DCE 8-JAN-75 18:35 25031

Considering ARC's use of IR&D funds in CY75

Jim and Dick: Bart and Bob Wing would like for ARC to apply for IR&D Program funding for any activity we can that could support ARC people in CY75 that would anyway be on overhead. As I understand it, this would have zero impact upon our perfomance in the SRI ledgers, but would help at Division and higher levels in getting maximum allowance of overhead charges. 1

Accordingly, I am preparing several IR&D Program proposals -- at least one each for Applications and Development. Subsequent action is flexible -- if it isn't feasible for us to charge, then apparently there is no bad effect. If we do wish to, we formulate specific-task proposal(s) under one of the programs, and get a specific charge number for that task. The tasks are approved at Bart's level, and the proposals rarely exceed a page in length. 2

This note is mainly for Jim's benefit, since he is travelling. I'll beam you a copy of my draft, Jim -- with some probability that it may have to be crammed into SRI's system before there is time for you to comment. 3

DCE 8-JAN-75 18:35 25031

Considering ARC's use of IR&D funds in CY75

(J25031) 8-JAN-75 18:35;;;; Title: Author(s): Douglas C. Engelbart/DCE; Distribution: /JCN([INFO-ONLY]) RWW([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: DCE;

Rough Notes on Speech Manipulation

Background Notes for Possible Speech Manipulation Proposal 1

We need an outline of what a proposed project might look like: 1a

Types of goals, 1a1

Types of skills required, 1a2

Type of hardware software needed, 1a3

Issues 1b

Speech String Representation 1b1

What changes in NLS file structure, if any? 1b1a

Speech insert string pointers, 1b1a1

If people could enter from given terminal or type of terminal, may be able to enter other kinds of recognizable markers that could make later editing and annotation etc easier. Another possibility is to have some initial speaker protocol to indicate end of thought etc that could be easily recognized. 1b1b

Would like to see speech strings represented as NLS statements. NLS statement size limitation possible problem, but solvable. How do you decide which part of string to be in which statements? 1b1c

Basic Manipulation Operations 1b2

insert a speech string 1b2a

delete a speech string 1b2b

move a speech string 1b2c

copy a speech string 1b2d

replace a speech string 1b2e

break a speech string 1b2f

append a speech string 1b2g

input and output speech strings 1b2h

Movement through Speech Strings 1b3

Rough Notes on Speech Manipulation

Want to be able to move forward or backward so many seconds, to speaker change, to next or backwardor N pauses, possibly simple word spotting, can imagine as speech understanding gets more sophisticated adding new type of "viewspecs", filters etc. Recognition could be via speech parameters or in longer term via speech recognition techniques involving task area models. SCRL will be doing some work on authentification of speakers and Becker and Poza have done some work on entity spotting. 1b3a

Coordination with text 1b4

Citations 1b4a

Want to be able to follow links from text to speech and ultimately vice versa. 1b4a1

Association of text statements and NLS structuring in speech strings. 1b4b

Practical applications 1c

Annotating conversations 1c1

Move forward and backward in conversation and either add comments in form of speech or text, insert markers, structure annotated conversation for online search and viewing listening. Such a capability would be useful in a number of areas, for example in having a meeting recording annotated for later reference rather than going to expense of transcribing whole thing. 1c1a

Conferencing and other dialog support 1c2

Ability to incorporate into both recorded and unrecorded dialog support systems. 1c2a

Ability to carry on conference, annotate, review, catch up, etc. 1c2b

Laboratory for human factors experimentation of speech techniques in context of range of tools, ability to try new techniques quickly in new applications, serve technology transfer. 1c3

Mixed media 1c4

graphics, text, voice 1c4a

Rough Notes on Speech Manipulation

CAI 1c5

Approach 1d

Should pick initial goal of manipulation and annotation, then on to provide basic set of operations out of which you could go on to build conferencing or dialog support or other application systems. 1d1

Should probably initially work with time as basic unit for movement in speech strings and develop operations for useful things there. This approach would be essentially independent of encoding scheme; to use another one would only have to introduce appropriate time parameter for searching. It would allow use early of low cost cvsd boards in PDP 11s. Once we had some useful things going there, could then go on to fancier recognition for search "viewing" etc. 1d2

Store on disk 1d3

Need NLS work station with voice input output facilities. We could use facilities available on PDP 11 of compression project for at least input. 1d4

Need to develop user interface and understand human factors involved in possible input protocols, tolerances of users for various delays and other factors unique to speech input and output, and develop appropriate interaction forms and conventions. 1d5

NLS file structure as being modified for property lists probably adequate. 1d6

Conversation with Bob Kahn on 1/8 1e

I described the type of thoughts associated with the above notes. Bob indicated that his motivation was - given that we can send speech in real time around the ARPANET and put it in files, and eventually do some levels of understanding, what else can you use it for and what are the research and development problems associated its successful use. He seemed to like the ideas presented. He felt the big problem was to think through how to package the research for presentation to higher management, ie goals, initial application etc. 1e1

Bob seemed quite concerned about various human factors issues around smooth output in the application, worried about delays nd response, chopped off thoughts etc. Felt that thing that distinguished speech from text was need for smooth output and

continuity of whole thoughts. I indicated that all that was important, but that there were other important issues as well and that speech might not be all that different when it came down to basic types of manipulations needed. 1e2

Question of the number of users that could be supported with speech tools on PDP 11 or 10 was important to him. 1e3

We discussed possibility of creating a facility that would allow, people to techniques they were developing in a larger application context for experimentation and technology transfer or to do human factors studies at higher levels. We need a name for such a thing rather than speech lab which it isn't really. He liked this idea and thought it might provide the right packaging if we could work out the implications and who would use it and how used. He indicated I should chat some with Kryter about work going on there and how it might relate to such an idea. 1e4

We talked about dialog support, and conferencing and need for more than just real time capability. That might also provide the higher level package and goal desired for sale of such a project. I indicated that I thought we should first get basic manipulation techniques down and then go on to other applications. He seemed to agree that that was needed but in thinking about selling project need larger research goals. 1e5

Next step will be for me to think more about packaging problem and contact him again in a week or so. 1e6

Rough Notes on Speech Manipulation

(J25032) 9-JAN-75 08:54;;;; Title: Author(s): Richard W. Watson/RWW;
Distribution: /NPG([INFO-ONLY]) JBP([INFO-ONLY]) DCE([
INFO-ONLY]) ; Sub-Collections: SRI-ARC NPG; Clerk: RWW;
Origin: < WATSON, SPEECHNOTES.NLS;1, >, 8-JAN-75 08:41 RWW ;;;;
####;

Be sure to remove the effects of the journal before sending this to be printed.

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(J25033) 9-JAN-75 10:32;;;; Title: Author(s): N. Dean Meyer/NDM;
Distribution: /POOH([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk:
POOH; Origin: <MEYER>JCNCARD.NLS;4, 2-JUL-73 09:26 NDM ;

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<HJOURNAL>25034,NLS;1, 9-JAN-75 15:33 XXX ;;;; Title: Author(s): N.
Dean Meyer/NDM; Distribution: /POOH([INFO-ONLY]) ; Sub-Collections:
SRI-ARC; Obsoletes Document(s): 25033; Clerk: POOH; Origin: <
MEYER, JCNCARD,NLS;4, >, 9-JAN-75 10:55 POOH
;;;;<MEYER>JCNCARD,NLS;4, 2-JUL-73 09:26 NDM ;

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(J25034) 9-JAN-75 14:18;;;; Title: Author(s): N. Dean Meyer/NDM;
Distribution: /POOH([INFO-ONLY]) ; Sub-Collections: SRI-ARC;
Obsoletes Document(s): 25033; Clerk: POOH; Origin: < MEYER,
JCNCARD,NLS;4, >, 9-JAN-75 10:55 POOH ;;;;<MEYER>JCNCARD,NLS;4,
2-JUL-73 09:26 NDM ;

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RWW 9-JAN-75 17:01 25035

Agenda for Meeting At RAND on Intelligent Terminal Program Issues

I will be attending the proposed meeting and personally have some strong opinions on various of the topics proposed here. I am having some more copies made of the report referenced herein. In a week or so will call a meeting to get additional opinions and input as background for meeting.

RWW 9-JAN-75 17:01 25035
Agenda for Meeting At RAND on Intelligent Terminal Program Issues

4685 Bob Anderson, Rand Corp. (ANDERSON at RAND-RCC): MEETING ON INTELLIGENT TERMINAL RESEARCH PROGRAM ISSUES
Distribution: LIST (SEE BELOW) 9 JAN 75
Received at: 9-JAN-75 12:40:42 1

On Tuesday, JANUARY 28, 1975, from 9 a.m. to 5 p.m., there will be a meeting at the Rand Corporation, 1700 Main Street, Santa Monica, Calif., to discuss several important issues related to ARPA's new research program in Intelligent Terminals. 1a

The morning will be devoted to the question of the application of artificial intelligence technologies to Intelligent Terminals to be developed under this program. Examples of issues in this area are: 1b

* the role of natural language; can any useful degree of natural language understanding be built into an I.T. interface? If so, how much computing resource is required? If not, what are the best alternatives -- keyword searches, a finite but presumably habitable syntax, a macro expansion facility,...? 1c

* user models: what specific benefits can we expect a user model to provide? What is the user's interface to 'his' model, for expanding it or modifying it? Can the interface between the user model and other modules of the I.T. be made explicit? 1d

The afternoon will be devoted to system implementation and organizational issues, including: 1e

* hardware: what hardware should be provided to I.T. contractors for development work? What about compatibility with PDP-10's? 1f

* what is the relationship between this research program and the National Software Works (NSW) currently under development? Should

Agenda for Meeting At RAND on Intelligent Terminal Program Issues

NSW protocols be used between I.T. modules? Should the I.T. be 'plug-to-plug compatible' with the NSW 'front-end'? What are the advantages and disadvantages of various levels of compatibility between I.T. and NSW? 1g

* documentation: what should I.T. aspirations be regarding system documentation? Is it possible to write documentation in a subset of natural language which is both human-readable and machine-readable in a useful way? 1h

Craig Fields, ARPA, has asked me to arrange this meeting, and he will be present at the meeting. Background reading for the meeting is my draft report 'Intelligent Terminals: DOD Requirements and Plan for an ARPA Research Program', which is available over the ARPANET through the following protocol: 1i

```
telnet rand-rcc
RAND COMPUTATION CENTER...
USER? n0000
ACCOUNT? 1677
PASSWORD? n00
COMMAND ? list it.report
   . . .
COMMAND ? logout clear
<break>
```
1j

(It is about 80 typewritten pages in length. For best readability, change all occurrences of '$' in column 1 to a page eject.) 1k

Present ARPA contractors are expected to use their contract funds for travel to the meeting; others needing travel reimbursement should contact Craig for travel order arrangements. 1l

Please send me an ARPANET message stating whether or not you expect to attend; if you need local accomodations, let me know dates,

etc. by
ARPANET or call my secretary, Linda Connelly (213) 393-0411 x7368.
I hope you will be able to attend, so that these issues can be thoroughly
aired at the crucial formative stages of this new research program. 1m

Bob A. 1n

List: 1o

(Note: the following list was chosen to elicit viewpoints from
a variety of projects and institutions; no one was deliberately
omitted or excluded. If you can suggest additions or substitutions,
please let me know - RHA) 1p

MIT: Al Vezza
Nick Negroponte
Bill Martin 1q

BBN: Bert Sutherland
Bill Woods
John S. Brown
Mario Grignetti
Jerry Burchfiel

RAND: Bob Anderson
Jim Gillogly
Peter Weiner

SRI: Dick Duda
Dick Watson

ISI: Bob Balzer
Don Oestricher

Stanford: Ed Feigenbaum 1r

NSA: Norm Glick

Irvine: Tim Standish 1s

UCLA: Jerry Popek 1t

SCRL: Dave Retz 1u

Roxanne Donahue 1v

ONR: Marv Denicoff 1w

ARPA: Craig Fields 1x

# # #

RWW 9-JAN-75 17:01 25035

Agenda for Meeting At RAND on Intelligent Terminal Program Issues

(J25035) 9-JAN-75 17:01;;;; Title: Author(s): Richard W. Watson/RWW; Distribution: /NPG([INFO-ONLY]) JBP([INFO-ONLY]) DCE([INFO-ONLY]) JHB([INFO-ONLY]) RLL([INFO-ONLY]) JCN([INFO-ONLY]) ; Sub-Collections: SRI-ARC NPG; Clerk: RWW;

KEV 9-JAN-75 17:18 25036

nsw debugging

this is my first draft as to how to due it, comments etc, would be greatly appreceated, thanx...

nsw debugging

This document is intended as a working document desribing our current Plans for the debugging of programs in an NSW environment. 1

Required Background Reading 2

1) The Procedure Call Protocol Version 2, by J. White (24590,) 2a

2) Tenex PCP Process Internal Structure [DRAFT], by J. White (24792,) 2b

Assumptions 3

We will assume the internal process structure discussed in 2 above, i.e., a PCP process consists of a controlling fork (CF), which is the process' link to the PCP process tree, and one or more processor forks (PF), each of which contains identical save file images. 3a

There will be one frontend process per frontend machine and this process will consist of one CF and at least one PF per active user. 3b

The Works Manager process (initially there will be only one, eventually there will probably be several for reliability purposes) will consist of one CF and probably on the order of one PF per active user. 3c

A tool backend will consist of a PCP process tree with one process tree per tool per (instance of each) user. Each process in the tool backend tree will consist of one CF and one or more PFs (at the tool implementer's disgression). 3d

We therefore have the following situations: 3e

In debugging a tool backend we can afford to suspend processing (e.g. upon encountering a breakpoint) of the entire process tree since we would be affecting only one user. 3e1

In debugging the Works Manager it would be nice if only the PFs associated with an individual user were affected by breakpoints, etc. However, since the proper operation of the WM is essential for the running of the NSW, we will assume that the debugging of the WM will suspend the entire process at a breakpoint, etc. (If there are several WM running then it will of course be possible to be debugging one instance of the WM while not affecting the other instances.) 3e2

In debugging the frontend process, or tool grammars and/or parsefunctions, etc., it is not possible to suspend the entire

process since it is precisely this process which is talking to the user. In addition, it is essential that any debugging scheme we use allow several users to be debugging at the same time. Therefore, breakpoints, etc., will affect only those PFs associated with an instance of a user. 3e3

The rest of this document will assume that the exact same implementation techniques will be used for the debugging of tool backends and the WM. However, due to the special requirements associated with the frontend, different implementation techniques will be required for debugging frontend programs. This does not mean that the user interface will be different, and in fact it will be the same regardless of whether a user is debugging a frontend or backend program. 3f

(Note that we will not be providing any tools for the debugginf of the code that lives in the CF. We expect to use existing debugging tools to debug the CF once and that after it is running it need never be modified!) 3g

Basic Approach 4

Our basic approach involves placing an IDDT-like debugging PCP package in the CF. This package is talked to via standard PCP primitives and can talk to other packages in other processes via PCP. There will be a special process handle that enables one to talk to the CF fork in the PCP process. This package will then "monitor" the PFs of its process in host dependent methods (on Tenex and ELF most likely by sharing pages). 4a

Since the address space of the CF contains very little other than the debugging package, this package can be very sophisticated (at least on Tenex where there is a large address space) and can (and will eventually) support source language debugging). 4b

The PFs need contain no code to support the debugger. 4c

(We may have to back off on this statement as we gain some implementation experience. It may be necessary for the PF to provide state saving and restoring procedures.) 4c1

It will be necessary, however, for the PFs to provide some storage (on the order probably of 2 dozen words) that can be used by the debugger, for calling procedures, etc., in the PF. We can use one or more of the following approaches to obtain this needed storage: 4d

We can require that all PFs leave the top (or some other well defined) N locations unused, and/or 4d1

The debugger can search the memory map of the PF to find some free core, and/or 4d2

The debugger can ask the user what core is available. 4d3

Debugging Tool Backend Process Trees and the WM 5

Let us initially consider the case where a user is command level and decides to do some debugging. We will deal with runaway programs later. 5a

In this situation, the user will issue a universal command that indicates "Debug Tool". The universal tool backend procedure that deals with this command will then issue an inline PCP call to start a CLI in the frontend process. This will cause a new CLI PF to be activated; this PF will talk to the same terminal that the user is at and will have the debugger grammar as its active grammar. The initialization rule for the debugger may interact with the user to get such information as which tool is to be debugged, etc. and will make the appropriate PCP calls to open the debug package in the proper CF. 5b

The user is now using the debugger as she would use any other NSW tool and can issue whatever commands she wishes, e.g., modify core in the tool, set breakpoints, etc. 5c

When the user is done talking to the debugger directly, she issues the debugger "proceed" command. This action causes a PCP Temporary return to be made to the original PF. The user is now back talking to her original tool. 5d

In the future, if the user wishes to return to the debugger, she once again issues the universal command "Debug Tool", or she may be able to hit some special key that indicates "Debug Tool". However, now a PCP resume process call is made to the debugger PF. 5e

If the user set some breakpoints in the tool backend in her prior interaction with the debugger and one of these breakpoints is encountered (breakpoint implementation discussed below), the tool backend will issue a PCP HELP return to the frontend process. The tool frontend PF that receives this HELP, which will be the PF that the user was using to talk to the backend with, will then issue the PCP RESUME to the debugger PF, and now the user is again talking to the debugger. 5f

We are now in a position to discuss runaway programs. If a user wishes to debug a runaway program, or wishes to do some debugging while not at command level, she hits a special key which means "STOP Tool". This causes the PCP STOP Process call to be issued

to the tool and also causes the debugger frontend PF to be either started or resumed. 5g

Breakpoints 5h

When a user sets a breakpoint, it will be set in all PFs for the associated process. (Breakpoints on Tenex will most likely consist of the BPT jsys which is equivalent to a HALTF jsys.) The CF for the process is notified whenever any breakpoint is encountered. (This happens in Tenex by enabling the fork termination PSI.) The CF then freezes all its inferior PFs and PCP freezes its inferior processes and passes back up the chain of control the appropriate PCP HELP message. Any processes above the target process (but not the frontend process) will probably freeze all their PFs and PCP freeze their inferior processes not in the previous control chain and then pass on the HELP message. 5h1

(I recognize that there are several "religeous" statements in the above paragraph and that perhaps we don't wish to freeze the world upon hitting a breakpoint. However, it seems easier from both an implementation and conceptual (to me anyway) point of view. If we don't freeze the world and some other process tries to communicate with the frontend, what happens???) 5h1a

Debugging the Frontend Process and Tool Grammars, Parsefunctions, etc. 6

The differences between debugging the frontend process and backend processes have to due with the level of sophistication of debugging code that lives in the frontend process' CF and with the implementation of breakpoints. 6a

Since the address space available for the frontend CF is likely to be quite small (on the ii), there is no room to place sophisticated source language debugging code there. Thus to obtain the desired sophistication, the frontend debugging package will make PCP calls on a Frontend-Debugging Tool Backend process (FDTBP). The combination of the frontend CF and the FDTBP will perform the necessary monitoring of the pertinent PF, either by sharing pages or by making use of ELF IPPs, or by using the ELF Debug Process. 6b

The implementation and action of breakpoints is also different for the frontend process. A breakpoint is only set in the PF associated with the user doing the debugging and not in all the PFs belonging to the process. Upon encountering a breakpoint, the frontend CF is notified and the proper PF is stopped (in fact it

probably already is by virtue of the way we hope to implement breakpoints). The CF then PCP freezes the tool process trees associated with this user (once again religion) and then resumes the frontend debugging PF for this user. 6c

(Note that to initiate debugging the user must have issued the universal command "Debug Frontend".) 6c1

KEV 9-JAN-75 17:18 25036

nsw debugging

(J25036) 9-JAN-75 17:18;;;; Title: Author(s): Kenneth E. (Ken) Victor/KEV; Distribution: /NPG([ACTION]) RWW([ACTION]) ; Sub-Collections: SRI-ARC NPG; Clerk: KEV; Origin: < VICTOR, PCP-DEBUGGING.NLS;1, >, 9-JAN-75 17:16 KEV ;;;;####;

DVN 9-JAN-75 19:59 25038

Rejected Journa Item

The journal item cited has rejected because I do not care to knon about this subject.

DVN 9-JAN-75 19:59 25038

Rejected Journa Item

(J25038) 9-JAN-75 19:59;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /DVN([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: DVN;

Rejected Journa Item

DVN 2-JAN-75 20:32 24988
Rejected Journa Item
Message: POOH 2-JAN-75 12:28 24983
Fake Title Includng "Tabs"
Message: this message is in code
*****Note: [INFO-ONLY] *****

*****Note: Author Copy*****

DVN 9-JAN-75 20:30 25039

Humour in the Command Language and Related References

Gwen, my sincere apologies for taking so long. I had not forgotten you, just figuratively rather than literally snowed under. Here I think I have asssembled all the references we spoke of. 1

The journal number of the witty interaction between the comand language and a user is < hjournal,23965, >. It's title is Dumb! 2

The basic journal item discussing justification for changes in the command language is: (hjournal,18408,). 3

The book of Computer poetry we mentioned is: Computer Poems, gathered by Richard W. Bailey, Potagannissng Press, Pigeon Cove Box, Drummond Island, Michigan, 49726. I got my copy by mailing them some amount of money, I can' recall how much. 4

One problem with diging up the reference to automatic novel writing is that most of the Sigart newsletters were not journalized. I plan to journalize them, but need to look a little into questions like who should be the author. Anyway as of now they are holding in directory <documentation> and the reference you want is < documentation,Aug73,13R >. The other nubers of the newsletter have names like that, months+years. 5

DVN 9-JAN-75 20:30 25039

Humour in the Command Language and Related References

(J25039) 9-JAN-75 20:30;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /GCE([ACTION]) JML([INFO-ONLY]) JCP([INFO-ONLY]) REF([INFO-ONLY]) LSC([INFO-ONLY]) DCW([INFO-ONLY]) LPD([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: DVN; Origin: < VANNOUHUYS, FORGWEN.NLS;2, >, 26-DEC-74 15:02 DVN ;;;;####;

DVN 9-JAN-75 20:33 25040

P S

Give my regards to Jaques. 1

P S

(J25040) 9-JAN-75 20:33;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /GCE([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: DVN;

KIRK 9-JAN-75 21:00 25041

test of a ' in a title

none 1

KIRK 9-JAN-75 21:00 25041

test of a ' in a title

(J25041) 9-JAN-75 21:00;;;; Title: Author(s): Kirk E. Kelley/KIRK;
Distribution: /KIRK([ACTION]) ; Sub-Collections: SRI-ARC; Clerk:
KIRK;

DVN 9-JAN-75 21:22 25042

A Simple Commands Branch to Reject Journal Mail on Specific Subjects

This journal item is sent with tongue in cheek, but only partly.

DVN 9-JAN-75 21:22 25042

A Simple Commands Branch to Reject Journal Mail on Specific Subjects

This commands branch works very nicely as a start up branch. I select tabs merely as a sample subject of disinterest; you may reject any other subject or ident by subsituting the string of disinterest inside the quotes in the first command. Note that the citation will be returned properly only if your journal citations retain the standard format. Note also it may search out and destroy a statement containing the string of disinterest in a branch below your "journal" branch. 1

```
Rejectmail                                                    2

   jum add <journal "Tabs">                                   2a

   Got Sen                                                    2b

   mess -100c+e                                               2c

   Tit Rejected Journa Item                                   2d

   Com The journal item cited has been rejected because I do not care
   to hear more about this subject.                           2e

   Unr                                                        2f

   dis act -100c'- -3c                                        2g

   sen                                                        2h

   qui to bas                                                 2i

   del bra                                                    2j
```

DVN 9-JAN-75 21:22 25042

A Simple Commands Branch to Reject Journal Mail on Specific Subjects

(J25042) 9-JAN-75 21:22;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /SRI-ARC([INFO-ONLY]) GCE([INFO-ONLY] this is using the command laguage as humour) DLS([INFO-ONLY]) PMK([INFO-ONLY]) PWO([INFO-ONLY]) MAP2([INFO-ONLY]) NJN([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: DVN;

Letter to Victor G. Kehler

Augmentation Research Center
Stanford Research Institute
Menlo Park, California 94025

Victor G. Kehler
HQ USAF/DAX
Washington, D.C.
20330

Dear Mr. Kehler,:

You may recall that last Thursday I phoned you at Bill Carlson's suggestion, to discuss the possibility of SRI offering assistance in analyzing or implementing improved computer based technical documentation systems. This possibilty arises from two related areas of expertise - The Augmentation Research Center's development and application of NLS, with which you already have some acquaintance, and the analytical work going on in other parts of SRI's Information Sciences Division. 1

In this connection Bill Carlson has had a chance to study a report on SRI's own text handling, including recommendations for step by step conversion to a computer-based system. I offered to supply you with a copy of that report so you could familiarize yourself with our work. That proves impossible. Access to the full report is closely restricted to SRI personnel involved, and Bill Carlson was able to see a copy because Dick Watson carried it to him and carried it back. 2

However, the parts of the report of principal interest to you have since been extracted as appendices to a proposal. I enclose those appendices. 3

I am also sending a copy of this letter to you through the NLS Journal system. 4

Letter to Victor G. Kehler

I hope to talk again when you have had a chance to read the enclosure.

Sincerely,

Dirk H. van Nouhuys
Augmentation Research Center

DVN/joann

DVN 9-JAN-75 22:04 25043

Letter to Victor G. Kehler

(J25043) 9-JAN-75 22:04;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /VGK([ACTION]) JOAN([ACTION] dpcs notebook please, and paper copies to tlh, pwo, and nn thru the SRI mail) DCE([INFO-ONLY]) RWW([INFO-ONLY]) WEC([INFO-ONLY]) PWO([INFO-ONLY]) TLH([INFO-ONLY]) ; Sub-Collections: DPCS SRI-ARC; Clerk: DVN; Origin: < HAMILTON, KEHLER.NLS;5, >, 9-JAN-75 13:01 JOAN ;;;;

####;

DVN 9-JAN-75 22:07 25044

Format Works at Office-1

There is now an up-to-date Format user program at Office-1. I look forward to hearing from you when you have tried it. The account of Format in Help at Office-1 is, by the way, out of date, I will try to arrange for it to be brought up to date shortly. 1

Format Works at Office-1

(J25044) 9-JAN-75 22:07;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /FGB([ACTION]) JOAN([ACTION] dpcs notebook please) JCN([INFO-ONLY]) JHB([INFO-ONLY]) JDH([INFO-ONLY]) NDM([INFO-ONLY]) PWO([INFO-ONLY]) MAP2([INFO-ONLY]) ; Sub-Collections: DPCS SRI-ARC; Clerk: DVN;

DVN 10-JAN-75 08:24 25045

Rejected Journa Item

The journal item cited has been rejected because I do not care to hear more about this subject.

Rejected Journa Item

DVN 9-JAN-75 19:59 25038
Rejected Journa Item
Message: DVN 2-JAN-75 20:32 24988
Rejected Journa Item
Message: POOH 2-JAN-75 12:28 24983
Fake Title Includng "Tabs"
Message: this message is in code
*****Note: [INFO-ONLY] *****

*****Note: Author Copy*****

*****Note: Author Copy*****

DVN 10-JAN-75 08:24 25045

Rejected Journa Item

(J25045) 10-JAN-75 08:24;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /DVN([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: DVN;

CHI 10-JAN-75 11:03 25056

New CML Features for NSW

sent via SNDMSG to Carlson, Balzer, Crocker, Warshall, Millstein, and Bolduc.

New CML Features for NSW

The following (Journal document # 25056) is some brief documentation of facilities that are being or have been added to the Control Meta Language (CML) to accomodate NSW needs: 1

Declaring execution functions 1a

DECLARE FUNCTION 1a1

PROCESS = "NLSBE", PACKAGE = "BASEPKG"; 1a1a

xinsert, xreplace, xoutproc OUT OF LINE, xname1 PSEUDONYM = name2; 1a1a1

declares the functions xinsert, xreplace, xoutproc, and xname1 to be externally callable procedures in the package BASEPKG in the PCP process NLSBE. The string "NLSBE" would be passed to the Works Manager (WM) to create the process and the package named "BASEPKG" would be opened by the Control Language Interpreter (CLI). The function xoutproc should be called "out-of-line" and the name NAME2 will be used to mean the procedure xname1 in this process and package (this is used to resolve ambiguity if there is another procedure named XNAME1 in another package). Any number of processes and packages can be so declared. 1a2

meaning of [...] 1b

The meaning of [...] has been changed to mean that the enclosed expression is optional, not that the user must enter the OPTION key to access it. This is shorthand for (... / DUMMY). 1b1

OPTION 1c

The builtin OPTION is now used to mean that the user must enter the OPTION key on his terminal. Thus the old use of [...] should be replaced by [OPTION ...] to get the same results. 1c1

SELECTION type declarations 1d

The COMMAND WORD declaration now allows the specification of some command words as arguments to LSEL, DSEL, and SSEL. This specification indicates whether the selection can be performed as one of the builtin selection types (TEXT, CHARACTER, WORD, VISIBLE, STRING, FILENAME, INTEGER, REAL, PASSWORD, or INVISIBLE) or that a parse function should be used to collect it from the user. One can specify this independently for TYPEIN, POINTING, and ADDRESS type selection. The syntax is of the form: 1d1

```
DECLARE COMMAND WORD                                                    1d1a

   "BLAP" = 5 SELECTOR = WORD,                                          1d1a1

      %the user will call it a blap but the CLI will treat
      it like a word.  When it is passed to the tool process
      it will have type = 5 %                                           1d1a1a

   "PLEX" = 17 SELECTOR POINT = pntplex TYPEIN = TEXT
   ADDRESS = getaddr;                                                   1d1a2

      % If the user types it, it will be treated like free
      text.  If he tries to point to a plex, the parse
      function pntplex will be called to process it and laod
      the accumulator with some tool-specific representation
      of the selected object.  If the user types the address
      of a plex (where such addresses are always interpreted
      by the tool process) then the parsefunction getaddr
      will be called to process it.  If the declareation had
      specified that ADDRESS = TEXT then free text would be
      collected as the address and it would be marked as an
      address string of type 17.                                        1d1a2a
```

List variables 1e

The assignment operator :_ may be used to append a new value to a variable instead of the _ operator which replaces the current value with a new value. If a variable previously contained a single value, then a :_ assignment replaces it by a list containing the new value. Subsequent :_ assignments to that var would append the new value to the list. Likewise if a variable previously contained a list, a _ assignment will replace the list by the new value. 1e1

Testing variables 1f

One may write "IF NOT var" and "IF var" to test whether or not a variable is FALSE (contains the integer zero) or is TRUE (contains a non-zero integer or a more complex data structure). 1f1

The assignment var _ FALSE and var _ TRUE are useful here. 1f1a

Note that a variable maintains its current value until it is replaced via a new assignment. Note also that juxtaposition represents the logical AND operator and that / represents the logical OR function. The builtin variayles "display", "typewriter", "lineatatime", and "halfduplex" are TRUE if the user's terminal has the indicated characteristic. 1f1b

calls to out-of-line execution functions 1g

One may specify that a variable be associated with a call to an execution function that is called out-of-line such that the variable is set to FALSE when the call is made and is set either to the results of the function when it finally returns or to TRUE if the function returns no results. This is denoted via the normal assignment operators _ or :_. In addition to being able to test the designated variable, one can also write WAIT UNTIL var and cause the CLI to wait for the outstanding call to return. One may also specify that when the function returns, a CML rule is to be executed by writing x[rulename](args). 1g1

IF a function has been declared OUT OF LINE then one may write a call to x as x[IN LINE](args) and force the call to be done in-line. Likewise a call to a normally in-line function can be made out-of-line by calling y[OUT OF LINE](args). The specification of a rule to be executed when the function returns implies an OUT OF LINE specification. 1g1a

Presenting information to the user 1h

general status 1h1

To cause the results of an execution function to be displayed to the user, one writes SHOW(var) or SHOW(x(args)) or SHOW(var _ x(args)), etc. The function x in this case may return the results piecemeal via co-routine returns, in which case the CLI will instruct the function to STOP or CONTINUE generating results based on possible user intervention. The execution function need not concern itself with how this information is presented to the user. In addition, SHOWCONFIRM may also be used to indicate that the user must confirm the fact that he has seen the message before parsing may continue. 1h1a

In addition, the FE makes available an externally callable function to present status-type strings to the user. This may also be invoked by issuing a NOTE. 1h1b

error messages 1h2

When an execution function issues an ABORT return, it may supply a string which will be presented to the user as an error message. In addition the FE provides an externally callable function to present error or warning messages to the user. This may also be invoked by issuing a NOTE.

Along with sch messages a time interval may be specified (one of them being the "standard" time interval such that the message will be replaced by the null message after that time period has elapsed. 1h2a

interactive display 1h3

For tools which wish to take advantage of the fact that a user is at an interactive display terminal, the FE makes available a number of externally callable functions for manipulating windows and text strings within those windows on the display. In addition, the CML allows one to specify that parameters may be collected from the user by allowing him to point at text placed on the screen by such tools in such a way that the tool can tell what part of the text he was refering to. An indication of the text so selected by the user is passed to the tool in an encoded form (window-id, string-id, character count, character-position-within-window). Other items such as a window and the edge of a window may also be selected. 1h3a

In a separate memo I shall address some possible tool interaction that can be facilitated by the FE and controlled by the WM. This tool interaction could take place largely without the explicit knowledge of the tools involved and could constitute a significant increase in capability for the user. 1h3b

The user could give a command to one tool and provide an argument to the command by pointing to an item in a window belonging to another tool or by typeing an address string that is to be interpreted by another tool. This would cause the CLI to invoke a procedure in the WM which would (if this interaction is allowed for this user) acquire the needed actual argument for the command. This acquisition could be accomplished by invoking a standard procedure in the source tool process and causing it to store its results in a temporary data structure in the destination tool process and returning to the CLI the data-selector for that temporary. The WM could also invoke conversion routines based on the "use type" of the data structure and attributes of the destination tool. 1h3bi

help for bad parameters 1i

If an execution function determines that one of its parameters is unacceptable and wishes to preserve the processing that has occurred so far, it may issue a HELP return to the CLI (its caller) indicating which parameter is bad and supplying a

string to present to the user indicating why it is unacceptable. The CLI will attempt to interact with the user to acquire another value for the parameter. If it is successful, it will resume the HELP with the new value. If it is unsuccessful or if the user so indicates, the HELP will be resumed with a request to abort the processing. 1i1

LOOPING 1j

To facilitate grammars where it is desireable to implement commands that never terminate (except when the user types the Abort-Command key), the construct LOOP (...) has been added. The previous construct PERFORM ... UNTIL (...) now results in recursion so that the user can backup his command specification. Please note that the user cannot backup into earlier iterations through a LOOP. 1j1

ANSWER 1k

Since getting a yes/no question response turned out to be so common in NLS, I have added a builtin operator ANSWER. This construct succeeds if the answer is afirmative and fails otherwise. 1k1

SYNTAX 1l

To allow the command language designer more control over the response given to user's when they ask for the full syntax of a command, I have added a declaration of the form 1l1

```
DECLARE SYNTAX                                          1l1a

    rulename = "STRING1",                               1l1a1

    executionfunction = "STRING2";                      1l1a2
```

This allows one to specify that some CML rules are to be represented by the specified string rather than being expanded. Likewise, one can specify that an execution function invoked during the command will be represented by a particular string instead of simply being absent. 1l2

INPUT FROM and OUTPUT TO 1m

To allow the user to record sessions, build up a record of user interaction, use input stored in a file, or use input aquired from some other source, I have added the constructs INPUT FROM x(args) and OUTPUT TO y(args). INPUT TO causes user input to be periodically obtained from a remote function. OUTPUT TO

causes user input and system output to be periodically reported to a remote function. 1m1

DECLARE TERMINAL CLASS FUNCTION 1n

To allow the user to simulate different terminal classes and to allow for terminal linking (which may imply a terminal class simulation) the CML allows the declaration of a function to be called in the event the terminal class is changed. 1n1

Success/failure in CML 1o

The general notion of success and failure is basically the same as in the old CML. The characteristics of the target machine have changed somewhat as follows (The implementation of the simulator for this machine, the CLI, is nearly complete.): 1o1

There is now an accumulator and an argument stack instead of just a stack. 1o1a

Variables may be lists and are fully typed. 1o1b

Variables maintain their current value until it is explicitly changed. 1o1c

Conflicts are handled much more gracefully in that all operators can fail and compete with any others for control. 1o1d

An example of this might be a command word as an alternative to an LSEL and a CONFIRM. How this ambiguity would be handled depends on the order in which the alternatives are expressed since this controls the order in which they are processed. 1o1d1

(CONFIRM / LSEL(word) / "HELP") 1o1d1a

If the user types CA, then the confirm would succeed. 1o1d1a1

If the user is using demand recognition and types "help " the command word would succeed. 1o1d1a2

If the user typed some other text the LSEL would succeed. In this case the user would be able to back up his input and cause one of the others to succeed by inputting the charactes just described. For example, the user could type "helt" then backup the "t" and type "p " and the command word would succeed. 1o1d1a3

(LSEL(word) / CONFIRM / "HELP") 1o1d1b

This is the same as above except that CA would be interpreted as a pointing selection of a word on the screen. 1o1d1b1

Execution functions 1p

Remote xecution functions will be called with a PCP encoding of the arguments specified in the CML. It may then HELP, NOTE, co-routine return partial results, abort, or return with or without results. Any returned results may be stored in CML variables and may be shown to the user, tested, or passed as arguments to other parse or execution functions. 1p1

Parse functions 1q

Parse functions must be L10 COROUTINES and must adhere to the conventions established by the CLI. They may get characters from the user and may output information to him. They may load the accumulator with data structures and they may maintain their own private data structures. If they acquire space from the storage allocator they must also free it. 1q1

I will write A GUIDE TO WRITING PARSE FUNCTIONS shortly in which I will attempt to describe all of the conventions to which parse functions must adhere and the facilities that will be at their disposal. I do not expect many tool installers to need parse functions. 1q2

CHI 10-JAN-75 11:03 25056

New CML Features for NSW

(J25056) 10-JAN-75 11:03;;;; Title: Author(s): Charles H. Irby/CHI;
Distribution: /NPG([INFO-ONLY]) RWW([INFO-ONLY]) DLS([
INFO-ONLY]) MAW([INFO-ONLY]) FJH([INFO-ONLY]) ;
Sub-Collections: SRI-ARC NPG; Clerk: CHI; Origin: <
NSW-SOURCES, NEW-CM-FEATURES.NLS;1, >, 10-JAN-75 10:51 CHI ;;;;####;

RWW 10-JAN-75 11:24 25057

please fill out your own timecards

While discharging my usual unhappy Friday chore of signing time cards I was struck with the very large number filled out by Sandy. Ah yes time cards are a pain in the ass, but the only way presently operable to get peoples time charged to all the correct accounts. Also government auditors are all over the place these days checking on charges and causing problems all around for the institute. Therefore, I would appreciae it if people would be ure to fill out and sign their own cards unless they are away on a trip, vacation or sick. Your help appreciated. Thanks Dick 1

RWW 10-JAN-75 11:24 25057

please fill out your own timecards

(J25057) 10-JAN-75 11:24;;;; Title: Author(s): Richard W. Watson/RWW; Distribution: /SRI-ARC([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: RWW;

RLL 10-JAN-75 11:35 25059

bug: poor message 'identification system error'

While submitting a journal item, I received the message 'identification system error'. Clearly (!!!) a non meaningful message. It turns out that I had given a subcollection name that was not a valid ident. Will submit sggestion on error messages in another mail item. Rob 1

RLL 10-JAN-75 11:35 25059

bug: poor message 'identification system error'

(J25059) 10-JAN-75 11:35;;;; Title: Author(s): Robert N. Lieberman/RLL; Distribution: /FEED([ACTION]) KIRK([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: RLL;

RLL 10-JAN-75 11:48 25060

sug: help data base

1: add the word 'errors', 'error message' is there but I think errors is just as likely to be requested.
2: the #3 item in the 'error messages' branch (sendmail errors) aparently has no information in it, just the name of the branch.
3: main sug- have every error message in the glossary so that one can search on it. because of conflicts (e.g.nls system error would conflict with nls as a keyword to search on) one might have dashes between words of error messages and let peole know about this convention.

1

RLL 10-JAN-75 11:48 25060

sug: help data base

(J25060) 10-JAN-75 11:48;;;; Title: Author(s): Robert N. Lieberman/RLL; Distribution: /FEED([ACTION]) KIRK([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: RLL;

RLL 10-JAN-75 16:15 25061

What happened to the group allo ation message??

what happened to the group message that you were writing? did JCN approve the latest version? was it put up at OFFICE-1??? Dialog about 8 to 11 Dec 74, tthis was the last I herad bout it. 1

RLL 10-JAN-75 16:15 25061

What happened to the group allo ation message??

(J25061) 10-JAN-75 16:15;;;; Title: Author(s): Robert N. Lieberman/RLL; Distribution: /JCP([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: RLL;

INTRODUCTION 1

This document records the ways in which the PCP implementation is diverging from its Version 2 documentation. It is a dynamic document of primary interest to implementers of PCP and code which must run in a PCP environment. It is organized by V2 document so that each section can, if desired, be physically stored with the document to which it corresponds. 1a

Comments, corrections, and additions are welcomed. The contents of this document will be used eventually to generate Version 3 documentation. In the interim, the most recent copy will be available on-line in the following forms: 1b

[SRI-ARC]<WHITE>PCPV2CHANGES.NLS 1b1
[SRI-ARC]<NLS>PCPV2CHANGES.TXT 1b2

The former is an NLS file, the latter an output-processed version suitable for printing on a non-SRI-ARC printer. 1c

CHANGES 2d

(PCP -- 24459,5a2a) Identifying the Calling Processor 2d1

An additional parameter of type INTEGER called PRH is required, following PRIVILEDGED, in the CALPRO message. PRH is a handle for the processor that requested the procedure call. Its secification in the CALPRO message enables the callee (in particular, PMP's LCKDATA and UNLCKDATA procedures) to distinguish one processor from another. 2d1a

(PCP -- 24459,5a2b) Cost of a Procedure Call 2d2

An additional parameter of type INTEGER called COST is required, following RESULTS, in the RTNPRO message. It represents the cost of the procedure since its call in cents. 2d2a

(PCP -- 24459,5a2d) Priviledged Use of INTPRO Message 2d3

An additional parameter of type BOOLEAN called PRIVILEDGED is required, following CH, in the INTPRO message. It provides a mechanism by which a procedure call can be interrupted without regard for the setting of its processor's FRZLCK lock, making possible the implementation of debuggers capable of interrupting infinite loops. 2d3a

(PCP -- 24459,5b3a) Logging in via CRTPRC 2d4

An additional argument called USERID is required, following PRCADDR, in the CRTPRC procedure. It represents the login parameters to be associated with the newly-created process. In particular, USERID specifies a user USER, for purposes of controlling access to system resources; an account ACCOUNT, for billing purposes; and a password PASSWORD by which the creating process' right to pose as user USER can be established. The argument USERID has the following form: 2d4a

```
userid- LIST (%user% CHARSTR, %password% CHARSTR,
              %account% CHARSTR)                    2d4a1
```

IDEAS 2e

Alter Egos 2e1

Some form of special process handle is required for addressing the processor-controlling code within a process (in PCPTNXINT, the CF) to aid implementation of the debugger. 2e1a

Timeouts 2e2

Should PCP ever time out a procedure call? If so, how should it know what interval is appropriate? Should it be an argument to the CALPRO procedure, a compile-time parameter specified by the procedure implementer, a system constant? 2e2a

Batched procedure calls 2e3

Should PCP, to improve efficiency, provide a mechanism by which calls to a series of procedures can be batched in a single inter-process transmission? Any but a permanent return of subtype SUCCESS by any but the last procedure in the series would cause the entire series to be aborted. Argument- and result-list masks could be used, as desired, to make the result of one procedure an argument to a succeeding one. 2e3a

(PCP -- 24459,4c4a3) Error code semantics 2e4

When a procedure makes a permanent return of subtype ABORTED, it provides an error code which somehow indicates to the caller the reason for the callee's failure. PCP at presents says nothing about the value of the error code, simply requiring it to be an INTEGER data structure. It may prove useful to assign meanings to error codes that fall within certain ranges. For example: 2e4a

0-99 Errors which necessitate deletion and recreation of the callee's process 2e4a1

100-199 Errors which necessitate closing and reopening of the callee's package 2e4a2

200-299 Errors which necessitate recalling the callee 2e4a3

300-399 Errors which are harmless 2e4a4

Statistics gathering 2e5

There must eventually be hooks throughout PCP to support statistical analysis of a system's performance, and possibly a package containing procedures by which the hooks can be enabled, disabled, and dynamically modified. 2e5a

PSP 4

CLARIFICATIONS 4a

(PSP -- 24461,3a) Opening Packages 4a1

When a process calls the OPNPKS procedure in another process, the effect is to open the specified package(s) only for the caller's process. Only that single process is enabled, by the call to OPNPKS, to call procedures in those package(s); any other process that desires to do so must open the package(s) itself. 4a1a

By associating the openness of a package with the caller's, rather than the callee's process, it becomes possible to restrict access to a package on a per-neighboring-process basis. A process might desire, for example, to permit its superior to open a package and yet prevent its inferiors from doing so. 4a1b

TYPOS 4b

BUGS 4c

CHANGES 4d

IDEAS 4e

PMP 5

CLARIFICATIONS 5a

TYPOS 5b

BUGS 5c

CHANGES 5d

(PMP -- 24462,3a1) Logging in with CRTPRC 5d1

An additional argument called USERID is required, following PRCADDR, in the CRTPRC procedure. It represents the login parameters to be associated with the newly-created process. In particular, USERID specifies a user USER, for purposes of controlling access to system resources; an account ACCOUNT, for billing purposes; and a password PASSWORD by which the creating process' right to pose as user USER can be established. The argument USERID has the following form: 5d1a

userid= LIST (%user% CHARSTR, %password% CHARSTR, %account% CHARSTR) 5d1a1

(PMP -- 24462,3a1) Preparing for Process Detach 5d2

An additional result called TOKEN is returned, following PRCNAME, by the CRTPRC procedure. Posession of the token permits a process to reatttach the newly-created process should it ever be detached, either voluntarily or involuntarily; unless the token is EMPTY, in which case the process can be neither detached nor attached. The result TOKEN has the following form: 5d2a

token= any / EMPTY 5d2a1

(PMP -- 24462,3a1) Splicing Trees 5d3

PMP permits two process trees to be "spliced" together, by providing a mechanism by which a process in one can establish a logical and physical channel between it and a willing process in the other. Once the splice has been performed, each process has a process handle that addresses the other and can therefore call its procedures.

and processes in one tree can be introduced to processes in the other. 5d3a

The process that initiates or permits the splice is said to be the "active or passive associate" of the other, respectively. A splice is created by the active associate by means of the CRTPRC procedure. Splice and process creation are therefore indistinguishable, except by means of the process address passed as an argument to CRTPRC, which in the former case must designate an existing process, rather than a new one. A splice is deleted by the active associate by means of the DELPRC procedure. Splice and process deletion are therefore indistinguishable, except by context. 5d3b

(PMP -- 24462,3) Locking Procedures Added 5d4

Introduction 5d4a

The procedures described in this section enable processors in one or more processes to synchronize their execution (e.g. to control their manipulation of shared data bases). They permit a processor to "lock" a specified data store and thus obtain either exclusive or shared access to it, or to some other entity for which the data store is agreed (by the processes involved) to be a token. 5d4a1

A processor may lock a data store for either read or write. In the former case, the processor is assured that no other processor (in any process) has (or can) apply a write lock to it until it is unlocked; in the latter, both read and write lock attempts are prohibited while the data store is locked. 5d4a2

While a data store is locked for read, the attempt of any other processor to modify it will be prohibited by PCP and the intruding processor's call to WRDATA aborted. While the data store is locked for write, attempts to read it with RDDATA will be aborted as well. 5d4a3

Procedures 5d4b

Lock data store 5d4b1

LCKDATA (dsname, type, wait)

This procedure applies a lock of type TYPE to local data store DSNAME. If WAIT is FALSE, the procedure will fail if the data store is currently locked by another processor in a way that precludes its being locked immediately by the caller. Otherwise, the procedure will wait as long as necessary to set the lock, and then return to the caller.

DSNAME, a data structure of type DSELECTOR*, must have only PH, PKH, and DATA STORE KEY fields, the first of which must have the value SELF.

Argument/result types:

dsname- DSELECTOR*
type - BOOLEAN [READ=TRUE / WRITE=FALSE]
wait - BOOLEAN

Unlock data store 5d4b2

UNLCKDATA (dsname)

This procedure removes the lock most recently applied to data store DSNAME by the calling processor.

DSNAME, a data structure of type DSELECTOR*, must have only PH, PKH, and DATA STORE KEY fields, the first of which must have the value SELF.

Argument/result types:

dsname- DSELECTOR*

(PMP -- 24462,3) Attach/Detach Procedures Added 5d5

Introduction 5d5a

The procedures described in this section permit a process to "detach" and effectively plant a "branch" of its process tree, creating a new tree independent of its creator; and later if desired reattach it. The root process of the new tree must have been a direct inferior of the process that detaches it. 5d5a1

When the process that heads what becomes the detached branch is first created, a "token" for the process is returned as a result of the CRTPRC procedure. Possession of the token is what permits a process to reattach the process at some later time. The token is a Network-wide handle for the detached process, and with it any process, anywhere within the Network can reattach the process. 5d5a2

Tokens contain both the process' physical location and a date-and-time stamp or other password sufficient to assure that only the process that detaches the branch, or one to which it willingly transmits the token, can attach it, and that obsolete tokens never prove valid by coincidence.

The new tree will be allowed to run until it attempts to call a procedure or manipulate a data store in its root process' direct superior, at which time its execution will be suspended until it is attached (i.e. until it HAS a direct superior). 5d5a3

The DETPRC procedure may be used to create an independent tree, to prevent a process from communicating with its superior for an arbitrary length of time, to transfer a process from one point in a tree to another, or to transfer it from one tree to another. 5d5a4

If a process' superior fails in execution before deleting them, its inferior processes will be detached, rather than deleted. If the superior process was farsighted enough to save on secondary storage or with another process the tokens returned by CRTPRC, it can restart the inferiors after the crash of its host system (at least those that reside on different hosts). 5d5a5

Procedures 5d5b

Detach process 5d5b1

DETPRC (ph)

This procedure detaches from the process tree, the process known to the local process via PH, along with its direct and indirect inferiors. PH and, or course, the handle via which the local process was known to the detached process, are invalidated.

Argument/result types:

ph- INTEGER

Attach process 5d5b2

ATTPRC (token -> ph)

This procedure reattaches the previously-detached process known via the token TOKEN, as a direct inferior of the local process via a physical channel, and makes it known to the local process via PH.

Argument/result types:

token- any
ph - INTEGER

IDEAS 5e

(PMP -- 24462,3) Recovering Detached Processes 5e1

After the detachment and reattachment of a process, what is the state of an introduction involving a process in the detached branch and a process in the body of the tree? What's the state of a call handle for a non-permanently-returned procedure call when the callee is in the detached branch and the caller in the body of the tree? 5e1a

CHANGES 7d

(PCPFRK -- 24576,4) Encoding of IPC Messages 7d1

The IPC messages are encoded in standard PCP formats, rather than in the ad hoc formats described. Hence: 7d1a

INITACK (prcname) 7d1a1
LIST (%opcode% INTEGER [INITACK=0], %prcname% CHARSTR)

TERM () 7d1a2
LIST (%opcode% INTEGER [TERM=1])

TERMACK (cost) 7d1a3
LIST (%opcode% INTEGER [TERMACK=2], %cost% INTEGER)

IPCERR (errcode, errmsg) 7d1a4
LIST (%opcode% INTEGER [IPCERR=3], %errcode% INTEGER, %errmsg% CHARSTR / EMPTY)

NOP () 7d1a5
LIST (%opcode% INTEGER [NOP=4])

(PCPFRK -- 24576,4) Initialization Message Added 7d2

Initialize 7d2a

INIT (userid) 7d2a1

This message, sent only from superior to inferior, requests the latter's initialization. USERID contains the login parameters to be associated with the newly-created process. In particular, USERID specifies a user USER, for purposes of controlling access to system resources; an account ACCOUNT, for billing purposes; and a password PASSWORD by which the creating process' right to pose as user USER can be established. 7d2a2

Format: 7d2a3

LIST (%opcode% INTEGER [INIT=5], %userid% LIST (%user% CHARSTR, %password% CHARSTR, %account% CHARSTR))

IDEAS 7e

PCPHST 8

CLARIFICATIONS 8a

(PCPHST -- 24577,3a1) Process Implementation 8a1

When the CRTPRC procedure is employed to create a process in a Tenex host, the process that answers the ICP and reads the INIT message uses the login parameters provided to create a new job using the CRTJOB JSYS, and pass it the JFNs for the ICP-created connections. 8a1a

TYPOS 8b

BUGS 8c

CHANGES 8d

(PCPHST -- 24577,4) Initialization Message Added 8d1

Initialize 8d1a

INIT (userid) 8d1a1

This message, sent only from superior to inferior, requests the latter's initialization. USERID contains the login parameters to be associated with the newly-created process. In particular, USERID specifies a user USER, for purposes of controlling access to system resources; an account ACCOUNT, for billing purposes; and a password PASSWORD by which the creating process' right to pose as user USER can be established. 8d1a2

Format: 8d1a3

```
LIST (%opcode% INTEGER [INIT=5], %userid% LIST
      (%user% CHARSTR, %password% CHARSTR, %account%
      CHARSTR))
```

(PCPHST -- 24577,4a3b) Encoding of IPC Messages 8d2

The IPC messages are encoded in standard PCP formats, rather than in the ad hoc formats described. 8d2a

IDEAS 8e

PCPTNXINT 9

CLARIFICATIONS 9a

(PCPTNXINT -- 24792,6c3b2) Responsibilities of PKOPCL 9a1

PKOPCL is responsible for maintaining a use count for each package, for incrementing it with each open, and for decrementing it with each close. PKOPCL should initialize and terminate the package whenever the count goes from zero to one and from one to zero, respectively. WhenEVER the subroutine is called to OPEN a package, regardless of the use count's value, PKOPCL should verify, if desired, the caller's access to the package. 9a1a

TYPOS 9b

BUGS 9c

(PCPTNXINT -- 24792,6b4a3) Size of Lock Word 9c1

LKSTS is a full word (with an initially-unused halfword inserted before it). 9c1a

CHANGES 9d

(PCPTNXINT -- 24792,6c1) Additions to User Descriptor 9d1

The following fields are added to the user descriptor (other fields are moved down three halfwords): 9d1a

Hword 3	USSUNS	Addr of splicer/unsplicer or zero	9d1a1
Hword 4	USROOT	Addr of tree entry or zero	9d1a2
Hword 5	USAPCR	Addr of processor allocator or zero	9d1a3

If USSUNS is zero, the process can not be spliced to. USSUNS' calling sequence is as follows: 9d1b

Greet or see off splicing process 9d1b1

USSUNS (mode, userid, ph)

This subroutine greets or sees off, according to MODE, the newly- or previously-spliced process known to the local process via the handle PH and will be called by a system module when the process first splices itself to the local process and again when it unsplices itself. If MODE is SPLICE, the USERID specified by the active associate in its call to CRTPRC is presented to the subroutine for verification (if desired).

Argument list format:

Word 0	Mode [SPLICE=1 / UNSPLICE=0]
Word 1	Userid (addr of PCPB36 data structure) / zero
Word 2	Ph

If USROOT is zero, the process can not be the root process of a tree. USROOT's calling sequence is as follows: 9d1c

Begin process tree 9d1c1

USROOT ()

Provided that the local process is the root process of the tree, this subroutine will be called by a system module when the process is created, and is expected to retain control for the life of the tree which the local process goes on to create. This subroutine should never return to its caller.

If USAPCR is zero, the process forfeits its right to OK processor allocation attempts. USAPCR's calling sequence is as follows: 9d1d

OK processor allocation 9d1d1

USAPCR (ph, count)

This subroutine either authorizes or rejects (depending upon whether it returns subtype SUCCESS or FAILURE) a request that COUNT local processors be allocated to the process known to the local process via the handle PH. It will be called by PMP's ALOPCRS procedure.

Argument list format:

Word 0 Ph
Word 1 Count

IDEAS 9e

JEW 10-JAN-75 17:30 25062

PCP Inter-Version (2-3) Documentation
PCPV2CHANGES

10 JAN 75

James E. White
Augmentation Research Center

Stanford Research Institute
Menlo Park, California 94025

PCPV2CHANGES records the ways in which the implementation of PCP is diverging from its Version 2 documentation, and should be viewed by implementers of both PCP and code which must run in a PCP environment as a dynamic appendix to the Version 2 PCP-related documents. The reader is of course assumed familiar with the Procedure Call Protocol (PCP -- 24459,).

(J25062) 10-JAN-75 17:30;;;; Title: Author(s): James E. (Jim) White/JEW; Distribution: /SRI-ARC([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: JEW; Origin: < WHITE, PCPV2CHANGES.NLS;8, >, 10-JAN-75 17:13 JEW ;;;; ####;

Informal Documentation Report for Week Ending 1/12

pooh:an almost all day visit to George Lithograph 1

attended another class for he output processor 1a

got the business cards file ready to for com. 1b

continued work on the glossary--now up to page 99 of 140. Some the the remaining 40 pages are covered by previous work. 1c

KIRK: very little. 2

> Made some changes to user-programs help. Now being reviewed by Applications. 2a

> Developed procedures for announcing changes in NLS. 2b

> Started updating <documentation,manual,> to reflect help conventions and proper procedures for documenting changes in NLS. 2c

> responsibility established (JDH) for up-to-date office-1 copies of help and files in userguides including locator. 2d

> Reviewed POOH's help work. 2e

> Fixed some bugs in Help. 2f

> Brought up a new Help. 2g

DVN: 3

Lineprocessor Usuer's Guide: Printed copies returned from SRI printing. I handed responisbility for future updates and upkeep to POOH 3a

Preface to NLS: Waiting for Application's Review 3b

Introduction to NLS (replacing the Howto branch of help):Waiting to be written. 3c

TNLS Addressing: It is on me to repsond to RWW's review. 3d

COM: 3e

Martin Hardy's paper on Microprocessor Techology: DDSI has called to say Stick fonts are working. They asked me to make a new copy of this file so they can try out he refurbished software. It did not work. 3e1

The revised command summary returned from DDSI. I blew it; a

bunch of stuff was centered that should not be, I will make a new run as soon as I can. It looks good otherwise. 3e2

The TNLS-8 Primer awaits my attention for COM printing. 3e3

Ken Victor's paper on CML returned. It needed some column balancing which I did. It went with POOH's cards and Larry Day's paper with the file name San Juan to ISI Thursday night and has not progressed further due to problems to be journalized separately. 3e4

Visited George Lithograph with Bob Belville, Elizabeth, and POOH. The possibilities of their doing COM work for us looks really good but we are not there yet. 3e5

Interviewed several applicants for documentation work here. Awaiting writing tests from some of them; then I will narrow the firld to a couple of people whom I will ask to come back and talk to intereted parites next week. 3f

drafted abstract for final report. 3g

JMB officially stopped working on documentation and started working on applications this week. 3h

POOH KIRK DVN 12-JAN-75 20:56 25064

Informal Documentation Report for Week Ending 1/12

(J25064) 12-JAN-75 20:56;;;; Title: Author(s): Ann Weinberg, Kirk E. Kelley, Dirk H. Van Nouhuys/POOH KIRK DVN; Distribution: /JOAN([ACTION] dirt notebook please) DIRT([INFO-ONLY]) ; Sub-Collections: SRI-ARC DIRT; Clerk: DVN;

DVN PWO 12-JAN-75 21:01 25065

Commerce Business Daily Request for Qualifications to Supply Computer Publication System to Bonneville Power Authority and Response.

Mailed Friday the 10th

DVN PWO 12-JAN-75 21:01 25065

Commerce Business Daily Request for Qualifications to Supply Computer Publication System to Bonneville Power Authority and Response.

Commerce Business Daily Dec. 12, 1974 1

Studying the feasibility of computer based word-or text-processing systems. Several locations with in BPA have a heavy paperwork load including the preparation of specifications, fiveand ten year plans, Environmental Impact Statements, computer program documentation, contracts, manuals, reports, etc. Consideration is being given to three alternatives to implementing such a computer-based system. These are: (1) By contract with a service bureau type supplier; (2) Through implementation of system software on the BPA CDC 6500 computer; or (3) Through the use of a new computer dedicated to word-processing. Companies having a system or terminals/individual units which they feel may be applicable to the BPA operation, must reply by 15 Jan 75. (P343)

U.S. Department of the Interior
Bonneville Power Administration
P.O. Box 3821
Portland, Ore. 97208
Attn: M. Lambie
Tele: 503-234-3381 ext 4707 1a

.SN=Off
Augmentation Research Center

Stanford Research Institute
Menlo Park, California 94025

M. Lambie
U.S. Department of the Interior
P.O. Box 3821
Portland, Oregon
97208

Dear Mr. Lambie:

I write in response to your request for a statement of qualification in the December 12 issue of Commerce Business Daily. SRI has invested many years in the development of computer-aided document production systems, both in-house and for commercial clients. We will discuss two of these systems currently in use and at advanced stages of development here.

Over the past twelve years the Augmentation Research Center (ARC) of SRI has developed a comprehensive online system (NLS) for handling textual and simple graphic information. NLS is now at a stage of evolution where it may be of interest to your organization.

NLS provides many services for the ARC and its user community. It includes a comprehensive set of text processing capabilities but is more than just a computer text handling system. For your information only capabilities related to document production are described.

NLS is made up of a number of subsystems, each serving a different function within the total NLS context. The Deferred Execution (DEX) subsystem provides for preparing text offline for entry into NLS. Text may be captured on any standard Teletype compatible terminal and recorded on paper tape, or on a keyboard device connected to a digital cassette recorder. During text capture, NLS directives may also be captured for later online processing. The structure of the text at capture defines the NLS file structure which is basically outline form.

Text may also be captured online using either display NLS (DNLS) or typewriter NLS (TNLS). Both subsystems provide interactive NLS capabilities. Online capture of text tends to be more costly than offline capture but allows the user to manipulate the material as it is captured. Processing of DEX-captured material, on the other hand, can take place

during periods of low system usage, providing for better use of the system computer. 7

DNLS and TNLS both offer the user an extensive set of text editing capabilities. DNLS employs a CRT display console and TNLS a typewriter terminal such as the TI-700. Both operate online. The command repertoires and facilities are as nearly identical as possible considering the different device characteristics. DNLS provides rather more effective user feedback, and certain operations--such as selecting a character or word in the text--are simpler with DNLS than with TNLS. The following discussion addresses the DNLS medium, but virtually all of the features described are also provided in TNLS. 8

DNLS provides, a comprehensive set of text manipulating commands: the user can delete, replace, or insert. Manipulations take place on naturally defined units such as characters and words as well as NLS-structured units such as statements (paragraphs or phrases on a line) and groups of statements. Macro-editing commands include move, copy, transpose, and force case. Several techniques exist for format control. The way in which text is represented on the display (margins, character sizes, etc.) may be defined by the user. The way in which statements are numbered allows further control of formatting. 9

One of the strongest features of DNLS is its development of display techniques. Several display devices have been used successfully by ARC, both ARC's own designs and commercially available units such as IMLAC or Hazeltine displays. The most economic display station consists of the display, a lineprocessor control unit, a mouse (a cursor device for pointing and input of some control commands), and an optional five-finger keyset (for onehanded input). Mouse, keyset, and lineprocessor were developed at ARC for interactive processing. The mouse is especially significant. It allows the user to "point" to any character on the display much more naturally than the typical four-directional, character-step cursor control of commercial units. 10

The archiving and retrieval activities of NLS are extensive. Once captured text has been structured into an NLS file, the system maintains storage control. While the file is active, it is stored online on disk. Inactive files are archived on magnetic tape and may be re-entered into the system upon request. 11

NLS provides a variety of publication formats: hardcopy of an NLS file as it appears on a display screen may be produced on

an upper/lower case line printer or directed to the Output Processor. The Output Processor is an NLS program which formats an NLS file according to instructions (directives) embedded within the text. A total of 186 directives are recognized by the Output Processor including font size, columnation, and page numbering. The Output Processor can direct output to hard copy devices such as a line printer or a production quality printer, or to a microfilm phototypesetter, where either Xerox proof copy or high-quality camera-ready masters can be generated. Complex phototypesetting can be and is accomplished in this manner by trained specialists. 12

A utility version of NLS has evolved to support expansion of the NLS user community. This utility has been made available to a limited community for exploratory application as a multi-user, timeshared service administered by ARC. It runs on a Digital Equipment Corporation PDP-10 operating through the TENEX timesharing system, connected via an Interface Message Processor to the ARPANET or via telephone lines to service subscribers outside the ARPANET 13

I enclose several documents giving information on the work of the Augmentation Research Center: 14

"Coordinated Information Services" by Douglas C. Engelbart, Proceedings of the Second Annual Computer Communications Conference in San Jose 7p. and "The Augmented Knowledge Workshop" by Douglas C. Engelbart, Richard W. Watson,and James C. Norton, Proceedings of the National Computer Conference in June 1973 in Publications of the American Federation of Information Processing, Volumne 42, New York, 1973. 19p. describe our general goals and purposes, 14a

"Online Team Environment / Network Information Center and Computer Augmented Team Interaction," Augmentation Research Center, Stanford Research Institute, Menlo Park, California 94025 16 March 1973. 178p. is our most recent general report, 14b

"Line Processor: A Device for Amplification of Display Terminal Cababilities for Text Manipulation" by Donald I. Andrews Presented at th 1974 AFIPS conference, gives information on our current terminal technology, 14c

"Output Processor Users' Guide," Augmentation Research Center, Stanford Research Institute, Menlo Park, California 94025 16 March 1973. 46p. shows NLS printing and formatting capabilities. 14d

and "The SRI-ARC Workshop Utility Service", by James C. Norton, ARC Journal #24031)) describes the NLS Utlity service. 14e

With respect to the availability of NLS: the current version of NLS runs on a PDP-10 using the TENEX timesharing system (see Online Team Environment page 167 ff, for a description of a typical facility). There is no difficulty making NLS available on any PDP-10 running TENEX. The possibility of operating NLS on other machines has been included in our design criteria for several years and implementation is high in our present priorities. NLS may operate through a variety of terminals. "Line Processor: A Device for Amplification of Display Terminal Cababilities for Text Manipulation" describes the terminal arrangement that is optimal in lowering cost and giving power to the user. 15

Your request comes opportunely to us. NLS has been developing for a long time in a research environment. It is only in the last year that, with the utility we have accepted the problems and opportunities of non-research use. NLS has a very wide range of applications; in developing new users we have chosen to concentrate on certain areas in an effort to create a community of people involved in development and initial applications. Document production and control is one such area. All enclosures, by the way, were produced in NLS and printed via either lineprinter or computer output to microfilm. 16

SRI has wide experience in this field not directly related to NLS. A number of textual information systems have been developed at SRI, and SRI has provided the service of analyzing publications and allied procedures to a variety of customers. 17

Another relevant publication system that has been developed at SRI is the Machine Aided Editing System (MAE). MAE is a minicomputer-based (PDP 11/20) text editing system developed in SRI's Information Science Laboratory. Its primary function is to provide an environment for the development of production-oriented text handling techniques and to demonstrate the application of these techniques to potential clients. An important feature of this system is that it provides online display editing support that is page-oriented. The capability for full page viewing on a CRT screen allows powerful page makeup review and editing to be very conveniently carried out prior to hard copy generation. A growing portion of MAE activity has been devoted to report preparation by SRI staff. For example, most reports generated by the Information Systems Group are processed

through MAE, and other groups such as Chemical Information Services are working with ISG personnel to use MAE for production text handling. 18

Both NLS and MAE are at present prototypical rather than a production systems. We at SRI and Utility customers use them for Document development and production only on a small scale. Thus some system checkout and refinement would be necessary in scaling up to operations of the size suggested in your inquiry. 19

It should be reiterated that both NLS and MAE have been evolving through continuous development and refinement efforts for the past 12 years. This continuing commitment has led to both very powerful text handling/document production tools and the requisite experience to appreciate and resolve the problems attendant to large scale document production environments. We are dedicated to this goal and have the expertise and the tools to effectively, rapidly implement such a system. 20

Sincerely,

Dirk H. Van Nouhuys
Augmentation Research Center

DVN/joan

DVN PWO 12-JAN-75 21:01 25065

Commerce Business Daily Request for Qualifications to Supply Computer Publication System to Bonneville Power Authority and Response.

(J25065) 12-JAN-75 21:01;;;; Title: Author(s): Dirk H. Van Nouhuys, Pat Whiting O'Keefe/DVN PWO; Distribution: /JOAN([ACTION] dpcs notebook please + paper copies to Pat W-O, Norm Nielsen, and Tom Humphry) DPCS([INFO-ONLY]) DCE([INFO-ONLY] because of problems with the letter program we had time to put in only your more important suggestions) ; Sub-Collections: SRI-ARC DPCS NIC; Clerk: DVN; Origin: < VANNOUHUYS, JRBON.NLS;1, >, 12-JAN-75 20:33 JOAN ;;;;####;

JHB 13-JAN-75 08:17, 25066

Note on recent Network Problems

Architects may wish to distribute this to users at their site. This is a copy of the message sent by the Network Control Center regarding the significant network problems over the past week or so.

JHB 13-JAN-75 08:17 25066

Note on recent Network Problems

11-JAN-75 1143-EST MCKENZIE at BBN-TENEX: A Possible IMP Software Bug and a Possible Software Release
Distribution: NETWORK-LIAISON-GROUP:
Received at: 11-JAN-75 08:44:56 1

ATTENTION TECHNICAL LIAISONS 1a

It appears that there may be a bug in the IMP system software which was released last Tuesday. The symptoms which are currently under investigation are greatly reduced throughput between seemingly random pairs of sites, at seemingly random times. For TIP users, this might be manifested as extremely "jerky" interaction with character-at-a-time systems, or by receiving "bells" after a bit of type-ahead. We are working this weekend to try to find and fix this bug. 1b

If, by Monday afternoon, we have not located the cause of the difficulty then on Tuesday, January 14, between the hours of 0600 and 0930 Eastern time, we will re-release the previous version of the software. It might be helpful to us to know of instances when you believe the symptoms have occurred. 1c

Therefore, we would appreciate it if anyone who thinks they have seen these symptoms would send a network message to Steve Butterfield (BUTTERFIELD@BBN-TENEX) listing 1d

a) The pair of sites affected 1d1

b) The date 1d1a

c) The time 1d1b

d) The telephone number of someone who could supply additional information. 1d1c

Please note that we are only interested in occurances after 1300 (Eastern time) on 7 January. your patience is greatly appreciated. 1d1c1

Alex McKenzie Network Control Center 1d1c2

JHB 13-JAN-75 08:17 25066

Note on recent Network Problems

(J25066) 13-JAN-75 08:17;;;; Title: Author(s): James H. Bair/JHB; Distribution: /JNH([ACTION]) MG([ACTION]) KWAC([ACTION]) UD([INFO-ONLY]) DCR2([INFO-ONLY]) ; Sub-Collections: SRI-ARC KWAC UD; Clerk: JHB;

DVN 13-JAN-75 10:12 25067

Final Report Abstract Ready for Review

The draft is at <documentation,final,2> 1

DVN 13-JAN-75 10:12 25067

Final Report Abstract Ready for Review

(J25067) 13-JAN-75 10:12;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /SGR([ACTION]) RWW([INFO-ONLY]) HGL([INFO-ONLY]) ; Sub-Collections: DPCS SRI-ARC; Clerk: DVN;

RLL 14-JAN-75 14:35 25068

Meeting with NSRDC personnel by RLL

This is a contact report.

RLL 14-JAN-75 14:35 25068

Meeting with NSRDC personnel by RLL

(DATE) 13 Dec 74 1

(BY) Robert Lieberman 2

(ATTENDEES) 3

Frank Brignoli (FGB) of NSRDC 3a

Roger Martin (RJM2) of NSRDC 3b

Robert Lieberman (RLL) of SRI-ARC 3c

(MEDIUM) FACE-TO-FACE 4

(WHERE) Place of contact 5

NSRDC, Carderock, Maryland 5a

(ACTION-ITEMS) None 6

(DISTRIBUTION) JCN DCE JHB RLL 7

(REMARKS) 8

For an entire afternoon I (RLL) spoke to Frank on a variety of subjects. Other users and old friends of mine at NSRDC dropped by and a few words were said. Here are my notes from these encounters. 8a

NSRDC would very much like to use DEX but understands that it cannot be used at present with the network. 8b

Frank has got enough funding for two slots 8c

The break down as far as internal funding is: 8c1

Network = one slot 8c1a

NAVSEC (Bono) = 1/2 slot 8c1b

Overhead (Gil Gray) = 1/2 slot 8c1c

Frank has good hopes to get a third slot by July 75. 8d

He has a pressing need for a way of satisfying the user who writes longhand and then gives it to the secretary. 8e

Unless buffer problem disappears bulk typing is undesirable. 8e1

Meeting with NSRDC personnel by RLL

Dex would be nice if it worked. 8e2

He needs a printer for local, clean output. 8f

They are currently using the utility for several large reports, hence the need for printer and bulk input. 8g

Interlaboratory group on information exchange (different from the Interlaboratory networking group) 8h

Might be interested in NLS. 8h1

Would probably use it as an information lookup facility. 8h2

Roger Martin commented that they have lots of trouble with the number of ports into TIPs. 8i

Roger indicated that Mitre TIP quickly gets filled in the morning and that NBS TIP does not have too many. 8i1

Sid Berkowitz of NSRDC (Artifical Intelligence group leader) is coleader with Sulit on the Navy Technical Document project 8j

Sulit does not like NLS for some unknown reason. 8k

Herb Ernst head of the Computer Sciences Division (Frank's boss) is leaving for NASA. 8l

The guess is that Herb will be managing money there. 8l1

This means we have a possible lead in a new agency, NASA. 8l2

Frank mentioned that a guy in OP-91 (Chief of Naval Operations, Code 091) called Jeske knew about NLS. Apparently the word has gotten around via Tillitt. At the moment Frank believes it is not worth seeing Jeske. 8m

(DOCUMENTS) Hard copy given and received 9

(GIVEN) None 9a

(RECEIVED) None 9b

RLL 14-JAN-75 14:35 25068

Meeting with NSRDC personnel by RLL

(J25068) 14-JAN-75 14:35;;;; Title: Author(s): Robert N. Lieberman/RLL; Distribution: /JCN([INFO-ONLY]) DCE([INFO-ONLY]) JHB([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: RLL;

RLL 14-JAN-75 14:41 25069

Phone contact with Tom Pyke of NBS

For the record.

RLL 14-JAN-75 14:41 25069

Phone contact with Tom Pyke of NBS

(DATE) 30 Dec 74 1

(BY) Lieberman 2

(ATTENDEES) 3

Thomas Pyke (TNP) of NBS 3a

Robert Lieberman (RLL) of SRI-ARC 3b

(MEDIUM) PHONE 4

(WHERE) Washington, DC area 5

(ACTION-ITEMS) 6
Meeting with Ira Cotton on 2 Jan 75 at 10:00 AM

(DISTRIBUTION) JCN DCE RLL 7

(REFERENCES) (25070,) NBS meeting 8

(REMARKS) 9

While in the Washington, DC area I called Tom Pyke of NBS. These are the few notes of this conversation. 9a

He thought it best to talk to Ira Cotton rather than himself. 9b

He was very anxious to find out the problems, cost, and feasibility of installing NLS on another operating system. 9c

He asked whether we had working the PDP-11 interface that they had loaned us. He wondered if we had a PDP-11/45 model or some other model. 9d

(DOCUMENTS) Hard copy given and received 10

(GIVEN) None 10a

(RECEIVED) None 10b

RLL 14-JAN-75 14:41 25069

Phone contact with Tom Pyke of NBS

(J25069) 14-JAN-75 14:41;;;; Title: Author(s): Robert N. Lieberman/RLL; Distribution: /JCN([INFO-ONLY]) DCE([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: RLL;

RLL 14-JAN-75 14:47 25070

Contact report from NBS meeting by RLL

(DATE) 2 Jan 75 1

(BY) Lieberman 2

(ATTENDEES) 3

Ira Cotton (IWC) of NBS 3a

Shirley Watkins (SWW) of NBS 3b

Roert Lieberman (RLL) of SRI-ARC 3c

(MEDIUM) FACE-TO-FACE 4

(WHERE) Place of contact 5

NBS, Gaithersburg, Maryland 5a

(ACTION-ITEMS) 6

Find out the cost of placing NLS on a Non-TENEX PDP-10. 6a

(DISTRIBUTION) JCN DCE RLL 7

(REFERENCES) (25069,) NBS meeting 8

(REMARKS) 9

I spoke to Tom Pyke of NBS on the phone (see -- (25069,). He suggested that I see Ira Cotton. These are my notes from a meeting at NBS. Shirley Watkins also attended for a brief time. 9a

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They are getting a PDP-10 and have PDP-11. These computers will be a part of the Network Research Group. 9e

Their shop is wholely in the documentation business, hence his strong interest in using NLS as a documentaton production tool. 9f

Ira expressed very strong desires to know what the cost, time, and specificaions were for getting NLS running on a PDP-10 without TENEX. 9g

Contact report from NBS meeting by RLL

As a side comment he stated that TENEX is now on the wane and thought it best to have NLS available on some other operating system. [I, of course, mentioned the prospects and our desires for this.] 9g1

I waited around for about 30 minutes to see Tom Pyke, but he was busy. Thus, I left without talking to him. 9h

(DOCUMENTS) Hard copy given and received 10

(GIVEN) None 10a

(RECEIVED) 10b

"Network Management Survey", Ira W. Cotton, National Bureau of Standards, Feb. 1974, Tech. Note 805. 10b1

"Cost Analysis for Computer Communications", Robert P. Blanc, National Bureau of Standards, Sept. 1974, Tech. Note 845. 10b2

"National Bureau of Standards at a glance", November 1973 [Gives the organizational structure and missions.] 10b3

RLL 14-JAN-75 14:47 25070

Contact report from NBS meeting by RLL

(J25070) 14-JAN-75 14:47;;;; Title: Author(s): Robert N. Lieberman/RLL; Distribution: /JCN([INFO-ONLY]) DCE([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: RLL;

RLL 14-JAN-75 14:55 25071

Phone contact with NAVCOSSACT / McKenzie

(DATE) 31 Dec 74 1

(BY) Robert Lieberman 2

(ATTENDEES) 3

Peter Bono (PRB) of NAVSEC 3a

Robert Lieberman (RLL) of SRI-ARC 3b

(MEDIUM) FACE-TO-FACE 4

(WHERE) NAVSEC, Hyattsville, Maryland 5

(ACTION-ITEMS) None 6

(DISTRIBUTION) JCN DCE RLL 7

(REFERENCES) 8

(REMARKS) 9

For several hours I spoke to Pete Bono of NAVSEC who has bought part of a slot via the NSRDC allocation. Pete also sponsors several projects at NSRDC. 9a

NAVSEC is the project manager for ISDS (Integrated Ship Design System) and COMRADE (Computer R... Aid Design Environment) both of which are principally at NSRDC. 9b

As project manager, they write the functional specifications and review/comment on the documents that the developers write. 9c

The developers write the program specifications, coding, and detail documentation. 9c1

Pete indicated that the basic trouble in using NLS was the delays in communications. 9d

Also mentioned were the lack of enough slots and terminals. 9e

He found the TNLS mode very difficult from which to edit (locating and correcting were hard). 9f

Among the suggestions made were to have a transpose ENTITY at DEST <CR> command that would transpose the two entities-- the one specified and the very next one. He thought that this was by far the most common transposition and thus deserved a short command. 9g

Phone contact with NAVCOSSACT / McKenzie

He thought that we should look at the business journals to see what are the most common errors by typists. This would show us the operations that should be made simple. 9h

Pete asked if there were some more general procedure like STARTUP. I told him about the process command. (Directed him to Brignoli and/or Bair). 9i

He would like to copy files 1,2,3,.. to file X by appending each together. I responded by telling him the copy/move commands work on plexes and plexes could be the entire file. He thought that was only partially satisfying. (I am not sure if the TENEX commands would do exactly as he wants.) 9j

Pete is preparing two output documents via NLS. 9k

He has two typists working 25 hours per week (High School students) taking the edited drafts and typing it into the system. 9k1

He has a STARTUP branch for the typists so that they are immedately sent into the INSERT repeat mode at the end of a loaded file. 9k2

So far they have 150 pages completed. 9k3

He considers there are four operations in producing a document. 9l

Bulk typing 9l1

Editing 9l2

Formatting 9l3

Production of final copy 9l4

He desparately needs a way of producing a good copy remotely. 9m

Another need is a primer or overview for the SENDMAIL, Message, etc. subsystems. 9n

He believes there are two ways that NLS will "pay". 9o

It could reduce the documentation cost. 9o1

It could improve the communication by giving more timely and accurate dialog. 9o2

Phone contact with NAVCOSSACT / McKenzie

In order to make effective use of the system he needs more people on it. He does not know when this will occur. 9p

The funding of the slot is from operations and management not R and D. This results in a real justification for the money. 9q

He would like to index all NAVSEC's documents for retrieval. 9r

As a side comment, he belives Frank Brignoli (the NSRDC architect) has not be able to give enough attention to NLS. He believes this is not due to Frank himself but the pressures for Frank to do other work. 9s

(DOCUMENTS) Hard copy given and received 10

(GIVEN) None 10a

(RECEIVED) None 10b

RLL 14-JAN-75 14:55 25071

Phone contact with NAVCOSSACT / McKenzie

(J25071) 14-JAN-75 14:55;;;; Title: Author(s): Robert N. Lieberman/RLL; Distribution: /JCN([INFO-ONLY]) DCE([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: RLL;

JAKE 13-JAN-75 13:11 25073

STANDARD FOOD PROTOCOL, or slightly pissed because someone ate my lunch

I would like to suggest the following protocol for food in the refrigerator (or anywhere else at ARC for that matter) and it is this: If you didn't bring it, don't eat it unless you check around to see to whom the item in question belongs...or , for short, the ASK convention! 1

STANDARD FOOD PROTOCOL, or slightly pissed because someone ate my lunch

(J25073) 13-JAN-75 13:11;;;; Title: Author(s): Elizabeth J. (Jake) Feinler/JAKE; Distribution: /SRI-ARC([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: JAKE;

DCE 13-JAN-75 18:44 25074

Note to FDBK re use of External Name in addressing

I have finally begun experimenting with declaring (in Useroption) an external file for use with the command, Jump to Name External. I like it. Have the comment, though, that we should try to make more general the extension that this feature could give us if we provided for scanning the declared, "External" file for a given address if it could not be found in the current directory. For example, in TNLS I have to do a J N E NAME CA VSPEC CA to position my self at the desired place, and then a P B CA CA to print it. I'd prefer to have a way to do that in one P B command. Like if the Address for the PB command were just a statement name, and if that name weren't found in the current file, that it would be searced for in the declared-external file. Have this be a standard default feature; keep the Jump Name External option for explicitly indicating that you want to skip the search of the current file. [I realize that I may be unaware of some addressexp feature that currently provides just such capability. Sorry if so.]

Regards from Doug, poking around in the evening from home. 1

DCE 13-JAN-75 18:44 25074

Note to FDBK re use of External Name in addressing

(J25074) 13-JAN-75 18:44;;;; Title: Author(s): Douglas C. Engelbart/DCE; Distribution: /FDBK([ACTION]) ; Sub-Collections: SRI-ARC FDBK; Clerk: DCE;

DCE 13-JAN-75 18:51 25075

Note to DVN re providing me with some further NLS tutoring

Dirk: I am doing a bit more experimenting with NLS, trying to extend my vocabulary and procedural skill. I think it would be useful to have a bit more tutoring -- like maybe ten minutes once in a while. Types of question: "Is there any way to modify a SENDMAIL message that I have finished (by hitting CA), but haven't yet said SEND? This is in TNLS, doing the interrogative process rather than making an NLS statent first and specifying it for the message (which I assume can be done for messages as well as for non-message Journal items?). Or, if I set my Useroption to move the left margin in a bit, it doesn't seem to do it for the subsystem heralds. Am I omitting something? And so forth. Regards, Doug 1

DCE 13-JAN-75 18:51 25075

Note to DVN re providing me with some further NLS tutoring

(J25075) 13-JAN-75 18:51;;;; Title: Author(s): Douglas C. Engelbart/DCE; Distribution: /DVN([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: DCE;

RLL 14-JAN-75 14:24 25077

Talk at an ONR seminar by SRI-ARC on NLS

This contains the attendees at a recent seminar and records the meeting for the journal.

RLL 14-JAN-75 14:24 25077

Talk at an ONR seminar by SRI-ARC on NLS

(DATE) 7 Nov 1974 1

(BY) Robert Lieberman 2

(ATTENDEES) Copy of list given to SRI-ARC by ONR 3

Lorens A. O'Field	NIH-DRG	496-7568	3a
Diane Grasso	NIH-DRG	496-7568	3b
Robert Lieberman	SRI		3c
LCDR. Lawrence,C. Gustafson	NAVAUDSVCHQ		3d
Johnny Camp	NAVAUDSVCHQ		3e
Gino H. Ratti	NAVAUDSVCHQ		3f
James F. Doherty	NAVAUDSVCHQ		3g
Capt. R. E. Wilson	NAVMAT-OAM	692-8780	3h
Susan R. Lee	SRI		3i
Rod Bondurant	SRI		3j
John C. Wanyo	FMSO 965L	277-3693	3k
James C. Leitzel	FMSO-965T	277-3693	3l
Patrick O'Shea	NAVAIR 4121	756-1347	3m
John Shore	NRL 5403	767-3056	3n
Charles Sinche	NAVSEC G121	436-1294	3o
James Miner	NSA	688-8188	3p
J. R. Prager	NAVAIR	692-7964	3q
Carol Osborne	NSA	688-6350	3r
David Thomas	NSA	688-6350	3s
Douglas Curswell (?)	NSA	688-7482	3t
Clyde Allen	NSA	796-6654	3u
Dennis Sullivan	MAT 0316	692-1204	3v

Talk at an ONR seminar by SRI-ARC on NLS

J. P. Francis	ONR 412	42715	3w
William A. Whitaker	ODDR&E (EPS)	Ox74197	3x
Seymour M. Selig	ONR-436	24314	3y
Bruce (?)	ONR-436	4315	3z
C.M. (?)	NMCSA-14B	692-4030	3a@
N. Glassman	ONR-434	4313	3aa
H. E. Wells	HQMC-(ISMS)	48041	3ab
E. D. Turse	HQMC-(ISMS)	48041	3ac
J. N. Green	ONR-410		3ad
J. H. Clark	NAVELEX	28204	3ae
W. H. Marlow	GWU	676-7503	3af
S. Brodsky	ONR	692-4362	3ag
D. De Priest	ONR	692-4315	3ah
Al Sorkowitz	NCSSA	433-3548	3ai
G. Bryan	ONR-450		3aj
E. Brown	USMC-MPD-20	44165	3ak
J. O'Hare	ONR-455	692-4507	3al
M. Milson (??)	USMC-MPI-20	44165	3am
C. E. Davis	USMC-MPD-20	44165	3an
R. Stephens	USMC:MPJ-30	48706	3ao
Martin Tolcott	ONR-450		3ap
J. Sowa	FMSO-972		3aq
J. Morrison	FMSO-972		3ar
Bulger (??)	ONR		3as
Jim Popa	NSA-C41	688	3at

RLL 14-JAN-75 14:24 25077

Talk at an ONR seminar by SRI-ARC on NLS

Dennis Mumaugh	NSA-R25	688-8141	3au
David Smith	NSA-C41		3av
R. T. Hofey	FMSO		3aw
D. Bott	FMSO		3ax
E. M. Young	AIR		3ay
M. Minker (??)	AIR		3az

(MEDIUM) Medium of contact CONFERENCE 4

(WHERE) ONR conference room, Arlington, VA 5

(ACTION-ITEMS) 6

Call Denicoff for feedback and leads. 6a

(DISTRIBUTION) DCE JCN RLL 7

(REFERENCES) (24595,) Afternoon Meeting; (24608,) video tape script 8

(REMARKS) 9

For the entire morning and a portion of the afternoon, SRI-ARC gave a talk to several Navy people (and others) at a ONR sponsored conference. Most of the attendees were from management (as opposed to the technical staff). 9a

Some 60 people attended at the morning session. See (24595,) for a report on the afternoon session. 9b

After an introduction by Marvin Denicoff of ONR, Robert Lieberman of SRI spoke and showed a video tape on NLS. Questions and answers followed the tape. After the break, Doug Engelbart spoke. Most of the questions were asked by John Shore of NRL. 9c

Denicoff announced that anyone interested in this technology should contact either SRI-ARC or himself. 9d

(DOCUMENTS) Hard copy given and received 10

(GIVEN) 10a

Coordinated Information Services for a Discipline- or Mission-Oriented Community (mjournal,12445,) 10a1

RLL 14-JAN-75 14:24 25077

Talk at an ONR seminar by SRI-ARC on NLS

The Augmented Knowledge Workshop, (ijournal,14724,) 10a2

The SRI-ARC Workshop Utility Service: What and Why, (jjournal,24031,) 10a3

(RECEIVED) none 10b

RLL 14-JAN-75 14:47 25070

Contact report from NBS meeting by RLL

(DATE) 2 Jan 75 1

(BY) Lieberman 2

(ATTENDEES) 3

Ira Cotton (IWC) of NBS 3a

Shirley Watkins (SWW) of NBS 3b

Roert Lieberman (RLL) of SRI-ARC 3c

(MEDIUM) FACE-TO-FACE 4

(WHERE) Place of contact 5

NBS, Gaithersburg, Maryland 5a

(ACTION-ITEMS) 6

Find out the cost of placing NLS on a Non-TENEX PDP-10. 6a

(DISTRIBUTION) JCN DCE RLL 7

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RLL 14-JAN-75 14:24 25077

Talk at an ONR seminar by SRI-ARC on NLS

(J25077) 14-JAN-75 14:24;;;; Title: Author(s): Robert N. Lieberman/RLL; Distribution: /DCE([INFO-ONLY]) JCN([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: RLL;

RLL 14-JAN-75 15:03 25078

Contact report on visit by PTI VP, Torregas (NSF cities project)

(DATE) 9 Jan 75 1

(BY) Robert Lieberman 2

(ATTENDEES) 3

Monroe Postman of San Jose City govt, 3a

Costis Torregas of PTI 3b

Robert Lieberman (RLL) of SRI-ARC 3c

Douglas Engelbart (DCE) of SRI-ARC 3d

(MEDIUM) FACE-TO-FACE 4

(WHERE) Place of contact 5

SRI-ARC, Menlo Park, CA 5a

(ACTION-ITEMS) None 6

(DISTRIBUTION) DCE JCN RLL 7

(REFERENCES) 8

(REMARKS) 9

Monroe Postman of the San Jose City Government is looking to buy a slot. He is one of several technologist who are assigned to 27 cities across the country. NSF is funding this project and PTI is the secretariat for the 27 agents. 9a

Postman wanted to give a demonstration to a vice president of PTI for the western region. The purpose was to show him that the system really exists and is working. Monroe needs his support to find the money for the slot. 9b

I gave both Postman and Dr. Torregas a 90 minute demo of NLS stressing the working parts. In support of this I used a file prepared by Postman on problems that cities have. 9c

The retrieval facilities based on content pattern were prominently shown. 9c1

Basically, little feedback was received from Torregas as to the degree of understanding, interest, etc. he received from the demo. 9d

Contact report on visit by PTI VP, Torregas (NSF cities project)

After this demo Doug joined us and we discussed the use of NLS for this cities project. 9e

Torregas stated that he was suitably impressed with our capabilities and that they were far greater than he expected. 9f

Unfortunately, he was not quite sure how they could be put into use. 9g

Postman tried very hard to convince him but to no avail. Doug indicated the possible payoffs and the beautiful application that the cities appears to be from our viewpoint. 9h

The conclusion was that Postman and Torregas should get together to plot out the steps between the NLS capability and the real needs of this project. 9i

(DOCUMENTS) Hard copy given and received 10

(GIVEN) None 10a

(RECEIVED) None 10b

RLL 14-JAN-75 15:03 25078

Contact report on visit by PTI VP, Torregas (NSF cities project)

(J25078) 14-JAN-75 15:03;;;; Title: Author(s): Robert N. Lieberman/RLL; Distribution: /DCE([INFO-ONLY]) JCN([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: RLL;

RLL 13-JAN-75 22:36 25079

First cut at specifications for a table management user program

Comments are most welcomed. I may have been too ambitious but let me here from you. Thanks.

RLL 13-JAN-75 22:36 25079

First cut at specifications for a table management user program

Here are some notes on what will be a specification for a simple-minded table manipulator program. 1

Consideration should be given for future implementations so as not to be too drastically different. 2

(notes) 3

A table consists of any number of table rows as the horizontal dimension and columns as the vertical dimension. 3a

Only one statement level will be considered part of the table. 3b

This will NOT preclude substructure but the substatements will not be considered in any table operations. 3b1

Indeed, this might be nice for detail viewing of the table by expanding it with use of substructure. 3b2

Each table row is one statement. 3c

The table header is the first statement (first table row) of the plex which is specified by the user. 3d

Columns will be delimited by any one of the following characters * = / ; : '. The column boundaries are the character position of these delimitors. 3e

An easily updated table should be kept so that these delimitors can be expanded or changed by user. 3e1

The boundaries are determined by scanning from given character position in the table header statement outward in both directions. This will allow two columns to be manipulated as one if the selection is precisely on the boundary. 3e2

Also, the delimitors need not be the same for the left and right boundary of any column. 3e3

The left and right edge of a table need not have a delimitor. 3f

Thus, an imaginary boundary to the left of the first character in the statement will be the left edge of a table unless a delimitor is found in character position one of the statement. 3f1

In a like manner, the right edge will be to the right of the last character in the statement unless a delimitor is found in the last character position. 3f2

When the character <CR> is found in the header row, it will be considered the right edge of the table (However see section on multiple lines for a more complete discussion.). If <CR> appears in any other row it will be regarded as any other character. 3f3

An entry is the text between (and not including) the column boundaries which are determined by the delimitors in the table header of the table (plex). 3g

If no delimitors represent the left and right most edges of the table then the first and last entry, respectively, include the first and last character. 3g1

Table entries will be truncated to fit into entry position and a notification will be given. For future versions, multiple lines will be generated. 3h

No delimitors are needed for rows other than the first (i.e., the table header.) 3i

When entries are specified that do not fit a column, a message will be given indicating truncation will take place. An option to proceed or abort will allow the user to decide the fate. 3j

For entries that are too short, blanks will be added and no message will be given. 3j1

Tabs 3k

Because tabs have different effects on different devices, they will not be used. 3k1

They are especially dangerous if found in the table header. 3k2

In the event of an existng tab character in the table the following rules will hold. 3k3

If a tab character appears in the table header (the first statement in the table plex), the tab character will be treated as any other character when searching for boundaries. When the table header is treated as a row in the table, rules elsewhere will apply. 3k3a

For example, when an entry is designated in the header itself; thus, tabs might be considered differently within one operation when the header itself is being operated upon. 3k3a1

If a tab character is within a table entry then it will terminate that entry and will logically be considered as the right boundary for the table entry. 3k3b

Generally, it will not be replaced or deleted. If, however, it is pushed to occupy the boundary positon, it will be replaced by a space. 3k3b1

In other words, it assumes that the tab position is the right boundary of the table entry. 3k3b2

For example, in the delete entry command the text between the left boundary and the tab character will be replaced by blanks. 3k3b3

For the copy entry command, only the text to the left of the tab character will be copied, not the tab. 3k3b4

If a tab character is on a table boundary, then it will be ignored. In fact, in most cases the character on the boundary is never known. 3k3c

Multiple lines (per table row) 31

Multiple lines per table row (statement) occur if a <CR> is in the statement. 311

In essence, multiple lines for a row will be ignored. 312

If a suitable table entry in the header row is not found with respect to the designated entry, then the specified entry is an invalid selection. 313

Thus, additional lines of a row can be used as another row. 314

In a subsequent version of this program, the character count will be relative to the last carriage return. An entry will include, in this case, all text on all lines on the designated row between the boundaries determined by the header row. 315

The problems associated with multiple line entries principally stem from determining how will the text be arranged on the multiple lines for the entry. Other issues such as the effect of moving or replacing a single line entry with a multiple line entry will also need to be resolved. 316

Inter table manipulation 3m

Plexes might be of different lengths - 3m1

Shorter tables will be lengthened by blank insertions. Thus either destination or source table might be altered. 3m1a

Maybe some warning might be used and an option given to the user befoore lengthening. 3m1b

Sematics (Should be clear if not stated) 3n

Delete column 3n1

Same as clear column. 3n1a

Replace column 3n2

Same as replace column. 3n2a

Transpose column 3n3

Clear column 3n4

clears column to blanks (may be tabs in advanced version). 3n4a

Copy column 3n5

Insert column 3n6

Replaces whatever is in the column with what is specified. 3n6a

Could mean inserting a new column after designated one. 3n6b

Move column 3n7

Append column 3n8

Widens the table rows by adding specified column to the right side of table. 3n8a

Could append column after designated column. 3n8b

Substitute column 3n9

Delete Entry 3n10

Same as clear entry. 3n10a

Replace Entry 3n11

Transpose Entry 3n12

If entries are of different widths then the shorter one will be expanded by blanks and the longer one truncated. 3n12a

Clear Entry 3n13

Clears entry to blanks (may be tabs in advanced version) 3n13a

Copy Entry 3n14

Insert Entry 3n15

Same as replace entry. 3n15a

Move Entry 3n16

Substitute Entry 3n17

RLL 13-JAN-75 22:36 25079

First cut at specifications for a table management user program

(J25079) 13-JAN-75 22:36;;;; Title: Author(s): Robert N. Lieberman/RLL; Distribution: /JCN([INFO-ONLY]) RLB2([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: RLL;

SRL 14-JAN-75 05:41 25080

Name Change - Roetter not Lee

I have a new name - Roetter instead of Lee - pronounced like rotor. 1

My network address will be roetter@sri-arc or office-1 and my ident sgr as of Tuesday, January 14. 2

The old directory will be around for awhile to catch any messages sent to the old name. 3

SRL 14-JAN-75 05:41 25080

Name Change - Roetter not Lee

(J25080) 14-JAN-75 05:41;;;; Title: Author(s): Susan R. Lee/SRL;
Distribution: /RADC([INFO-ONLY]) NSA([INFO-ONLY]) KWAC([
INFO-ONLY]) ARPA-TIP([INFO-ONLY]) ; Sub-Collections: SRI-ARC RADC
NSA KWAC ARPA-TIP; Clerk: SRL; Origin: < LEE, NAM.NLS;1, >,
14-JAN-75 05:39 SRL ;;;;####;

DVN 7-MAY-75 00:30 25081

Notes on Documentation Production Activities and Potential Users Associated with NLS prepared for Meeting of May Second

Things going on 1

Publications Activities:
Note: I don't know about everything going on at the Utility and there is sometimes a question if something is a publication activity or not. 1a

RADC: Regular Report production. An 800-page JOVIAL Manual has been typed in, formatted, held up by diversion of Duane Stone into NSW work. Summary versions for separate publication will be extracted via NLS structure. 1a1

NSW: Betty Finney is putting online an 8000-page AF Manual intended for online use and publication, via MTST and a series of translations and tapes. Printing plans are uncertain. 1a2

Larry Crain expects to publish other documentation for Gunter via NLS. Gunter has many complex publications procedures for many documents of varying types amounting to hundreds of thousands of pages per year; integrating NLS into those procedures usefully is a large task which has not been faced seriously to my knowledge. 1a2a

ARPA IPT Office: Connie Mclindon adminsters preparation of a steady stream of small reports and the like. They have an electrostatic printer (an XGP) and are insteressted in making it easier to use. 1a3

ARC: Reports, proposals, user and system documentation. Maybe a couple of thousand pages a year for the last several years. The prodcution effort is not well organized. More COM activity than anywhere else. 1a4

NIC: Jake Feinler prints the Resource Notebook, ARPAnet Directory. 1a5

NSRDC: Frank Brignoli is producing small reports via Line Printer, wants to go to COM. More potential exists. 1a6

Bell Canada: Larry Day and Inez Mattiuz are producing papers and a book via COM. 1a7

Developments for NSW 1b

By July 1 1b1

Editing aids in Modify Subsystem - automatically set spacing around sentence boundaries, colons, semi-colons, and commas. 1b1a

limited graphics 1b1b

2nd COM Supplier 1b1c

Specialized programs for MTST input 1b1d

Help data base for DPCS 1b1e

By November 1b2

Improved Tabs 1b2a

Heading entity 1b2b

Simulate COM page on Techtronics high-resolution tube 1b2c

Page-Oriented Output Processor 1b2d

More extensive Graphics 1b2e

Users on the Horizon 2

ACM Journals. One guy, Lee Revens, very interested. A good place to gain exposure to the right people. NLS seems very adapted to some of his problems. It might be hard to finance a utility slot; N. Y. location makes communication a problem. 2a

Navy 2b

There seems to be a of activity in the Navy in this area. We have had several contacts through NSRDC, the Navy Technical Manual System, etc. Not clear what to do. Complex politics. 2b1

Army Material Command 2c

A Utility user with great documentation needs. Ron Uhlig, the architect, is very interested in this application. 2c1

National Academy of Science 2d

Contact is old user John Perry. Some people from NAS will visit ARC this month. 2d1

Bechtel-Dough Reports Contacts. Advanatge of Local User. 2e

G.E. Nuclear Engineering of San Jose. Massive, high-pressure proposal production. Problems (opportunities) of reliability and

scale compared to what has been done with NLS in the past. Have only met unsophisticated users. Advanatge of Local User. 2f

EPRI. We have friends there, Dick Schmitt is one. An old proposal by SRI has gone dead. Advanatge of Local User. 2g

BRL (Ballistic Research Lab). Produces reports. Stan Taylor, the Architect, is interested in doing them through NLS. 2h

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Notes on Documentation Production Activities and Potential Users Associated with NLS prepared for Meeting of May Second

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