feedback, David C. Smith, Mary Ann Kellan, Buddie J. Pine, Andy Poggio, David L. Retz, Laura J. Metzger, Karolyn J. Martin, Jan A. Cornish, Larry L. Garlick, Priscilla A. Wold, Pamela K. Allen, Delorse M. Brooks, Beverly Boli, Rita Hysmith, Log Augmentation, Joseph L. Ehardt, Raymond R. Panko, Susan Gail Roetter, Robert Louis Belleville, Rene C. Ochoa, Ann Weinberg, Adrian C. McGinnis, Robert S. Ratner, David S. Maynard, Robert N. Lieberman, Sandy L. Johnson, James H. Bair, Jeanne M. Leavitt, Rodney A. Bondurant, Jeanne M. Beck, Marcia L. Keeney, Elizabeth K. Michael, Jonathan B. Postel, Elizabeth J. Feinler, Kirk E. Kelley, N. Dean Meyer

JHB 7-SEP-75 11:30 33426

Potential marketing contact from last year: Zanner, AFSC

Another potentially worthwhile lead for marketing.

JHB 7-SEP-75 11:30 33426

Potential marketing contact from last year: Zanner, AFSC

Telecon received 1

30 Nov., John Zanner, AFSC Data Automation, Andrews AFB, (301) 981-6400 (or Lt Col Madril). He talked to John Islei, and was very interested in accessing the Net and ARC. He asked about Utility rates and how billing is determined, and ports; had a question about baud rates higher than 9600; Was going to try to get one of RADC's slots into the Utility. I discouraged this idea, and suggested that he consider buying a slot, to which there was a positive response. He seemed satisfied with the info, and mentioned collaboration with ESD and RADC. 1a

JHB 7-SEP-75 11:30 33426

Potential marketing contact from last year: Zanner, AFSC

(J33426) 7-SEP-75 11:30;;;; Title: Author(s): James H. Bair/JHB;
Distribution: /RLL([ACTION]) DCE([INFO-ONLY]) JCN([INFO-ONLY]
) ; Sub-Collections: SRI-ARC; Clerk: JHB;

33426 Distribution
Robert N. Lieberman, Douglas C. Engelbart, James C. Norton,

Motels and Transportation for visitors to SRI-ARC

MOTELS AND TRANSPORTATION FOR VISITORS TO SRI-ARC

MOTEL	DISTANCE	SRI RATE (SINGLE)
.....	.....	.....
Mermaid Inn Motel	3 blocks	$14.00

Address: 727 El Camino Real, Menlo Park, Ca.
Phone: 323-9481
Other: Restaurant nearby, Pool, Continental Breakfast, Color T.V., Air Conditioned, Theatre nearby

Menlo Motor Lodge	3 blocks	$12.00

Address: 1315 El Camino Real, Menlo Park, Ca.
Phone: 326-7530
Other: Restaurant nearby, Color T.V., Air Conditioned, Theatre nearby

Tiki Inn	3 miles	$14.00

Address: 531 Stanford Avenue, Palo Alto, Ca.
Phone: 327-3550
Other: Continental Breakfast, Heated Pool, Air Conditioned, Restaurants nearby

Red Cottage	2 miles	$16.00

Address: 1704 El Camino Real, Menlo Park, Ca.
Phone: 326-9010
Other: Heated Pool, Continental Breakfast, Cocktail Lounge, Restaurant (dinner only), Restaurant nearby

Cabana Hyatt House	5 miles	$18.00

Address: 4290 El Camino Real, Palo Alto, Ca.
Phone: 493-0800
Other: Restaurant, Cocktail Lounge, Coffee Shop, Pool

Rickey's Hyatt House	5 miles	$20, 21, 22.00

Address: 4219 El Camino Real, Palo Alto, Ca.
Phone: 493-8000
Other: Restaurant, Coffee Shop, Cocktail Lounge, Pool, Air Conditioned

Holiday Inn	2 miles	$21.00

Address: 625 El Camino Real, Palo Alto, Ca.
Phone: 328-2800

Motels and Transportation for visitors to SRI-ARC

Other: Coffee Shop, Restaurant, Cocktail Lounge, Pool, Air Conditioned 10a

(Quality generally corresponds to price. The Mermaid is the most frequently used by SRI visitors.) 11

TRANSPORTATION FROM SAN FRANCISCO AIRPORT 12

There are 3 ways to arrive at SRI from the airport: 13

1. Limosine. A limosine is available from the airport to your motel. The cost is approximately $10.00. To reserve a limosine call (415)961-8800. Meet at the baggage claim area upon arrival to San Francisco. 14

2. Cab. A cab from the airport to Menlo Park will cost approximately $30.00. 15

3. Rent-a-car. All major agencies are represented at the airport. It is an approximately 20 mile drive to Menlo Park. 16

Directions to SRI are provided on the attached map. The address is 333 Ravenswood Ave., Menlo Park, Ca. ARC is located in Building 30 of the SRI complex. The location is marked on the reverse side of the map. 17

Motels and Transportation for visitors to SRI-ARC

(J33427) 7-SEP-75 12:24;;;; Title: Author(s): Laura J. Metzger/LJM;
Distribution: /RLL([INFO-ONLY]) JCN([INFO-ONLY]) SGR([
INFO-ONLY]) RH([INFO-ONLY]) JHB([INFO-ONLY]) ;
Sub-Collections: SRI-ARC; Clerk: LJM; Origin: < METZGER,
MOTELS.NLS;2, >, 3-SEP-75 15:25 LJM ;;;;####;

33427 Distribution
Robert N. Lieberman, James C. Norton, Susan Gail Roetter, Rita Hysmith, James H. Bair,

ILA 8-SEP-75 06:19 33429

Information for NLCC representatives

Please pass this to your NLCC representatives (Gray, Lamonica, Maudlin, Lakin, McElroy,Callahan,Jones,Tremblay,Goertz,Bligh)

Bob Jeske has passed on information that Data General is negotiating with GSA to place their ECLIPSE computer on Federal Supply Schedule under both class 70 and class 66, He expects that these actions will be concluded in the near future,

Please acknowledge receipt of this message so I can tell who is reading their mail,

Regards,
Larry

1

ILA 8-SEP-75 06:19 33429

Information for NLCC representatives

(J33429) 8-SEP-75 06:19;;;; Title: Author(s): I. Larry Avrunin/ILA;
Distribution: /NALCON([ACTION]) ; Sub-Collections: NIC NALCON;
Clerk: ILA;

Proposed October Agenda (1st draft)

Mon. Introductions	1
A.M. Introductory Remarks	1a
Doug Engelbart, Jim Norton, etc. & KWAC'ers	1a1
P.M. News	1b
SRI News (ARC Development, Applications, User Services, & Marketing)	1b1
KWAC News	1b2
Site Reports	1b3
Tue. Communities	2
A.M. Continued	2a
Site Reports	2a1
P.M. NLS Communities	2b
Document Production & Control System (DVN)	2b1
Others	2b2
Wed. Using NLS	3
A.M. Documentation, Training, Feedback, etc.	3a
- available SRI documentation & training	3a1
- documentation & training available from NLS community	3a2
- Feedback, client laison, etc.	3a3
P.m. enhancements to NLS	3b
- DEX (both direct & over-the-net)	3b1
- Output Procesor	3b2
- Calculator	3b3
- L-10 programming	3b4
Thur. More Using NLS	4

Proposed October Agenda (1st draft)

A.M. / P.M. NLS Service	4a
- quality of computer service	4a1
- charging strategies	4a2
- network vs direct access	4a3
- alternatives (e.g., PDP 11 front end)	4a4
- services other than NLS (e.g., types of service, criteria for making available, etc.)	4a5
- projections	4a6
- etc.	4a7
Fri. Experiences	5
A.M. Show, tell, & share session	5a
P.M. Open	5b

FGB 8-SEP-75 08:09 33430

Proposed October Agenda (1st draft)

(J33430) 8-SEP-75 08:09;;;; Title: Author(s): Frank G. Brignoli/FGB; Distribution: /DCE([ACTION]) ; Sub-Collections: NIC; Clerk: FGB;

33430 Distribution
Douglas C. Engelbart,

DLS 8-SEP-75 11:46 33431

Terminal Buys in Progress at RADC

Does this list agree with what you are currently purchasing? If not, would appreciate a call on the subject. Jim Norton said that some shipments might begin soon...most people are super anxious to get there hands on the terminals.

Terminal Buys in Progress at RADC

TERMINAL MATRIX 1

USER	DNLS LP	GNLS LP	DATA MEDIA	TEKT 4014	TEKT 4063	TI-735	GE-300	2400B MODEM
RADC	5	1	6	1	1			
NAVY(NCSSA)	1		1				1	1
IBM	1		1			1		1
DMA	1		1			1		2
NAVY(NSWC)						4		
NSA	2							
DSC	1							
TOTALS	11	1	9	1	1	6	1	4

Terminal Buys in Progress at RADC

(J33431) 8-SEP-75 11:46;;;; Title: Author(s): Duane L. Stone/DLS; Distribution: /BJP([ACTION]) RLL([INFO-ONLY]) JCN([INFO-ONLY]) ELF([INFO-ONLY]) ; Sub-Collections: RADC; Clerk: DLS;

33431 Distribution
Buddie J. Pine, Robert N. Lieberman, James C. Norton, Edward F. LaForge,

PAW2 8-SEP-75 15:39 33432

Copy of Process Branch given to Sgt. J. Crabtree

A list of the qualifications mentioned to him will be sent later.

Copy of Process Branch given to Sgt. J. Crabtree

```
(print)                                                                  1
   load file active-direps                                               1a
   update file compact                                                   1b
   execute program delete all                                            1c
   set content to $NP'(3D('2/'8/'1/'5)')$NP"SOLUTION:";                  1d
   execute program load program norton,rtreve,                           1e
   goto retrieve                                                         1f
   set filter level xbb                                                  1g
   accept father xbxb                                                    1h
   accept brother xbbxbb                                                 1i
   accept daughters xbbbw                                                1j
   move plex active-direps, 1 direp-status-report,1                      1k
   quit                                                                  1l
   jump address 0                                                        1m
   reset viewpecs                                                        1n
   set viewspecs n                                                       1o
   output term n                                                         1p
(file)                                                                   2
   set content to $NP'(3D('1/'5)')$NP"SOLUTION:";                        2a
   goto retrieve                                                         2b
   set filter level xb                                                   2c
   accept father xx                                                      2d
   accept brother xbxb                                                   2e
   accept daughters xbbw                                                 2f
   copy plex direp-status-report,2 interim-direps,                       2g
```

Copy of Process Branch given to Sgt. J. Crabtree

```
quit                                                                    2h
update file                                                             2i
set content to $NP'(3D('2/'8)')$NP"SOLUTION:";                          2j
goto retrieve                                                           2k
set filter level xb                                                     2l
accept father xx                                                        2m
accept brother xbxb                                                     2n
accept daughters xbbw                                                   2o
copy plex direp-status-report, 2 inactive-direps,                       2p
quit                                                                    2q
update file                                                             2r
load file direp-status-report                                           2s
delete modifications                                                    2t
```

Copy of Process Branch given to Sgt. J. Crabtree

(J33432) 8-SEP-75 15:39;;;; Title: Author(s): Priscilla A. Wold/PAW2; Distribution: /US([INFO-ONLY]) JHB([INFO-ONLY]) JCN([INFO-ONLY]) POOH([INFO-ONLY]) ; Sub-Collections: SRI-ARC US; Clerk: PAW2; Origin: < DSDC-SC, PROCESS.NLS;6, >, 8-SEP-75 14:40 PAW2 ;;;;####;

33432 Distribution
Susan Gail Roetter, Priscilla A. Wold, Jeanne M. Beck, Pamela K. Allen, Rita Hysmith, Sandy L. Johnson, James H. Bair, James C. Norton, Ann Weinberg,

JHB 8-SEP-75 16:22 33433

Disregard (HJOURNAL, 33420,): NLS error got entire file instead of specified structure

I discovered some bugs in the Sendmail subsystem as a result of trying to use Process (sendmail form):
1) Apparently, if you use a sendmail form and bug the beginning of the form, the file in which the form resides will be sent regardless of what structure you specified in the form. This could be due to leaving the parts of the inserted form that refer to branch, Plex, etc., empty. In my case, I had specified a message, but not the other structures (which logically would be cancelled out by Message).
2) It was also pointed out recently that when the subsystem decides that what you have submitted is a Message, the notifications for Action/Info go away, and so do the parenthetical comments associated with the Idents.
I am taking action to correct (33420,), so please read the part I really wanted to send in a few days. Thanks, Jim

1

JHB 8-SEP-75 16:22 33433

Disregard (HJOURNAL, 33420,): NLS error got entire file instead of specified structure

(J33433) 8-SEP-75 16:22;;;; Title: Author(s): James H. Bair/JHB; Distribution: /FEED([ACTION]) ARC-APP([ACTION]) DVN([ACTION]) CHI([ACTION]) JDH([INFO-ONLY]) ; Sub-Collections: SRI-ARC ARC-APP; Clerk: JHB;

33433 Distribution

Special Jhb Feedback, Buddie J. Pine, Laura J. Metzger, Priscilla A. Wold, Pamela K. Allen, Rene C. Ochoa, Jeffrey C. Peters, Marcia L. Keeney, Jeanne M. Beck, Geoffrey S. Goodfellow, Rodney A. Bondurant, Douglas C. Engelbart, Jeanne M. Leavitt, Susan Gail Roetter, Raymond R. Panko, Adrian C. McGinnis, James C. Norton, J. D. Hopper, Elizabeth J. Feinler, James H. Bair, Robert N. Lieberman, N. Dean Meyer, Sandy L. Johnson, Martin E. Hardy, Dirk H. Van Nouhuys, Charles H. Irby, J. D. Hopper,

FGB 9-SEP-75 07:37 33434

Proposed KWAC Agenda (1st try)

Bob, Here's a 1st crack at an agenda.

FGB 9-SEP-75 07:37 33434

Proposed KWAC Agenda (1st try)

Mon. Introductions	1
A.M. Introductory Remarks	1a
Doug Engelbart, Jim Norton, etc. & KWAC'ers	1a1
P.M. News	1b
SRI News (ARC Development, Applications, User Services, & Marketing)	1b1
KWAC News	1b2
Site Reports	1b3
Tue. Communities	2
A.M. Continued	2a
Site Reports	2a1
P.M. NLS Communities	2b
Document Production & Control System (DVN)	2b1
Others	2b2
Wed. Using NLS	3
A.M. Documentation, Training, Feedback, etc.	3a
- available SRI documentation & training	3a1
- documentation & training available from NLS community	3a2
- Feedback, client laison, etc.	3a3
p.m. enhancements to NLS	3b
- DEX (both direct & over-the-net)	3b1
- Output Procesor	3b2
- Calculator	3b3
- L-10 programming	3b4
Thur. More Using NLS	4

Proposed KWAC Agenda (1st try)

A.M. / P.M. NLS Service	4a
- quality of computer service	4a1
- charging strategies	4a2
- network vs direct access	4a3
- alternatives (e.g., PDP 11 front end)	4a4
- services other than NLS (e.g., types of service, criteria for making available, etc.)	4a5
- projections	4a6
- etc.	4a7
Fri. Experiences	5
A.M. Show, tell, & share session	5a
P.M. Open	5b

FGB 9-SEP-75 07:37 33434

Proposed KWAC Agenda (1st try)

(J33434) 9-SEP-75 07:37;;;; Title: Author(s): Frank G. Brignoli/FGB; Distribution: /RMS2([ACTION]) ; Sub-Collections: NIC; Clerk: FGB;

33434 Distribution
Robert M. Sheppard,

Here is a list of hotels in the Boston-Cambridge area and some suggestions for you visit to this area for the fall KWAC meeting.

Because of the supply of hotel accommodations and the possibilty of the Boston Red Sox being involved in the baseball playoffs, I would suggest that you consider making arrangements for your accommodations for the KWAC meeting rather early. Here is a list of some of the hotels that would be good choices . I will not recommend any one hotel except to say that it is rather easy to get from all of these hotels to the meeting either on foot or by subway. As you can see, the cost of hotels in Boston is rather high. All the prices given below are for single rooms only. I will be happy to make any reservation for you. 1

If you are going to rent a car then I would recommend that you consider one of the Cambridge hotels rather than the Boston ones. Driving in the city of Boston is an experience second only to walking in Boston. The drivers have no courtesy and the pedestrians have no rights .Boston is a maze of narrow one way streets . 2

For those not familiar with New England in October, you can expect pleasant temperatures and sunny days. The daytime highs may reach 75 degrees (on the warmer days) while the night time lows will be in the 30's. The fall color should be about at a peak in this area. Early reports suggest that the color will come early this year and be less than normal. 3

HOTELS 4

Sonesta Hotel
5 Cambridge Parkway
Cambridge, Massachusetts 02142
(617) 491-3600
$29.00 - 36.00 4a

This is about a 10-15 minute walk from the meeting; may be the most convenient. 4a1

Fenway-Cambridge Motor Hotel
777 Memorial Drive
Cambridge, Massachusetts 02139
(617) 492-7777
$22.50 - $25.50 4b

This is a good 30 minute walk from the meeting; a car rental may be necessary. 4b1

Copley Plaza
Copley Square
Boston, Massachusetts 02116
(617) 267-5300
$33.00 , $40.00 , $48.00 4c

This is in the heart of Boston. Good public transportation is available (subway,taxi, ect.) 4c1

Dunfey's Parker House
60 School Street
Boston Massachusetts 02108
(617) 227-8600
$34.00 , $36.00 , $44.75 4d

This is the "Parker House" of Parker House rolls fame. Also in the heart of the city but near the newly built Government Center. Good transportation available. 4d1

Tredway Motor Hotel
110 Mt. Auburn Street
Cambridge, Massachusetts 02138
(617) 864-5200
$23.00 4e

Just off of Harvard Square in the Harvard - Radcliff area. It is only 2 stops on the Harvard subway to the meeting. 4e1

Sheraton Commander Hotel
16 Garden Street
Cambridge, Massachusetts 02138
(617) 547-4800
$22.00, $24.00 4f

This is also in the Harvard Square area, close to subway and Harvard. 4f1

The Lenox
710 Boylston Street
Boston, Massachusetts 02116
(617) 536-5300
$25.00 - $31.00 4g

This is in one of the pockets of Boston, at the new Prudential Center. Close to subways and other transportation. 4g1

Holiday Inn, Government Center
5 Blossom Street
Boston, Massachusetts 02114
(617) 742-7630
$30.00 4h

This is close to the meeting and only 2 stops on the subway . However, you must walk about 5 - 10 minutes to get the subway. Close to all of Boston. 4h1

(J33435) 9-SEP-75 12:05;;;; Title: Author(s): Robert M. Sheppard/RMS2; Distribution: /KWAC([ACTION]) MC([INFO-ONLY]) RTL([INFO-ONLY]) ; Sub-Collections: NIC KWAC; Clerk: RMS2; Origin: < SHEPPARD, HOTELS.NLS;6, >, 9-SEP-75 12:00 RMS2 ;;;;####;

33435 Distribution

Marilynne A. Sims, Elizabeth F. Finney, Lawrence A. Crain, E. S. VonGehren, Glenn A. Sherwood, Kathey L. Mabrey, Jeanne M. Beck, David A. Potter, Robert N. Lieberman, Terry H. Proch, Ronald P. Uhlig, Susan Gail Roetter, Michael A. Placko, Stanley M. (Stan) Taylor, Elizabeth J. Feinler, Rudy L. Ruggles, Frank G. Brignoli, Robert M. Sheppard, Richard W. Watson, Douglas C. Engelbart, James C. Norton, James H. Bair, Duane L. Stone, Inez M. Mattiuz, Connie K. McLindon, Michael Chinnery, Richard T. LaCoss,

RH 9-SEP-75 12:43 33436

Process Branch

Betty: Sorry I did not get back to you soon but there were problems as you well know at Office-1 yesterday and naturally Office-1 was the only place I had this process branch at. Hope this helps you.

Process Branch

```
(process)                                                    1
   print journal                                             1a
   move plex 1a  mail ,d                                     1b
   goto message                                              1c
   move message  mail ,d                                     1d
   reformat plex 3a                                          1e
   sort message 3a                                           1f
   quit                                                      1g
```

Process Branch

(J33436) 9-SEP-75 12:43;;;; Title: Author(s): Rita Hysmith/RH;
Distribution: /EFF([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk:
RH;

33436 Distribution
Elizabeth F. Finney,

KIRK 9-SEP-75 13:44 33437

In response to JMB 26432 and JHB 33419 on maintining multi-site helps

Just wanted to remind people that up until Jims message, my understanding was that changes were made at BBNB and then copied to other sites, Before anyone copies a file from D-1 to BBNB, it would be wise to check the BBNB file to be sure no uncopied changes remain. It would also be very wise if the procedures including which is the "home" site are written down in <BBNB, XHELP, HELPD, PROCEDURES> and understood by everyone involved. 1

KIRK 9-SEP-75 13:44 33437

In response to JMB 26432 and JHB 33419 on maintining multi-site helps

(J33437) 9-SEP-75 13:44;;;; Title: Author(s): Kirk E. Kelley/KIRK; Distribution: /DPCS([INFO-ONLY]) DIRT([INFO-ONLY]) DMB([INFO-ONLY] dirt) ; Sub-Collections: SRI-ARC DPCS DIRT; Clerk: KIRK;

33437 Distribution

James H. Bair, Elizabeth K. Michael, Richard W. Watson, Elizabeth J. Feinler, Harvey G. Lehtman, Kirk E. Kelley, Laura E. Gould, Jeanne M. Beck, Dirk H. Van Nouhuys, James C. Norton, Delorse M. Brooks, Marilynne A. Sims, Delorse M. Brooks, Elizabeth F. Finney, Beverly Boli, Joseph L. Ehardt, James H. Bair, Robert N. Lieberman, Pat Whiting O'Keefe, James H. Bair, Robert Louis Belleville, Ann Weinberg, Thomas L. Humphrey, Jeanne M. Leavitt, Kirk E. Kelley, Duane L. Stone, Elizabeth J. Feinler, N. Dean Meyer, Dirk H. Van Nouhuys, Douglas C. Engelbart, James C. Norton, Richard W. Watson, Charles H. Irby, Jonathan B. Postel, Priscilla A. Wold, Rita Hysmith, Pamela K. Allen, Delorse M. Brooks, Elizabeth F. Finney, Beverly Boli, Lawrence A. Crain, Kirk Sattley, Susan Gail Roetter, Robert N. Lieberman, Ann Weinberg, Kenneth E. (Ken) Victor, Douglas C. Engelbart

m

m

(J33438) 10-SEP-75 04:28;;;; Title: Author(s): Robert E. Mortenson/RBTM; Sub-Collections: NIC; Clerk: RBTM;

A THINKPIECE ON COMPUTER MESSAGE SERVICES: SOME POLICY ISSUES

by

Ra3y Panko

September 2, 1975

INTRODUCTION

2

The computer is beginning to come of age as a medium for human communication. Computer mail and computer teleconferencing have reached the boarderline of commercial availability, and even more sophisticated "dialogue support systems" are also emerging.. 2a

A number of policy issues are raised by computer message services (a generic term we will use in this paper for computer-based human communications). Among them is whether message services will be classified as processing or communication, a sensitive issue upon which the current uneasy coexistence between time-sharing computer networks and telephone carriers has rested. Broader issues relate to how message service will fit into the regulated communication industries: telephone, telegraph and the postal service, both in the United States and abroad. 2b

Another set of policy issues is whether message service should be allowed to remain a scattering of separate services, as it is evolving today, or whether a broad service that integrates computer mail, computer conferencing and other message services should be encouraged or even mandated. 2c

A third set of issues is how to interconnect message services supplied by different vendors, should diversity of vendors and systems emerge or be sought. 2d

BACKGROUND

3

The idea of message services is hardly new. The telegraph was in use during the civil war, and both Telex and TWX services have become widespread in recent years. The sophisticated use of computer power in message services, however, is a rather new innovation. Primative computer mail systems emerged only with the growth of time-sharing computer networks, and the development of "Sendmessage" software for TENEX PDP-10 computers on the ARPA Net in the late 1960's may be taken as a start date for computer-based message services. 3a

In 1970 and 1971 the first sophisticated systems emerged. Usable computer teleconferencing systems were designed by Turoff at (what is now) the Federal Office of Preparedness, and by Johansen and Schuyler at Northwestern. At the same time the Journal subsystem was built in NLS under Englebart at SRI's Augmentation Research Center (ARC). The Journal subsystem can be loosely thought of as a computer mail system, but it also incorporates a number of features for document control and routing that even today make it the most sophisticated message service available. 3b

In 1973, the sophisticated FORUM teleconferencing system designed at the Institute for the future was tested and developed in experimental conferences. About the same time, TENEX computer mail systems were refined, first by the SND program for composing mail, and later by a succession of special programs designed at Bolt Beranek and Newman (BBN) and at USC's Information Sciences Institute (ISI) for reading Sendmessages. 3c

In January 1974, NLS and its Journal subsystem were offered for use in agencies outside ARC. Later that year, a version of FORUM (called PLANET-1) was offered by Tymshare on an experimental basis, and a system patterned after Turoff's work (General Conferencing System (GCS), by General Conferencing Systems, Ltd.) was offered by the I.P. Sharpe Computer network in Canada and parts of the United States. The year also saw the development of improved ARPA Net Sendmessage reading systems at BBN and ISI. 3d

It would be inaccurate to label the growth of message services as rapid or to state that its future viability is certain. Yet the results to date, albeit with self-selected user populations, have been encouraging. In one of the cleanest quasiexperimental situations, the use of GCS by Canada's Nonmedical Drugs Directorate, an organization of 90 people sent 21,000 mail-like messages in six months, with an average cost, at current rates, of $1.30 per message. Yet the Directorate had special communication problems, so its use may be artificially high. 3e

In general, there is a dearth of information about how message services have been used, even where they have been used extensively. Although there has been speculation that computer mail has been used extensively on the ARPA Net (i.e., TENEX sendmessages), ARPA never collected traffic data on mail activity, nor to date has its new successor in operating the network, the Defense Communication Agency. Commercial time sharing networks have not discussed their message service traffic. 3f

To our knowledge, only three serving organizations have systematically collected traffic data. The Institute for the Future has studied the use of FORUM under an NSF contract. This was the only major research effort involving computer message services, and it only probed teleconferencing. ARC has systematically collected detailed traffic data on its Journal system since 1971, but this data base has not been analyzed in depth. General Conferencing Systems has also kept traffic data for the one organization that has used GCS to date, but no detailed analysis has been done on the data. 3g

Although the future is uncertain, there is considerable activity in the field. The Advanced Research Projects Agency's Information Automation project, which is being conducted at ISI, is developing an advanced military message service, based upon NLS file structure but eschewing most of the sophisticated features of the Journal system. The IA may be tested experimentally in 1976 or 1977 in the COTCO Naval command in Hawaii and in the Army Materiel Command, which is also an NLS user. 3h

ISSUES RAISED BY CURRENT DEVELOPMENT TRENDS

4

While message services are not new, the computer has added new dimensions to message services. Even in relatively traditional computer mail, the computer allows multiple-addressing, the specification of pre-prepared documents for transmission, online lists of user addresses and even interactive message preparation and editing systems. Overall, computer mail is rapidly expanding to encompass document preparation (in NLS, document production and even collaborative report writing came before computer mail). 4a

Computer teleconferencing is another novel communication device made possible by the computer. In computer conferencing, online conferees type messages which can be read by the entire group (except for private messages). At the same time, the messages are being recorded, and participants can later respond to the recorded dialogue as if they were present. 4b

The Journal system has attempted to broaden the scope of computer message services even further. As in teleconferencing, all journal entries (unless they are private) are recorded and are open for general retrieval. In addition to delivering message directly, the Journal system allows users to forward messages to others or to search through all messages by author, date or title word. Other parts of the Journal system that were designed but not fully implemented would allow streams of messages to be strung together as conferences or as articles in a scientific journal; a single entry might be in several strings. Similarly, SRI designed but did not develop Journal tools to point the user to newer versions of a document if it has been rendered obsolete or updated. 4c

Although the Journal system was designed in 1969 and at the time of its implementation in 1971 was integrated to document composition tools, systems designed since the Journal have tended to shy away from its attempt at generality, trying instead to be teleconferencing or computer mail tools alone, or at best tieing teleconferencing and mail services together as separate tools. Although the intent of newer systems, to simplify message

transmission and reception, is certainly desirable, there is some danger involved in building isolated tools. The danger is that later integration of document preparation, document control, retrieval of collections and so forth may be partially and even heavily compromised. 4d

The current state of the telephone system reflects the problems of limited conceptualization. Electronic switching, which has already been installed in many areas, could make possible numerous new services, for example automatically transferring calls to other numbers when a person is away, recording messages for later delivery to many people, or facilitating computer-assisted instruction. Yet because the telephone system's original technology could not support such services, electronic switching's benefits will be felt only slowly, as the existing plant is gradually replaced. Even then, services may not be integrated, especially if certain services, for example, automatic answering, are implemented first by other means. 4e

It is impossible, with today's knowledge, to assess how much flexibility and value, if any, would be lost by a piecemeal development of message services during the coming years. It seems desirable, however, to build test systems to probe the value of integrated service tools. One attractive alternative is to update and fully implement the design of the Journal system in NLS, to take advantage of its prior investment, its four-year data base on usage, and its experienced user community that could serve as a test bed for new services. 4f

POLICY ISSUES RAISED BY TRADITIONAL REGULATORY PATTERNS

5

Traditionally, communication services have been controlled by monopolistic vendors with rather well-defined areas of responsibility and protection. The telephone, telegraph and postal services all have their own, protected servers in the United States. Both telephone and telegraph are dominated by virtually-monopolistic firms, while the postal service is run by a quasipublic agency. Other countries have different divisions of authority for communication services. 5a

Time-sharing computer networks, even before the advent of message services, traditionally disturbed the telephone monopolies in the United States and elesewhere. An FCC inquiry begun in 1968 (Docket No. 16976) created an uneasy basis for coexistence between time-sharing computer networks and telephone companies, balanced on the principle that time-sharing servers could certainly provide functions that were "processing," rather than "communication," in nature. The FCC also noted, but did not elaborate upon, the fact that processing and communication formed a continuum. In the middle ground, there could be grave policy questions. Message services, it would seem, tend to fall into that middle ground, and this alone may reopen the analysis of time-sharing computer networks. 5b

Because computer message services can cover so wide a variety of functions, they may affect traditional servers beyond the telephone companies. Telegraph, Telex and TWX services are obviously reminscent of the new computer message services. Even the U. S. Postal Service, which has already established links to message services (with mailgrams) and which has, from time to time, expressed interest in electronic mail, could be affected. 5c

To further complicate matters, the Federal Government and particularly the Defense Department have traditionally exerted a measure of control over their communication uses, and a similar measure of control would probably be extended to computer based message services. 5d

International computer message services would raise even more questions, since different countries have developed different ways of assigning control over telephone, telegraph, mail and remote computing services. The problems traditionally encountered in overseas telegraph and telephone could be dwarved by problems that will be encountered by international message services. 5e

INTERCONNECTION ISSUES

6

At present, several companies offer message services of differing kinds. If the Federal, State and Local governments allow this conditiona to continue, a healthy diversity may arise, provided that a technical means to interconnect servers can be created. A similar problem emerged when telephone service was maturing and hundreds of independent telephone companies existed, using incompatible equipment. 6a

Telephone interconnection was finally settled by standardizing equipment. While this was desirable at the time, it imposed great hardship on many servers and later served to make change difficult as improved technology came about. For computer message services, the relevant issues may be how best to create standards for message transmission, for message specification fields, for national directories and "phone numbers" for users, and so on. 6b

As in the cases of the telephone and computers, the issue of interconnection and standardization has potential antitrust implications. Historically, the emergence of a single dominant company in the telephone industry has often been viewed with some disfavor by critics, and recently there has been concern that I.B.M.'s standards-setting powers have acted to stiffle competition. Similar controversies can be expected to arise as computer message service interconnection becomes an issue. 6c

CONCLUSIONS

7

Unlike several other new communication services, such as cable television, pay television and satellites, computer message services have been maturing away from the glare of systematic research and policy debates. Message services have reached boarderline commercial availability during this period of benign neglect. Whatever the past value of neglect, however, computer message services raise too many policy issues to remain forever in the shadows. Natural adversary pressures are likely to bring certain issues to the fore quickly, for example, how message services may upset the traditional balance between computer networks and telephony. Other potentially important issues, such as interconnection and the integration of various message services, may not be brought to light naturally until the opportunity for action is passed. 7a

Three specific actions seem needed if policy questions raised by computer message services are to be addressed while there is still time to make basic decisions. First, the policy issues discussed in this note must be developed and expanded. Second, existing usage data should be analyzed to probe the outlook for message services, and data from such systems as the ARPA Network must be collected to expand the data base. Third, an advanced message service must be built and field tested, to probe the desirability of creating integrated message service systems. 7b

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Policy Thinkpiece

(J33439) 9-SEP-75 21:07;;;; Title: Author(s): Raymond R. Panko/RA3Y; Distribution: /RA3Y([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: RA3Y; Origin: < PANKO, THINKPIECE,NLS;13, >, 6-SEP-75 18:27 RA3Y ;;;; ####;

33439 distribution
Raymond R. Panko,

KIRK 7-SEP-75 21:00 33441

My programming time

When my part time status was agreed upon, RWW decided to give me over entirely to documentation. At that time, I did not see how it would be possible. Now it is clear there is no one to take over all of my programming responsibilities. Therefore, it seems I will continue to be doing some programming. In harmony with my recent hard won responsibility for Help and my entire professional direction, I expect Help to have priority in any future programming time I have as long as there is programming time to be allocated for its development. I am looking forward to working with Dave Smith. We certainly need to have more time allocated in this area. 1

My programming time

(J33441) 7-SEP-75 21:00;;;; Title: Author(s): Kirk E. Kelley/KIRK;
Distribution: /DAV([INFO-ONLY]) EKM([INFO-ONLY]) RWW([
INFO-ONLY]) JAC3([INFO-ONLY]) BEV([INFO-ONLY]) ;
Sub-Collections: SRI-ARC; Clerk: KIRK;

33441 Distribution
David C. Smith, Elizabeth K. Michael, Richard W. Watson, Jan A. Cornish, Beverly Boli,

DVN 10-SEP-75 10:32 33442

Working With the Intelligence Community

Doug, as you know I am not given to invovling my personal values much in my paid work. I try to do honorably what I am paid for. Yet I feel I have to comment on our conversation of the other evening. As a citizen I have been for a long time horrified and ashmaned of many of the functions of the CIA, NSA, etc. I have have, for example, written my representnaitves uring that they be disbanded and that those members of the organizations who have committed crimes be prosecuted in the normal way as crimnals. Recent events have fanned these feelings: this week it was a chache of poinsen hidden from the president, last week it was the assenation of general Schneider. Do you really want to do busines with these people? 1

Feeling this way and having made no secrete of my feelings I cannot help being somewhat uncomfortable about the possibility of working closely with them. I don't mean that I couldn't or wouldn't. Such a stance would seem to me childish. Yet going failing to expresse my feelings to you seems dishonest. 2

There is also a question of short term self interest. I am far from alone in these feelings and when Senator Church gets through there seems a chance that there will be no CIA or it will be much dimihsed. Do you want to attach yourself to a sinking ship? 3

I also could not help thinking to your resolution of a year or so ago not to seek more funding in the defense establishment, for reasons that were mostly seprate from those I cited above. Except for NSF your list sounds like a who's who of defense research. In the mean time the IRS, the Library of Congress, and the Civil Service Commission have installed expensive systems for the purpose of preparation of distributed documents. You could argue that they got away while out eyes were down the same old rat holes. 4

Working with the Intelligence Community

(J33442) 10-SEP-75 10:32;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /DCE([INFO-ONLY]) EKM([INFO-ONLY]) KIRK([INFO-ONLY]) BEV([INFO-ONLY]) JBP([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: DVN; Origin: < VANNOUHUYS, CIA.NLS;2, >, 10-SEP-75 10:20 DVN ;;;;####;

33442 Distribution
Douglas C. Engelbart, Elizabeth K. Michael, Kirk E. Kelley, Beverly Boli, Jonathan B. Postel,

nls training

(J33443) 10-SEP-75 12:43;;;; Title: Author(s): Thomas J. Dames/TJD;
Distribution: /ESV([INFO-ONLY]) PAW2([INFO-ONLY]) ;
Sub-Collections: NIC; Clerk: TJD;

33443 Distribution
E. S. VonGehren, Priscilla A. Wold,

this isa test.

(J33444) 10-SEP-75 12:50;;;; Title: Author(s): Thomas J. Dames/TJD;
Distribution: /SGR([ACTION]) PAW2([INFO-ONLY]) ;
Sub-Collections: NIC; Clerk: TJD;

33444 Distribution
Susan Gail Roetter, Priscilla A. Wold,

SENDMAIL EXERCISE

THIS IS STATEMENT NUMBER ONE. 1

this should be 1b 1a

THIS IS STATEMENT NUMBER TWO. 2

STATEMENT NUMBER THREE. 3

Statement number four. 4

THIS IS STATEMENT NUMBER 5 5

This should be statement nr 5b. 5a

SUBSTATEMENT NR 5B 5b

THIS IS AN EXANPLE OF BOTH AN OVERLONG LINE AND A LINE HAVING A
LITERAL CARRIAGE RETURN THICH APPEARS HERE
THIS SHOULD BE A NER LINE IN THE SAME STATEMENT. 6

SENDMAIL EXERCISE

(J33445) 10-SEP-75 12:54;;;; Title: Author(s): David L. Grobstein/DLG; Distribution: /DLG([ACTION]) DLG([INFO-ONLY]) TJD([INFO-ONLY]) PAW2([INFO-ONLY]) ; Sub-Collections: NIC; Clerk: DLG; Origin: < GROBSTEIN, WAR.NLS;2, >, 10-SEP-75 09:08 DLG ;;;;####;

33445 Distribution
David L. Grobstein, David L. Grobstein, Thomas J. Dames, Priscilla A. Wold,

this is number one 1

this is a new line 2

this is number two, 3

this is statement number, three more 4

more 5

this is four 6

this is five 7

this is six 8

(J33446) 10-SEP-75 12:57;;;; Title: Author(s): Thomas J. Dames/TJD;
Distribution: /PAW([ACTION]) ; Sub-Collections: NIC; Clerk: TJD;
Origin: < DAMES, WAR,NLS;2, >, 10-SEP-75 09:22 TJD ;;;;####;

33446 Distribution
Paul A. Wintz,

SECOND PRACTICE.2

THIS IS STATEMENT NUMBER ONE. 1

this should be 1b 1a

THIS IS STATEMENT NUMBER TWO. 2

STATEMENT NUMBER THREE. 3

Statement number four. 4

THIS IS STATEMENT NUMBER 5 5

This should be statement nr 5b. 5a

SUBSTATEMENT NR 5B 5b

THIS IS AN EXANPLE OF BOTH AN OVERLONG LINE AND A LINE HAVING A
LITERAL CARRIAGE RETURN THICH APPEARS HERE
THIS SHOULD BE A NER LINE IN THE SAME STATEMENT. 6

SECOND PRACTICE.2

(J33447) 10-SEP-75 12:59;;;; Title: Author(s): David L. Grobstein/DLG; Distribution: /DLG([INFO-ONLY]) ; Sub-Collections: NIC; Clerk: DLG; Origin: < GROBSTEIN, WAR.NLS;2, >, 10-SEP-75 09:08 DLG ;;;;####;

33447 Distribution
David L. Grobstein,

Charging My Time

Some time ago Doug and Dave agreed that ARC overhead swould pay my slalary for the first three months of my DPCS neucleation in the Information Sciences Group. In fact this has not been happening and Dave and I figured out today that it was because of a misunderstanding on my part of how to use the numbers to do that. I have just signed time card revsions that will in effect return 130 hours of my time since I have been here from ISG's overhead to ARC's. The remaining hours since I came to ISG were charged to various other projects. From now on my neucleation work will appear on ARC overhead until the end of September or until some other change is made.

1

Charging My Time

(J33448) 10-SEP-75 14:31;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /JCN([INFO-ONLY] you should read this) DCE([INFO-ONLY]) RWW([INFO-ONLY]) DRB([INFO-ONLY]) NRN([INFO-ONLY]) &DOCPLAN([INFO-ONLY]) KAM([INFO-ONLY] docplan notebook please) ; Sub-Collections: SRI-ARC DOCPLAN; Clerk: DVN;

33448 Distribution
James C. Norton, Douglas C. Engelbart, Richard W. Watson, David R. Brown, Norman R. Nielsen, Documentation Development Production and Control Community Planning Group , Karen An Mai,

DCE 10-SEP-75 20:52 33450

To POOH -- Hold that Line, Kid

Anne: I get the impressioon that things are a bit hectic for you and your students down there. Just wanted to tell you that you are just getting some of what are called "maturing experiences." You know, like a wilderness survival test, or swimming the Channel or something. This is the sort of circumstance that may, or may not, have a lot to do with our eventual success with the Gunter experiment. Can't really tell. But the way to work it is to do an honest job of really trying to help it all work, keep cool enough to avoid making things worse, and keep in mind that the equipment maintenance is a valid concern but is someone else's RESPONSIBILITY. My first worry is that you don't get too upset - it won't hurt you to get a little upset, or to work like hell, but I really don't want you to get UPSET. Then my next worry is for Larry Crain -- is there anything we can do to help him get the backing he needs and apparently hasn't gotten. Someplace after that I'd worry about the producttion, even if we all do feel that it is VERY important, you two guys getting supported comes before the production people getting supported. Didn't mean to get too theorettical. Good luck. You have my best wishes, Kid. Best regards, Doug 1

DCE 10-SEP-75 20:52 33450

To POOH -- Hold that Line, Kid

(J33450) 10-SEP-75 20:52;;;; Title: Author(s): Douglas C. Engelbart/DCE; Distribution: /POOH([ACTION]) RWW([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: DCE;

33450 Distribution
Ann Weinberg, Richard W. Watson,

DCE 11-SEP-75 04:16 33451

Thanking Jeff and Dave H for shared-screen fixup

Jeff and Dave: I really appreciate having the shared-screen facility up. Today will perhaps present the opportunity (challenge) to try it -- yesterday I had to tell people NLS had it. Just in time. It will bea very important feature to have useable over the coming few months as we struggle like never before to promote new business (and hold the old). Best regards, Doug

1

DCE 11-SEP-75 04:16 33451

Thanking Jeff and Dave H for shared-screen fixup

(J33451) 11-SEP-75 04:16;;;; Title: Author(s): Douglas C. Engelbart/DCE; Distribution: /JDH([ACTION]) JCP([ACTION]) BLP([INFO-ONLY]) JCN([INFO-ONLY]) RWW([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: DCE;

33451 Distribution
J. D. Hopper, Jeffrey C. Peters, Bruce L. Parsley, James C. Norton, Richard W. Watson,

cross impact memo

Sept. 8 memo 1

Company Confidential 1a

Date: Sept. 8, 1975. 1a1

Memo from: Philip Feldman, Supervisor - Business Planning 1a2

Memo to: Ken Hoyle, AVP - Planning 1a3

Copy to: Jack Hillier, AVP - Regulatory Matters 1a4

Copy to: Al Moore, AVP - Intercorporate Policy 1a5

Copy to: Don Atkinson, General Supervisor - Business Planning 1a6

Copy to: Larry Wilson, Director - Public Affairs 1a7

Copy to: Larry Day, Staff Supervisor - Business Planning 1a8

Copy to: Suren Gupta, Corporate Environment Research Manager 1a9

Subject: Cross Impact Matrix of Corporate Social Responsibility (Session 2) 1a10

Synopsis 1b

This memo documents the first phase of a cross impact investigation into the implications of corporate responsibility. The matrix in Appendix 2 confirms the a priori assumptions that there are many ways of improving Bell's image in the eyes of regulators and consumers through decisions based on social responsibility studies. However, it also raises the question of whether the direct costs of studies and indirect costs of specific decisions will be balanced by increased revenues accruing from a more lenient regulatory atmosphere. Figure 1 is an extension of the original problem and, subject to comments by the participants, will form the basis for the second phase of sessions. 1b1

Background 1c

A series of memos involving Public Relations, Intercorporate Policy, Regulatory Matters and Planning led to a preliminary cross impact session involving corporate social responsibility on Aug. 22. In that meeting, actions available to Bell and possible impacts were discussed and ten specific events were defined (see Appendix 1). The purpose of the second meeting on

Sept. 5 was to look at their interrelationships in cross impact form. 1c1

Cross Impact Session on Sept. 5/75 1d

The second session went very smoothly from a technical viewpoint. Participants had a common understanding of the variables and little time had to be devoted to re-definition. Discussion focussed mainly on the effects of social responsibility on costs and revenues. This was mainly due to different viewpoints on the costliness of certain decisions relative to increased rates that would result indirectly. Though a brief feedback discussion indicated the desirability of a more complex matrix and wider participation by the departments, it was felt that the process itself was an efficient method of drawing out opinion and structuring discussion (see Appendix 2). 1d1

Findings 1e

"Bell Nationalized" 1e1

Appendix 3 indicates that the nationalization of Bell will not be affected one way or the other by Bell actions in the social responsibility sphere. Its probability is only .1 because of the huge capital outlay along with normal factors acting against public takeover. This event will, therefore, not be discussed further within the context of this exercise. 1e1a

"More Socially Responsive" 1e2

The .6 probability indicates that Bell will probably become increasingly socially responsive with time. This is reinforced by the plus signs in its column which indicate that any action, including "status quo" will tend to increase responsiveness (see Appendix 4). 1e2a

"Consumers Perceive Responsibility" 1e3

Interestingly, despite the tendency towards more responsibility, there is only a .4 chance that consumer groups will perceive the change. This is reinforced by the column of impacts which is lower in magnitude than corresponding impacts on professionals and governments. This is due to less information making its way to consumers along with the in-built biases of many interventionist-type groups (see Appendix 5). 1e3a

"Financial Costs" 1e4

Discussion of this topic proved to be the most intense and decisive of the meeting. The dispersion as well as the raw average has been included on Appendix 6 to show the degree of dissensus. Essentially one school of thought agreed with the corporate responsibility literature which generally believes that responsibility more than pays for itself. The opposing viewpoint was that though the cost of studies is not that significant, the opportunity costs of providing certain uneconomical services will be very high, particularly in the five year period examined. 1e4a

The .2 probability of the event indicates that the net financial costs will not be significant. However, the concrete examples during the discussion which showed how costs could easily mount indicated that further thinking is required on the interrelationships of rate increases and socially responsible decisions by Bell. An interesting observation is the perceived importance of the cost factor. Though the literature often stresses that a company must often subordinate its personal interests for the public good (as long as it does not destroy itself in the process), the luxury of corporate responsibility for its own sake did not come up in the discussion. 1e4b

"Status Quo" 1e5

Appendix 7 indicates that from all possible angles, the "status quo" option gives worse results than the alternative strategies. This is not surprising since the underlying reason for convening these cross impact sessions was to explore ways of improving on our present posture in the responsibility area. Since, to the participants' dismay, it is not self-evident that Bell must behave responsibly in its own self interest, we will now have to explore the mechanisms in which it can profit over the long term by becoming more responsive to social needs. 1e5a

Phase Two of Cross Impact Analysis 1f

The tone of memos which preceeded the cross impact sessions implicitly assumed that the costs of behaving responsibly would be balanced by direct benefits, such as more generous rate approvals. However, discussion of the actual effect of individual actions on consumer and government groups as well as anecdotal evidence on the costs of being a good corporate citizen led the participants to believe that a further discussion of the financial implications would be needed. For

this reason, the "Financial Costs" event will be split up into three segments: "significant costs of performing and monitoring studies"; significant indirect costs of basing decisions on studies"; and, "increased revenues resulting from a more lenient regulatory atmosphere". 1f1

A second source for improving the scope of the analysis came in discussing the precise definitions of each action. It was evident that some actions could be combined more easily than others, e.g., it is possible to have a steering committee and hire an external consultant. Figure 1 incorporates the two suggestions and, after modifications by the participants will form the basis of the second phase of the analysis. 1f2

Conclusions 1g

After completion of the first phase, one could sense a feeling of malaise on the part of participants. This was not due to the quality of discussion or the businesss-like atmosphere of the meeting for both had been as good as anyone expected; rather it was due to the concretization of a possible imperfection in the whole corporate responsibility movement. In "selling" their ideas, responsibility specialists often accent the good will payoffs of responsible actions and assume that though these benefits cannot be quantified, they must certainly more than balance the comparatively small costs of performing studies and changing an occasional "go" decision to "no-go" and vice-versa. If this is not the case, business managers must decide whether it is philosophically right to behave responsibly even though it will indirectly cost the corporation time and resources. These questions will be addressed in phase two through the matrix on Figure 1. If any recipients of this memo would like to comment or make additions before the next meeting, they can contact Phil Feldman at 870-5917 (620 Belmont, #1105). 1g1

PF 11-SEP-75 07:27 33454

cross impact memo

(J33454) 11-SEP-75 07:27;;;; Title: Author(s): Phil Feldman/PF;
Distribution: /LHD([ACTION]) ; Sub-Collections: NIC; Clerk: PF;

33454 Distribution
Lawrence H. Day,

EJK 11-SEP-75 08:47 33455

Helpful Hint - Multics Printer

The somewhat chaotic state of our printers has effectively cancelled out a method of operation proposed wherein one of our printers would have wide paper on it at all times and the other would have regular size paper. 1

At the present time the printer on port 4 has regular sized paper and the port 5 printer is sick. 2

This leaves us with the alternatives of having the paper changed everytime we want to print a file requiring wide paper, or of using some other printer. 3

I have gone through one of the ways that you can transfer a file from NLS to Multics and then print it out on the Multics printer which has good quality wide, white paper. 4

5

This is ONE way to do it: 6

6a

IN NLS: 6b

Load File AFILENAME<cr> (Of course, use your own filename) 6b1

Output Terminal File BFILENAME<cr> (use your own variant of your filename) 6b2

N. B. I found out the hard way that Output Sequential File and Output Printer File do NOT work. 6b2a

After this process is completed you are ready to print out your BFILENAME on the Multics printer. 6b3

6b4

Logout from NLS and close your connections to Office-1. Then connect to 18 (Radc Multics) After logging out of Office-1, type @1 18<cr> 6c

6d

IN MULTICS: 6e

1<sp>Yourname<cr> (Start the login procedure. NOTE: In Multics the case counts, the first letter of your name must be capitalized) 6e1

Helpful Hint - Multics Printer

your password<cr> (Your Multics password) 6e2

user<sp>_ftp<sp>offc<cr> (offc=Office-1 You are using file transfer protocol to get to Office-1 NOTE: The character before ftp is an underline character. On the Imlac it looks like a left arrow. I presume that on the Imlac if you use the 6 on the right hand cluster of numbers you get a left arrow and that this serves the function of typing an underline on the TTY terminals. Try it.) 6e3

user<sp>yourname<cr> (You must type this. Start logging into Office-1) 6e4

pass<cr> (You must type this) 6e5

your office-1 password<cr> 6e6

status<cr> (Shows yur Office-1 Directory) 6e7

get<sp>cfilename<sp>-from<sp>bfilename.txt<cr> (The cfilemname will be the name of your multics file. The bfilename is the name of yur Office-1 text file.) 6e8

quit<cr> (after transfer is complete) 6e9

ls<cr> (lists Multics files) 6e10

dp<sp>cfilename (for one copy NOTE: You must copy cfilename exactly as it appears in the Multics directory - case counts) 6e11

dp<sp>-cp<sp>n<sp>cfilename (for n copies) 6e12

After this is finished, you will get a respnse indicating that a certain number of jobs are queued and that yours is in the queue. All you need do then is to logout. 6e13

logout<cr> 6e14

6f

In about 15 minutes or so, depending on the size of the queue, your printout will be ready for you in the pigeon hole designated by last-name initial. 6g

If you have a Multics account it may not be set up properly to do this. See Bob Walker. 6h

If you do not have a Multics account. See Bob Walker. (If you

have an Office-1 Directory you probably have a Multics account already)

6i

EJK 11-SEP-75 08:47 33455

Helpful Hint - Multics Printer

(J33455) 11-SEP-75 08:47;;;; Title: Author(s): Edmund J. Kennedy/EJK; Distribution: /RADC([INFO-ONLY]) ; Sub-Collections: RADC; Clerk: EJK;

33455 Distribution

Rocco F. Iuorno, Thomas J. Bucciero, Roger B. Panara, John L. McNamara, Joe P. Cavano, Duane L. Stone, Marcelle D. Petell, Thomas F. Lawrence,
Wolf-Hasso Kaubisch, Kim Cynthia Carter, Samuel L. Ruple, Stephen P. Sutkowski, Richard Calicchia, William W. Patterson, Francis J. Hilbing, Robert K. Walker, Frank P. Sliwa, Joe F. Femia, Roger W. Weber, Melville J. Draper, Robert D. Krutz, James W. Hyde, David T. Craig, Fred N. Dimaggio, Robert E. Doane, Richard Nelson, William F. Stinson, Daniel R. Loreto, John B. McLean, Murray L. Kesselman, Edward F. LaForge, Agatha C. Deconde, Alan R. Barnum, Larry M. Lombardo, Roberta J. Carrier, Richard H. Thayer, Frank J. Tomaini, Mike A. Wingfield, Edmund J. Kennedy, Ray A. Liuzzi, Donald VanAlstine, Deane F. Bergstrom, Frank S. LaMonica, William E. Rzepka

DVN 11-SEP-75 09:09 33456

Notes on Organization of Multi-Client Communities at SRI I, Chemical Information Services and Advanced Automantion

On August 27 I met with John Dean, the director of Chemical Information Services. Chemical Information Services publishes principally a bookshelf of thick volumes of market information on chemicals: prices, names of users, descriptions of market trends, etc. There are over 700 subscribers. It is a noteworthy exercise in controlled documentation. Articles are updated within three years and mailed out to subscribers who update to volumes. In addition, they publish some other books and answer questions from customers free "if they can answer them off the top of their heads." 1

When Dean became manager the program had been around 23 years. It had many fewer subscribers and articles were as much as seven years out of date. He increased subscription by approaching new classes of potential subscribers, e.g., institutions like banks that do financial planning. He solved the second problem by hiring someone who brought the production cycle under control. I commented that the DDPCS might need consultation from such a person. He did not repply to that but said that much of the scheduling was based on knowledge of the subject, e.g., the expert who writes an article on a given field is able to predict when it will need to be updated. 1a

I pressed him on control of the project and how he found customers. He said that he controlled what they published, that they received little formal feedback on what they should do from customers, few complaints. He credited high acceptance to his authors being in good contact with important customers through their general contact with the field and through answering questions. 1b

Dean spends about one half of his time promoting and about half administering. Promoting basically consists of identifying likely customers by class and then seeking some point of personal contact through the project's now very extensive web of contacts. Dean is very agressive in this matter. For example, a Canadian utility recently subscribed. He is going to fly there to find out why; should he be looking for utilities as customers? CIS also publishes a newsletter to a distribution which includes many potential customers and includes "intriguing tidbits of information". 1c

Note that CIS differs from a possible DDPCS Community in that it is selling access to information not tools, that relative to NLS it sells a cheap, well-defined product to a large number of users with a clear line between buyer and seller. 1d

On Tuesday, Septebmer 2, I talked with Charlie Rosen about "Industrial Participation in a Program of Advanced Automation". He

gave me a copy of the proposal circulated to industrial customers. Parts of the proposal are of sufficient interest to the DDPCS community that I reproduce excerpts here: 2

"I INTRODUCTION 2a

At present twelve industrial companies are affiliates of this program. We are hereby soliciting the participation of additional companies, up to a maximum of approximately 20. 2a1

It is our plan to obtain participation from as broad a representative cross secton of the U.S. industry as possible. Each participating company will be expected to designate one key individual who would be directly concerned with monitoring our work and who will also be part of an advisory council to guide the reserch. Quarterly workshops will be held to ensure timely transfer of information, including demonstrations held of working systems. Further, representatives from each company will be entitled to two man-weeks' consultation with SRI staff at prearranged times, during which transfer of detailed technical information relevent to this project can be made, or specific problem areas can be discussed. 2a2

Formal reports will be issued as part of the requirements of the NSF grant and, therefore, the work performed will be in the public domain, available to all industry. However, industrial participants will have a more direct opportunity to influence the direction or course of the project, as well as a considerable lead-time advantage in having early detailed knowledge of important results and close access to informed SRI staff for discussion and counsel regarding specific applications. 2a3

The Artificial Intelligence Center ar SRI has been developing a program in advanced automation for the past four years, initially financed by internal funding. A survey of industrial needs was made, including in-depth discussions with key people representing diverse industries. Based on these preparatory efforts, a two-year program was proposed to the National Science Foundation to conduct goal-oriented research in advanded automation. NSF approved this program starting April 1, 1973. We have submitted a new proposal for a two-year continuation starting in April 1, 1975, with a reasonable expectation for its acceptance. An abridged version of this new proposal (ISU 74-212) is presented in the attached Appendix. 2a4

A key element of the on-going program is the participation by

industrial companies both in funding and in providing technical support. Such participation is intended to aid in attaining a major goal--i.e., to help guide the research so that ti results in early and effective technological transfer to industry. The following is extracted from the text of the original proposal: 2a5

A principal role for the industrial participants is for them to acquaint the Artificial Intelligence scientists with the real problems to be solved, and to guide and assist them in their choice of constraints that can be economiically applied to simplify machine requirements. Other important contributions by industrial pariticipants include: 2a5a

(1) Assistance in the evaluation of the economic consequence (cost effectiveness, worker acceptability, etc.) of proposed techniques. 2a5b

(2) Considerations of what design changes are possible and which can be economically made to permit assembly/inspection to be performed more readily or simply by the new mechanized equipment. 2a5c

(3) Determination of the system consequences of introducing the new mechanization into existing producton line, such as matching throughput, the effect of breakdowns, backup strategy, and others. 2a5d

III PROPRIETARY HANDLING 2b

Specific interests and objectives of each participating client will be handled on a confidential basis. Market or technical information obtained from any company will not be disclosed individually; it will be used only for general guidance of the experimental work to maximize useful output. Should a company desire to sponsor a special investigation in the course of this project, such sponsorship can be arranged on the basis of a separate cntract, with complete confidentiality maintained as to purpose, scope, and results. 2b1

During the course of the program, the Institute reserves the right to respond to individual requests from government agencies or commercial and industrial clients for specific studies or development work in the general area of advanced automation. All such requests will be carefully screened to avoid direct conflict of interest with the proposed program. 2b2

IV REPORTS AND LIAISON 2c

Interim, annual, and final reports will be issued as required by the NSF grant. Ten copies of each will be issued to each participating client. Supporting office services will be provided by SRI to key personnel fom each participating client at mutually agreed upon times, for periods not exceeding two weeks per year per client." 2c1

A great deal of work went into this community. First, Charlie spent 6 months trying to promote a community. This effort included visiting many industrial organizations, writing papers, and giving talks. It flopped, because, Charlie said, the customers weren't oriented towards cooperaton, they feared the appearance of collusion in restraint of trade, and they did not see the need for the technology (did not think it would save money.) 2d

Then in 1973 one man in NSF's RANN program became interested in this issue under the ruberic of increasing productivity. The result was an arrangement whereby RANN essentially pays two-thirds of the cost as noted above. 2e

Charlie reports getting new clients through continued promotional activity of the type described above. SRI's history of such activity contributed to getting the RANN support. He spends about half of his time now on promotion and other people spend a half a person's worth of time. Although one new customer has appeared, the total is down. 2f

When I asked who controls what development is done, Charlie pointed to himself. But he listens closely to what he hears from clients. It sounds as if clients do not control development formally but have quite a lot of effect. 2g

Seed money like that supporting the Industrial Automation project would surely be nice for DDPCS. The Editorial Processing Center Project is such money in a limited domain. It is not clear how easy searching for it would be to find more such money, whether searching for it would be worth the effort. 2h

Note that this project integrates development work and system analysis consutling services. 3

I have appointments in the next two weeks with Reggs Montfort in Long Range Planning and Rick Peters in Telecommunications. 4

DVN 11-SEP-75 09:09 33456

Notes on Organization of Multi-Client Communities at SRI I, Chemical Information Services and Advanced Automantion

(J33456) 11-SEP-75 09:09;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /KLM([ACTION] copies to notebook, norm, and Dave please) DOCPLAN([INFO-ONLY]) ; Sub-Collections: SRI-ARC DOCPLAN; Clerk: DVN; Origin: < MABREY, CHEM-INFO-SERVICES.NLS;1, >, 9-SEP-75 17:02 KLM ;;;;####;

33456 Distribution

Kathey L. Mabrey, Raymond R. Panko, James H. Bair, David R. Brown, Glenn A. Sherwood, N. Dean Meyer, Kathey L. Mabrey, Norman R. Nielsen, Thomas L. Humphrey, Robert Louis Belleville, Elizabeth K. Michael, Richard W. Watson, James C. Norton, Robert N. Lieberman, Pat Whiting O'Keefe, Douglas C. Engelbart, Dirk H. Van Nouhuys,

DLG 11-SEP-75 11:58 33457

TEST 9-11-75

NULL MESSAGE TO SEE IF IT GOES TWICE (FOR ACTION AND INFO. 1

DLG 11-SEP-75 11:58 33457

TEST 9-11-75

(J33457) 11-SEP-75 11:58;;;; Title: Author(s): David L. Grobstein/DLG; Distribution: /DLG([ACTION]) DLG([INFO-ONLY]) ; Sub-Collections: NIC; Clerk: DLG;

33457 Distribution
David L. Grobstein, David L. Grobstein,

TJD 11-SEP-75 12:01 33458

pay raise

super govt workers get raises today hooray 1

TJD 11-SEP-75 12:01 33458

pay raise

(J33458) 11-SEP-75 12:01;;;; Title: Author(s): Thomas J. Dames/TJD;
Distribution: /PAW2([INFO-ONLY]) DLG([INFO-ONLY]) ;
Sub-Collections: NIC; Clerk: TJD;

33458 distribution
Priscilla A. Wold, David L. Grobstein,

RA3Y 11-SEP-75 15:17 33459

A Teleconference on a New Journal System

Doug has asked me to coordinate the promotion of a new and more beautiful Journal system. I would appreciate you comments on what featues the next-generation journal system should have. Please send them to my ident, RA3Y.

I will put all suggestions in a file in my directory: Panko,Transcript. Please feel free to read them and respond to any items by sending comments to me via Sendmail (no Sendmessages, please).

About titles. When you send something, make the title as specific as possible. For example, don't remark that it is for the Journal teleconference. If we keep titles specific, we may be able to search for them.

Panko,transcript, also contains a number of "exhibits," i.e. old citations dealing with the journal system.

Thanks, Ra3y

1

A Teleconference on a New Journal System

(J33459) 11-SEP-75 15:17;;;; Title: Author(s): Raymond R. Panko/RA3Y; Distribution: /SRI-ARC([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: RA3Y;

33459 Distribution

Douglas C. Engelbart, Martin E. Hardy, J. D. Hopper, Charles H. Irby, Harvey G. Lehtman, James C. Norton, Jeffrey C. Peters, Dirk H. Van Nouhuys, Kenneth E. (Ken) Victor, Richard W. Watson, Don I. Andrews, David C. Smith, Mary Ann Kellan, Buddie J. Pine, Andy Poggio, David L. Retz, Laura J. Metzger, Karolyn J. Martin, Jan A. Cornish, Larry L. Garlick, Priscilla A. Wold, Pamela K. Allen, Delorse M. Brooks, Beverly Boli, Rita Hysmith, Log Augmentation, Joseph L. Ehardt, Raymond R. Panko, Susan Gail Roetter, Robert Louis Belleville, Rene C. Ochoa, Ann Weinberg, Adrian C. McGinnis, Robert S. Ratner, David S. Maynard, Robert N. Lieberman, Sandy L. Johnson, James H. Bair, Jeanne M. Leavitt, Rodney A. Bondurant, Jeanne M. Beck, Marcia L. Keeney, Elizabeth K. Michael, Jonathan B. Postel, Elizabeth J. Feinler, Kirk E. Kelley, N. Dean Meyer, James E. (Jim) White

NLS Programmers' Guide

Content Analyzer(Partial Edition)

Augmentation Research Center

11 SEP 75

Stanford Research Institute
333 Ravenswood Avenue
Menlo Park, California 94025

TABLE OF CONTENTS

Remaining parts will be published imminently.

INTRODUCTION 2

NLS provides a variety of commands for file manipulation and viewing. Editing commands allow the user to insert and change the text in a file. Viewing commands (viewspecs) allow the user to control how the system prints or displays the file. Line truncation and control of statement numbers are examples of these viewing facilities. 2a

Occasionally one may need more sophisticated view controls than those available with the viewing features of NLS. 2b

For example, one may want to see only those statements that contain a particular word or phrase. 2b1

Or one might want to see one line of text that compacts the information found in several longer statements. 2b2

One might also wish to perform a series of routine editing operations without specifying each of the NLS commands over and over again, or build commands for specific applications. 2c

User-written programs may tailor the presentation of the information in a file to particular needs. Experienced users may write programs that edit files automatically. 2d

User-written programs currently must be coded in ARC's procedure-oriented programming language, L10. NLS itself is coded in L10. L10 is a high-level language which must be compiled into machine-readable instructions. This document describes L10. Programs which interact with users additionally use a language developed at ARC called Command Meta Language (CML), described in Part Four of this document. 2e

This document describes three general types of programs:
--simple filters that control what is portrayed on the user's teletype or display (Parts One and Two),
--programs that may modify the statements as they decide whether to print them (Parts Two and Three),
--those that, like commands, are explicitly given control of the job and interact with the user (Part Four). 2f

User programs that control what material is portrayed take effect when NLS presents a sequence of statements in response to a command like Print (or Jump in DNLS). 2f1

In processing such a command, NLS looks at a sequence of

statements, examining each statement to see if it satisfies the viewspecs then in force. At this point NLS may pass the statement to a user-written program to see if it satisfies the requirements specified in that program. If the user program returns a value of TRUE, the (passed) statement is printed and the next statement in the sequence is tested; if FALSE, NLS just goes on to the next statement. 2f1a

While the program is examining the statement to decide whether or not to print it, it may modify the contents of the statement. Such a program can do anything the user can do with NLS commands. 2f2

For more complex tasks, a user program function as a special-purpose subsystem having (in addition to the may supervisor commands) one or more commands. Once such a program is loaded, it can be used just like any of the standard subsystems. (The MESSAGE program is an example.) 2f3

This document is divided into five parts; the first two have been published in this partial edition: 2g

Part One is intended for the general user. 2g1

It is a primer on Content Analyzer Patterns, allowing the NLS user to set up simple yet powerful filters whrough which he may view and edit files. This does not involve learning the L10 language nor programming. This section can stand alone, and the general (if somewhat experienced) NLS user should find it very useful. 2g1a

Part Two is intended for the beginning programmer. 2g2

It presents a hasty overview of L10 programming, with enough tools to write simple programs. This is intended as an introduction for the beginning user programmer, who we assume is reasonably familiar with NLS (its commands, subsystems, and capabilities) and has some aptitude for programming. 2g2a

Parts Three, Four and Five will be published imminently. 2g3

Part Three is a more complete presentation of L10. 2g4

It is intended to acquaint a potential L10 programmer with enough of the language and NLS environment to satisfy most requirements for automated editing programs. Many of the concepts in Part Two are repeated in Part Three so that it

may stand alone as an intermediate programmer's reference guide. This is the section in which to begin looking for answers to specific questions. 2g4a

Part Four presents more advanced L10 tools and an introduction to CML, allowing command syntax specification. 2g5

This should give the programmer the ability to write programs which work across files, which move through files in other than the standard sequential order, and which interact with the user. It allows the programmer to build user-attachable subsystems with commands looking very much like standard NLS facilities. 2g5a

Part Five presents a number of subjects of interest to the advanced L10 progammer. 2g6

We suggest that those who are new to L10 begin by acquiring a thorough understanding of Part One. Then Part TWo should be studied one section at a time, pausing between sections to try out the concepts presented by actually writing patterns or programs that put the new ideas to experimental use. Actual experience is of at least as much value as this tutorial. Tutorial guidance should be requested from ARC through your architect. If you have problems at any point, you should get help from ARC before proceeding to the next section. 2g7

For examples of user programs which serve a variety of needs, examine the attachable subsystems in the <PROGRAMS> directory and their descriptions in Help. For information about commands mentioned, ask for the programming subsystem with the NLS Help command. 2h

PART ONE: Content Analyzer Patterns 3

Section 1: Introduction 3a

Content analysis patterns cannot affect the format in which a statement is printed, nor can they edit a file. They can only determine whether a statement should be printed at all. They are, in a sense, a filter through which you may view the file. More complex tasks can be accomplished through programs, as described later in this document. 3a1

The Content Analyzer filter is created by typing in (or selecting from the text in a file) a string of a special form which describes those statements which will pass through the filter. This string is called the "Content Analyzer Pattern". Each statement is checked against the pattern before it is printed; only statements that are described by the pattern will be printed. 3a2

Some quick examples of Content Analyzer Patterns: 3a3

'($LD ') will show all statements whose first character is an open parenthesis, then any number of letters or digits, then a close parenthesis. 3a3a

["blap"] will show all statements with the string "blap" somewhere in them. 3a3b

SINCE (3-JUN-75 00:00) will show all statements edited since June 3, 1975 3a3c

The next part of this section will describe the elements which make up Content Analyzer Patterns, followed by some examples. The final subject of this section is how to put them to use. 3a4

Section 2: Patterns 3b

Elements of Content Analyzer Patterns 3b1

Content Analyzer Patterns describe certain things the system must check before printing a statement. It may check one or a series of things. Each test is called an element; the many possible elements will be described below. 3b1a

The Content Analyzer searches a statement from the beginning, character by character, for described elements. As it encounters each element of the pattern, the Content Analyzer checks the statement for the occurrence of that element; if the test fails, the whole statement is failed (unless there was an "or" condition, as described later) and not printed; if the test is passed, an imaginary marker moves on to the next character in the statement, and the next test in the pattern is considered.

For example, if the next element in the Content Analyzer pattern is "LD", the imaginary marker will move over the next character and go on to test the next element of the pattern only if the next character is a letter or a digit; otherwise the whole statement fails to pass the filter.

The pattern may include any sequence of the following elements; the Content Analyzer moves the marker through the statement checking for each element of the Pattern in turn: 3b1b

Literal String elements 3b1c

'c	the given character (e.g. a lower case c)
"string"	the given string (may include non-printing characters, such as spaces)

Character class elements 3b1d

CH	any character
L	lowercase or uppercase letter
D	digit
UL	uppercase letter
LL	lowercase letter
ULD	uppercase letter, or digit
LLD	lowercase letter, or digit
LD	lowercase or uppercase letter, or digit
NLD	not a letter nor digit
PT	any printing character (letters, digits, punctuation)
NP	any non-printing character (e.g. spaces, control characters)

Special non-printing character elements 3b1e

SP	a space
TAB	tab character
CR	a carriage return
LF	line feed character
EOL	TENEX EOL (end of line) character
ALT	altmode character

Special elements 3b1f

ENDCHR	beginning and end of every NLS statement; can't scan past it; not considered a character
TRUE	is true without checking anything in statement (used with OR constructs, as described below)
ID= id	statement created by user whose ident is given
ID# id	statement not created by user whose ident is given
BEFORE (d-t)	statement edited before given date and time
SINCE (d-t)	statement edited since given date and time

e.g. BEFORE (1 OCT 1974 00:00) ;

The date and time must both appear, in the parentheses. It accepts almost any reasonable date and time syntax.

Examples of valid dates:

17-APR-74	17 APRIL 74
APR-17-74	17/5/1974
APR 17 74	5/17/74
APRIL 17, 1974	

Examples of valid times:

1:12:13	1234:56
1234	1:56AM
1:56-EST	1200NOON
16:30 (i.e. 4:30 PM)	
12:00:00AM (i.e. midnight)	
11:59:59AM-EST (i.e. late morning)	
12:00:01AM (i.e. early morning)	

Scan direction 3b1g

<	set scan direction to the left
>	set scan direction to the right

The default, re-initialized for each new statement, is scan to the right from before the first character in the statement (beginning to end).

Modifying Elements 3b2

Several operators can modify any of the elements except the "special elements": 3b2a

NUMBER -- multiple occurrences 3b2b

A number preceding any element other than one of the "Special elements" means that the test will succeed only if it finds exactly that many occurrences of the element. If there aren't that many, the statement will be rejected. Even though there may be more, it will stop after that many and go on to check the next element in the pattern.

3UL means three upper case letters

$ -- range of occurrences 3b2c

A dollar sign ($) preceding any element other than the "Special elements" means "any number of occurrences of". This may include zero occurrences. It is good practice to put the element itself in parentheses.

$('-) means any number of dashes

A number in front of the dollar sign sets a lower limit.
3$(D) means three or more digits

A number after the dollar sign sets an upper limit for the search. It will stop after that number and then check for the next element in the pattern, even if it could have found more.
$3(LD) means from zero to three letters or digits
5$7(PT) means from 5 to 7 (inclusive) printing characters

[] -- floating scan 3b2d

To do other than a character by character check, you may enclose an element or series of elements in square brackets []. The Content Analyzer will scan a statement until the element(s) is found. (If the element is not in square brackets, the whole statement fails if the very next character or string fails the test of the next element.) This test will reject the statement if it can't find the element anywhere in the statement. If it succeeds, it will leave the marker for the next test just after the string satisfying the contents of the square brackets.

"start" means check to see if the next five characters are: s t a r t.

["start"] means scan until it finds the string: s t a r t.

[3D] means scan until it finds three digits.

[3D ':] means scan until it finds three digits followed by a colon

\- -- negation 3b2e

If an element is preceded by a minus sign -, the statement will pass that test if the element does not occur.

-LD means anything other than a letter or digit, such as punctuation, invisibles, etc.

NOT -- negation 3b2f

NOT will be TRUE if the element or group of elements enclosed in parentheses following the NOT is false.

NOT LD will pass if the next character is neither a letter nor a digit.

Combining Elements 3b3

You may put together any number of any of these elements to form a pattern. They may be combined in any order. Spaces within the pattern are ignored (except in literal strings) so they may be used to make reading easier for you. 3b3a

e.g. 1$PT [",NLS;" 1$D] -SP

i.e. one or more printing characters, then scan for ,NLS; followed by one or more digits, then check that the next character is not a space

More sophisticated patterns can by written by using the logic features of L10. Combinations of elements may in turn be treated as single elements, to be modified or combined using logical operators. 3b3b

Generally, an expression is executed left to right. The following operations are done in the given order:

()
/
NOT
AND
OR

3b3c

()

3b3d

Parentheses (and square brackets for floating scans) may be used to group elements. It is good practice to use parenthesis liberally.

/

3b3e

/ means "either or"; the bracketed element, consisting of two or more alternatives, will be true if either (any) element is true.

(3D L / 4D) means either three digits and a letter or four digits.

Since the slash is executed before NOT, NOT D / 'h will be true if the next character is NEITHER a digit nor the letter "h". It is the same as NOT (D/'h).

Sometimes you may want want the scan to pass your marker over something if it happens to be there (an optional element). "TRUE" is true without testing the statement. If the other tests fail, the imaginary marker is not moved.

(D / TRUE) looks for a digit and passes the imaginary marker over it. If the next character is not a digit, it will just go on to the next test element in the pattern without moving the marker and without failing the test. (This test always passes.)

i.e. It is used to scan past something(s) which may or may not be there.

Since expressions are executed from left to right, it does no good to have TRUE as the first option. (If it is first, the test will immediately pass without trying to scan over any elements.)

AND 3b3f

AND means both of the two separated groups of elements must be true for the statement to pass.

SINCE (3/6/73 00:00) AND ID#NDM means statements written since March 6, 1973 by someone other than NDM.

OR 3b3g

OR means the test will be true if either of the separated elements is true. It does the same thing as slash, but after "AND" and "NOT" have been executed, allowing greater flexibility.

D AND LLD OR UL means the same as (D AND LLD) OR UL
D AND LLD / UL means the same as D AND (LLD / UL)

While such patterns are correct and succinct, parentheses make for much clearer patterns. Elements within parentheses are taken as a group; the group will be true only if the statement passes all the requirements of the group. It is a good idea to use parentheses whenever there might be any ambiguity.

Section 3: Examples of Content Analyzer Patterns 3c

```
D 2$LD / ["CA"] / ["Content Analyzer"]
```
3c1

This pattern will match and pass any of three types of NLS statements: those beginning with a numerical digit followed by at least two characters which may be either letters or digits, or statements with either of the strings "CA" or "Content Analyzer" anywhere in the statement. 3c1a

Note the use of the square brackets to permit a floating scan -- a search for a pattern anywhere in the statement. Note also the use of the slash for alternatives.

```
BEFORE (25-JAN-72 12:00)
```
3c2

This pattern will match those statements created or modified before noon on 25 January 1972. 3c2a

```
(ID = HGL) OR (ID = NDM)
```
3c3

This pattern will match all statements created or modified by users with the identifiers "HGL" or "NDM". 3c3a

```
[(2L (SP/TRUE) / 2D) D '- 4D]
```
3c4

This pattern will match characters in the form of phone numbers anywhere in a statement. Numbers matched may have an alphabetic exchange followed by an optional space (note the use of the TRUE construction to accomplish this) or a numerical exchange. 3c4a

Examples include DA 6-6200, DA6-6200, and 326-6200.

```
[ENDCHR] < "cba"
```
3c5

This will pass those statements ending with "abc". It will go to the end of the statement, change the scan direction to left, and check for the characters "cba". Note that since you are scanning backwards, to find "abc" you must look for "cba". Since the "cba" is not enclosed in square brackets, it must be the very last characters in the statement. 3c5a

Section 4: Using the Content Analyzer 3d

Content Analyzer Patterns may be entered in two ways: 3d1

1) From the BASE subsystem, use the command: 3d1a

Set Content (pattern) To PATTERN OK

2) From the PROGRAMS subsystem, use the command: 3d1b

Compile Content (pattern) PATTERN OK

OK means "Command Accept", a control-D or, in TNLS (by default) a carriage return.

In either case: 3d2

1) Patterns may be typed in from the keyboard, or 3d2a

2) they may be text in a file, 3d2b

In this case, the pattern will be read from the first character addressed and continue until it finds a semicolon (;) so you must put a semicolon at the end of the pattern (in the file).

Viewspec j must be on (i.e, Content Analyzer off) when entering a pattern. 3d2c

Entering a Content Analyzer Pattern does two things: 3d3

1) compiles a small user program from the characters in the pattern, and 3d3a

2) takes that program and "institutes" it as the current Content Analyzer filter program, deinstituting any previous pattern. 3d3b

"Instituting" a program means selecting it as the one to take effect when the Content Analyzer is turned on. You may have more than one program compiled but only one instituted.

When a pattern is deinstituted, it still exists in your program buffer space and may be instituted again at any time with the command in the PROGRAMS subsystem:

Institute Program PROGRAM-NAME (as) Content (analyzer) OK

The programs may be refered to by number instead of name. They are numbered sequentially, the first entered being number 1.

All the programs you have compiled and the one you have instituted may be listed with the command in the PROGRAMS subsystem:

Show Status (of programs buffer) OK

Programs may build up in your program buffer. To clear the program buffer, use the PROGRAMS subsystem command:

Delete All (programs in buffer) OK

We recommend that you do this before each new pattern, unless you specifically want to preserve previous patterns.

To invoke the Content Analyzer: 3d4

When viewspec i is on, the instituted Content Analyzer program (if any) will check every statement before it is printed (or displayed). 3d4a

If a statement does not pass all of the requirements of the Content Analyzer program, it will not be printed.

In DNLS, if no statements from the top of the screen onward through the file pass the content Analyzer filter, the word "Empty" will be displayed.

Note: You will not see the normal structure since one statement may pass the Content Analyzer although its source does not. Viewspec m (statement numbers on) will help you determine the position of the statement in the file.

When viewspec k is on, the instituted Content Analyzer filter will check until it finds one statement that passes the requirements of the pattern. Then, the rest of the output (branch, plex, display screen, etc.) will be printed without checking the Content Analyzer. 3d4b

When viewspec j is on, no Content Analyzer searching is done. This is the default state; every statement in the output (branch, plex, display screen, etc.) will be printed. Note that i, j, and k are mutually exclusive. 3d4c

Notes on the use of Content Analyzer filters: 3d5

Some NLS commands are always affected by the current viewspecs (including i,j, or k): 3d5a

Output

Jump (in DNLS)

Print (in TNLS)

Most NLS commands ignore the Content Analyzer in their editing. The following BASE subsystem commands offer the option of specifying viewspecs, or "Filters", (which may turn on the Content Analyzer) which apply only for the purpose of that one command and affect what statements the command works on (only those statements which pass the filter will be copied, moved, etc,; structure will be adjusted): 3d5b

Copy

Delete

Move

Substitute

At this point, it would be wise to practice until you become proficient at Content Analyzer patterns. You might begin by trying to use some of the patterns given in the above examples, and then try writing a few patterns of your own. These patterns are both a useful NLS tool and a basic component of many L10 programs. We further recommend that you contact ARC via your architect before you begin the next part. 3d6

PART TWO: Introduction to L10 Programming 4

Section 1: Content Analyzer Programs 4a

Introduction 4a1

When you specify a Content Analyzer Pattern, the PROGRAMS subsystem constructs a program which looks for the pattern in each statement and only displays the statement if the pattern matching succeeds. You can gain more control and do more things if you build the program yourself. The program will be used just like the simple pattern program and has many of the same limitations. Programs are written in NLS just like any other text file. They then can be converted to executable code by a compiler. This code resides (or is loaded) in your programs buffer space; it can be instituted as the current Content Analyzer filter program like a Content Analyzer Pattern. 4a1a

Program Structure 4a2

If you specify a Content Analyzer Pattern, NLS compiles a small program that looks like this (with the word "pattern" standing for whatever you typed in): 4a2a

```
PROGRAM name

    (name) PROCEDURE;

        IF FIND pattern THEN RETURN(TRUE) ELSE RETURN(FALSE);

        END.

    FINISH
```

L10 programs must begin with a header statement, the word PROGRAM (all caps) followed by the name of the first procedure to be executed (all lower-case). This name is also the name of the program. If the program is being compiled into a file (to be described at the end of this section), the word FILE should be substituted for the word PROGRAM. 4a2b

```
e.g.  PROGRAM first
        or
      FILE deldir
```

(Note: the Content Analyzer compiler makes up a program name consisting of UP#!xxxxx , where

is a sequential number, the first pattern being number one, and

xxxxx is the first five characters of your pattern.)

E.g. UP1!$LD[P

The body of a program consists of a series of DECLARATION statements and PROCEDURES (in any order) which are blocks of instructions. In the above case, the program consisted of only one small procedure and no declarations. When the program is loaded into your programs buffer space, the declarations reserve space in the system to store information (variables). When the program is used as a Content Analyzer filter program, the first procedure is called for each statement. It may in turn call other procedures and access variables in the program or in the NLS system. 4a2c

```
e.g. DECLARE x, y, z ;   (described below)
     (first) PROCEDURE ;
        ...
```

The end of the program is delimited by the word "FINISH" (in all upper case). The compiler stops at that point, so any text after that in the NLS source file will be ignored. 4a2d

Comments may be enclosed in percent signs (%) anywhere in the program, even in the middle of L10 statements. The L10 compiler will ignore them. 4a2e

Except within literal strings, variable names and special L10 words, spaces are ignored. It is good practice to use them liberally so that your program will be easy to read. Also, NLS file structure is ignored; statements will be read sequentially, regardless of their level. Structure is, however, very valuable in making the program readable, and it is good practice to use it in close correlation to the program's logical structure. For instance, the programmer usually makes each of the elements of a program (declarations, procedures, and FINISH) separate statements, below the header statement in file structure. This point will be discussed further later. 4a2f

So far, we have file which looks something like: 4a2g

```
PROGRAM name1

   DECLARE ... ;

   DECLARE ... ;

   (name1) PROCEDURE ;

   (name2) PROCEDURE ;

   FINISH
```

Procedure Structure 4a3

Each procedure must begin with its header statement. This header statement is a name enclosed in parentheses followed by the word PROCEDURE, and terminated by a semicolon. 4a3a

e.g. (name) PROCEDURE ;

The body of the procedure may consist of Local declarations, then L10 statements. An L10 statement is any program instruction, terminated by a semicolon. The body must at some point return control to the procedure that called it. All this will be discussed more later. 4a3b

The procedure must end with the terminal statement: 4a3c

END.

Example (the actual L10 statements in this example will become clear as you read on): 4a4

PROGRAM compare 4a4a

```
% Content analyzer.  Displays statement if first two
visibles are the same.  %
DECLARE TEXT POINTER pt1, pt2, pt3, pt4;  %reserves
                          space for ("declares") four
                          text pointers named "pt1"
                          through "pt4"%
DECLARE STRING vis1[100], vis2[100];  %reserves 100
                          characters of space for each
                          of two string variables named
                          "vis1" and "vis2",%
(compare) PROCEDURE ;
   IF FIND $NP ^pt1 1$PT ^pt2 $NP ^pt3 1$PT ^pt4 THEN
                          %set pointers around first
                          two visibles (strings of
                          printing characters)%
      BEGIN               %if it found two visibles%
      *vis1* _ pt1 pt2 ;  %put visibles in strings%
      *vis2* _ pt3 pt4 ;
      IF *vis1* = *vis2* THEN RETURN(TRUE);  %compare
                          contents of strings, return
                          and display the statement
                          if identical%
      END;
   RETURN (FALSE) ;       %otherwise, return and don't
                          display%
   END.
FINISH
```

Declaration Statements 4a5

As you may have guessed from the above example, Content Analyzer programs can manipulate variables (like text pointers and strings), while patterns cannot. 4a5a

Text Pointers 4a5b

A text pointer points to a particular location within an NLS statement (or into a string, as described later).

The text pointer points between two characters in a statement. By putting the pointers between characters, a single pointer can be used to mark both the end of one

string and the beginning of the string starting with the next character.

Text pointers are declared with the following Declaration statement:

```
DECLARE TEXT POINTER name ;
```

Strings 4a5c

String variables hold text. When they are declared, the maximum number of characters is set.

To declare a string:

```
DECLARE STRING name[num] ;
```

num is the maximum number of characters allowed for the string.

e.g. DECLARE STRING lstring[100];

declares a string named "lstring" with a maximum length of 100 characters and a current length of 0 characters (it's empty).

You can refer to the contents of a string variable by surrounding the name with asterisks.

e.g. *lstring* is the string stored in the variable named "lstring".

(Refering to lstring without the asterisks represents only the first computer word of the string. This is rarely needed.)

you can put the text between two text pointers in a string variable with the L10 statement:

```
*lstring* _ ptr1 ptr2 ;
```

where ptr1 and ptr2 are the names of previously declared and set text pointers, and lstring is a previously declared string variable.

These variables will retain their value from one statement to the next. Other types of variables and their use will be discussed in detail in Part Three, Section 3. 4a5d

Body of the Procedure 4a6

RETURN Statement 4a6a

No matter what it does, every procedure must return control to the procedure that called it. The statement which does this is the RETURN statement.

e.g. RETURN;

A RETURN statement may pass values to the procedure that called it. The values must be enclosed in parentheses after the word RETURN.

e.g. RETURN (1,23,47);

A Content Analyzer program must return either a value of TRUE or of FALSE. If it returns the value TRUE (1), the statement will be printed; if it returns FALSE (0), the statement will not be printed.

```
i.e.  RETURN (TRUE);   will print the statement
      RETURN (FALSE);  will not print the statement
```

The RETURN statement often is at the end of a procedure, but it need not be. For example, in the middle of the procedure you may want to either RETURN or go on depending on the result of a test.

Other than the requirement of a RETURN statement, the body of the procedure is entirely a function of the purpose of the procedure. A few of the many possible statements will be described here; others will be introduced in Part Three of this document. 4a6b

FIND Statement 4a6c

One of the most useful statements for Content Analyzer programs is the FIND statement. The FIND statement specifies a Content Analyzer pattern to be tested against the statement, and text pointers to be manipulated and set, starting from the Current Character Position (that invisible marker refered to in Section 1). If the test succeeds, the character position is moved past the last character read. If at any point the test fails, the character position is left at the position prior to the FIND statement. The values of text pointers set in the statement prior to the

failing element will remain as set; others of course will not be changed.

FIND pattern ;

The Current Character Position is initialized to BEFORE THE FIRST CHARACTER, and the scan direction is initialized to left to RIGHT, FOR EACH NEW STATEMENT passed to the Content Analyzer program.

Any simple Content Analyzer pattern (as describe above) is valid in a FIND statement.

In addition, the following elements can be incorporated in the pattern:

stringname

the contents of the string variable

^ptr

store current scan position into the text pointer specified by ptr, the name of a declared text pointer

_NUM ptr

back up the specified text pointer by the specified number (NUM) of characters. If NUM is not specified, 1 will be assumed. Backup is in the direction opposite to the current scan direction.

ptr

Set current character position to this position. ptr is the name of a previously set text pointer.

SF(ptr)

The Current Character Position is set to the front of the statement in which the text pointer ptr is set and scan direction is set from left to right.

SE(ptr)

The Current Character Position is set to the end of the statement in which the text pointer ptr is set and scan direction is set from right to left.

BETWEEN ptr1 ptr2 (pattern)

Search limited to between positions specified, ptr is a previously set text pointer; the two must be in the same statement or string. Current Character Position is set to first position before the pattern is tested.

e.g. BETWEEN pt1 pt2 (2D [,] $NP)

FINDs may be used as expressions as well as free-standing statements. If used as an expression, for example in IF statements, it has the value TRUE if all pattern elements within it are true and the value FALSE if any one of the elements is false.

e.g. IF FIND pattern THEN ... ;

Complicated example:

```
IF FIND "sf $NP '( $(LD/'=) ') ["," *str*] SE(sf) $NP
', THEN RETURN(TRUE) ELSE RETURN(FALSE);
```

IF Statement 4a6d

IF causes execution of a statement if a tested expression is TRUE. If it is FALSE and the optional ELSE part is present, the statement following the ELSE is executed. Control then passes to the statement immediately following the IF statement.

IF testexp THEN statement ;

IF testexp THEN statement1 ELSE statement2 ;

The statements within the IF statement can be any valid L10 statement, but are not followed by the usual semicolon; the whole IF statement is one L10 statement and is followed by a semicolon.

e.g.

IF FIND [5D] THEN RETURN(FALSE) ELSE RETURN(TRUE) ;

Programming Style: File Structure 4a7

The compiler which converts your NLS text to code ignores NLS file structure. This allows you to use structure to make your program text easier to read and understand. Logical use of

structure often facilitates the actual programming task as well. Some conventions have developed at ARC in this respect, although flexibility is essential. These should seem obvious and logical to you. 4a7a

All declarations and PROCEDURE statements should be one level below the PROGRAM statement.

All local declarations (not yet described) and code should be one level below the PROCEDURE statement.

It is good style, and makes for much easier programming, to list what you want to do as comment statements (in percent signs) at the level below the PROCEDURE statement. Then you can go back and fill in the code that accomplishes the task described in each comment statement. The code should go one level below the comment.

It is also worthwhile to put comments in individual statements whose purpose is not obvious.

We will later describe how to block a series of statements where one is required. These blocks should go a level below the statement of which they are a part.

File structure should follow the logical structure of the program as closely as possible.

```
e.g.   IF FIND (5D)
           THEN RETURN(TRUE)
           ELSE RETURN(FALSE);
```

Using Content Analyzer Programs 4a8

Once the Content Analyzer program has been written (in an NLS file), there are two steps in using it. First, the program must be "compiled," i.e. translated into machine-readable code; the compiled code is "loaded" into a space reserved for user programs (the user programs buffer). Secondly, the loaded program must be "instituted" as the current Content Analyzer program. 4a8a

There are two ways to compile and load a program: 4a8b

1) You may compile a program and load it into your programs buffer all in one operation. In this case, the program

header statement must have the word PROGRAM in it. When the user resets his job or logs off, the compiled code will disappear.

First, enter the Programs subsystem with the command:

Goto Programs OK

Then you may compile the program with the command:

Compile L10 (user program at) SOURCE OK

SOURCE is the NLS file address of the PROGRAM statement.

2) you may compile a program into a TENEX code file and then load it into your buffer in a separate operation. The program can then be loaded from the file into your user programs buffer at any time without recompiling. The header statement must use the word FILE instead of PROGRAM. Use the PROGRAMS subsystem command:

Compile File (at) SOURCE (using) L10 (to file) FILENAME OK

The FILENAME must be the same as the program's name.

The code file is called a REL (RELocatable code) file. Whenever you wish to load the program code into the user programs buffer, use the PROGRAMS subsystem command:

Load Program (file) FILENAME OK

Once a compiled program has been loaded (by either route), it must be instituted. This is done with the PROGRAMS subsystem command: 4a8c

Institute Program PROGRAM-NAME
(as) Content (analyzer program) OK

The named program will be instituted as the current Content Analyzer filter, and any previously instituted program will be deinstituted (but will remain in the buffer).

Again, the programs in the buffer are numbered, the first in being number one. You may use the number instead of the program's name as a shorthand for PROGRAM-NAME.

To invoke the Content Analyzer using whatever program is currently instituted, use the viewspec i, j, or k, as described in Part One, Section 4 (3d4). 4a8d

Problems 4a9

Given these few constructs, you should now be able to write a number of useful Content Analyzer programs. Try programming the following: 4a9a

1) Show those statements which have a number somewhere in the first 20 characters.

2) Show those statements where the first visible in the statement is repeated somewhere in the statement.

Sample solutions: 4a9b

Problem 1

```
PROGRAM number
   DECLARE TEXT POINTER ptr1, ptr2 ;
   (number) PROCEDURE ;
      FIND ^ptr1 $20CH ^ptr2 ;
      IF FIND BETWEEN ptr1 ptr2 ( [D] )
         THEN RETURN(TRUE)
         ELSE RETURN(FALSE);
      END,
   FINISH
```

Alternate Solution to Problem 1: Content Analyzer Filter

```
$20CH < [D]
```

Problem 2

```
PROGRAM vis
   DECLARE TEXT POINTER ptr1, ptr2 ;
   DECLARE STRING str[500] ;
   (vis) PROCEDURE ;
      FIND $NP ^ptr1 1$PT ^ptr2 ;
      *str* _ ptr1 ptr2 ;
      IF FIND ptr2 [NP *str* NP]
         THEN RETURN(TRUE)
         ELSE RETURN(FALSE);
      END,
   FINISH
```

Section 2: Content Analyzer Programs: Modifying Statements 4b

Introduction 4b1

Content Analyzer programs may edit the statements as well as decide whether or not they are printed. They are very useful where a series of editing operations has to be done time and time again. This section will introduce you to these capabilities. All these constructs will be covered in detail in Part Three. 4b1a

A Content Analyzer program has several limitations. It can manipulate only one file and it can look at statements only in sequential order (as they appear in the file). It cannot back up and re-examine previous statements, nor can it skip ahead to other parts of the file. It cannot interact with the user. Part Four provides the tools to overcome these limitations. 4b1b

String Construction 4b2

Statements and the contents of string variables may be modified by either of the following two statements: 4b2a

```
ST ptr _ stringlist ;
```

The whole statement in which the text pointer named "ptr" resides will be replaced by the string list (to be described in a minute).

```
ST ptr ptr _ stringlist ;
```

The part of the statement from the first ptr to the second ptr will be replaced by the string list.

ptr may be a previously set text pointer or SF(ptr) or SE(ptr).

The content of string variables may be replaced with the string assignment statement: 4b2b

```
*stringname* _ stringlist ;
```

The string list (stringlist) may be any series of string designators, separated by commas. The string designators may be any of the following (other possibilities to be described later): 4b2c

a string constant, e.g. "ABC" or 'w

ptr ptr

the text between two text pointers previously set in either a statement or a string

stringname

a string name in asterisks, refering to the contents of the string

E.g.: 4b2d

```
ST p1 p2 _ *string* ;
   or
ST p1 _ SF(p1) p1, *string*, p2 SE(p2);
```

(Note: these have exactly the same meaning.)

Example: 4b3

PROGRAM delsp 4b3a

```
% Content analyzer.  Deletes all leading spaces from
statements. %
DECLARE TEXT POINTER pt; %reserves space for
                          ("declares") a text pointer
                          named "pt"%
(delsp) PROCEDURE ;
   IF FIND 1$SP 'pt THEN %scans over leading spaces,
                          then sets pointer%
      ST pt _ pt SE(pt); %replaces statement with text
                          from pointer to statement end%
   RETURN (FALSE) ;      %return, don't display anything%
   END.
FINISH
```

More Than One Change per Statement 4b4

Part of a text pointer is a character count. This count stays the same until the text pointer is again set (to some other position), even though the statement has been edited. If, for example, you have the statement 4b4a

abcdefghijklmnopqrstuvwxyz

and if you have set a pointer between the "d" and the "e", it

will always point between the fourth and fifth characters in the statement. If you then delete the character "a", your pointer will be between the "e" and the "f", now the fourth and fifth characters. For this reason, you should begin a series of edits with the last one in the statement and work backwards through the statement. 4b4b

Controlling Which Statements are Modified 4b5

In TNLS, the Content Analyzer program will be called for commands which construct a printout of the file (Print and Output). The program will run on every statement for which it is called (e.g. every statement in the branch during a Print Branch command) which pass all the other viewspecs. Once you have written, compiled, and instituted a program which does some editing operation, the Print command is the easiest way to run the program on a statement, branch, plex, or group. 4b5a

In DNLS, the system will call the Content Analyzer program whenever the display is recreated (e.g. viewspec F and the Jump commands), and also for the Output commands. If the program returns TRUE, it will only run on enough statements to fill the screen. It is safer to have programs that edit the file return FALSE. Then when you set viewspec 1, it will run on all statements from the top of the display on, and when it is done it will display the word "Empty". At that point, change to viewspec j and recreate the display with viewspec F, then all statements including the changes will be displayed. You can control which statements are edited with level viewspecs and the branch only (g) or plex only (l) viewspecs, and by positioning the top of your window. 4b5b

After having run your program on a file, you may wish to Update to permanently incorporate the changes in the file. It is wise to Update before you run the program so that, if the program does something unexpected, you can Delete Modifications and return to a good file. 4b5c

Problems 4b6

Try writing the following programs: 4b6a

1) Remove any invisibles from the end of each statement.

2) Make the first visible a statement name surrounded by parentheses if it is a word (letters and digits).

Sample solutions: 4b6b

Problem 1

```
PROGRAM endinv
   DECLARE TEXT POINTER ptr ;
   (endinv) PROCEDURE ;
      IF FIND "ptr SE(ptr) 1$NP "ptr
         THEN ST ptr _ SF(ptr) ptr ;
      RETURN (FALSE) ;
      END,
   FINISH
```

Problem 2

```
PROGRAM makename
   DECLARE TEXT POINTER ptr1, ptr2 ;
   (makename) PROCEDURE ;
      IF FIND $NP "ptr1 1$LD "ptr2 NP
         THEN ST ptr1 _ '(, ptr1 ptr2, '), ptr2 SE(ptr2);
      RETURN(FALSE)
      END,
   FINISH
```

(J33461) 11-SEP-75 15:54;;;; Title: Author(s): N. Dean Meyer/NDM;
Distribution: /LJM([INFO-ONLY]) JHB([INFO-ONLY]) JCN([
INFO-ONLY]) PKA([INFO-ONLY]) SLJ([INFO-ONLY]) FEED([
INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: NDM; Origin: <
USERGUIDES, L10-PARTIAL.NLS;2, >, 11-SEP-75 15:48 NDM ;;;;

Send requests for printed copies to <FEEDBACK>,####;

33461 Distribution
Laura J. Metzger, James H. Bair, James C. Norton, Pamela K. Allen, Sandy L. Johnson, Special Jhb Feedback,

RA3Y 11-SEP-75 16:46 33462

tStats

CongratulAtions, you get to do the monthly stats after all. Ra3y. 1

RA3Y 11-SEP-75 16:46 33462

tStats

(J33462) 11-SEP-75 16:46;;;; Title: Author(s): Raymond R. Panko/RA3Y; Distribution: /PAW2([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: RA3Y;

33462 Distribution
Priscilla A. Wold,

JHB 11-SEP-75 17:05 33463

Hotel Reservations at the KWAC Meeting

If my recollection of the Boston area is correct, the Motels Susan suggests would require some special transportation to the Kwac meeting: this wuld be in the midst of the rush hr every morning at least. The Sonnesta is across the street and conveninet to the Metro for gong Downtown later. The Holiday at Gov Center is a 5 min walk to a Metro and then a 5 min ride and then a 5 min walk. It has been nice the number of times I have sayed there. For a large group to transport across any part of Boston is something else, and during the rush hr it is an experience. I also think that the the commercial rate for allthe Motels is much lower than what Bob sent, and there might be a group discount as well. The Sonnesta is on the Charles River and isconveniently located for all the things we probably will be doing. I think any cost differene is negligable. 1

Hotel Reservations at the KWAC Meeting

(J33463) 11-SEP-75 17:05;;;; Title: Author(s): James H. Bair/JHB;
Distribution: /SGR([ACTION]) US([INFO-ONLY] [ACTION]) JHB([
INFO-ONLY] [ACTION]) RLL([INFO-ONLY] [ACTION]) BJP([
INFO-ONLY] [ACTION]) JCN([INFO-ONLY] [ACTION]) DCE([
INFO-ONLY] [ACTION]) JDH([INFO-ONLY]) ; Sub-Collections:
SRI-ARC US; Clerk: JHB;

33463 Distribution

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The mysteries of <CTRL-E>...

Susan, That was not was I as refering to exactly: the conflict seems to be that when you are in DNLS, the CM is at the top of the screen. BUT, CTRL e follows the same rule as for TNLS (which isn't really important because not many TNLS terminals have the Insertbutton, it's in DNLS where you might try using just insert). It seems that the DNLS statement should be after the one at the top of your screen. 1

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The mysteries of <CTRL-E>...

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Susan Gail Roetter, Special Jhb Feedback, Buddie J. Pine, Laura J. Metzger, Priscilla A. Wold, Pamela K. Allen, Rene C. Ochoa, Jeffrey C. Peters, Marcia L. Keeney, Jeanne M. Beck, Geoffrey S. Goodfellow, Rodney A. Bondurant, Douglas C. Engelbart, Jeanne M. Leavitt, Susan Gail Roetter, Raymond R. Panko, Adrian C. McGinnis, James C. Norton, J. D. Hopper, Elizabeth J. Feinler, James H. Bair, Robert N. Lieberman, N. Dean Meyer, Sandy L. Johnson, Martin E. Hardy, Dirk H. Van Nouhuys, Charles H. Irby,