KEV 24-FEB-72 16:40 9194

Comments about the LOGIN Message

(J9194) 24-FEB-72 16:40; Title: Author(s): Kenneth E. Victor/KEV; Distribution: Diane S. Kaye, Paul Rech, Michael D. Kudlick, Donald R. Cone, Don Limuti, William R. Ferguson, Priscilla Lister, Robert L. Dendy, Linda L. Lane, Marilyn F. Auerbach, Walter L. Bass, Mary S. Church, William S. Duvall, Douglas C. Engelbart, Beauregard A. Hardeman, Martin E. Hardy, J. D. Hopper, Charles H. Irby, Mil E. Jernigan. Harvey G. Lehtman, John T. Melvin, Jeanne B. North, James C. Norton, Cindy Page, Bruce L. Parsley, William H. Paxton, Leffrey C. Peters, Jake Ratliff, Barbara E. Row, Ed K. Van De Riet, Dirk H. van Nouhuys. Kenneth E. Victor, Donald C. Wallace, Richard W. Watson, Don I. Andrews/SRI-ARC; Sub-Collections: SRI-ARC; Clerk: BER;

KEV 24-FEB-72 16:40 9194

Comments about the LOGIN Message

Currently we see the LOGIN message at least once a day.
I suggest changing this so that you only see each LOGIN message once.
Please give comments to me or JTM -- KEV. 1

Charles H. Irby

BLP 16-FEB-72 16:21 9196

Suggestion to Delete Executer Content-analyzer Command

It is proposed that the command Execute Content analyzer be deleted. 1

The reason for this is that there is the command Goto Program Content analyzer which does exactly the same thing. This is the only place in NLS where there are two commands to do the same thing. Its a pain to keep them consistent. 2

Unless there are strong objections raised by Monday, Feb. 21, the suggestion will be acted out. 3

BLP 16-FEB-72 16:21 9196
Suggestion to Delete Executer Content-analyzer Command

(J9196) 16-FEB-72 16:21; Title: Author(s): Bruce L. Parsley/BLP; Distribution: Diane S. Kaye, Paul Rech, Michael D. Kudlick, Donald R. Cone, Don Limuti, William R. Ferguson, Priscilla Lister, Robert L. Dendy, Linda L. Lane, Marilyn F. Auerbach, Walter L. Bass, Mary S. Church, William S. Duvall, Douglas C. Engelbart, Beauregard A. Hardeman, Martin E. Hardy, J. D. Hopper, Charles H. Irby, Mil E. Jernigan, Harvey G. Lehtman, John T. Melvin, Jeanne B. North, James C. Norton, Cindy Page, Bruce L. Parsley, William H. Paxton, Jeffrey C. Peters, Jake Ratliff, Barbara E. Row, Ed K. Van De Riet, Dirk H. van Nouhuys, Kenneth E. Victor, Don C. Wallace, Richard W. Watson, Don I. Andrews/SRI-ARC; Sub-Collections: SRI-ARC; Clerk: BLP;

DCW 16-FEB-72 16:30 9197

ON GETTING FROM HERE TO WHERE?

ON GETTING FROM HERE TO THERE (where ever that may be!!) 1

there has been a lot of discussion,bitching etc. here at ARC recently on where we are going and what we are doing. I feel we are spinning our wheels mainly because there is a feeling we have invented something new (NLS, AUGMENTATION ...) and are in a hurry to export it before some one beats us the the punch. We are even considering changing our work habits, hours and structuce in order to face the comming deadlines and commitments. 1a

just what is it that ARC has to offer the world that a CUC,XEROX, or any body else for that matter cant do equally well with 1000 robots (disguised as programmers) and a cobol compiler? 1b

I think the most significant thing here a ARC is the people system and NLS is the proof that traditional bullshit nose to ground management is not only not the way to do things but is in fact the wrong way. The thing we should be worried about is not that we are getting behind, but rather that the true nature of the group is not being represented,sold, exported or even shared with some members of ARC. 1c

Its really rather easy to meet deadlines and deliver on time if you dont care how many people you fuck over in the process. Just look around at "succesful" people, businesses, governments, etc... 1d

How we get there is overwelmingly more important than when or how much it costs. Even though the later is the measure of the real world 1e

I joined ARC because I felt that it is proof positive that there is an alternative to people exploitation. In fact since being here I beleive it to be not only an alternative but better way. 1f

If we are going to adopt traditional methods of management in order to prepare ourselves for the real world environment then lets cash in now and consider the experiment a failure. The world doesn't need another software house. Least of all an idealistic one. 1g

DCW 16-FEB-72 16:30 9197

ON GETTING FROM HERE TO WHERE?

(J9197) 16-FEB-72 16:30; Title: Author(s): Don C. Wallace/DCW; Distribution: Diane S. Kaye, Paul Rech, Michael D. Kudlick, Donald R. Cone, Don Limuti, William R. Ferguson, Priscilla Lister, Robert L. Dendy, Linda L. Lane, Marilyn F. Auerbach, Walter L. Bass, Mary S. Church, William S. Duvall, Douglas C. Engelbart, Beauregard A. Hardeman, Martin E. Hardy, J. D. Hopper, Charles H. Irby, Mil E. Jernigan, Harvey G. Lehtman, John T. Melvin, Jeanne B. North, James C. Norton, Cindy Page, Bruce L. Parsley, William H. Paxton, Jeffrey C. Peters, Jake Ratliff, Barbara E. Row, Ed K. Van De Riet, Dirk H. van Nouhuys, Kenneth E. Victor, Don C. Wallace, Richard W. Watson, Don I. Andrews/SRI-ARC; Sub-Collections: SRI-ARC; Clerk: DCW;
Origin: <WALLACE>COMMENT.NLS;1, 16-FEB-72 14:59 DCW ;

Proposed Control Language for primitive source level debugger. 1

Commands 1a

'B<reakpoint > 1a1

'C <lear> ('A<ll> CA / ((VALUE /) CA <NUMBER , VALUE>) 1a1a

This command is used for clearing a breakpoint. 1a1a1

If All is specified, all breakpoints are removed. 1a1a2

If a VALUE is specified, then the breakpoint to be removed is selected according to the algorithm used in the Replaces Option in setting breakpoints. 1a1a3

If this field is left empty, the breakpoint to be removed is assumed to be the last one which was executed. 1a1a4

After the breakpoint has been cleared, the breakpoint number and address of the breakpoint are typed. 1a1a5

'P <rint> ('A<ll> / VALUE /) CA 1a1b

Prints the status of the breakpoint(s) indicated. 1a1b1

Breakpoints to be printed are identified in a manner analogous to that used in the Breakpoint Clear command. 1a1b2

'S<et> VALUE $(C. ('C<all> PNAME / 'R<eplaces> VALUE / 'T<est> VALUE [('= / '#) VALUE/)) CA <NUMBER> 1a1c

If location indicated by address is a stack manipulation instruction, address is incremented by one (and check is made again). 1a1c1

If the Replace option is indicated, the VALUE is checked to see if it is a legitimate Break point number. 1a1c2

If it is, that number is assigned to this breakpoint, and any previous breakpoint of that number is cleared. 1a1c2a

If the VALUE is not a legitimate breakpoint number, then it is assumed to be an address. 1a1c2b

The breakpoint table is searched for a breakpoint at that address (the address is evaluated like a breakpoint address with regard to stack manipulation instructions), and if found, that breakpoint is replaced by the one currently being specified. 1a1c2b1

If a matching breakpoint is not found, a warning message is displayed. 1a1c2b2

If the Replace option is not specified, then the first available breakpoint in the table is assigned. 1a1c3

If the Call option is specified, then the breakpoint becomes a conditional breakpoint. 1a1c4

Whenever the instruction in the breakpoint location is executed, the procedure specified by the Call option is called. 1a1c4a

If that procedure returns true, the breakpoint is executed. 1a1c4b

Otherwise, the instruction normally occupying the break location is executed, and the breakpoint is ignored. 1a1c4c

The Test option specifies that the location specified by the first VALUE is compared to the value of the second VALUE, and the break is executed if they are equal. 1a1c5

If the '= VALUE is omitted, the test is made against non-zero. 1a1c5a

The breakpoint table is set up when the user executes a 'Go or Proceed command, and restored whenever a breakpoint is executed. 1a1c6

The table entry format is as follows: 1a1c6a

Word 0: location of breakpoint instruction. 1a1c6a1

Word 1: The Instruction replaced by the breakpoint call 1a1c6a2

This will be set to -1 if the break is not active. 1a1c6a2a

Word 2: Conditional Testing Instruction 1a1c6a3

If the CALL option has been specified, this cell will contain a CALLO p, where p represents the test procedure. 1a1c6a3a

IF the test option was specified, this word will contain an instruction which will load the contents of the specified test location. 1a1c6a3b

IF this is a normal breakpoint, this word will contain a JRST to the breakpoint execution code. 1a1c6a3c

The reason for using an instruction as the contents of this cell rather than a simple flag is that it opens the way towards easy implementation of more elaborate options later on. 1a1c6a3c1

Word 3: 1a1c6a4

Value for comparison with Test Location. 1a1c6a4a

Will be set to 1 if test option has not been specified. 1a1c6a4b

'C<ontinue> CA 1a2

This causes execution of the program to continue after a breakpoint. 1a2a

Breakpoints and registers are set up as in Go. 1a2a1

'G<oto> VALUE /C. <Stack Frame = > STACKREF/ CA 1a3

This causes control to be transferred to location indicated by VALUE. 1a3a

Breakpoints are set up, and the registers are set first. 1a3a1

IF the stack frame is indicated, the stack is cut back to that level before the control transfer. 1a3b

'P<rocedure > 1a4

'B<ack up to> PNAME CA 1a4a

This causes the undo-ing of a Replace. 1a4a1

In otherwords, it restores the original procedure. 1a4a2

The PNAME used should be that of the procedure being restored, e.g. if P1 has been replaced by P2, THEN P1 is restored by a Back up to P1 CA. 1a4a3

If the indicated procedure has not been replaced, an appropriate message is displayed. 1a4a4

'C<all> PNAME ('(/VALUE $(', VALUE) / ') / 1a4b

STACKREF/ 1a4b1

) CA 1a4b2

This allows the direct call of a procedure. 1a4b3

When the called procedure returns, control is returned to the debugger. 1a4b4

Following the PNAME is an optional parameter specification. 1a4b5

If the parm spec is of the form of a normal procedure call parameeter list, the parms are stacked as in a normal procedure call, and the call is made. 1a4b5a

If, however, a value is used, it is assumed to indicate a stack frame, and the stack frame is used as that of the procedure. 1a4b5b

In this case, the procedure is not called normally, but rather is started at the first instruction following the set up of the stack. 1a4b5b1

What do we do about strings ??? 1a4b5b1a

If no parameters are specified, a CALLO is executed. 1a4b6

'R<eplace > PNAME CA <by> PNAME CA 1a4c

This causes the indicated procedure to be replaced by a new one. 1a4c1

The implementation of this is similar to breakpoints, in that it is accomplished by replacing the first instruction in the old procedure with a jump to the first instruction of the replacing procedure. 1a4c2

A table is kept which contains the address of the replaced procedure, and the instruction replaced by the JRST. 1a4c3

'S<how> ('R<ecord> / S<tring> / L<ocation> / -('S/'R/'L))
SHOWADDR [C. MODESPEC CA] CA [SP VALUE CA] 1a5

Entity 1a5a

The operand of the SHOW command is an entity, which may be any of the following types: 1a5a1

(a) Word: (specified by Location or empty) Refers to 1 PDP10 Memory word 1a5a1a

(b) Field: (Specified as word, except that address is terminated with a field designator) A Field which is contained within a word (or is equivalent to the word) 1a5a1b

The Location of the field is computed relative to the address pf a PDP10 word. Note that the PDP10 Word is treated as the start of the record containing the field, not the word containing the field. 1a5a1b1

(c) Record: (Specified by Record) A Set of contiguous fields (defined by an L10 RECORD Declaration) 1a5a1c

The particular record to be used in interpreting the data is addressed by the internal cell RP. 1a5a1c1

(d) String: (Specified by String) An NLS A-String of the standard format 1a5a1d

(e) Sequence: (Specified by parameters used in address) A set of records, fields, or words (may be intermixed) designated by a procedure or other dynamic device. Usually used for the display of certain entities within DDT, e.g. TRACE is a sequence. 1a5a1e

The entity type sometimes implies that a particular format will be used in displaying the contents: 1a5a2

Word, Field: Contents displayed as either a symbolic quantity (e.g. blap+16) or in halfword octal format . 1a5a2a

Record: 1a5a2b

Displayed according to mode (symbolic/numeric), with individual fields separated by TAB or EOL. 1a5a2b1

String: The maximum and current lentgh of the string are displayed in the format <MMM:LLL> where MMM is the Max, and LLL is the current length, followed by the string itself displayed as text. 1a5a2c

When an operand of the type string is displayed, an error is indicated if the format of the data does not coincide with that of an A-string 1a5a2c1

Sequence: Displayed in a manner appropriate to the particular sequence. 1a5a2d

Mode 1a5b

If explicitly indicated (Numeric or symbolic), will overide the previous setting. Overide is permanent 1a5b1

The optional Value clause has the following meanings: 1a5c

Word, Field: The value typed replaces the current value of the entity 1a5c1

Record: The user will be led (symbolically) through the individual fields in the record, and he may place a value in each field until a CA is typed. 1a5c2

C. Indicates for the current field to be closed, and the next one opened. 1a5c2a

CD Aborts, and none of the fields are changed. 1a5c2b

String: The user may type a string, and it will replace the old contents of the A-string. 1a5c3

The length word is automatically updated, and an

error is indicated if the maximum string length is exceeded. 1a5c3a

A CD Aborts without changing the string. 1a5c3b

Sequence: The nature of the SEquence is such that it is not immediately obvious what it would mean to change the value. The value of individual elements in a sequence may be changed as words or fields. 1a5c4

Whenever a value clause is empty, the previous value is indicated. 1a5d

'V<alue of > VALUE [C. MODESPEC] CA 1a6

Prints the VALUE according to the modespec. 1a6a

Advance mode is not affected by this command. 1a6b

Addressing 1b

The basic elements of an address expression are: 1b1

VALUE = ([=]SYMBOL/NUMBER) [OPERATOR VALUE] 1b1a

A Value is any combination of symbolic names and numbers, joined by a legal operator (SP is equivalent to +), and excluding those symbolic names which are STACKSYM's and SEQNAME's 1b1a1

Legal operators are: +, SP, -, *, / 1b1a2

All operators are of equal precedence. 1b1a3

STACKREF = STACKSYM $(ADOP NUMBER) 1b1b

A reference to a location in the stack below the frame used in calling DDT. 1b1b1

The optional adop[s] and number[s] following the STACKSYM are interpreted in units of STACK FRAMES. 1b1b2

Errors are indicated if the address attempts to reference outside of the stack (i.e. an illegal frame) 1b1b3

The only thing which may legally follow a STACKREF in an address expression is a STACKFIELD 1b1b4

STACKSYM's 1b1b5

FP (Frame Pointer) 1b1b5a

Whenever a STACKREF is evaluated, FP is updated to poit to the resultant frame. 1b1b5a1

TOP (Top of the stack) 1b1b5b

BASE(Base of the stack) 1b1b5c

SPECSYM 1b1c

A Collection of symbols which are meaningful to DDT, such as RP (Record Pointer) and PC (Program Counter) 1b1c1

When a SPECSYM is used in an address expression, the contents of the cell indicated by the symbol are referenced, rather than the value of the symbol itself 1b1c2

If it is necessary to reference the cell itself, the symbol must be preceded by the character '=. 1b1c3

e.g. the value of RP may be changed by: "Show =RP" CA "record1 " SP "record2"CA 1b1c3a

Initial list of SPECSYM's 1b1c4

RP (record Pointers) 1b1c4a

PC (Program COunter) 1b1c4b

R1-R7 (Registers 1 through 7) 1b1c4c

A1 - A4 (Registers 14-17) 1b1c4d

LV (Last Value) 1b1c4e

EC (Escape Character) 1b1c4f

SF (Symbol Flag...True means NLSDDT Symbols are checked first) 1b1c4g

SEQNAME 1b1d

The name of a sequence is a reserved name which is meaningful to NLSDDT. 1b1d1

Whenever a SEQNAME is used in an ecpression, it must be the last thing in the expression, an it must be used in a context appropriate to its meaning. 1b1d2

Seqnames which may be used as STKFLDNAME's 1b1d3

P (Parameters in a frame) 1b1d3a

L (Locals in a frame) 1b1d3b

TU (Trace Up) 1b1d3c

TD (Trace Down) 1b1d3d

FIELDESIG = '. FIELDNAME [FIELDESIG] 1b1e

Indicates that the operand of the address expression is a field. 1b1e1

When used recursively, the operand is evaluated in a manner analagous to that used in L10. 1b1e2

STACKFIELD = '. STKFLDNAME 1b1f

Valid only after STACKREF. 1b1f1

Indicates a particular field (or mebbee a sequence) wihin the particular stack frame. 1b1f2

Reserved symbols which may be used as STKFLDNAME's (not SEQNAME's) 1b1f3

'P NUMBER (A specific parameter in the frame) 1b1f3a

'L NUMBER (A specific LOCAL in the frame) 1b1f3b

RET (REturn Location for tis frame) 1b1f3c

SIG (Signal Location for this frame) 1b1f3d

MARK (Mark contents for this frame) 1b1f3e

SHOWADDR = (RELADR / STACKADR / 10ADR) 1b2

Always produces the following parameters: 1b2a

Record Pointer: Address of a record to be used in interpreting the data. 1b2a1

May be the address of an L10 RECORD, a Procedure (internal to DDT, or external if that has any meaning), or -1 indicating that it is irrelevant. 1b2a1a

Type 1b2a2

entity type: 1b2a2a

See discussion of entities under SHOW command 1b2a2a1

Address 1b2a3

The pdp10 address which was the result of the address evaluation 1b2a3a

Field list 1b2a4

A 1st of fields to be used as operators on the location addressed by address. There will be some limit here 1b2a4a

RELADR = '↑ / LF /TAB / EMPTY 1b3

Indicates the previous , successive, or same entity. 1b3a

STACKADR = STACKREF [STACKFIELD] 1b4

Indicates either a particular frame, a sequence, or a field within the stack 1b4a

10ADR = VALUE [FIELDESIG] 1b5

A note on Symbols: 1b6

Whenever there is a conflict between a symbol reserved by NLSDDT and a symbol with the same name in NLS, the ambiguity is resolved by an escape character and a flag. 1b6a

The normal mode has the escape character set to ';, and the flag set so that symbols not precede by the escape are interpreted as NLSDDT symbols if there is an ambiguity. 1b6b

The Escape Character is contained in the cell addressed by the reserved symbol EC, and the flag in the cell SF. 1b6c

WSD 16-FEB-72 16:56 9198

Proposed Control Language for NLSDDT

(J9198) 16-FEB-72 16:56; Title: Author(s): William S. Duvall/WSD; Distribution: John T. Melvin, Diane S. Kaye, Don I. Andrews, Walter L. Bass, William S. Duvall, Mary S. Church, J. D. Hopper, Charles H. Irby, Harvey G. Lehtman, John T. Melvin, Bruce L. Parsley, William H. Paxton/JTM NPG; Sub-Collections: SRI-ARC NPG; Clerk: WSD;

DCW 16-FEB-72 16:58 9199

OFFICIAL HOST NAMES IN NETSER AND TELNET

official host names dont fit in a single word ala sixbit bullshit
this is supposedto be remedied in version 129 of tenex...
please refer problems of this type to mohammad the mountain is
tired of the journey..... 1

DCW 16-FEB-72 16:58 9199

OFFICIAL HOST NAMES IN NETSER AND TELNET

(J9199) 16-FEB-72 16:58; Title: Author(s): Don C. Wallace/DCW; Distribution: Jonathan B Postel/JBP; Sub-Collections: SRI-ARC; Clerk: DCW;

BLP 16-FEB-72 18:00 9200

Communique from the Cedar 9 -- 16 February 1972

Greetings! 1

We had a "report from PODCom". 2

We discussed goal setting. 3

We wonder to what extent Doug will actually allow others to be involved in goal settng and decision making. 3a

We discussed EMC. 4

We suggest that that EMC not concern itself with so much trivia, but that at least non-controversial issues be delagated to someone for a decision and action, and that EMC spend more time discussing larger issues. 4a

We discussed the secrecy issue. 5

We would like to send "delegates" to sit in on other POD meetings. Linda Lane and Harvey Lehtman are interested in visiting another POD -- invitations would bee welcomed. 6

Unless something comes up, we will not meet again til two weeks from today. 7

This decision came from a dissatisfaction at the way PODs are working. The meetings are seen as mostly a waste of time. We suggest that perhaps it is time to evaluate the POD experiment. 7a

BLP 16-FEB-72 18:00 9200

Communique from the Cedar 9 -- 16 February 1972

(J9200) 16-FEB-72 18:00; Title: Author(s): Bruce L. Parsley/BLP; Distribution: Diane S. Kaye, Paul Rech, Michael D. Kudlick, Donald R. Cone, Don Limuti, William R. Ferguson, Priscilla Lister, Robert L. Dendy, Linda L. Lane, Marilyn F. Auerbach, Walter L. Bass, Mary S. Church, William S. Duvall, Douglas C. Engelbart, Beauregard A. Hardeman, Martin E. Hardy, J. D. Hopper, Charles H. Irby, Mil E. Jernigan, Harvey G. Lehtman, John T. Melvin, Jeanne B. North, James C. Norton, Cindy Page, Bruce L. Parsley, William H. Paxton, Jeffrey C. Peters, Jake Ratliff, Barbara E. Row, Ed K. Van De Riet, Dirk H. van Nouhuys, Kenneth E. Victor, Don C. Wallace, Richard W. Watson, Don I. Andrews/SRI-ARC; Sub-Collections: SRI-ARC; Clerk: BLP;

BLP 16-FEB-72 18:24 9201

Suggestion for POD Delegates to Meet with ECM

I would like to make the following suggestion: 1

Once a week for say an hour, the ECM meet with one representative each from the PODs to discuss issues raised in the PODs. 2

The reason for the suggestion is: 3

> At least the Cedar 9 were unhappy when it turned out that PODCom was not to be a device for bringing their gripes and suggestions to the attention of the powers that be and having something done about them (at least have them acknowleged). PODCom is indeed an inappropriate place for such things since Doug wants out of that sort of decision making. The ECM is really a more appropriate place for treatment of many of the things that are raised at the PODs and that they would like some attention paid to. Thus the suggestion. 3a

I would much prefer it if 4 delegates from the PODs met with the regular ECM. However another possibility would be for the ECM to devote say an hour each week to discussion of issues raised in the PODs (each POD has a member of ECM). The feedback from that hour should be very explicitly done. 4

BLP 16-FEB-72 18:24 9201

Suggestion for POD Delegates to Meet with ECM

(J9201) 16-FEB-72 18:24; Title: Author(s): Bruce L. Parsley/BLP; Distribution: Diane S. Kaye, Paul Rech, Michael D. Kudlick, Donald R. Cone, Don Limuti, William R. Ferguson, Priscilla Lister, Robert L. Dendy, Linda L. Lane, Marilyn F. Auerbach, Walter L. Bass, Mary S. Church, William S. Duvall, Douglas C. Engelbart, Beauregard A. Hardeman, Martin E. Hardy, J. D. Hopper, Charles H. Irby, Mil E. Jernigan, Harvey G. Lehtman, John T. Melvin, Jeanne B. North, James C. Norton, Cindy Page, Bruce L. Parsley, William H. Paxton, Jeffrey C. Peters, Jake Ratliff, Barbara E. Row, Ed K. Van De Riet, Dirk H. van Nouhuys, Kenneth E. Victor, Don C. Wallace, Richard W. Watson, Don I. Andrews/SRI-ARC; Sub-Collections: SRI-ARC; Clerk: BLP;

DCW 16-FEB-72 19:05 9202

update to disk allocation/restriction writeup- 8758

The following discribes the implementation of a disk file space allocation and restricticon factility in tenex.

1

Presently the disk allocation is a property of the user and is defined in the DDB by cell "DDBMAX". This cell will no longer be used and instead a cell in the directory overhead block "DIRDSK" is used to contain both the present count of file pages and the max allowable. 1a

Accounting of disk pages used is done at close and expunge time. The error return code OPNX10 (no room) is used for OPENF for violation of directory disk space alloction. Enabled wheel status overides the alloction/restriction facility. 1b

This has the draw back that a single large file could greatly exceed a directories allocation,but the overhead required to keep track of disk pages dynamically is prohibitive. 1c

Setting of the "pages used" count is accomplished by either using the "SET COUNT" function in BSYS or dumping and restoring the file system. Care must be exercised that a users file space at dump time is within his allocation. If it is not some of his files will not be restored. 1d

The following code changes are required to impliment this facility
all insertions show new code bracketed by old (existing).

2

jsys.fai;74 (page 35) 2a

this change allows setting "new" max disk word with crdir jsys 2a1

delete at crdir3+3 2a2

```
UMOVE  A,2(E)  ;get max disk storage          2a2a
TLNE   E,(1B2)                                2a2b
MOVEM  A,DDBMAX(NUM)                          2a2c
```

insert at crdir3+31 2a3

```
BUG(HLT,< SETDIR...     ;*** existing code    2a3a
UMOVE  A,2(E)           ;get max disk storage 2a3b
```

```
        TLNE    E,(1B2)                                         2a3c
        HRLM    A,DIRDSK        ;set new max allocation         2a3d
        UMOVE   A,7(E)          ;*** existing code
                                                                2a3e
jsys.fai;74  (pages 40 & 41)                                    2b
   this change gets "new" max disk word for gtdir jsys          2b1
   delete at gtdir1+10                                          2b2
      MOVE    D,DDBMAX                                          2b2a
      UMOVEM  D,2(E)                                            2b2b
   add at gtdir2+12                                             2b3
      PUSHJ   P,MAPDIR        ;*** existing code                2b3a
      HLRZ    D,DIRDSK        ;get max allocation               2b3b
      UMOVEM  D,2(E)          ;give to caller                   2b3c
      MOVE    D,DIRDPW        ;*** existing code
                                                                2b3d
jsys.fai;74  (page 72)                                          2c
   account for pages (at expunge time)                          2c1
   insert at ↑delfil+10                                         2c2
      MOVE    D,(P)           ;*** existing code                2c2a
      PUSH    P,A                                               2c2b
      MOVEI   A,DIRORG(D)     ;point to fdb                     2c2c
      LDB     E,PFILPC        ;get pages this file              2c2d
      POP     P,A                                               2c2e
      HRRE    F,DIRDSK        ;get current count                2c2f
      SUB     F,E             ;compute new current count        2c2g
```

```
        HRRM    F,DIRDSK        ;and set it                             2c2h
        MOVE    E,FDBCTL+DIRORG(D)      ;***exiting code
                                                                        2c2i
direct.fai;43  (page 13)                                                2d
   new word in directory overhead block                                 2d1
   delete                                                               2d2
      SPARE: BLOCK 4            ;locations for additional
      variables                                                         2d2a
   add                                                                  2d3
      DIRDSK: BLOCK 1           ;lh=max disk pages for this dir         2d3a
                                ;rh= current pages in use               2d3b
      SPARE: BLOCK 3            ;locations for additional
      variables
                                                                        2d3c
disc.fai;52  (page 2)                                                   2e
   open failure if allocation exceeded                                  2e1
   add at dskopn+15                                                     2e2
      JRST  OPENF1              ;*** existing code                      2e2a
      PUSH  P,B                                                         2e2b
      MOVE  B,CAPENB            ;get enabled cpabilities                2e2c
      TRNE  B,WHEEL ;if a wheel bypass checks                           2e2d
      JRST  DSKOP1                                                      2e2e
      MOVE  B,FDBCTL(A)         ;get fdb flags                          2e2f
      TLNE  B,FDBTMP            ;skip if not a temp file                2e2g
      JRST  DSKOP1              ;temps are drum only                    2e2h
      PUSH  P,A                                                         2e2i
```

```
        HLRZ    B,DIRDSK        ;get max allowed                        2e2j
        HRRE    A,DIRDSK        ;and cuurent count                      2e2k
        SUB     B,A             ;compute residue                        2e21
        POP     P,A                                                     2e2m
        JUMPLE  B,[POP  P,B                                             2e2n
           MOVEI   A,OPNX1O     ;no room                                2e2n1
           UNLOCK  DIRLCK                                               2e2n2
           POPJ    P,0]                                                 2e2n3
    DSKOP1: POP    P,B                                                  2e3
        TRNE    STS,1B27        ;*** existing code
                                                                        2e3a
  disc.fai;52  (page 15)                                                2f
    account for pages used (at closf time)                              2f1
    add at dskc18+10                                                    2f2
        POP     P,A             ;***existing code                       2f2a
        PUSH    P,B                                                     2f2b
        PUSH    P,C                                                     2f2c
        LDB     E,PFILPC        ;get pages this file                    2f2d
        SUB     B,C             ;compute net change                     2f2e
        HRRE    C,DIRDSK        ;get current pages used                 2f2f
        ADD     B,C             ;compute new total                      2f2g
        HRRM    B,DIRDSK        ;save new total pages (this dir)        2f2h
        POP     P,C                                                     2f2i
        POP     P,B                                                     2f2j
```

```
        DPB    B,PFILPC          ;*** existing code                    2f2k
```

dosc.fai;52 (page 19) 2g

account for pages at rename time (RENAMF jsys) 2g1

add at dskre8+13 2g2

```
        PUSH   P,B               ;***existing code                     2g2a
        EXCH   B,DIRDSK                                                2g2b
        SUBM   B,DIRDSK          ;subtract file pages                  2g2c
        PUSH   P,FDBSIZ(A)       ;***existing code                     2g2d
```

add at dskre9+10 2g3

```
        DPB    B,PFILPC          ;***existing code                     2g3a
        ADDM   B,DIRDSK          ;add to current count (this dir)      2g3b
        POPJ   P,B               ;***existing code                     2g3c
```

DCW 16-FEB-72 19:05 9202
update to disk allocation/restriction writeup- 8758

(J9202) 16-FEB-72 19:05; Title: Author(s): Don C. Wallace/DCW; Distribution: Diane S. Kaye, Paul Rech, Michael D. Kudlick, Donald R. Cone, Don Limuti, William R. Ferguson, Priscilla Lister, Robert L. Dendy, Linda L. Lane, Marilyn F. Auerbach, Walter L. Bass, Mary S. Church, William S. Duvall, Douglas C. Engelbart, Beauregard A. Hardeman, Martin E. Hardy, J. D. Hopper, Charles H. Irby, Mil E. Jernigan, Harvey G. Lehtman, John T. Melvin, Jeanne B. North, James C. Norton, Cindy Page, Bruce L. Parsley, William H. Paxton, Jeffrey C. Peters, Jake Ratliff, Barbara E. Row, Ed K. Van De Riet, Dirk H. van Nouhuys, Kenneth E. Victor, Don C. Wallace, Richard W. Watson, Don I. Andrews, Rainer W. Schulz, Bob Van Tyul, Jeanne B. North, Robert L. Dendy, John T. Melvin, Kenneth E. Victor, John W. McConnell, Peggy M. Karp, Dan L. Murphy, Rod M. Fredrickson, Peter H. Lipman, Don C. Wallace, Carl M. Ellison, Ted R. Strollo/SRI-ARC TUG; Sub-Collections: SRI-ARC TUG; Obsoletes Document(s): 8758; Clerk: DCW;
Origin: <WALLACE>DISK-ALLOCATION.NLS;11, 16-FEB-72 18:57 DCW ;

JCN 16-FEB-72 19:13 9203

Re: 9196 on eliminating execute content analyzer

Re: 9196 on elimiinating execute content analyzer:
Having two commands that do exactly the same thing doesn't sound right. --but the ec command IS easier for the user, particularly the less experienced one, and is quicker. I prefe it to 'g 'p 'l 'i /name/ cacaca or whatever it is. Just how much trouble is it to keep the easuer one? How much pain? 1

JCN 16-FEB-72 19:13 9203

Re: 9196 on eliminating execute content analyzer

(J9203) 16-FEB-72 19:13; Title: Author(s): James C. Norton/JCN; Distribution: Bruce L. Parsley, Richard W. Watson, Charles H. Irby, Marilyn F. Auerbach/BLP RWW CHI MFA; Sub-Collections: SRI-ARC; Clerk: JCN;

Characteristics of IMP's & TIP's

	H-316 IMP	DDP-516 IMP	TIP
Add (microsec.)	3.2	1.9	3.2
Store cycle	1.6	1.0	1.6
Max core (words)	16K	16K	32K
Actual core	12K	12K	20K
DMC Channels (max.)	14	14	15
Card Slots for Host & TelCo Interfaces	11 (lo-boy) 35 (hi-boy)	19	23 *

* Requires an estension cabinet.

Interface Burden:

TelCo Interface (2 DMC's, 3 cards)
Local Host (2 DMC's, 2 cards)
Distant Host (2 DMC's, 3 cards)

Specials for the TIP:

MLC requires 3 DMC's
Line Interface Units (LIU's) = 32 or 63
Internal modems (103, 201 or 202) need 1 card slot each
Mag tape controller requires added 4K core, uses one DMC, needs 4 card slots.

Modems may not occupy more than 16 card slots.

Added core takes 1 card slot/4K words.

Without extension cabinet, TIP has only 9 slots for Host & TelCo interfaces and for core beyond 20K.

General: Except for the cramped space in the TIP (without an extension cabinet), main difference between -516 and -316 is the latter has about two-thirds the thruput of the former.

Hope this is helpful, John. Good hunting, Bruce.

1

BAD 17-FEB-72 6:07 9206

Characteristics of IMP's & TIP's

(J9206) 17-FEB-72 6:07; Title: Author(s): Bruce A. Dolan/BAD;
Distribution: John T. Melvin, Steve D. Crocker/JTM SDC2(info);
Sub-Collections: NIC; Clerk: BAD;

JBL 17-FEB-72 8:10 9207

Random Things About NIC EXEC

Would it be very much trouble to give us network users some more control over the formatting of our output? On some of our devices the ability to give EXEC the FORM command or the TABS command would be nice to have, and frequently the NO RAISE and LOWERCASE, too (though the latter are not too important since NLS does the right thing). Also the INDICATE (FORMFEED) command to make TYPEing a bit easier. (just in the way of random comments by a random user.)

Pax

JBL

JBL 17-FEB-72 8:10 9207

Random Things About NIC EXEC

(J9207) 17-FEB-72 8:10; Title: Author(s): Joel B. Levin/JBL;
Distribution: John T. Melvin/JTM; Sub-Collections: NIC; Clerk: JBL;

DVN 17-FEB-72 10:47 9208

Execute Content Analyser, Let's keep it

I object moderately to abadoning the execute contentent analyser command per (journal,9197,) because it is much easier to use than the go to program version. 1

DVN 17-FEB-72 10:47 9208

Execute Content Analyser, Let's keep it

(J9208) 17-FEB-72 10:47; Title: Author(s): Dirk H. van Nouhuys/DVN;
Distribution: Bruce L. Parsley, Charles H. Irby/BLP CHI;
Wub-Collections: SRI-ARC; Clerk: DVN;
Origin: <VANNOUHUYS>JOURDRAFT.NLS;14, 17-FEB-72 10:43 DVN ;

RWW 17-FEB-72 11:26 9209

Conversation with Tom Pyke of NBS about Network Future

Tom Pyke of the National Bureau of Standards called to talk about where I thought the NIC was and what possible futures it might have. NBS has been asked by ARPA to consider running the Network for the next couple of years starting 1973 and NBS is studying the possibility. They are predicting over 100 nodes being added in the next couple of years.
I told him there were several possiblilities such as staying in ARC, eventually moving to the Network Operating company, being independent etc. I told him we considered the NIC had a lot of development yet to go and we expected to be running it for several years to come, but that we probably would prefer to buy expanded computer power from some utility like Tymshare rathr than running hundreds of machines here. NBS isn'T sure it wants such a huge job as running the network, but are giving it a serious look.

1

RWW 17-FEB-72 11:26 9209

Conversation with Tom Pyke of NBS about Network Future

(J9209) 17-FEB-72 11:26; Title: Author(s): Richard W. Watson/RWW; Distribution: Diane S. Kaye, Paul Rech, Michael D. Kudlick, Donald R. Cone, Don Limuti, William R. Ferguson, Priscilla Lister, Robert L. Dendy, Linda L. Lane, Marilyn F. Auerbach, Walter L. Bass, Mary S. Church, William S. Duvall, Douglas C. Engelbart, Beauregard A. Hardeman, Martin E. Hardy, J. D. Hopper, Charles H. Irby, Mil E. Jernigan, Harvey G. Lehtman, John T. Melvin, Jeanne B. North, James C. Norton, Cindy Page, Bruce L. Parsley, William H. Paxton, Jeffrey C. Peters, Jake Ratliff, Barbara E. Row, Ed K. Van De Riet, Dirk H. van Nouhuys, Kenneth E. Victor, Don C. Wallace, Richard W. Watson, Don I. Andrews/SRI-ARC; Sub-Collections: SRI-ARC SRI-ARC; Clerk: RWW;

WSD 17-FEB-72 11:36 9210

more on conent nalyser

As long as we are working on the content analyzer, why don't we fix it so that a CA pattern in a viewspec string works??. This would be very useful. 1

WSD 17-FEB-72 11:36 9210

more on conent nalyser

(J9210) 17-FEB-72 11:36; Title: Author(s): William S. Duvall/WSD; Distribution: Diane S. Kaye, Don I. Andrews, Walter L. Bass, William S. Duvall, Mary S. Church, J. D. Hopper, Charles H. Irby, Harvey G. Lehtman, John T. Melvin, Bruce L. Parsley, William H. Paxton/NPG; Sub-Collections: SRI-ARC NPG; Clerk: WSD;

RMS 17-FEB-72 11:46 9211

a message

a message to myself 1

RMS 17-FEB-72 11:46 9211

a message

(J9211) 17-FEB-72 11:46; Title: Author(s): Ron M. Stoughton/RMS; Distribution: James E. White, Ron M. Stoughton/JEW RMS; Sub-Collections: NIC; Clerk: RMS;

HGL 17-FEB-72 14:43 9213

NEW NLS RISES FROM THE PIT

A new version of NLS came up today. Additions were made to DEX, bugs were fixed in the Journal and Goto Programs subsystems. These and other changes are documented in (nls, status, running).--- HGL 1

HGL 17-FEB-72 14:43 9213

NEW NLS RISES FROM THE PIT

(J9213) 17-FEB-72 14:43; Title: Author(s): Harvey G. Lehtman/HGL; Distribution: Diane S. Kaye, Paul Rech, Michael D. Kudlick, Donald R. Cone, Don Limuti, William R. Ferguson, Priscilla Lister, Robert L. Dendy, Linda L. Lane, Marilyn F. Auerbach, Walter L. Bass, Mary S. Church, William S. Duvall, Douglas C. Engelbart, Beauregard A. Hardeman, Martin E. Hardy, J. D. Hopper, Charles H. Irby, Mil E. Jernigan, Harvey G. Lehtman, John T. Melvin, Jeanne B. North, James C. Norton, Cindy Page, Bruce L. Parsley, William H. Paxton, Jeffrey C. Peters, Jake Ratliff, Barbara E. Row, Ed K. Van De Riet, Dirk H. van Nouhuys, Kenneth E. Victor, Don C. Wallace, Richard W. Watson, Don I. Andrews/SRI-ARC; Sub-Collections: SRI-ARC; Clerk: HGL;

BAD 17-FEB-72 15:37 9214

Request for Documents

Please send a "TIP user's" complement of documents to the following person. I believe this should include (1) the TIP User's Guide (NIC 8232), and (2) the Resource Notebook.

SAGA, OJCS
ATTN: Col. W. T. Minor
Room 1D-940, The Pentagon
Washington, DC 20301

1

BAD 17-FEB-72 15:37 9214

Request for Documents

(J9214) 17-FEB-72 15:37; Title: Author(s): Bruce A. Dolan/BAD;
Distribution: Jeanne B. North/JBN; Sub-Collections: NIC; Clerk: BAD;

XEROX meeting notes -- 15-FEB-72

Xerox Meeting Notes: 1

The following are notes on a meeting held, on 15-FEB-72, at Xerox PARC, attended principally by Bill Paxton, Charles Irby, Peter Deutsch, Jim Mitchel, Bill English, and Butler Lampson, to discuss: 1a

PARC's statement of work regarding IMLAC level protocal for running NLS over the NET, and 1a1

a possible PDP-10 -- PDP-11 configuration to run NLS for ARC and the relationship between this configuration and xNLS on a mini-computer. 1a2

Regarding the Imlac level protocal, PARC would just as soon not have been given the responsibilty for developing this protocal. Larry Roberts apparently saw an opportunity to get this done with minimal hassle and took advantage of the situation. They would gladly give the responsibility for developing and publishing this protocal to us since its initial use will be for running DNLS over the ARPANET. We agreed that it would be a joint effort anyway, but that it was unfortunate that Larry Roberts had seen fit to do things this way, since its initial use involves NLS which is principally an ARC responsibility. 1b

Regarding the possibility of a PDP10-PDP11 configuration at ARC and its relationship to xNLS: 1c

I have again raised the issue of supporting terminals with small computers which would do the command interaction with the users, sending fully specified command requests to the PDP10, which would have its scheduling mechanisms set to favor heavy compute jobs. 1c1

The interface between the PDP10 and PDP11's would involve message sending and confirmation, much like the ARPANET. (In fact, one of the ways in which they could be connected together is through the ARPANET. Note that there could be more than one PDP11, and that they would not have to be local.) The PDP11 would run a simple operating system (which we would probably NOT write) with no swapping and no file system and would run jobs for NLS users. 1c1a

The NLS running on the ten would specify which job the eleven should run. This allows us freedom to run several versions of NLS concurrently. A set of

PDP11's would run all of our terminals. A net user could connect to a PDP11 and be a tty or to a PDP10 and be PDP11-like. The interface looks simple and clean, with no new language development. 1c1a1

Writing the program to run in the PDP11's, and separating the interactive command specification portion of NLS from the non-interactive file manipulation portion would be quite straight forward, since NLS is already organized in that way for the most part. 1c1a1a

The interface consists of two sets of procedures, between which an arbitrary protocal could be added. 1c1a1a1

The measurement and analysis of our system, which will be taking place over the next couple of months, should indicate whether or not using a small computer to do the interaction with the users is the appropriate thing to do. I think it is reasonable at this time to look into the feasability of doing such a thing. In considering the possibilities, the following questions occurred to me. 1c2

Which small computer would be best for such a task? 1c2a

Which have reasonable operating systems? 1c2a1

which have reasonable languages? 1c2a2

What about the availability, reliability, and maintenance? 1c2a3

How might the machine be connected to the PDP10? 1c2a4

Through the ARPANET? 1c2a4a

Through the I/O bus? 1c2a4b

Through the memory bus? 1c2a4c

What about being compatible with the PARC choice for an xNLS computer? 1c2a5

Have they made a choice yet? 1c2a5a

If it is up in the air, will our needs help them decide? 1c2a5b

How does this relate to xNLS on a small computer? 1c2b

When will MPL be available on a small computer? 1c2b1

Does it seem desirable for xNLS to adopt the same approach? 1c2b2

Try putting the interactive portion in a small machine between the xNLS computer and the display system or in the display system itself, if there is excess resource available. 1c2b2a

When will xNLS be operational? 1c2b3

Should we wait until then? 1c2b3a

What about the PDP11 BLISS which compiles on a PDP10 -- being developed at Carnagie (I think)? 1c2c

What about operating systems that now exist for PDP11's and NOVA's, such as the one developed at U of Ill for the PDP11. 1c2d

What about the energy DEC is pouring into the PDP11? 1c2e

What about a net interface? 1c2f

Will PARC build their own? 1c2f1

What about the one used at U of Ill for the PDP11? 1c2f2

Do we or PARC intend to support MPL on other machines? 1c2g

Other network sites might be interested in buying an NLS front end. 1c2g1

Would this be in competition with xNLS? 1c2g1a

Would the use of some other language be better, since we wouldn't have to maintain the language? 1c2g1b

Or, would the use of MPL be better because it would encourage people to experiment with the NLS front end by adding new modules or replacing old ones? 1c2g1c

The discussion at PARC did not really suggest answers most of these questions. 1d

Since nls now consists of two modules, interactive and non-interactive, with two sets of procedures representing the two sides of the interface, how should we proceed? 1d1

We could use a PDP11, connected to ten through the I/O bus or through the network, use bliss and possibly the operating system and net interface developed at U of Ill. 1d1a

We could choose to wait for NLS in MPL, with MPL and an MPL operating system running on a small machine -- all necessary for xNLS. 1d1b

If it looks like it will be a year or longer before we could do this, I would probabley choose to proceed sooner than that (we are severely overloaded, our user community is growing, and I do not think we can expect to get more than 10% to 15% more out of the PDP10). 1d1b1

This seems mostly to be a question of timming and energy required to do it wiithout MPL and PARC help. 1d1c

The following tentative schedule for next few months, regarding MPL and NLS 1e

Rewrite MPL in MPL: mid FEB to mid MARCH 1e1

Design data typing facility for MPL: mid FEB to mid MAR 1e2

Implement data type facility: mid MAR to ? 1e3

Start design for NLS: mid MAR to ? 1e4

Start implementing NLS in MPL: JUL to ? 1e5

MPL on mini: ? 1e6

MPL operating system: ? 1e7

CHI 17-FEB-72 18:45 9219

XEROX meeting notes -- 15-FEB-72

(J9219) 17-FEB-72 18:45; Title: Author(s): Charles H. Irby/CHI; Distribution: William H. Paxton, Butler W. Lampson, L. Peter Deutsch, James G. Mitchell, Diane S. Kaye, Don I. Andrews, Walter L. Bass, William S. Duvall, Mary S. Church, J. D. Hopper, Charles H. Irby, Harvey G. Lehtman, John T. Melvin, Bruce L. Parsley, William H. Paxton, Richard W. Watson, James C. Norton, Douglas C. Engelbart, Dirk H. van Nouhuys, Marilyn F. Auerbach, Ed K. Van De Riet, Don C. Wallace, John T. Melvin, Kenneth E. Victor/WHP BWL LPD JGM NPG RWW JCN DCE DVN MFA EKV DCW JTM KEV; Sub-Collections: SRI-ARC NPG; Clerk: CHI;

WLB 17-FEB-72 19:24 9220

Some Thoughts on PODAC

This is in part a reply to Cedar POD's last "Communique" (9200) and Bruce's suggestion that the PODs send delegates to EMC meetings (9201).

WLB 17-FEB-72 19:24 9220

Some Thoughts on PODAC

I agree with Bruce that it is time to begin an evaluation of PODAC -- since this activity consumes such a large percentage of our total manpower resources, it would be very counterproductive as well as frustrating to delay such evaluation arbitrarily. 1

I have one objection to the position taken by the Cedar POD, and I would like to dispose of this before going into points of agreement and elaboration of my own feelings (all of these being my own personal views and not "official" positions of my POD). 2

The Cedar POD indicates in its last "Communique" (9200) that they generally feel that PODs are a waste of time and, consequently, have decided to instigate a POD "slowdown" by not meeting next week. 2a

I have very mixed feelings about this development. Basically, I feel that PODs should have very great latitude in determining their own working relationships, goals, and activities; however I also feel that Cedar may be "copping out" just because the going has begun to get rough. 2b

Cedar says in its communique that they are dissatisfied with the ways PODs are working and that they feel it is time to evaluate the POD experiment. What I hear when I read this (which may be 180 degrees from what was meant) is that they feel frustrated and uncomfortable about their own POD and want someone else to do something about it. If this is in fact what they are saying, it strikes me as being somewhat bitchy and basically untrusting of their own ability to cope. By this I mean that, if the POD experiment is in fact a failure, then Cedar owes it to its own members as well as to the rest of us to work a little harder at characterizing the dimensions of that failure and to propose viable alternative means for accomplishing the ends for which PODs were created. 2c

I certainly do not mean to rule out the possibility that there is just not enough valuable POD activity to fill up two hours every week, but I feel that PODAC is undergoing birth pains at this time and that it is premature to throw out the baby until we've all given it a fair chance. 2c1

Oak POD has been experiencing some of the same uneasiness that Cedar reports, and it is my feeling that this represents not a pathological indication of decay but rather a healthy attempt on the part of the individuals in the POD to adjust their perceptions and energies so as to move towards mutual understanding and perhaps some sort of group spirit or direction. 2d

Some Thoughts on PODAC

We all have had the opportunity, not to mention the cause, to complain about the way things are done at ARC. PODAC has been instituted, at least in part, to give us a vehicle for airing our differences and formulating alternatives. I think that it would be a serious mistake to assume that these processes are going to be easy ones and to place the blame for our difficulties on the particular structure which we have for carrying them out. In short, I think that we should approach PODAC as something which we need to make work (much as NIC or DSS or any other activity) and, in the spirit of bootstrapping, consider our unhappiness with our PODs as a suitable problem to be worked out in the PODs. 2e

Now for some areas of agreement! I like the idea of individuals from one POD being able to visit other PODs -- by mutual agreement -- at the initiative of either the individual or the POD, and I hope that all the PODs will discuss people's feelings about this and possible mechanisms for encouraging this cross-fertilization. 3

I think that Bruce's idea (9201) of sending POD representatives to EMC meetings has a lot of merit. It is clear that the role of PODCOM has been defined differently from what many of us had in mind, and that it does not directly address our needs to have problems resolved -- or at least seriously considered -- once they have been identified, accepted, and voiced by individual PODs. 4

It seems to me that we have a right to expect PODAC to support us in at least the following three areas: 4a

(1) Giving us a forum for airing gripes, suggestions, observations, etc. and for receiving feedback, knowledge of the wider ARC world, and simple support as human beings and as valuable members of a team. 4a1

(2) Giving us a channel for communication (both ways) with the operational management of ARC and SRI. 4a2

(3) Giving Doug the support, encouragement, criticism, feedback, etc., that he needs to be effective as our "guiding light," and giving us the contact with Doug which we need to fully accept him as a human being and our leader. 4a3

The PODs as presently constituted offer a sufficient mechanism for accomplishing (1) -- granted, we will have to put energy into our PODs if we want them to work for us, but the

organizational structure now exists if we care enough to use it. 4b

Cedar's proposal to send delegates to EMC meetings -- with the exact working arrangements to be set up by mutual agreement and compromise -- seems to be a promising way of approaching (2), and I think that the rest of the PODs should give this proposal the most serious consideration. 4c

PODCOM is a possible vehicle for filling the needs of (3), but I think that there are factors which indicate that we should consider scrapping PODCOM and trying some other mechanism. 4d

The role and functioning of PODCOM has never been clear to all (if any) of us, but many of us have seen it as the channel for carrying out the processes of (2) above. Doug has indicated, nowever, that he does not want PODCOM delegates to take on the responsibility for communicating between him and the rest of ARC, and PODCOM has no "official" interaction with EMC. 4d1

Some of us have seen PODCOM as basically being Doug's POD, but this view has been unpopular because of the confidentiality that that brings to PODCOM deliberations; also the constitution of PODCOM varies continuously, and at the pleasure of the individual PODs, thereby preventing the creation of a close-knit POD unit within PODCOM. 4d2

It has been suggested that Doug join a single one of the existing PODs so that he can interact like any other ARCer; however, this really seems like a pipe dream because of the way that Doug's presence polarizes POD activity (to the detriment of the other POD members, I believe). 4d3

Another possible way for achieving (3) would be for Doug to "float" around between PODs, but this seems undesirable because of the energy drain it puts on Doug and because of the disruption it brings to the PODs themselves -- PODs should be able to meet with Doug at their and his mutual desire and convenience, but a regular schedule seems inappropriate. 4d4

I believe that we need an entirely new organization to replace PODCOM (whose communicative responsibilities would be taken over by the EMC delegation). 4d5

This would be a POD-like body, constituted expressly for the purposes outlined in (3) above. Everyone in this

body, except Doug, would be a member of another POD, which presumably would be responsible for addressing his personal needs, and his participation in this body -- let's call it Doug's POD -- would be for the purpose of helping Doug in his relationships with ARC. 4d5a

A major difference between Doug's POD and the present PODCOM would be that Doug would invite people to join (at their option) rather than having to face a changing (and potentially hostile) group of delegates. This would guarantee him the support and continuity of a group which he can accept as being expressly for his benefit -- where getting feedback and even occasional flack should be recognized as being beneficial rather than threatening. 4d5b

I would like also to suggest the formation of another group, which might actually be Doug's POD itself if the potential conflicts can be resolved. This group would be responsible for working with Doug on long (and perhaps medium) range planning and goal setting. 4d6

I think it is generally recognized now that Doug is in no shape to carry the burden of this activity himself, and that is foolish for him to try to when there is as great a body of talent and good-will in ARC as we have at the present time. 4d6a

A reasoned consideration of our current political and operational environment indicates that there is no need for a crisis approach to setting new goals and formulating new activities, but that there is a need for the creation of a solid, real, dependable, and accepted mechanism for beginning a serious review of our current position, vector, and momentum and for formulating principles by which we can steer our course in the coming years. This mechanism must be one which Doug can trust to be non-threatening to his psyche and which the rest of us can depend on to pick Doug's mind and help him to provide the leadership which we will be desperately needing before too many more moons have passed. 4d6b

The needs outlined above are complex, and I urge everyone to consider how the present POD organization can be used to satisfy those needs, how it needs to be modified, and what alternative structures are needed to fill the gaps left by PODAC. 4e

WLB 17-FEB-72 19:24 9220

Some Thoughts on PODAC

(J9220) 17-FEB-72 19:24; Title: Author(s): Walter L. Bass/WLB; Distribution: Diane S. Kaye, Paul Rech, Michael D. Kudlick, Donald R. Cone, Don Limuti, William R. Ferguson, Priscilla Lister, Robert L. Dendy, Linda L. Lane, Marilyn F. Auerbach, Walter L. Bass, Mary S. Church, William S. Duvall, Douglas C. Engelbart, Beauregard A. Hardeman, Martin E. Hardy, J. D. Hopper, Charles H. Irby, Mil E. Jernigan, Harvey G. Lehtman, John T. Melvin, Jeanne B. North, James C. Norton, Cindy Page, Bruce L. Parsley, William H. Paxton, Jeffrey C. Peters, Jake Ratliff, Barbara E. Row, Ed K. Van De Riet, Dirk H. van Nouhuys, Kenneth E. Victor, Don C. Wallace, Richard W. Watson, Don I. Andrews/SRI-ARC; Sub-Collections: SRI-ARC; Clerk: WLB;

BLP 17-FEB-72 22:15 9221

Reply to Objections to Deleting Execute Content-analyzer

You are objecting for the wrong reasons. 1

In TNLS you type 'e 'c 'o etc. to Execute Conan. You type 'g 'p 'c etc. to Goto Program Conan. The "etc." is exactly the same in both cases. Also in both cases the pattern is automatically instituted as your Content Analyzer Program User. Thus the two commands are exactly equivalent and easy (or difficult) to use. 2

It is true that in DNLS you need type only 'e 'c to Execute Conan. However that seems a small thing. 3

BLP 17-FEB-72 22:15 9221
Reply to Objections to Deleting Execute Content-analyzer

(J9221) 17-FEB-72 22:15; Title: Author(s): Bruce L. Parsley/BLP;
Distribution: Dirk H. van Nouhuys, James C. Norton/DVN JCN;
Sub-Collections: SRI-ARC; Clerk: BLP;

JTM 18-FEB-72 2:53 9222

EXEC 1.32.04 features

(J9222) 18-FEB-72 2:53; Title: Author(s): John T. Melvin/JTM; Distribution: Diane S. Kaye, Paul Rech, Michael D. Kudlick, Donald R. Cone, Don Limuti, William R. Ferguson, Priscilla Lister, Robert L. Dendy, Linda L. Lane, Marilyn F. Auerbach, Walter L. Bass, Mary S. Church, William S. Duvall, Douglas C. Engelbart, Beauregard A. Hardeman, Martin E. Hardy, J. D. Hopper, Charles H. Irby, Mil E. Jernigan, Harvey G. Lehtman, John T. Melvin, Jeanne B. North, James C. Norton, Cindy Page, Bruce L. Parsley, William H. Paxton, Jeffrey C. Peters, Jake Ratliff, Barbara E. Row, Ed K. Van De Riet, Dirk H. van Nouhuys, Kenneth E. Victor, Don C. Wallace, Richard W. Watson, Don I. Andrews/SRI-ARC; Sub-Collections: SRI-ARC; Clerk: JTM;

DVN 18-FEB-72 10:45 9229

Oak POD Meeting:Duration

Further research uncovered resistance to our establishing a routine of meetings that include dinner. 1

Therefore the next meeting is scheduled for my house at 3:00 on Wednesday, but does not include dinner. 2

My adress is 431 Central avenue, Oenlo Park. It's close and easey to find.. 3

I will have maps in my office. 3a

James E. White

DVN 18-FEB-72 10:45 9229

Oak POD Meeting:Duration

(J9229) 18-FEB-72 10:45; Title: Author(s): Dirk H. van Nouhuys/DVN; Distribution: Walter L. Bass, Beauregard A. Hardeman, J. D. Hopper, Diane S. Kaye, Don Limuti, Priscilla Lister, James C. Norton, William H. Paxton, Dirk H. van Nouhuys/OAK; Sub-Collections: SRI-ARC OAK; Clerk: DVN;
Origin: <VANNOUHUYS>JOURDRAFT.NLS;14, 38-FEB-72 10:41 DVN ;

JEW 18-FEB-72 14:47 9230

Who is host x'96'?

(J9230) 18-FEB-72 14:47; Title: Author(s): James E. White/JEW;
Distribution: Jeanne B. North, Bruce A. Dolan, Alex A. McKenzie, John T. Melvin, Robert M. Metcalfe, Robert E. Kahn, Richard B. Kalin, Jonathan B Postel, Peggy M. Karp, Lames E. White, Steve D. Crocker/NF;
Sub-Collections: NIC NF; Clerk: JEW;

JEW 18-FEB-72 14:47 9230

Who is host x'96'?

Does any one have information about host #2 at McClellan? UCSB has been receiving Host-Host RST's from host address x'96', but they're not listed in #1822. 1

Don I. Andrews

DIA 18-FEB-72 14:53 9231

things to put in GETAB

(J9231) 18-FEB-72 14:53; Title: Author(s): Don I. Andrews/DIA;
Distribution: Don C. Wallace, John T. Melvin, Kenneth E. Victor/DCW JTM
KEV; Sub-Collections: SRI-ARC; Clerk: DIA;
Origin: <ANDREWS>MEMO.NLS;1, 18-FEB-72 14:43 DIA ;

things to put in GETAB

Parameters added to system by DIA which perhaps should be in GETAB. 1

The parameter name, meaning, and format are given below. All of them are in MONSRI and need INTERN's, I believe. 1a

(RESLM1) response cutoff, upper limit 1a1

floating point 1a1a

(RESLM2) pesponse cutoff, lower limit 1a2

floating point 1a2a

(SKDPMI) initials of last sched. param. changer 1a3

7 bit ASCII string in one word 1a3a

(SKDPMF) sched. normal parameter flag 1a4

zero or non-zero 1a4a

zero means sched. params are normal 1a4b

(RESNDX) response index 1a5

floating point 1a5a

(RESFLG) response - login flag 1a6

zero or non-zero 1a6a

zero means logins OK. 1a6b

There are lots of other things which could be added, but which I see no particular need for 1b

e.g. PC sampler on or off, fault record on or off, memory sampler on or off. 1b1

The status of all these things can redily be obtained via superwatch. 1b2

Charles H. Irby

ASMG 18-FEB-72 15:15 9232

SCHED1 problem

(J9232) 18-FEB-72 15:15; Title: Author(s): Charles H. Irby, Don I. Andrews, Don C. Wallace, Oary S. Church, Michael D. Kudlick, Richard W. Watson, William H. Paxton/ASMG; Distribution: Charles H. Irby, Don I. Andrews, Don C. Wallace, Oary S. Church, Michael D. Kudlick, Richard W. Watson, William H. Paxton/ASMG; Sub-Collections: ASMG; Clerk: DIA; Origin: , 38-FEB-72 14:56 DIA ;

SCHED1 problem: spending too much time checking waiting jobs for runnable status 1

PC sampler indicates that SCHED1 uses 5% or more of CPU when system loaded -- hard to measure since system naturally spends time here when idle. 1a

Could use more measurement - carefully done only at busy times. 1b

The cure looks like having two wait lists - one checked often for TCI wait jobs and another regulated by a process clock or something. 1c

Robert L. Dendy

RLD 18-FEB-72 15:45 9233

redwood minutes of 15 feb 72

(J9233) 18-FEB-72 15:45; Title: Author(s): Robert L. Dendy/RLD; Distribution: Diane S. Kaye, Paul Rech, Michael D. Kudlick, Donald R. Cone, Don Limuti, William R. Ferguson, Priscilla Lister, Robert L. Dendy, Linda L. Lane, Carilyn F. Auerbach, Walter L. Bass, Cary S. Church, William S. Duvall, Douglas C. Engelbart, Beauregard A. Hardeman, Martin E. Hardy, L. D. Hopper, Charles H. Irby, Mil E. Jernigan. Harvey G. Lehtman, John T. Melvin, Leanne B. North, Lames C. Norton, Cindy Page, Bruce L. Parsley, William H. Paxton, Jeffrey C. Peters, Jake Ratliff, Barbara E. Row, Ed K. Van De Riet, Dirk H. van Nouhuys. Kenneth E. Victor, Don C. Wallace, Richard W. Watson, Don I. Andrews/↑SRI-ARC; Sub-Collections: SRI-ARC; Clerk: RLD;
Origin: <DENDY>REDWOODMIN.NLS;1, 38-FEB-72 15:36 RLD ;

redwood minutes of 15 feb 72. 1

Report of PODCOM meeting: 2

Marilyn informed us that Doug has had to pull back a bit. He is talking again of establishing a seperate committee for the express purpose of long range planning. 2a

Doug was informed of Redwood's intent to formally attack the problem of goal definition. Marilyn felt he recieved it with mixed feelings: that he didn't expent goals to come out of our effort, but as an exercize it would certainly do us good. 2b

The POD's discussion of ARC goals: 3

Having read many old proposals of past years to orient himself, Mike observed that one of the explicit goals expressed had been to attempt to determine what happens when a whole group uses the tools of online augmentation. He has found no written answer in his reading. Is there such a document? 3a

Robert joined him in wondering whether the question had ever been answered (written or not). If not yet answered, is it still a goal, and should it be? No answers to any of these questions were forthcoming from the pod. But the question of What happens (or has happened) under our present level of augmentation seems basic to any discussion of ARC's goals. Maybe PODCOM or EMC or someone could respond. 3a1

Charles observed, and we agreed, that online augmentation must be psychologicly inexpensive and psychologicly immediate if it is to be effective: 3b

INEXPENSIVE so that folks won't worry about using it, but relax, and use it regularly and freely. 3b1

IMMEDIATE so that one is aided toward getting into ones thoughts, instead of distracted by long waits and uncertainty. 3b2

It must be kept in mind that these factors are more than matters of convenience. If our mandate and goal is simply the building of text editors and data delivery techniques, than they could be considered as merely conveniences; but for augmentaion they are vital. 3b3

The rest of the meeting was devoted to trying to pin down and define specific desirable products which we presently have or can easily have in the near and medium future. Progress was made, but things were turned back to the committee of three for further thought. Maybe after our next meeting we will have a releasable document. 3c

NEXT MEETING: scheduled for 2:00 pm, Tues Feb 22. 3d

JEW 20-FEB-72 12:08 9234

Facilitator Fable: Once upon a time...

\J9234) 20-FEB-72 12:08; Title: Author(s): James E. White/JEW;
Distribution: Jeanne B. North, Bruce A. Dolan, Alex A. McKenzie. Lohn T. Melvin, Robert M. Metcalfe, Robert E. Kahn, Richard B. Kalin, Lonathan B Postel, Peggy M. Karp, James E. White, Steve D. Crocker/NF;
Sub-Collections: NIC NF; Clerk: JEW;
Origin: <UCSB>SCRL.NLS;2, 20-FEB-72 12:03 JEW ;

JEW 20-FEB-72 12:08 923h

Facilitator Fable: Once upon a time...

John Markel of Speech Communications Research Lab (SCRL):

1

John Markel
Speech Communications Research Lab
35 W Micheltorena
Santa Barbara, Calif.
Phone (805) 965-3011

1a

visited UCSB last week and talked with Dave Harris, Ron Stoughton,
Roland Bryan, and myself.

2

It seems that SCRL is doing some speech research that interests ARPA, and hence ARPA will probably fund their work. Markel indicates further that ARPA intends to put them on the Net, as a full-fledged host, probably via the IMP at UCSB. With these assumptions, then, Oarkel came to discuss the specifics of making such a connection and the benefits to be derived.

3

The host machine at SCRL would be a PDP-11.
They currently operate (at the moment on a PDP-8, I believe) with c fixed-head disk and many DEC tapes. Their
most pressing need seems to be for direct-access storage; they indicate that they need about 10 mega-bytes of such storage (1/3 of a IBM 2314 disk pack). They envision using
that space to hold their speech dictionary, which currently lives on
DEC tapes.

4

We suggested the following:

5

SCRL should contact BBN regarding their remote-host scheme, for use,
is this instance, in connecting the PDP-11 via a 50 Kbit line to IMP #3 at Ucsb. In particular,
when will the software to support remote hosts be resident in the IMP software? What are the specifics of the host software required to support such a link?

5a

SCRL should contact DEC to determine whether they can provide off the shelf an interface for a Modem of the appropriate type , and
what the cost is.

5b

Order of magnitude, how big (core-wise) can they expect a PDP-11
NCP to be, and how long would it take to write it? We suggested

he contact Harvard and Gary Grossman at Illinois for an estimate.

5c

One 2314 drive at UCSB is currently reserved for use by Network users, so that's a candidate for the direct access storage currently required by SCRL. Such storage would be on-line always. Software to manipulate the speech data base and service requests from the PDP-11 is required for the 360/75, and that software might be written either by SCRL personnel or through the Computer Center here.

5d

Markel envisons that SCRL would make no more exotic use of the Net than that involved in obtaining access to secondary storage at UCSB. WE asked in particular if he forsaw a possibility of their making use of other speech software which might in the future become available via the Net, or whether SCRL might make their software accessible to the Net. Markel didn't think either possibility was very likely, but we strongly recommended that in terms of designing an NCP, for example, they not "code" themselves out of having such options available in case they prove to be important later.

5e

BAD 20-FEB-72 13:10 9235

Who IS Host X'96'?

(J9235) 20-FEB-72 13:10; Title: Author(s): Bruce A. Dolan/BAD;
Fistribution: James E. White, Steve D. Crocker/JEW SDC2(info);
Sub-Collections: NIC; Clerk: BAD;

BAD 20-FEB-72 13:10 9235

Who IS Host X'96'?

McClellan is not on the Net-- Will not be until after 8 March, the date telephone circuits go in. One Host only (a Univac 418-III) is intended. It is supposed to be unresponsive to any traffic, except that from Tinker's 418. That's all I know, Jim. Your question is very intriguing. Tell me more, if you find an answer. Regards, Bruce.

1

John T. Melvin

JTM 21-FEB-72 17:18 9236

Visitor Log -- Bob Abbott of LRL

(J9236) 21-FEB-72 17:18; Title: Author(s): John T. Melvin/JTM; Fistribution: Richard W. Watson, Douglas C. Engelbart, James C. Norton/RWW DCE JCN; Sub-Collections: SRI-ARC; Clerk: JTM;

JTM 21-FEB-72 17:18 9236

Visitor Log -- Bob Abbott of LRL

Bob Abbott, from LaWrence Radiation Lab, visited on Thurs, Feb 10. He was actually here to see Don Parker about something. I gave Bob the protocol notebook (minus binder) since Crocker has previously indicated that LRL was a fairly strong potential candidate for inclusion of the net. 1

Alex A. McKenzie

AAM 22-FEB-72 7:20 9237

HOST/HOST PROTOCOL DOCUMENT REVISION

(J9237) 22-FEB-72 7:20; Title: Author(s): Alex A. McKenzie/AAM;
Fistribution: Richard W. Watson, Steve D. Crocker/RWW SDC2;
Sub-Collections: NIC; Clerk: AAM;

AAM 22-FEB-72 7:20 9237

HOST/HOST PROTOCOL DOCUMENT REVISION

DICK,
TODAY I AM PUTTING IN THE MAIL FOR YOU 125 COPIES OF THE NEW REVISED VERSION OF THE "HOST/HOST" (OR "NCP") PROTOCOL SECTOIN FOR THE PROTOCOL NOTEBOOK. I HOPE THAT BY THE TIME YOU RECEIVE THE COPIES YOU WILL HAVE RECEIVED AUTHORIZATION FROM CROCKER TO DISTRIBUTE THEM, BUT IF NOT PLEASE WAIT FOR HIS AUTHORIZATION BEFORE SENDING THEM OUT.
ALEX MCKENZIE

1

Joel B. Levin

JBL 22-FEB-72 7:54 9238

'I-echo'/'You-echo' telnet modes

(J9238) 22-FEB-72 7:54; Title: Author(s): Joel B. Levin/JBL:
Distribution: John T. Melvin/JTM; Sub-Collections: NIC; Clerk: JBL;

JBL 22-FEB-72 7:54 9238

'I-echo'/'You-echo' telnet modes

John:
I have just tried a new experiment with your system that I think you might be interested in. Just before I logged in, I sent you a Telnet 'You-echo' op-code (I think octal 284). This did not put TENEX into full-duplex mode, as I had expected it would and (I think) should. Is this a known 'feature'? 1

MEJ 22-FEB-72 8:13 9239

Fir POD Meeting, 9 Feb 1972

(J9239) 22-FEB-72 8:13; Title: Author(s): Mil E. Jernigan/MEJ;
Distribution: Diane S. Kaye, Paul Rech, Michael D. Kudlick, Donald R. Cone, Don Limuti, William R. Ferguson, Priscilla Lister, Robert L. Dendy, Linda L. Lane, Oarilyn F. Auerbach, Walter L. Bass, Oary S. Church, William S. Duvall, Douglas C. Engelbart, Beauregard A. Hardeman, Martin E. Hardy, L. D. Hopper, Charles H. Irby, Mil E. Jernigan, Harvey G. Lehtman, John T. Melvin, Leanne B. North, Lames C. Norton, Cindy Page, Bruce L. Parsley, William H. Paxton, Jeffrey C. Peters, Jake Ratliff, Barbara E. RoW, Ed K. Van De Riet, Dirk H. van Nouhuys. Kenneth E. Victor, Don C. Wallace, Richard W. Watson, Don I. Andrews/SRI-ARC;
Sub-Collections: SRI-ARC; Clerk: MEJ;
Origin: <JERNIGAN>FIR-POD-NOTES.NLS;1, 34-FEB-72 14:44 MEJ ;

Notes on FIR POD Meeting 9 February 1972 1

The general tone of this FIR-POD meeting was one of pride in the direction of the accomplishments of ARC and irritated dissatisfaction with certain faulty procedural methods that seem to have become an unfortunate working habit in the group and which were pinpointed as one of the things that keeps a good project from being a great one. 1a

No one person or group of people was singled out and no personal criticism was leveled. Rather, dissatisfaction was expressed with the apparent tendency of ARC to design processes and systems that are hurried, short-term, make-shift efforts for an immediate, urgent need to produce something and then allow that process to remain without redesigning for longer-term and more efficient job handling. 1b

The quick and dirty methods used for an immediate task should not be allowed to continue in operation in a design "given to the world" cs a finished product of some sophistication and elegance. It was felt that this is dangerous to our long-term standing in the community and to the continued confidence apparently placed in us by our financial backers. There was a feeling expressed that one of the more urgent tasks facing ARC is the redesigning of some of these shaky processes that are now reaching the point of attrition. 1c

There was considerable discussion of some of the design and system problems facing ARC, for one instance, the rather urgent need to settle some basic problems of Journal system handling. It was suggested that we immediately institute a redesigning project in the Journal: (a) we can continue to use the present Journal system for present day needs for a short while longer; (b) at the same time, assign a team to the task of redesigning a new Journal system; (c) set definite criteria (one of them, a more economical use of the system); (d) set definite time limits of a reasonable nature for completion of the design; (e) give the implementation team freedom to rewrite whatever is necessary to achieve the above items; and (f) not release the system to the public until it has beem amply tested in day-to-day use. 1d

RWW stated that there is a real need in ARC for someone to concentrate on reliability. If we are to continue in business, fail-safe methods must be installed in the group. 1e

There is a credibility gap between what we pridefully feel for our system and, because it is our brainchild, will put up with

in the way of unreliability, and what the public who uses the Net and other features, will put up with. Net users and outside customers need systems that are reliable, are always available, and that they can count on to do jobs that they have planned to get done through use of those facilities. If we cannot fill their needs, they will look elsewhere, and there is a very definite time limit their patience will give us to furnish that reliability. 1f

DCW discussed the philosophy of a real-world, money-making environment vs. that of the unpressured, scientific research project where a usable, practical product is not necessarily the goal. Since we are now in a mixed environment (by going on the Net and NIC and promising certain facilities), it behooves us to change our ways of thinking and working habits to fit that real-world environment for those products advertised to the real world. 1g

RWW stated that he felt that ARPA is satisfied that the group is doing worthwhile things. However, reliability is an urgent and immediate goal and must be achieved very quickly if we are to keep their confidence. 1h

There was some general discussion of what augmentation should be in the real-world environment of the business user. Experiences of the group were compared in their attempts to use NLS for augmentation of their personal needs when they first joined the group. They all had similar histories in attempts to use NLS in this way. Initially, there was delighted discovery of NLS capabilities as an online system. Second, there was enthusiastic input of personal data to fulfill personal recording needs. Third came the discovery that data could not be easily got to, necessities allied to use of the NLS system made its use often too cumbersome, and it took much longer to use than, for instance, (1) paper and pencil for small personal budgets and notes, and (2) some other online methods. 1i

> Concerning the latter, Smokey stated that most of his work was now done in TECO because he can do it much faster and with more flexibility than in NLS. 1il

Several of the group more familiar with programming aspects of ARC stated that from the programmer's point of view, PLS is a really good environment, but for practical business applications, some weaknesses are felt. 1j

The group as a whole expressed a need for NLS to be scrutinized very carefully for 1k

(a) Practicality - More important to gain flexibility, streamlining of processes, speed, and ease of handling in more frequently used areas than to devote so much effort toward such a wide scope in areas known and used only in more sophisticated programming needs. 1k1

(b) Flexibility - Streamlining of processes to eliminate repetition when one process could handle several applications; it was felt that some of the newer modular programming concepts might help here. 1k2

(c) Speed - More reliability in hardware and more elegant software processes should help in this area. 1k3

(d) Reliability - Proper and full debugging and day-to-day use for checkout should be done before releasing any system to a public user. 1k4

The group also expressed a need for keeping up with other allied research going on in the world. There was some feeling that the group was in danger of losing touch with reality and of reinventing the wheel, if the present insular attitude continued. This is vitally important both from the viewpoint of technology and from the viewpoint of the needs of that real world we must meet. 1l

RWW mentioned some of the newer information retrieval processes under investigation elsewhere and pipedreamed about the possibilities of combining NLS browsability with some of these procedures. 1m

WSD 22-FEB-72 8:38 9240

Some Suggestions with regard to Scheduling Computer Usage.

(J9240) 22-FEB-72 8:38; Title: Author(s): William S. Duvall/WSD; Distribution: Richard W. Watson, Charles H. Irby, Ed K. Van De Riet, James C. Norton/EMC; Sub-Collections: SRI-ARC EMC; Clerk: WSD;

WSD 22-FEB-72 8:38 9240

Some Suggestions with regard to Scheduling Computer Usage.

(1) I Think that the dump should be done 6 days per week...Mon through Sat, or perhaps Fri Night. 1

(2) I would like to try to start Journal Hard Copy Production in the 0000 to 0300 slot if Ralph is available. 2

(3) Why don't we have Ralph start up NLS-UTILTY during the heavy processing slot, to do any compilations which may be waiting in the wings. 3

So far as that goes, he could start NLS loads, too. 3a

Dirk H. van Nouhuys

DEX-2 Proposed Design

(J9241) 22-FEB-72 10:12; Title: Author(s): Harvey G. Lehtman/HGL; Distribution: Harvey G. Lehtman, Charles H. Irby, Walter L. Bass, William H. Paxton, Douglas C. Engelbart, Oarilyn F. Auerbach, Charles H. Irby, Harvey G. Lehtman, Douglas C. Engelbart, Richard W. Watson, James C. Norton, Donald R. Cone, Mary S. Church, Marilyn F. Auerbach, William S. Duvall, William H. Paxton, Dirk H. van Nouhuys/DEX2 DEXBWY MSC MFA WSD WHP DVN; Sub-Collections: SRI-ARC DEX2 DEXBWY; Clerk: HGL; Origin: <LEHTMAN>DEX-2.NLS;8, 22-FEB-72 9:31 HGL ;

DEX-2 Proposed Design

This document contains the proposed user interaction design for the expcnded Deferred Execution system (DEX-2). User features are well defined while implementation decisions are still in a preliminary stage. Please read the proposed user features section very carefully. If you feel that there should be changes made in the design before the implementation, let us know before Wednesday, 1 March, or we will implement DEX-2 as proposed.

The DEX-2 Design Team -- WLB, CHI and HGL

DEX-2 Proposed Design

INTRODUCTION 1

This document contains the design for an expanded Deferred EXecution (DEX) system as proposed by the DEX-2 Team of the Software Group. 1a

The final preliminary design meetings of the DEX-2 Team were held on Monday 31 January and Wednesday 2 February 1972. Present were HGL, WLB, and CHI. 1a1

These notes summarize the content of the meetings and are recorded by WLB based on previous notes prepared by HGL and CHI. 1a2

Additonal notes from a meeting held on 14 February have been incorporated by HGL. 1a2a

This document represents the consensus decisions of HGL, WLB, and CHI and is based on extensive cross-comparison of various proposed user features, interaction modes, and implementation possibilities. It should not be a priori assumed that We are completely satisfied with the proposed design, particularly in the realm of user language specification; however, We believe that the proposal does represent a near optimum combination of powerful user features and usable command language, and we request that criticism of this design reflect an equally reasoned understanding of the various tradeoffs involved. 1a3

We attempt to hint here at the various considerations which influenced design decisions; however, it should be realized that it is impossible to accurately record all facets of a three-way dialog of more than 12 hours which took place over a span of two or three weeks. 1a4

The remainder of this design document is divided into two primary parts -- those items corresponding to user interaction and those items cooresponding to a proposed implementation. At this point the user interaction design has converged enough to be proposed as final, and the implementation design, while still preliminary, seems to be in good shape. 1a5

USER INTERACTION DESIGN 2

COMMANDS 2a

Command Syntax 2a1

After extensive debate, it was decided that (except for the implicit "Place Statement" command carried over from DEX-3) all commands should have a uniform syntax which is as close to that of TNLS as is possible taking into consideration the extreme differences between user interaction in the two systems. 2a1a

The principal point of discussion here dealt with the question of whether location numbers should be forced to appear at the beginning of command lines. 2a1b

PRO: 2a1b1

This would make it easier to scan the hard-copy produced in the process of preparing a DEX input tape to determine what commands have affected a given statement. 2a1b1a

CON: 2a1b2

(1) It is not true that this arrangement makes possible a simple (human) scanning algorithm, the best counterexample being commands which reference groups or plexes to which the given statement might belong without being referenced explicitly (and you need to know the command BEFORE you can intelligently interpret its arguments). 2a1b2a

(2) This syntax would be "unnatural" (for English-speaking people anyway) and conflicts with the syntax of TNLS commands. (Such conflict might be desirable if there were significant differences in the semantics of the commands; however, that is not the case). 2a1b2b

(3) This syntax would make it very difficult (if not impossible) to define unambiguous parse rules for the DEX command language. 2a1b2c

Expanded Place (or Insert) Statement and Structure Capability 2a2

Need for generalization of DEX-1 Place statement command-- a center-dot facility 2a2a

In the DEX-1 Place statement (i.e., insert) command, a statement of literal text is constructed at a location specified by a number (LN). The structure

of the finished file is implicit in the LN's used in placing statements into that file: the user may use arbitrary LN's in constructing the file, with provision for interpolating between any existing LN's. DEX-3 does a final cleanup pass to put the file into standard NLS form, at which time the LN's no longer have any meaning with respect to the file. 2a2a1

It was felt that requiring the input clerk to assign numbers to the each statement while entering material was grossly inefficient and unpleasant in the situation where large amounts of text are to be input with little expectation of having to edit any of this text before a proof of the document had been entered into NLS thru DEX and subsequently printed. 2a2a2

Doing so would mean that the clerk would have to either go thru the document before typing it to assign numbers or interrupt the flow of work at each statement to compute and input the next number. 2a2a2a

It was finally agreed that some form of "centerdot" continue capability was needed to facilitate high-speed transcription input, and much time was spent discussing various ways of implementing this in the command language. 2a2a3

The major problems involved in providing this facility have to do with making it possible to uniquely reference any statement which has been input when some of the statements have never been assigned location numbers. This problem interacts strongly with the problems of interpolation and of referencing the contents of moved and copied structures; and these points will be covered in more detail in the section on Address Expressions. 2a2a3a

Change in meaning of repeats 2a2b

It was ultimately decided that the Place Statement command would remain unchanged (except that repeated uses of the same Location Number would be interpreted as replaces rather than as the repetitions of DEX-1) and that a generalized Place command permitting substructure creation would be added. 2a2b1

The basic reasons for deciding to change the semantics for repeated LNs were 2a2b1a

(1) the problem of specifying locations uniquely and sanely is severe enough without having to worry about repeat counts as well 2a2b1a1

(2) the DEX-1 repetition facility seems to be of far less value than other competing features which also result in addressing complications (e.g., being able to address within moved and copied structures and having a high-speed input capability). 2a2b1a2

(3) structures which have been replaced (or deleted) will be placed in a relative of the "Grror" branch to be called the "Delete" branch. This will make mistakes less serious and more easily recoverable. 2a2b1a3

These statements are then accessible in later DEX passes. The date and time of the deletions will be included in the header of this branch as well as the Error branch since it is conceivable that several DEX passes may take place over an existing file. 2a2b1a3a

Generalized Place statement command 2a2c

Syntax: 2a2c1

['p] STAE NP LIT CDL *[GAP]* 2a2c1a

$(('s /'d / 1$('u)) NP LIT CDL *[GAP]*) 2a2c1a1

STAE := STatic file Address Expression 2a2c1a2

More general than the LN (location numbers) of DEX-1, but including them as a subset. The general method of referencing a structural location within a file being manipulated by DEX. 2a2c1a2a

NP := SP / TAB / EOL / LF 2a2c1a3

LIT := Literal String 2a2c1a4

CDL := Command delimiter; currently '! 2a2c1a5

Known as STDELIM in DEX-1 2a2c1a5a

GAP := 1SNP 2a2c1a6

Note that one result of this syntax is that LITs for succeeding statements could be separated by lines on which only 's/'u/'d strings occur, thus making it relatively easy to compute the relative address for any statement should this be necessary later in the DEX input session. 2a2c1b

It has been decided that these commands should be called "place" rather than "Insert" since the first statement added goes AT location STAE rather than being INSERTED after it. 2a2c1b1

Semantics: 2a2c2

At the location specified by the STAE, place a statement (or the first statement of a structure of statements) containing the text of the first LIT. 2a2c2a

Subsequent LITs are placed in statements at locations relative to previous statements as specified by the string of s's, u's, and d's (for successor, up, and down), with the condition that only a structure belonging to the same level or lower than the that of the first STAE in the command group may be input -- e.g., a "u" cannot carry input out of the structure being defined (the offending "u" will probably be ignored, although if there is a desire for flagging it as an error, this would be just as easy). 2a2c2b

Input is thus restricted to a specified entity because addressing of statements in the file becomes impossibly ambiguous if this restriction is not made. In reality, this is not a major limitation as we foresee the greatest use of the Place command continue feature being for the input of new material at the top level of a file. 2a2c2c

If a placed statement would have the same STAE as a previously placed statement (see section on STAEs), it is treated as a replacement -- i.e., the "old" statement is moved to the DELETED branch

(a relative of the ERRORSTRINGS branch) and the "new" statement takes its place. 2a2c2d

Text Editing 2a3

It was felt that providing the full range of TNLS text editing commands would be likely to lead to frequent errors due to the difficulty of accurately specifying textwal addresses, and it was decided that the only text-editing capability to be provided in DEX-2 should be Substitute commands and editing made possible through the use of strings containing the delete characters of DEX-1 and text which may be appended to statements. (These back deletes will be processed in text in the file after all other commands have been processed.. 2a3a

The implementation will be such that, although Substitutes will not be executed immediately upon being encountered (to allow for the possibility of cancelling the command with an UnSubstitute later on), they will be executed only on text which existed within the structure specified at the time the Substitute is encountered. 2a3b

To make the obscure more apparent, consider the following sample DEX session: 2a3b1

1 text! 2a3b1a

2 text! 2a3b1b

3 text! 2a3b1c

2.1 text! 2a3b1d

2.2 text! 2a3b1e

4 text! 2a3b1f

sg 2,4 newtext!text! 2a3b1g

2.3 text! 2a3b1h

3.5 text! 2a3b1i

The semantics as now defined would mean that the substitution would be performed over LNs 2, 2.1, 2.2, 3, and 4 but not over 2.3 and 3.5 -- i.e., the range of the substitution would be the same as if the user

had been working within a dynamic system such as TNLS. 2a3b2

We believe that these conventions correspond closely to a user's normal working expectations -- i.e., that his actions on the DEX file have time dependency. 2a3b2a

This mechanism will be implemented by parsing each Substitute (as it is given) such that it is equivalent to individual Substitute Statements for all the statements within its range at the time it is encountered. 2a3b3

Planned side effects of this are that it will be possible to request an effective Unsubstitute over an individual statement (or substructure) within a structure over which a Substitute has been requested by doing a substitute of the original material for itself. Later items take precedence in the case of overlaps; it will be possible to assign higher precedence to Substitutes that are issued later in the DEX session on a statement-by-statement basis -- i.e., all substitutes affecting a given statement will be collected until an Update or Snapshot point, at which time they will be executed in the reverse order of specification so that later requests always take precedence over earlier requests. 2a3b3a

Substitute 2a3c

Syntax: 2a3c1

's ('s/'b/'p) NP STAE NP LIT CDL LIT CDL *[GAP]* / 2a3c1a

's 'g NP STAE GPSEP *[GAP]* STAE NP LIT CDL LIT CDL *[GAP]* 2a3c1b

GPSEP := group separator, currently a ', 2a3c1c

Semantics: 2a3c2

The first LIT is substituted for every occurrence of the second LIT throughout the specified structure. 2a3c2a

It should be noted that DEX will not make use

of the sequence generator as is the case in NLS. Thus one could not impose viewspecs on structures before the substitutions are executed. 2a3c2a1

Structural Editing 2a4

Append 2a4a

Syntax: 2a4a1

'a NP STAE GAP STAE *[NP LIT]* CDL *[GAP]*/ 2a4a1a

'a 't NP STAE NP LIT CDL *[GAP]* 2a4a1b

Semantics: 2a4a2

In the first form, the second statement specified is appended to the first with the optional text (perhaps including delete control characters) inserted between them. In the second form, the text, which may include back delete control characters, is appended to the statement specified. 2a4a2a

Any substructure is moved as in NLS. It is addressed using the moved/copied structure conventions (see Address Expressions section). 2a4a2a1

Copy 2a4b

Syntax: 2a4b1

'c ('s/'b/'p) NP STAE GAP STAE CDL *[GAP]* / 2a4b1a

'c 'g NP STAE GAP STAE GPSEP *[GAP]* STAE CDL *[GAP]* 2a4b1b

Semantics: 2a4b2

The specified structure is copied in such a way that the first element of the new structure has the specified STAE. 2a4b2a

The copied structure is addressed for later purposes using the moved/copied structure addressing conventions. 2a4b2a1

Delete 2a4c

Syntax: 2a4c1

'd ('s/'b/'p) NP STAE CDL [GAP] / 2a4c1a

'd 'g NP STAE GPSEP [GAP] STAE CDL [GAP] 2a4c1b

Semantics: 2a4c2

The specified structure is deleted (moved to the DELETED branch). 2a4c2a

Delete statement has the same semantics as in NLS. If there is substructure, the statement is not deleted and the command moved to the error strings branch.. 2a4c2a1

Move 2a4d

Syntax: 2a4d1

'm ('s/'b/'p) NP STAE GAP STAE CDL [GAP] / 2a4d1a

'm 'g NP STAE GAP STAE GPSEP [GAP] STAE CDL [GAP] 2a4d1b

Semantics: 2a4d2

The specified structure is moved in such a way that the first element of the moved structure has the specified STAE. The elements of the moved structure are addressed using the moved/copied structure conventions described below. 2a4d2a

Replace 2a4e

Syntax: 2a4e1

'r 's NP STAE (2a4e1a

CDL [GAP] STAE CDL [GAP] / 2a4e1a1

NP LIT CDL [GAP]) / 2a4e1a2

'r ('b/'p) NP STAE (2a4e1b

CDL [GAP] STAE CDL [GAP] / 2a4e1b1

NP LIT CDL [GAP] $(('s /'d /1$('u)) NP LIT CDL [GAP])) / 2a4e1b2

'r 'g NP STAE GPSEP [GAP] STAE (2a4e1c

CDL [GAP] STAE GPSEP [GAP] STAE CDL [GAP] / 2a4e1c1

NP LIT CDL [GAP] $(('s /'d /1$('u)) NP LIT CDL [GAP])) 2a4e1c2

Semantics: 2a4e2

The indicated structure at the location specified by the first STAE (in the case of group, starting at that location) is replaced by the specified old or new structure (the replaced and replacing structure must be of the same type). 2a4e2a

The replaced structure is moved to the DELETED branch. 2a4e2b

If a new structure is typed in, the command is equivalent to a Delete followed by a Place, and the replacing structure's elements are addressed using the structure conventions. 2a4e2c

If an old structure is specified as the replacement, the command is equivalent to a Delete followed by a Copy, and the elements of the replacing structure are addressed using the moved/copied structure conventions. 2a4e2d

The replace statement command does not permit continued insertions as do the other possibilities because of possible ambiguities between the STAEs of the old and new substructure. 2a4e2d1

Transpose 2a4f

Syntax: 2a4f1

't ('s/'b/'p) NP STAE GAP STAE CDL [GAP] / 2a4f1a

't 'g NP STAE GPSEP [GAP] STAE GAP STAE GPSEP [GAP] STAE CDL [GAP] 2a4f1b

Semantics: 2a4f2

The specified structures are transposed. 2a4f2a

The Transpose commands are equivalent to two Move commands executed simultaneously, and elements within the transposed structures are addressed using the moved/copied structures conventions. 2a4f2b

File Manipulation 2a5

Open File 2a5a

Syntax: 2a5a1

'o 'f NP NUM FILSEP [GAP] filename CDL [GAP] 2a5a1a

FILSEP := file number separator, currently ': 2a5a1b

Semantics: 2a5a2

The named file is opened for reference and editing. Several files may be open simultaneously, and the File Number assigned in the Open command is used in STAEs to designate which file is being referenced. 2a5a2a

Normally file 0 is initialized by DEX to be a new file in the users directory which has the same name as the DEX command file and extension NLS. The use of "of 0:" overrides that default, and a named file becomes the primary file for DEX operations. Whenever a NUM ': is not the first element of an STAE, 0: is assumed. 2a5a2b

Make File (Snapshot) 2a5b

Syntax: 2a5b1

'm 'f NP [NUM FILSEP] [GAP] [FILENAME] 2a5b1a

$(GPSEP [GAP] NUM FILSEP [GAP] [FILENAME]) CDL [GAP] 2a5b1a1

Semantics: 2a5b2

If the first NUM ': is omitted "0:" is assumed. 2a5b2a

All commands up to this point in the command file will be executed, and the indicated files will be output into new NLS files with primary names as specified in the command. 2a5b2b

If a filename is omitted, a new version of the file represented by the number will be created. 2a5b2b1

This command creates a "Snapshot" of the indicated files without altering the state of the command table as respects any commands which may be subsequently issued. 2a5b2c

I.e., the "state of the world" is saved away, all commands encountered so far are executed (including final cleanup), and the appropriate output files are done. 2a5b2c1

Then the saved "state of the world" is restored so that the Make File command will be "transparent" to subsequent file manipulation commands -- this means that addressing will be the same as if no Make File had been done and that subsequent UnDo commands will function properly. 2a5b2c2

File name for Output at termination 2a5c

Syntax: 2a5c1

'f 'o NP *[* NUM FILSEP*]* *[*GAP*]* *[*FILENAME*]* 2a5c1a

$(GPSEP *[*GAP*]* NUM FILSEP *[*GAP*]* *[*FILENAME*]*)
CDL *[*GAP*]* 2a5c1a1

Semantics: 2a5c2

If the first NUM FILSEP is omitted "0:" is assumed. 2a5c2a

This command specifies a filename to be used at the end of processing when the files are output. 2a5c2b

It thus permits specification of a file name before the end of the control file without executing the commands to that point as with the Make snapshot command. 2a5c2b1

No Output File 2a5d

Syntax: 2a5d1

"no" [NP NUM [FILSEP] $(GPSEP [GAP] NUM [FILSEP])] CDL [GAP] 2a5d1a

Semantics: 2a5d2

If the arguments are omitted, file 0 is assumed. 2a5d2a

This command indicates that the specifid files are not to be output at the end of processing. 2a5d2b

Output is the default for all files open at the end of a DEX-2 session. This command would be used if the user wanted to leave a file on which DEX has been working locked until he could check its contents and manually Output (i.e., approve) it. 2a5d2c

Undo Command 2a6

Syntax: 2a6a

"un" COMMAND 2a6a1

Semantics: 2a6b

The specified command is tagged in the command table and will not be executed in producing subsequent files. (If a snapshot was requested after the command but before the matching undo, the command will affect that snapshot but not snapshots or outputs made following the undo). 2a6b1

If the command to be cancelled is not a place or replace involving input of a LIT, then COMMAND is the exact text of the command as it appears on the paper (except that backspace characters can be interpreted rather than copied if desired and OPTIONAL non-printing characters do not need to match). 2a6b2

If the command to be cancelled is a place or replace involving input of a LIT, then COMMAND is the exact text of the command as it appears on the paper except that the string of LITs beginning with the leading NP and ending with the final '! may be replaced by "+!". 2a6b3

Substitutes may be undone by resubstituting the original material for itself. 2a6b3a

For example, to undo the following commands 2a6b4

```
sb 3a new garbage!old garbage!
rg 3b, 3g
texttexttexttexttexttexttext!
s
texttexttexttexttexttexttext!
d
texttexttexttexttexttexttext!
u
texttexttexttexttexttexttext!
```

2a6b4a

the user could type 2a6b5

```
sb 3a old garbage!old garbage!
un rg 3b, 3g+!
```

2a6b5a

Redo Command 2a7

Syntax: 2a7a

"re" COMMAND 2a7a1

Semantics: 2a7b

The specified command is untagged in the command table and will be executed in producing subsequent files. This construction may be used to "undo" "undo" commands and has the same syntax. It is useful in that the user need not retype long replaces that have been undone and which are later desired to be executed. In addition, the user need not know how many undo's have been specified before the redo command. 2a7b1

If the command to be executed after cancellation is not a place or replace involving input of a LIT, then COMMAND is the exact text of the command as it appears on the paper (except that backspace characters can be interpreted rather than copied if desired and OPTIONAL non-printing characters do not need to match). 2a7b2

If the command to be executed after cancellation is a place or replace involving input of a LIT, then COMMAND is the exact text of the command as it

appears on the paper except that the string of LITs beginning with the leading NP and ending with the final '! is replaced by "+!". 2a7b3

Substitutes may also be redone by resubstituting the material. 2a7b3a

Command file naming convention (esp for DEX sink directory) 2a8

The standard convention for naming DEX command files will be 2a8a

FILENAME: arbitrary, default output will be to a new version of 2a8a1

FILENAME.NLS; 2a8a1a

EXTENSION: the user's IDENT 2a8a2

(to be used for marking statement signatures) 2a8a2a

For the purposes of a DEX sink, the destination directory of a file may be contained in a parenthesized field in the FILENAME of the control file. This parenthesized name will be stripped off for the default NLS file name. (This is not necessary for DEX processes run by hand. Perhaps everything will go in the sink?) 2a8b

Example: 2a8b1

"(lehtman)file.HGL;" is a DEX control file which may result in the NLS file "<LEHTMAN>FILE.NLS;" after it has been copied to the DEX sink. Statements will be edited with the signature HGL. 2a8b1a

Different initializations for different devices 2a9

Because of expanded character sets on different devices, some of the control characters will have different meaning. We may, in the future, wish to have some way of specifying the device on which the command file was created. 2a9a

Proposed Control Characters 2a10

The following control characters are proposed. In some cases they are different from those used in DEX-1 which was designed with the limited character set of the 33

teletype in mind. Also, since DEX-2 does away with repeats, some characters are not necessary. DEX-2 will primarily be used on TI-type terminals with cassette recorders; these control characters were chosen for their typing ease and (in the case of the back-space characters) for their similarity to characters fed-back in TNLS. 2a10a

LITESC = '' 2a10a1

GPSEP =', 2a10a2

CDL = '! 2a10a3

ABRT = "#!" (Currently $! in DEX-3) 2a10a4

CHRDEL = '< (Currently >) 2a10a5

WDDEL = '← (Currently <) 2a10a6

LNDEL = '↑ (Currently /) 2a10a7

CAPCHR = '/ (Not needed for devices with upper case) 2a10a8

CAPWD = '\ (Not needed for devices with upper case) 2a10a9

INTERP = '. 2a10a10

FILSEP = ': 2a10a11

CPDELIM = '/ 2a10a12

(Copy delimiter-- see address expressions below; also used in SUDS specification) 2a10a12a

UNTXT = '+ 2a10a13

(Used as an escape from typing text in "undo" and "rgdo" commands.) 2a10a13a

ADDRESS EXPESSIONS 2b

The STatic file Address Expression (STAE) 2b1

Each statement within the range referable by DEX has a

STatic file Address Expression (STAE) which remains the same throughout the DEX session. 2b1a

The only way in which a statement's STAE can change is if the statement itself is copied or moved (either alone or within a structure), and even then the orginal STAE of the statement can, in most (unambiguous) cases, be used in place of the new STAE or at least becomes part of the new STAE in a manner described below. 2b1a1

This is in contrast to Dynamic file Address Expressions (DAEs) of NLS which can change interactively due to remote editing changes within a file. 2b1a2

The design philosophy is that in a deferred process, one must deal with what one sees, either on the previously typed input in the session or on listings with location numbers. 2b1b

Syntax: 2b1c

STAE := [NUM FILSEP] VAE [COPDAE / SUDSAE] 2b1c1

Semantics: 2b1d

NUM is the DEX file number; if none is specified, 2 is assumed. 2b1d1

All the new terms are defined below. 2b1d2

Visible Address Expressions (VAE) 2b2

Every STAE has an Visible Address Expression (VAE) which is an address expression which is visible on hardcopy (either old existing file or current DEX input.) It may be either a Location Number (LN) or a Cluster Address Expression (not to be implemented on this pass.) 2b2a

Syntax: 2b2b

AAE := LN / CAE 2b2b1

Semantics: 2b2c

Location Numbers (LN) 2b2c1

The basic STAE is the Location Number (LN), which is the same as a NLS Statement Number -- i.e., it is a string of alternating numbers and alphabetic characters, beginning with a number. 2b2c1a

There are two essential differences between LNs and NLS statement numbers (SNs): 2b2c1b

SNs change dynamically as the file is edited, while LNs remain constant throughout a DEX session (unless copied as substructure, in which case they are part of the expcnded address). 2b2c1b1

SNs always refer to EXISTING statements, while LNs may be used to address a statement which is in the process of being created -- as in the Place, Move, and Copy commands. 2b2c1b2

In DEX commands one refers to locations at which something is to happen rather than locations after which something happens. 2b2c1b2a

Interpolations on "normally" inserted items (i.e., wihtout s, u, or d continues) take place as described in the DEX-3 design. That is, field extensions of the same type following a period indicate interpolations. 2b2c1c

1.3 comes between 1 and 2; 1a.d between a 1a and 1b, etc. 2b2c1c1

Additionally, it is possible to extend a particular level further if necessary by adding more point fields of the same type. For example, if there are statements 1a.a and 1a.b, a statement may be placed between them with the number 1a.a.c. Also, if it is desired to place a statement down from 1 but before 1a, one could use 1.a; down from 1 and before 1.a could be 1..a. 2b2c1c2

A different convention, described below, permits interpolation on items created using the SUDs centerdot facility in the structure creation. 2b2c1d

Cluster Address Expressions (CAE) 2b2c2

Cluster Address Expressions are a general method of addressing statements using many of the features of TNLS addresses; they may be used only to reference statements which existed prior to initiation of the DEX session. 2b2c2a

CAEs will not be implemented until a later version of DEX. 2b2c2a1

Copied/Moved Address Elements (COPDAE) 2b3

Syntax: 2b3a

COPDAE := CPDELIM STAE (Note recursive nature of STAE!!) 2b3a1

CPDELIM := copy/move delimiter (currently a '/; also used for interpolations in SUDs elements) 2b3a2

Semantics: 2b3b

A serious problem in addressing arises from the ability of the user to cause structures of statements to be Moved, Copied, Transposed, and Replaced in DEX. To make this problem manageable, the following convention has been adopted: 2b3b1

If a structure of statements is moved or copied to another location, the address of statements within that new (or newly located) structure is formed by taking the STAE of the first statement in the structure -- i.e., the STAE used previously used to specify where the old structure was to be copied/moved -- and appending a CPDELIM followed by the original STAE of the statement within the old structure. 2b3b1a

If a statement is in a moved structure, the old address may be used as well as this convention. Coupled with the convention that repeats imply replacements, it should be clear that numbers may not be reused in a session unless a replacement is actually desired. 2b3b1a1

The purpose of this is to enforce the convention that moves and copies affect addressing only within the newly located structure and do not

change the addresses of items outside of the structure for the purposes of later DEX editing. 2b3b1b

Example 2b3c

For example, the following DEX input 2b3c1

```
1 texttexttexttexttext!
1a texttexttexttexttext!
1b texttexttexttexttext!
1c texttexttexttexttext!
2 texttexttexttexttext!
2a texttexttexttexttext!
cg 3 1a,1c!
rs 3/1b different text!
```

2b3c1a

would produce the following structure in the final cleaned up NLS file: 2b3c2

```
1 texttexttexttexttext                    2b3c2a
   1a texttexttexttexttext                2b3c2a1
   1b texttexttexttexttext                2b3c2a2
   1c texttexttexttexttext                2b3c2a3
2 texttexttexttexttext                    2b3c2b
   2a texttexttexttexttext                2b3c2b1
3 texttexttexttexttext                    2b3c2c
4 different text                          2b3c2d
5 texttexttexttexttext                    2b3c2e
```

Note in this example that statement "4" does not exist until the final cleanup is done, and that if "4" had been used as a LN in the original DEX session, it would reference an entirely different location than "3/1b" -- location "4" would follow the entire group copied to location "3". 2b3c3

SUDs Address Elements (SUDSAE) 2b4

Syntax: 2b4a

```
SUDSAE := $(CPDELIM $('s/'u/'d)) CPDELIM 1$('s/'u/'d)
```

2b4a1

This syntax permits interpolation in SUDs elements even before the first position. 2b4a1a

Semantics: 2b4b

An addressing problem similar to that encountered for copied/moved structures exists for structures which have been input with the "SUDs" continue facility of the Place and Replace commands. 2b4b1

Specifically, there exists nowhere in hard copy an explicit address for any other than the first statement in such a structure; however, there is visible in the hard copy an easily traceable string of ('s/'u/'d) strings leading from the specifically addressed statement down to any other statement in the structure: this total string along with the STAE of the first statement can then be used to construct an unambiguous address for the desired statement (it may be long, but it is POSSIBLE, UNAMBIGUOUS, and CONCEPTUALLY EASY to construct.) 2b4b2

Interpolations are also permitted on items submitted in this mode by typing a CPDELIM followed by an s, u, or d as appropriate. Interpolations before the first subelement of a structure inserted in the SUDs mode may be made by typing a slash followed by a slash and the interpolation letter. 2b4b2a

In case of potential conflicts between interpolations made in SUDs mode and those in normal mode (an occurrence which is rare, but possible), the SUDs items come first in the cleaned up file. 2b4b2b

Example: 2b4c

DEX command input: 2b4c1

```
1
texttexttexttexttexta!                                  2b4c1a
d
texttexttexttexttextb!                                  2b4c1b
u
texttexttexttexttextc!                                  2b4c1c
s
texttexttexttexttextd!                                  2b4c1d
s
texttexttexttexttexte!                                  2b4c1e
rs 1/dus
different text!                                         2b4c1f
```

```
        1//d
        first interpolation!                                    2b4c1g
        1/du/s
        second interpolation!                                   2b4c1h
        1///d
        third interpolation!                                    2b4c1i
        2
        text!                                                   2b4c1j
        1.3 new text!
                                                                2b4c1k

    Resulting File:                                             2b4c2

        1 texttexttexttexttexta                                 2b4c2a
          1a third interpolation                                2b4c2a1
          1b first interpolation                                2b4c2a2
          1c texttexttexttexttextb                              2b4c2a3
        2 texttexttexttexttextc                                 2b4c2b
        3 second interpolation                                  2b4c2c
        4 different text                                        2b4c2d
        5 texttexttexttexttexte                                 2b4c2e
        6 new text!                                             2b4c2f
        7 text                                                  2b4c2g

Example                                                         2b5

    The DEX session below:                                      2b5a

        1 xxxxx!                                                2b5a1
        2a yyyyy!                                               2b5a2
        2b zzzzz!                                               2b5a3
        2c aaaaa!                                               2b5a4
        3a bbbbb!                                               2b5a5
        3b ccccc!                                               2b5a6
        2b.a ddddd!                                             2b5a7
        s eeeee!                                                2b5a8
        d fffff!                                                2b5a9
        d ggggg!                                                2b5a12
        3a.b hhhhh!                                             2b5a11
        s iiiii!                                                2b5a12
        s jjjjj!                                                2b5a13
        d kkkkk!                                                2b5a14
        4 lllll!                                                2b5a15
        3a.b/ssd/s mmmmm!                                       2b5a16
        s nnnnn!                                                2b5a17
        s ooooo!                                                2b5a18
        d ppppp!                                                2b5a19
        cb 2b.a/sdd/s 3a.b/ss!                                  2b5a20
```

ds 2b.a/sdd/s/3a.b/ssd/s! 2b5a21

results in the NLS file: 2b5b

1 xxxxx 2b5b1
2 ***Dummy*** 2b5b2
2a yyyyy 2b5b2a
2b zzzzz 2b5b2b
2c ddddd 2b5b2c
2d eeeee 2b5b2d
2d1 fffff 2b5b2d1
2d1a ggggg 2b5b2d1a
2d1b jjjjj 2b5b2d1b
2d1b1 kkkkk 2b5b2d1b1
2d1b2 nnnnn 2b5b2d1b2
2d1b3 ooooo 2b5b2d1b3
2d1b3a ppppp 2b5b2d1b3a
2e aaaaa 2b5b2e
3 ***Dummy*** 2b5b3
3a bbbbb 2b5b3a
3b hhhhh 2b5b3b
3c iiiii 2b5b3c
3d jjjjj 2b5b3d
3d1 kkkkk 2b5b3d1
3d2 mmmmm 2b5b3d2
3d3 nnnnn 2b5b3d3
3d4 ooooo 2b5b3d4
3d4a ppppp 2b5b3d4a
3e ccccc 2b5b3e
4 lllll 2b5b4

PRELIMINARY IMPLEMENTATION DESIGN -- not complete, not yet ready for review 3

Order of execution, number of passes 3a

After some consideration it was decided that the only precedence needed in commands wold be the following: 3a1

All "Wn" commands done first on commands before them in the Command Table (CT) 3a1a

All other commands (including Places) done in order specified 3a1b

A final clean up pass over text to deal with delete characters (which probably have to have been translated

into some non-printing character to avoid conflicts with existing similar characters in existing text. 3a1c

It was reasoned that this would be most natural for the user. We could think of no problems in this scheme. The semantics would be different in a precedence arrangements in which, e.g., deletes would be done before substitutions. However, the semantics under this design are most convenient for the user. 3a2

If you can come up with counter-examples, please tell us. 3a2a

Upon specification of a "make snapshot" command, all commands in CT will be executed up to that point, but the CT left as it was to permit further editing in control file. 3a3

As the control file is processed, the CT will be built in a form to be discussed below. Text strings will be placed in a workfile with no structure. Structure will be handled later using the STAE strings which will stored in a string buffer. 3a4

The CT will contain pointers into the buffer to relevant STAE strings which have been cleaned up before they are stored in the buffer. We will use our own string

DVN 22-FEB-72 9:58 9242

INTRODUCTION

(J9242) 22-FEB-72 9:58; Title: Author(s): Dirk H. van Nouhuys/DVN;
Distribution: Richard W. Watson, Jeanne B. North, Cindy Page, Barbara E.
ROW/RWW JBN CXP BER; Sub-Collections: SRI-ARC; Clerk: DVN;
Origin: <VANNOUHUYS>INTRO.NLS;2, 22-FEB-72 9:53 DVN ;

INTRODUCTION

Below follows a draft of an introduction of the Directoies of Network Particiipants. Please look itover, particularly to see if it does what you think the introduction shold do. 1

Use Online: 2

The Current Directory of NetWork Participants is also available onljne at the NIC. 2a

To use it most effectively, log into SRI-ARC and then NLS in your usual way, then load and read file <NIC>LOCATOR branch 2E (NIC,LOCATOR,2E:ct). 2b

NIC LOCATOR 2B is the table of contents to the Current Directory of Network Participants. Each heading contains a link to the part of the Directory it names. Each link sets up viewspecs appropriate to the part of the Directory in question and leads the reader to a branch that gives instruction in how to use it online. 2c

Links: 3

The expressions in parentheses that occur in this Introduction are links. Links are a form of address in NLS. For instructions in the use of the NLS command language in general study a copy of the Network Information Center User Gudie which is supplied to each Network Station or see (NIC, LOCATOR,2A:ct). For information on links in particular, see section 3, page 17 of the Guide or (NIC, LOCATOR,2a6:ct). 3a

For detailed instruction in linking through Locator, see (NIC,LOCATOR,1:w). 3b

The Identfile: 4

The Current Directory of NetWork Participants is based upon the files of idents (JOURNAL,IDENTFILE,) used by the NIC system to recognize users. 4a

You may want to change your ident or add someone else to the file. The easiest way to chnage the file is to ask Barbara Row to do it. Her ident is BER her phone number is, (415) 326-6200 ext 2469, and she is available through your Enterprize or Zenith Number). 4b

For instruction in manipulating the Identfile yourself, see Network Information Center User Guide, secomd part, Pic

Journal System User Guide, section 3 or (NIC,LOCATOR,2b4:ct)
and (documentation,folklore,3b3). 4c

JEW 22-FEB-72 10:30 9243

Host '96': found.

(J9243) 22-FEB-72 10:30; Title: Author(s): James E. White/JEW;
Distribution: Bruce A. Dolan/BAD; Sub-Collections: NIC; Clerk: JEW;

JEW 22-FEB-72 10:30 9243

Host '96': found.

Ralph Alter at BBN gave me a call this morning regarding host x'96',
apparently after talking to you, Bruce.
Ralph indicates that that host is physically on
the premises of BBN Cambridge at the moment
and that it is undergoing checkout. He says that he doesn't
care particularly whether those RST's I've been seeing I respond
to or not, so I won't bother to update UCSB's NCP tables. Guess
that solves that little mystery. 1

Kenneth E. Victor

KEV 22-FEB-72 16:15 9244

more comments on podac

(J9244) 22-FEB-72 16:15; Title: Author(s): Kenneth E. Victor/KEV; Distribution: Diane S. Kaye, Paul Rech, Michael D. Kudlick, Donald R. Cone, Don Limuti, William R. Ferguson, Priscilla Lister, Robert L. Dendy, Linda L. Lane, Oarilyn F. Auerbach, Walter L. Bass, Oary S. Church, William S. Duvall, Douglas C. Engelbart, Beauregard A. Hardeman, Martin E. Hardy, L. D. Hopper, Charles H. Irby, Mil E. Jernigan. Harvey G. Lehtman, John T. Melvin, Leanne B. North, Lames C. Norton, Cindy Page, Bruce L. Parsley, William H. Paxton, Jeffrey C. Peters, Jake Ratliff, Barbara E. RoW, Ed K. Van De Riet, Dirk H. van Nouhuys. Kenneth E. Victor, Don C. Wallace, Richard W. Watson, Don I. Andrews/SRI-ARC; Sub-Collections: SRI-ARC; Clerk: KEV;
Origin: <VICTOR>POD-COMMENTS.NLS;1, 22-FEB-72 15:59 KEV ;

KEV 22-FEB-72 16:15 92hh

more comments on podac

it is and was my understanding that the pods were set up to fulfill two primary functions: 1

1) to act as forums where problems that transcended any professional groupings could be discussed and brought to the attention of doug 1a

2) to act somewhat as "encounter groups" where members of arc could get to know and talk with other members of arc whom they normally would not have a chance to interact with 1b

to the best of my knowledge, none of the pods have addressed themselves directly to 2. 2

this type of discussions have occured though, specifically in the integration of both mike and paul 2a

however it is my personal feeling, that picnics, \such as the one held today in burgess park) serve this function quite well and in a more friendly atmosphere 2b

oost of pod discussion have centered around where are we now and where are we going, who is leading us there, are we a part of the goal setting "group" (if so, how can we help, if not, why not?). how are we getting to our "goals", etc. 3

my own personal feelings are that we have been holding such discussions in a vacuum 3a

doug has indicated that he is willing to use podcom as a vehicle for communiction from the rest of arc to him but not from him to the rest of arc 3a1

thus it appears that we have so far succeeded in formalizing a means for one way communication (a very poor means of communication) 3a1a

meeting for two hours a week under this constraint is extremely draining of both individual and group energies 3a2

i also question whether or not it is neccessary for all of arc to be involved in discussions of goal setting (perhaps only those interested in such discussions should be present and they can take into account any discussions that they have had with other arc members) 3b

i also question why we have four seperate, distinct, and private groups doing the same thing 3c

more comments on podac

i think it might be more valuable to have a number of seperate task forces, each with the authority and responsibility to attack individual problems 3c1

each of these forces should have a fair representation of arc 3c1a

i do not mean to imply that all of our problems can be catagorized into neat little boxes, but i do think we could profit by recognizing what specific problems we do have 3c1b

there can easily be a task force to deal with problems that dont fit into any one specific task force 3c1b1

i do not think that we have to make podac work 3c2

i view podac as an experiment and thus if it fails we try another experiment 3c2a

i do not think we should have to take an existing structure and tear its guts out to make it work 3c2a1

if this is what happens (and it appears to me that this is precisely what is happening), then we should re-evaluate the experiment, reorganize it if this can be done successfully within its framework, but if it is not succeeding then scrap it, recognize why it failed and start with a new experiment and try to capitalize on our past mistakes 3c2a1a

William S. Duvall

WSD 22-FEB-72 16:36 9245

Redwood Pod Notes...Feb 22

(J9245) 22-FEB-72 16:36; Title: Author(s): William S. Duvall/WSD; Distribution: Diane S. Kaye, Paul Rech, Michael D. Kudlick, Donald R. Cone, Don Limuti, William R. Ferguson, Priscilla Lister, Robert L. Dendy, Linda L. Lane, Carilyn F. Auerbach, Walter L. Bass, Cary S. Church, William S. Duvall, Douglas C. Engelbart, Beauregard A. Hardeman, Martin E. Hardy, J. D. Hopper, Charles H. Irby, Oil E. Jernigan, Harvey G. Lehtman, Lohn T. Melvin, Jeanne B. North, James C. Norton, Cindy Page, Bruce L. Parsley, William H. Paxton, Jeffrey C. Peters, Lake Ratliff, Barbara E. Row, Ed K. Van De Riet, Dirk H. van Nouhuys, Kenneth E. Victor, Don C. Wallace, Richard W. Watson, Don I. Andrews/SRI-ARC; Sub-Collections: SRI-ARC; Clerk: WSD;

Redwood Pod Notes...Feb 22

notes from the Redwood Tree---feb 22 1

Barbara asked why should we continue to have meetings. 2

some discussion on the subject, with reference to the fact that other pods are fading away 2a

I don't think that there were any concrete points for or against. 2b

The discussion ten migrated onto the subject of why don't we apply the results of augmentation inward. 3

For example, why isn't there a PH Directive library, or a program Library, or... 3a

Some people are obviously bored 4

Talked about information dssemination and collection within the group (still related to applying augmentation inward) 5

Talked about file privacy, and concept of non-printable files. 6

Some discussion about pros and cons of privacy 6a

List of goals was distributed, and people scanned. 7

Some discussi merits and value of goals versus means. 7a

Agreed to meet next Tues at 1400 7b