JBN 7-MAY-71 15:26 6958
RECEIVED at ARC Week Ending 7 May 1971

Meetings 1

Asis Bay Area Mtg. May 1971
at NASA, demonstration of RECON 1A

Journals 2

Innovation Search May/June 1971
Contains: Book reviews, meeting notices 2A

Naval Research Reviews March 1971
Contains: Research Note; New Computer Programming Technique for Hand-Drawn Symbols, p. 26-27, about Freeman at NYU. 2B

Computerworld 5 May 1971
Contains: Compumetrics Group is Born, p. 1-2, about founding of ACM SIC/Compumetrics. 2C

Reports 3

Cornell University, Department of Computer Science 6745
Information Storage and Retrieval
Gerard Salton October 1970 ISR-18
World of the SMART Project summer 1969 to summer 1970 on: automatic content analysis, automatic dictionary construction, user feedback procedures, document and query clustering methods, and SMART systems design for online operations. 3A

RAY
RFC 137 TELNET Protocol--a Proposed Document NIC 6714
T. C. O'Sullivan 30 April 1971
Result of work of TELNET Committee 3B

Stanford University SPIRES/BALLOTS Project 6746
Requirements for SPIRES II. An External Specification

for the Stanford Public Information Retrieval System.
April 1971 unpaged 3C

SUAI 6749
DPY - a Device Independent Graphics Package
Andy Moorer 12 Novembber 1970 SAILON63 3D

RAND
On Distributed Communications
Paul Baran April 1964 10 vols. 3E

SUAI 6748
COPY
Richard P. Helliwell May 1970 SAILON 61
Describes program for moving information from one file to another. 3F

JBN 7-MAY-71 15:26 6958
RECEIVED at ARC Week Ending 7 May 1971

<JOURNAL>6958.NLS;1, 7-MAY-71 15:27 BER ; (Expedite) Title: Author(s): Jeanne B. North/JBN; Distribution: Douglas C. Engelbart/DCE; Clerk: BER; Krigin: <ROW>RECEIVED.NLS;1, 7-MAY-71 15:23 BER ;

WSD 7-MAY-71 17:49 6959
Proposal for Journal System for Stage 0 NIC

In response to (journal, 6210,) and (Journal, 6222,)

WSD 7-MAY-71 17:49 6959
Proposal for Journal System for Stage O NIC

Proposal for Journal System modifications to meet the stage O NIC requirements (see (Journal, 6222,) and (Journal, 6210,)) 1

The Journal system presented to the Network will be substantially like the one we currently use for ARC. 2

The features added will be generally useful to ARC as well as the NIC, and as such we will not differentiate between ARC an NIC Journal systems. 3

The new features are briefly: 4

Sub-collection Membership 4A

The Journal is in essence a transactional library concerning projects undertaken by persons/teams within the NLS environment. 4A1

As such, it may include documents relevant to a wide variety of projects. 4A2

It is convenient to sub-divide the Journal collection of documents into smaller collections which have relevance to a particular dialogue or collection of dialogues. 4A3

Eventually, we will have elaborate mechanisms for generating sub-collections automatically. 4A4

For the present, however, we can facilitate use of the Journal by making an initial high-level designation of sub-collection membership when an item is entered to the Journal. 4A5

There will be two aspects of this initial designation. 4A6

(1) Default sub-collection membership 4A6A

Each system user will have, in his identification file entry, a list of subcollections to which any Journal document he submits will belong. 4A6A1

This is the initial sub-collection membership of his documents. 4A6A2

(2) Assigned sub-collection membership 4A6B

Commands will be added to the Journal submode which

will enable a user to augment or override the default membership of a Journal document being submitted. 4A6B1

The significance of this so far as the NIC is concerned, is that all items submitted to the Journal by persons on the network will be automatically assigned to the NIC sub-collection. 4A7

Similarly, all items submitted by ARC will by default belong to the ARC sub-collection. 4A8

Intuitively, there is a connection between sub-collections as described here, and group identifications as described in (Journal, 6215,) 4A9

It is, however, a bit premature to combine the two into a single feature at this time, however, hence this somewhat redundant separate proposal. 4A9A

Entry of off-line (hard-copy) documents. 4B

The Journal as it currently exists provides no facility for entering documents which are not in NLS file form. 4B1

There is a need for this in the NIC environment, and the proposal here is to provide for this need by the following convention: 4B2

When an off-line document is recieved for Journal entry, an entry is made into the Journal using the normal machinery. 4B2A

When the document identification is requested, the operator types 'H for Hard-copy (the system will respond appropriately), and proceeds to enter information indicating the location of the master copy of the document. 4B2B

Just what the format of this indication is is undecided. 4B2B1

The remainder of the entry is normal, except that when the user types 'Go', there is no file or message created, i.e. the execution of the process results in nothing more than the appropriate bookkeeping and catalog entries. 4B2C

affirmed by echoing the document number and subcollection rather than the current link. 5B

I think that it would be nice if group identifications (Journal, 6215,) were available for stage 0 NIC. 5C

WSD 7-MAY-71 17:49 6959
Proposal for Journal System for Stage O NIC

<JOURNAL>6959.NLS;1, 7-MAY-71 17:50 WSD ; (Expedite) Title: Author(s): William S. Duvall/WSD; Distribution: Richard W. Watson, John T. Melvin, Charles H. Irby/RWW JTM CHI; Keywords: Journal NIC Stage O; Clerk: WSD;

CHI 10-MAY-71 10:27 6961
On-line Journal Delivery via INITIAL File

CHI 10-MAY-71 10:27 6961
On-line Journal Delivery via INITIAL File

Bill, I would like to suggest that on-line delivery of journal documents/messages be expedited since quite a simple method could be used and since I am accumulating far too much paper on my desk. Also, I personnally would get messages much more quickly if delivery was on-line. 1

I suggest the following scheme for on-line delivery: 2

Deposit copies of messages and links to documents (with header and comment) in a branch named "JOURNAL" in the recipients INITIAL file (the file which is presented to the user upon entry into NLS). 2A

I assume that all users are in JOURNAL's group, so that it could modify anyone's INITIAL file. I assume also that no other users have journal in their groups. 2A1

Obviously, no delivery can take place when the initial file is locked or open. Possibly, a simple algorithm could be used which attempted on-line delivery a few times, then resorted to off-line delivery. Also, we might want to use both modes for a while, and one certainly would want the ability to specify which method should be used, on-line, off-line, or both, with a convenient default assumed if no preferrence is specified. 2B

CHI 10-MAY-71 10:27 6961
On-line Journal Delivery via INITIAL File

<JOURNAL>6961.NLS;1, 10-MAY-71 10:27 CHI ;Title: Author(s): Charles H. Irby/CHI; Distribution: William S. Duvall, Harvey G. Lehtman, Mimi S. Church, William H. Paxton, James C. Norton, Richard W. Watson, Douglas C. Engelbart, Bruce L. Parsley/WSD HGL MSC WHP JCN RWW DCE BLP; Keywords: online delivery journal initial file; Clerk: CHI;

WSD 10-MAY-71 11:41 6962
Response to On-line Journal Distribution Note: (Journal, 69611,)

Chuck: 1

With respect to on-line delivery (Journal, 6961,), I agree that we need it soon. 1A

The machinery required for depositing the stuff in the control (initial) files is straight forward, but as you have indicated, the problems arise when the initial file is locked. 1B

With respect to this, the major part of the problem is that the initial file is locked more often than not. 1C

I think that we should do something about this in NLS, for example making NULFIL create a new unlocked file rather than a partial copy for the existing file. 1D

Another possibility is to have the on-line distribution program ignore the fact that a file is locked, and only pay attention to tha fact that it is busy 1E

I had thought that the information indicating the type of delivery which a user desired could be kept in the identification file. 1F

This would leave us flexibility in adding different techniques in the future, as well as allowing the user to specify more than one type of delivery, e.g. on-line and hard copy. 1F1

One problem which you didn't mention is that we currently have no acceptable way of handling background jobs, particularly one which should be initiated at system startup, and the on-line distribution would be a job such as this. 1G

Given the solution to this, I see the on-line distribution taking about a week, mebbee less, to design and implement. 1H

The only question remaining is who can afford the week?? 1I

```
PROGRAM p                                                    2
   DECLARE TEXT POINTER p1 , p2;                             2A
   (p) PROCEDURE;                                            2B
      FIND ['(] ↑p1 [')] ↑p2 ←p2;                            2B1
      ST p1 ←  '@, p1 p2, '@, SF(p1) SE(p1);                 2B2
```

```
    flag ← FALSE;                                                    2B3

    RETURN END.                                                      2B4

FINISH                                                               2C
```

WSD 10-MAY-71 11:41 6962
Response to On-line Journal Distribution Note: (Journal, 69611,)

<JOURNAL>6962.NLS;1, 10-MAY-71 11:41 WSD ; (Expedite) Title: Author(s): William S. Duvall/WSD; Distribution: Charles H. Irby, Douglas C. Engelbart, Bruce L. Parsley, William H. Paxton/CHI DCE BLP WHP; Clerk: WSD;

RWW 10-MAY-71 11:59 6963
status report forNWG meeting

IMPORTANT This is the type of report I would like to present at the NWG meeting in ATlantic CITY giving some dates which we are committed to meeting. IF any of these dates are unreasonable please let me know by WED. May 13. Thanks.

RWW 10-MAY-71 11:59 6963
status report forNWG meeting

Status of SRI-ARC, NIC 1

The conversion to the DEC PDP 10 running the BBN operating syatem Tenex has just about been completed. We have had a number of obscure bugs which caused delays recently. Several symptoms were traced to bad data being written into memory. This problem was diagnosed as a noisey ground on a chip in the drum-disk memory bus access control. With the problem fixed our reliability has improved significantly to about one crash every day or two. System attention has now been turned to system tuning and to bringing up an NCP and Telnet. 2

We have brought up the BBN NCP and Telnet of doc. #1,NIC (5143,) and logged into ourselves through the Telnet and run NLS in full and half duplex modes. 3

Our plans for providing service to the network are briefly as follows: 4

Stage 0 (June 4): 4A

Stage 0 is to provide experimental access to the NIC for a limited number of West Coast sites (these sites provide a variety of hosts and having them on the West Coast simplifies communications for this initial trial period) so that we can learn how to handle any problems which may come up in actual network operation. 4A1

Stage 0 will allow access to the Tenex Executive, NICTNLS(Nic version of Typewriter On Line System),an initial Network Dialog Support System-NICDSS (which will allow online creation and submission of messages and documents, with hardcopy mail delivery), and the first release of our users manual. 4A2

We will allow an initial maximum of two network users on at once. 4A3

There will be a two day NICTNLS course at SRI June 2-3 for the initial sites . 4A4

Stage 1 (early July): 4B

Stage 1 is to provide access to the NIC from any site in the network having the appropriate access software. 4B1

Stage 1 will allow access to a self contained version of NICTNLS not requiring access to the Tenex Executive, the

NICDSS of Stage 1 with online access to documents and messages created online, online access and query of network related files such as the NIc Catalog, ARPA Network Resource Notebook etc., and further documentation. 4B2

We expect to provide training to sites desiring access in their geographical location. We will allow 4-8 network users simultaneous access ,depending on initial success with system tuning. 4B3

Stage 2 (middle August): 4C

Stage 2 will provide more capacity for network use and additional features. 4C1

Stage 2 will provide message delivery to files at remote sites (assumming the NWG establishes file transfer protocols soon),an initial deferred execution mode allowing users to prepare files on their systems and then have them entered into NICTNLS for further work, and improved query facilities of network online files. 4C2

We hope also to provide by this time specification of requirements for access to Display NLS. 4C3

We hope to have improved Tenex-NLS performance so as to allow 12-16 network users simultaneous access. 4C4

RWW 10-MAY-71 11:59 6963
status report forNWG meeting

<JOURNAL>6963.NLS;1, 10-MAY-71 12:03 RWW ; (Expedite) Title: Author(s): Richard W. Watson/RWW; Distribution: William S. Duvall, John T. Melvin, Charles H. Irby, James C. Norton, Douglas C. Engelbart, Ed K. Van De Riet, Bruce L. Parsley/WSD JTM CHI JCN DCE EKV BLP; Clerk: RWW;

RWW 11-MAY-71 10:20 6964
Note to Steve Crocker on Starting Stations with a Subset of Documents

Steve,
This is a test of our clerical handling of external messages. 1

We have been running our Journal System for about a month.There will be online delivery in the near future now that the transfer to the PDP 10 is about complete. Message delivery is by hardcopy for the present. 2

Besides accepting the message or document an automatic catalog entry is made. 3

The main information that I wanted to give you is that we have only two complete sets left of the NIC collection sent to the stations and therefore we need to enter the mode we discussed in my last visit to UCLA,namely when new stations are established to start them out with a carefully selected subset of currently relevant documents. 4

You indicated that you would make such a selection and write some introductory material.I was going to help with the NIC related material. 5

Please let me know soon about whether we are to enter this new mode.
Thanks 6

RWW 11-MAY-71 10:20 6964
Note to Steve Crocker on Starting Stations with a Subset of Documents

<JOURNAL>6964.NLS;1, 11-MAY-71 10:21 RWW ; (Expedite) Title: Author(s): Richard W. Watson/RWW; Distribution: Steve Crocker, Cindy Page, James C. Norton, Harvey G. Lehtman/SC CXP (Cindy this doc is to be mailed) JCN HGL; Clerk: RWW;

HGL 11-MAY-71 10:57 6965
DEX Implementation Design-- a proposal

HGL 11-MAY-71 10:57 6965
DEX Implementation Design-- a proposal

The following proposes the implementation design for DEX-1. It fulfills the requirements (i.e., user features design) outlined in (journal,6936,0:gw). 1

Many of the design decisions outlined below were made after a consideration of the way we wish the whole DEX system to work. In some instances these decisions make the implementation of the simple DEX-1 more complicated. If we look upon DEX-1 as an experiment for the whole system implementation (which will have the availability of correspondences to most of the NLS commands), this method does not seem to be more costly than a more straightforward implementation concerned only with the immediate DEX-1 which would have to be scrapped and redone. We look upon DEX-1 as being upwardly compatible in both user features and implementation designs. 1A

DEX-3 Proposed Processing Flow 2

1. Load (sequential) file specified on entry to DEX-1 offline system. 2A

2. Delimit statement-- Read in string through either the command accept or abort character (! or $ respectively). Check if the terminating character is immediately preceded by a valid literal escape ('). 2B

If there is an escape character, append the next string through ! or $ to this string. Check for a literal escape again. Continue until a valid terminating character is found. 2B1

If there is not an escape character, use the string for further processing. 2B2

If the terminating character is $ the command is to be aborted and the string discarded. (If we wish to keep it around for some sort of "unabort" we could.) 2B3

Remove escape characters preceding ! and $. 2B4

3. On the string which has been input, effect the immediate deletions (< and > not preceded by an escape). Remove the escape character from before <s or >s where necessary. 2C

In order to make possible the form of deletions described in (journal,6936,4d5c:gw) and (journal,6949,1b:gw) we scan the string from right to left up to the space following the node location number. 2C1

*****It may be desirable to defer the deletions until all items have been read in to permit appending strings with immediate deletion flags. 2C2

4. Handle capitalization (indicated by / and \). (journal,6936,4d5g:gw) (journal,6936,4d5h:gw) (journal,6949,1a:gw) 2D

5. Command parsing-- 2E

Check whether this is an insertion or a command. Look for period immediately following space after the location number. 2E1

The method of attaching meaning to the LN is dependent on its location in the command. For insertions, for example, the location number is the location at which a new node is to be placed and not, as is now the case, the location after which it should go. Thus the present algorithm (used in (nls,seqgen,fechux:gw)) will not work. We must, in parsing the commands, bear this in mind. 2E2

If we have an insertion the text is placed immediately in an NLS file. Other commands cause an entry in the Command Table to be built and may cause text statements to be entered (to handle insertions, deletions and substitutions of text. 2E3

****For consistency maybe place Insertions in command tables, too. 2E4

6. Insertions-- the text file 2F

Since we make provision for insertion in any order we have dummy statements inserted into the file in order to generate psids. 2F1

We create an extension of the ring (which is not preserved with the file) which has several flags and pointers useful for DEX. This ring extension contains information pertinent to nodes which is more properly associated with them than with the commands. Examples include a flag indicating that the node is a dummy or contains text to be inserted or substituted for text in other nodes. 2F2

7. Other commands-- command tables 2G

The command table permits us to make several passes over

the input in order to optimize our handling of commands. Thus we can do insertions before other commands (in DEX-1, before deletions). 2G1

The command tables have pointers to the relevant text in the file (psids), flags indicating commands, and pointers to other commands (in the case of un-commands). They appear in the table sequentially in the order of appearance in the input. 2G2

We could thus permit editing commands on nodes before they have been inserted. 2G2A

Errors will cause an insertion in an error branch in the output or updated file containing as much of the text of the command as possible (a task made relatively easy by the methods of storage.) 2G3

8. Pass over command tables in precedence and order of command specification. 2H

In DEX-1 insertions are handled before deletions. Little thought has been given to the necessary precedence for the full system. 2H1

Text changes before structure changes? Copies before deletions? Deletions before moves? The consequences of the final choice must be carefully considered, but it is not necessary to do it now. 2H1A

Final pass is a clean-up before outputting the file. 2H2

9. Output (or update) file-- error handling 2I

Dummy nodes are eliminated where possible. Text conceerning errors are put at the end of the file. 2I1

10. Output device printer if necessary 2J

Design Alternatives 3

We do not need command tables to do merely insertions and deletions. We could, in fact, get away with a ring extension used to facilitate undeletes. It is a good idea to start the system now in order to get a test of the full system design. 3A

All commands could be done as they come in. This makes it impossible to "undo" commands. This is not good in an

off-line mode. The building of the command tables permits optimizing the order of command execution, valuable for a process permitting input in any order. 3B

An NLS text file of commands could be built and then processed using the string analysis constructions in L10. This would be very slow and inefficient. 3C

HGL 11-MAY-71 10:57 6965
DEX Implementation Design-- a proposal

<JOURNAL>6965.NLS;1, 11-MAY-71 10:58 HGL ; (Expedite) Title: Author(s): Harvey G. Lehtman/HGL; Distribution: Bruce L. Parsley, Douglas C. Engelbart, James C. Norton, Richard W. Watson, Ed K. Van De Riet, William H. Paxton, Charles H. Irby, William S. Duvall/BLP DCE JCN RWW EKV WHP CHI WSD; Keywords: DEX proposal design; Clerk: HGL; Origin: <LEHTMAN>DEXPRO.NLS;7, 11-MAY-71 10:53 HGL ;

RWW 11-MAY-71 11:04 6966
Response to Stage 0 Proposal for the Journal

RWW 11-MAY-71 11:04 6966
Response to Stage 0 Proposal for the Journal

Response to the Proposal for Journal System Stage 0
(Journal,6959,) 1

The proposal meets the needs of the NIC for Stage 0. 2

I would like to discuss some of the issues raised further as they effect further developments and may modify slightly what we want to do for Stage 0. 3

As I understand it we have two basic kinds of collections a dynamic transactional collection with subcollections such as the ARC Journal, and a more static collection such as XDOC. 4

For hardcopy , offline entry, into the transactional collection, as long as it is performed by ARC people initially, the approach you proposed is ok. If we were going to let people on the network enter offline docs there could be problems. 5

One problem is with RFC numbers ; we have no way to obtain these automatically as we have decided that when all the set mechanisms and fancy catalog querying stuff is implemented there will probably be no need for RFC numbers. Therefore we want people to call Jean as now to obtain NIC and RFC numbers. There are going to be problems in any case with docs prepared online which the writer wants to be RFCs, when he can get the NIC number automatically and has to call us for the RFC number. 5A

Another problem we could get into if anybody could enter docs offline is to fail to obtain sufficient information for the catalog entry or to allow Jean or someone to obtain this information.We need a subsystem to ask more questions to obtain the appropriate informatin. This problem applies more to the static collection then the transactional one. 5B

The conclusion I would draw is not to tell people outside of ARC about this offline entry capability until we have more tools. 5C

There is no immediate need in Stage 0 for online access.Therefore do not do anything for NIC you would not want to do for ARC more generally. Until there are some catalog building tools and query facilities more sophisticated than those presently available Iwould not anticipate much online access. 6

I agree that group identification is something we want and need both for NIC and, ARC more generally, as soon as possible. 7

RWW 11-MAY-71 11:04 6966
Response to Stage 0 Proposal for the Journal

<JOURNAL>6966.NLS;1, 11-MAY-71 11:05 RWW ; (Expedite) Title: Author(s): Richard W. Watson/RWW; Distribution: William S. Duvall, Jeanne B. North, Douglas C. Engelbart, James C. Norton/WSD JBN DCE JCN; Keywords: ; Clerk: RWW;

HGL 11-MAY-71 15:26 6968
Corrections to DEX-3 User Features Proposal

HGL 11-MAY-71 15:26 6968
Corrections to DEX-1 User Features Proposal

Delete the number sign (#) in the syntax equations (journal,6936,#fla:gw) and (journal,6936,#f2a:gw). Only one space is needed between the LN and the period in commands. 1

HGL 11-MAY-71 15:26 6968
Corrections to DEX-3 User Features Proposal

(J6968) 11-MAY-71 15:26; (Expedite) Title: Author(s): Harvey G. Lehtman/HGL; Distribution: Bruce L. Parsley, Douglas C. Engelbart, James C. Norton, Richard W. Watson, William H. Paxton, Charles H. Irby, William S. Duvall, Ed K. Van De Riet/BLP DCE JCN RWW WHP CHI WSD EKV; Keywords: DEX proposal requirements design; Clerk: HGL;

BLP 11-MAY-71 17:23 6969
Current State of the Baseline Record -- (<MSR>Baserec)

BLP 11-MAY-71 17:23 6969
Current State of the Baseline Record -- (<MSR>Baserec)

Service Developement 1

(Operations'Developement) ??? ??? <Ed Ken Jim 1A

Information: 1A1

Developing procedures and practices for providing service. 1A1A

Milestones: 1A2

3/4 something like a plan will be ready by this date. 1A2A

(Hardware'Doc'Standards) 5/1 5/1 <Ed Martin Roger Bo Fred Jake 1B

Information: 1B1

Decide on standards of hardware documentation. The standards would be applied both to documentation done by ARC people and future contractors. 1B1A

(Hardware'Documentation) --- ??? <Martin Bo Roger 1C

Information: 1C1

Bring documentation on all our hardware up to date and make it complete. Martin and Bo will do documentation that serves hardware trouble-shooters. Roger will do documentation that serves programmers. 1C1A

(Hardware'Training) ??? ??? <Ed Martin Roger Bo Fred Jake 1D

Information: 1D1

Train Fred on Tasker and work station input devices, Martin on digital equipment, Jake on the TV equipment, Roger on Cybernex stuff and the paging box, and Bo. 1D1A

(New'Operator) ??? ??? <??? 1E

Information: We need another computer operator. 1E1

TENEX 2

(Start-up) 5/2 5/3 <Ken software 2A

Information: 2A1

Ability to start programs automatically at system start-up time, e.g. Recover NLS, OPIM. 2A1A

(Tasker'Diagnostic) ??? ??? <Martin Charles
software 2B

Information: 2B1

Be able to display a test pattern. 2B1A

(New'System'Programmer) 4/1 ??? <Ed 2C

Information: 2C1

We need another system programmer for the monitor and exec. 2C1A

(Bryant'System) ??? ??? <Dave Ken
software 2D

Information: 2D1

Make a system that uses the Bryant drum and not the Univac. 2D1A

Man-time: 2D2

less than 1 man-week *[Dave]* 2D2A

(Bryant'Diagnostics) ??? ??? <Dave Roger
software 2E

Information: 2E1

Diagnostics for the Bryant drum. Modify Univac diagnostics to provide a time-shared diagnostic for the Bryant. 2E1A

Man-time: 2E2

1 man-week *[Dave]* 2E2A

(TENEX'Speed-up) 4/2 ??? <Don Ken
software 2F

Information: 2F1

Increase response times. Think about capacity. 2F1A

Milestones: 2F2

6/1 learning TENEX 2F2A

5/2 tweaking TENEX scheduler parameters 2F2B

5/2 Design software measurement stuff 2F2C

5/4 debug software measurement stuff 2F2D

6/1 begin scheduler and balance set manipulation 2F2E

6/3 run tests with measurements and evaluate 2F2F

(Drum'Compare) 4/1 ??? <WHP Ken Ed Don Roger Dave John?
software 2G

Information: 2G1

Decide relative merits of Univac, Bryant, and both drums and decide which to keep. 2G1A

Milestones: 2G2

before 6/2: drum statistics collector so can run tests 2G2A

no decision will be reached before 9/1 to allow statistic gathering and to assure that the heads are not going to crash 2G2B

(Performance'Measure) ??? ??? <Don Ken WHP
software 2H

Information: 2H1

Develop tools for measuring response time and capacity as a function of the number of users, what kind of users, which drums are on, etc. 2H1A

(Increase'Capacity) ??? ??? <??? 2I

Information: 2I1

Develop plan for increasing capacity -- considering things like more core, disk packs, etc. 2I1A

(Work'Station'I/O) ??? ??? <John Charles Don? 2J
software

Information: 2J1

Change the way work station I/O is done so that it will be faster and is cleaned up and nice. 2J1A

(Background'Process) ??? ??? <Mimi 2K

Information: 2K1

The idea is to have a version of NLS running in background mode that would be able to handle things like hardcopy output and compilations. 2K1A

(Print'Queue) ??? ??? <Ken 2L
software

Information: 2L1

Ability to queue printing jobs and do the printing in sort of background mode, i.e. without tying up a console. 2L1A

(Directory'Groups) ??? ??? <Jim Ken 2M

Information: 2M1

Think about how to use or alter TENEX's file directory group mechanism to achieve the file protection ARC needs. 2M1A

(Disk'Diagnostics) ??? ??? <Ken Roger? Bo? 2N
software

Information: 2N1

Adding some bells and whistles to the present diagnostics for the Bryant disk. 2N1A

(Login'User'Name) ??? ??? <Ken 2O
software

Information: 2O1

Do name recognition on user names at login time. 2O1A

(More'Open'Files) ??? ??? <Ken
software 2P

Information: 2P1

Change TENEX so a lot more files can be kept open at the same time by a user. 2P1A

(Bid'Scheduling) ??? ??? <Ken Don WHP Dick
software 2Q

Information: 2Q1

Implement a scheduling algorithm for hardware resources that employs bidding for those resources by the users. BBN people may do it or help. 2Q1A

Man-time: 2Q2

9 man-weeks *[Ken]* 2Q2A

(Backup'System) ??? ??? <Ken WSD BBN-people
software 2R

Information: 2R1

A software system that automatically backs up files. BBN is to send whatever specs they have for this system.. 2R1A

NIC 3

GETTING ON THE NETWORK 3A

(Stage'0) 4/1 6/1 <Dick John Harvey 3A1

Information: 3A1A

Stage 0 is to provide experimental access to the NIC to a limited number of selected sites and users. 3A1A1

Requirements: 3A1B

Access to Tenex Exec 3A1B1

Access to TNLS with local echoing 3A1B2

Initial NIC DSS - hardcopy delivery 3A1B3

Initial Primer and other NIC documentation 3A1B4

Total lines in = 2 3A1B5

Buyer(s): 3A1C

ARC goal 3A1C1

Sub-Contracts: 3A1D

(,Initial'TNLS'Primer) 4/1 6/1 <Marilyn Dirk 3A1D1

(,Journal'User'Guide) 4/1 6/1 <Marilyn Dirk 3A1D2

(,DSS) 4/3 5/2 <WSD 3A1D3

Requirements: 3A1D3A

(Journal,6222,) 3A1D3A1

Subtasks: 3A1E

(Tenex'work) 4/3 5/1 <John 3A1E1

Requirements: 3A1E1A

Put in NCP Telnet 3A1E1A1

Put in user ID info 3A1E1A2

Changes to Tenex to access TNLS from Net 3A1E1A3

Proper crash recovery for Net 3A1E1A4

Access spec 3A1E1A5

Subtasks: 3A1E1B

(NCP) 4/1 4/4 <John
software 3A1E1B1

Information: 3A1E1B1A

Get the Network Control Program written
by BBN into our system and debugged. 3A1E1B1A1

(TELNET) 4/1 4/4 <John
software 3A1E1B2

Information: 3A1E1B2A

Get the TELNET written by BBN into our system and debugged. 3A1E1B2A1

(Training) 4/3 6/1 <Dick Harvey John 3A1E2

Requirements: 3A1E2A

Lesson plan 3A1E2A1

Examples 3A1E2A2

Practice materials 3A1E2A3

Milestones: 3A1E2B

Course to be given June 2-3 3A1E2B1

(Stage'1) 4/3 7/1 <Dick John Marilyn Dick Jim 3A2

Information: 3A2A

Stage 1 is to provide access to the NIC from any site on the Network having the appropriate access software. 3A2A1

Requirements: 3A2B

Access to NIC TNLS self-contained version with Exec features 3A2B1

Access to any site with official Telnet 3A2B2

Number of lines in = 4-8 depending on our capability 3A2B3

File Space restrictions by Group 3A2B4

Final Primer 3A2B5

Online files accessed with standard TNLS commands (possibly a simple query language) 3A2B6

Catalog 3A2B6A

Guide to network personnel 3A2B6B

Facilities guide 3A2B6C

NIC guide 3A2B6D

Host status 3A2B6E

Buyer(s): 3A2C

ARC goal 3A2C1

Sub-Contracts: 3A2D

(,NLS'EXEC) 4/4 6/2 <John Dave Mimi Charles WHP 3A2D1

Requirements: 3A2D1A

(Journal,6229,) 3A2D1A1

(,DSS) 5/2 6/3 <WSD 3A2D2

Requirements: 3A2D2A

Any improvements found necessary for Stage 0 and internal usage. 3A2D2A1

(,Deferred'Execution) 4/3 6/3 <Harvey Doug 3A2D3

Requirements: 3A2D3A

As designed by hgl and dce 3A2D3A1

Subtasks: 3A2E

(Tenex'Work) 5/3 6/3 <John 3A2E1

Requirements: 3A2E1A

New NCP Telnet 3A2E1A1

Help create NIC TNLS 3A2E1A2

Restrictions on file space of Tenex groups 3A2E1A3

Enter user ID info 3A2E1A4

Access spec 3A2E1A5

Link for advise mode 3A2E1A6

Network file transfer 3A2E1A7

File storage at UCSB?	3A2E1A8
Sub-Contracts:	3A2E1B
(,Restrict'File'Space) 5/3 6/3 <John	3A2E1B1
Requirements:	3A2E1B1A
Restrictions on file space of Tenex groups.	3A2E1B1A1
(,Advise'Mode'Link) 5/3 6/3 <John	3A2E1B2
(,Network'File'Transfer) 5/3 6/3 <John	3A2E1B3
(,UCSB'Storage'File?	3A2E1B4
Sub-tasks:	3A2E1C
(New'NCP'Telnet) 5/3 6/3 <John	3A2E1C1
(Enter'User'ID'Info) 5/3 6/3 <John	3A2E1C2
(Access'Spec) 5/3 6/3 <John	3A2E1C3
(Documentation) 5/2 6/3 <Marilyn Dick	3A2E2
Requirements:	3A2E2A
Guide to our online files	3A2E2A1
Final NIC TNLS Primer	3A2E2A2
Guide to Journal system	3A2E2A3
Sub-Contracts:	3A2E2B
(,Final'NIC'TNLS'Primer)	3A2E2B1
(,Guide'to'Journal'System)	3A2E2B2
(Training) ??? 6/1 <Dick	3A2E3
Requirements:	3A2E3A
Plans for site training	3A2E3A1
(Online'Files) 5/4 6/3 <Dick Jim Marilyn	3A2E4

Requirements: 3A2E4A

Catalog and simple query facility 3A2E4A1

Guide to Network personnel 3A2E4A2

Facilities guide 3A2E4A3

NIC guide includes NIC TNLS Primer 3A2E4A4

Host status 3A2E4A5

(Stage'2) 6/3 8/2 <Dick John Marilyn Jim 3A3

Information: 3A3A

Stage 2 is to provide more capacity for Network use and additional facilities as described in Require 3A3A1

Requirements: 3A3B

Online message delivery 3A3B1

Number of lines in 12-16 3A3B2

Expanded Deferred Execution 3A3B3

Access to remote line printers 3A3B4

Refined resource restrictions 3A3B5

Improve query facilities for our online files 3A3B6

Specs for access to NIC DNLS 3A3B7

Buyer(s): 3A3C

ARC goal 3A3C1

Sub-Contracts: 3A3D

(,Mixed'Text'Graphics) ??? 8/1 <Charles Dick Walter 3A3D1

Requirements: 3A3D1A

Ways to specify from typewriters drawings in

NIC TNLS which, when output through Output Processor, would create line printer drawings 3A3D1A1

(,Deferred'Execution) 6/3 8/1 <Harvey Doug 3A3D2

Requirements: 3A3D2A

Mixture of interactive and deferred mode ways of working online 3A3D2A1

(,DSS) ??? 8/1 <WSD 3A3D3

Requirements: 3A3D3A

Online message delivery 3A3D3A1

Message delivery to remote files? 3A3D3A2

(,Remote'DNLS'Spec) ??? 8/1 <Charles 3A3D4

Requirements: 3A3D4A

A spec for coding for what a site would have to do to access NIC DNLS from their graphic terminals 3A3D4A1

Subtasks: 3A3E

(Tenex'Work) 6/3 8/1 <John 3A3E1

Requirements: 3A3E1A

Access from X lines with maximum y per site 3A3E1A1

(NIC'Documentation) ??? 8/1 <Dick Marilyn 3A3E2

Requirements: 3A3E2A

On-going improvements and coverage of new features offered to Network 3A3E2A1

(Training) ??? 8/1 <Dick 3A3E3

Requirements: 3A3E3A

On-going site training 3A3E3A1

Possible self-teaching program or workbook 3A3E3A2

(Online'Files) 6/3 8/1 <Dick Jim 3A3E4

Requirements: 3A3E4A

Improve query system using ARC set techniques 3A3E4A1

Improve our online documentation of NIC 3A3E4A2

NIC Collection 3B

(Catalog) --- --- <Jim Jean Dick 3B1

Information: 3B1A

There are a number of tasks required to continue to upgrade our capabilities in the cataloging area 3B1A1

Buyer(s): 3B1B

NIC 3B1B1

Subtasks: 3B1C

(Complete'new'catalog) --- 4/3 <Jim 3B1C1

(Document'catalog'production) ??? ??? <Jim 3B1C2

(Catalog'Users'Guide) --- 4/4 <Jean 3B1C3

(Improve'catalog'production'process) ??? ??? <Dick 3B1C4

(Initial'Query'Language) ??? 6/3 <Dick Jean 3B1C5

(Subcollections) ??? 6/3 <Dick Jim 3B1C6

(Find'the'bug) ??? 5/1 <WSD ? Ken Charles 3B1C7

Information: 3B1C7A

This is the problem which has led to innumerable crashes and prevented us from easily creating titleword indexes 3B1C7A1

(Obtain'documents) --- --- <Jean Mil 3B2

Information: 3B2A

Obtain ARPA reports and Karp biblio documents for collection 3B2A1

Buyer(s): 3B2B

NIC 3B2B1

(Binder'Dividers) ??? 5/2 <Jean 3B3

Information: 3B3A

For our NIC functional documents need printed binder dividers 3B3A1

Buyer(s): 3B3B

NIC 3B3B1

(Syntax'In'Citations) ??? ??? <Dick Doug 3B4

Information: 3B4A

Need standard way for citations to be written so that online documents can be accessed 3B4A1

Buyer(s): 3B4B

ARC goal 3B4B1

ACCESS EXPERIMENT 3C

(Access'experiment) ??? ??? <John 3C1

Information: 3C1A

This experiment is to study users reaction to levels of feedback and response. 3C1A1

Requirements: 3C1B

NWG/RFC 96 ,NIC (5739,) 3C1B1

NIC Documentation 3D

(NLS'Doc'Master'File) ??? ??? <Jim Marilyn 3D1

Information: 3D1A

Develop a plan for a master file of NLS documentation that can be manipulated in various ways, e.g., with the Content Analyzer, to produce various documents. 3D1A1

(BBN'Facilities'Guide) 4/3 5/1 <Dick 3D2

Information: 3D2A

Go over BBN's facilities guide. See documentation under (Stage 0), (Stage 1), and (Stage 2) 3D2A1

Network Stations 3E

(Station'Agent'Help) --- --- <Jean 3E1

Requirements: 3E1A

Station Agent Manual 3E1A1

Site visits 3E1A2

Suggestions on storage circulation 3E1A3

Clerical 3F

(More'Clerical'help) ??? ??? <Dick 3F1

Longer Range Problems 3G

(Microfilm'Study) ??? ??? <Dick 3G1

Information: 3G1A

We need to study reader copiers for use experimentally in ARC Journal System 3G1A1

(Fiche'Production) ??? ??? <Dick 3G2

Requirements: 3G2A

What features in Output Processor are needed 3G2A1

What service firms are in the area with FR80, etc. 3G2A2

(Fiche'Reading) ??? ??? <Dick 3G3

(Fiche'Frame'Jumping) ??? ??? <Dick 3G4

(Phototypesetting) ??? ??? <Dick 3G5

(System'for'CAI) ??? ??? <Dick 3G6

(Catalog'Input'Quality'Control) ??? ??? <Dick 3G7

(Advanced'Query'System) ??? ??? <Dick 3G8

(Cataloging'Aids) ??? ??? <Dick Jean 3G9

(Data'Management'Needs) ??? ??? <Dick 3G10

(Collection'Distribution'Philosophy) ??? ??? <Dick 3G11

(Computer'capacity'at'What'cost) ??? ??? <Dick 3G12

(Accounting) ??? ??? <Jim 3G13

Requirements: 3G13A

Catalog input 3G13A1

Duplication 3G13A2

Phone 3G13A3

Mailing 3G13A4

Training 3G13A5

System development 3G13A6

Computer operations 3G13A7

(Our'Own'Xerox) ??? ??? <Dick 3G14

NLS 4

(Display'NLS) 3/2 4/3 <Charles Mimi
software 4A

Information: 4A1

Get NLS running on the displays. 4A1A

At the completion date above, NLS will include all the NLS features of the 940 with the exception of: 4A1B

the calculator 4A1B1

the vector package 4A1B2

the keyword system 4A1B3

executable text 4A1B4

Major new features that will be implemented by that date are: 4A1C

partial copies 4A1C1

two checkpoints 4A1C2

Jump to Word 4A1C3

Subtasks: 4A2

(Tabs) ??? ??? <Mimi? Charles? software 4A2A

Information: 4A2A1

Implement tabs. 4A2A1A

(Fast'Create'Display) ??? ??? <Mimi? Charles? software 4A2B

Information: 4A2B1

Debug fast Create Display (when only a portion of the display, not the whole thing, is reformatted). 4A2B1A

(CD'Fonts) ??? ??? <Mimi? Charles? software 4A2C

Information: 4A2C1

Underline, overbar, boldface, italics fonts in display nls--requires some thought on implementation. 4A2C1A

(Journal'Commands) ??? ??? <Harvey software 4A2D

Information: 4A2D1

Implement journal commands in display nls command parser. 4A2D1A

(Collecter-Sorter'Commands) ??? ??? <Harvey software 4A2E

Information: 4A2E1

Implement Collecter-Sorter commands in display nls command parser. 4A2E1A

(Catalog'Commands) ??? ??? <Harvey software 4A2F

Information: 4A2F1

Implement Catalog commands in display nls command parser. 4A2F1A

(Identification'Commands) ??? ??? <Harvey software 4A2G

Information: 4A2G1

Implement Identification commands in display nls command parser. 4A2G1A

(Help'Command) ??? ??? <Mimi? Charles? software 4B

Information: 4B1

Allow users to type a question mark during a command a display the options available at that point in the command. 4B1A

(Viewchange) ??? ??? <Mimi software 4C

Information: 4C1

Finish that which was left out of the Execute Viewchange command. Includes secifying statement name delimiters, tab stops, columns, rows, etc. 4C1A

(Novice'Mode) 5/3 5/3 <Mimi software 4D

Information: 4D1

Allows users to be typed "novice' in the identification file. Certain commands will be disallowed 4D1A

Output Processor, Output Device Printer, Output Quickprint, Insert/Output sequential, etc. 4D1B

(Signature'Display) ??? ??? <Mimi? Charles? software 4E

Information: 4E1

Be able to display signatures. 4E1A

(Cross-file'Editing) 5/2 5/2 <Mimi? Charles? software 4F

Information: 4F1

This means having several files open and displayed on the screen at the same time and then being able to freely edit. 4F1A

(NLS'EXEC) 4/4 6/2 <John Dave Mimi Charles WHP software 4G

Information: 4G1

Implement EXEC-like commands into NLS and start NLS in response to initial control-c. 4G1A

The following set of commands would be implemented as a minimal set, with a command which would start the old EXEC as a sub-fork. 4G1B

login, logout, auto-logout 4G1B1

copy, delete, expunge, and rename files 4G1B2

directory (simple version), sysstat 4G1B3

all control characters 4G1B4

Subtasks: 4G2

Each of the above mentioned features could be dealt with as individual subtasks. 4G2A

(Control'File) ??? ??? <Charles Mimi WSD
software 4H

Information: 4H1

Each user is to have a "control file" that contains various information about himself and his files. 4H1A

(Paper'Tape'Input) 4/2 ??? <Harvey
software 4I

Information: 4I1

Allow files to be edited by providing all the input on papertape. This may be the first stage of Deferred Execution. 4I1A

(Deferred'Execution) 4/2 ??? <Harvey Doug
software 4J

Information: 4J1

Allow user to specify many commands before any of them are executed. Would be primarily used from off-line. 4J1A

(Diddle'OP) 4/4 5/2 <Walter Bruce
software 4K

Information: 4K1

Add directives and fix a couple of bugs. 4K1A

Bugs 4K1B

Roman Numbers 4K1B1

GPN with negative page numbers 4K1B2

IF expressions 4K1B3

New Directives 4K1C

HJournal -- special directive for Journal 4K1C1

Multiple Header Directives: H1, H2, H3, H4, LBH1H2, LBH2H3, LBH3H4, H1Sw, H2Sw, H3Sw, H4Sw, H1P, H2P, H3P, H4P. 4K1C2

IgL -- Ignore Line 4K1C3

IgLS -- Ignore Line Segment 4K1C4

LShow -- Line Show 4K1C5

SVLC -- Statement Visible Line Count (for query only) 4K1C6

SNShow -- Statement Number Show; also work on SNF and SN to make numbering neater. 4K1C7

(Cheap'Fonts) 5/4 5/5 <Walter Bruce 4L

Information: 4L1

Implement directives for a limited set of fonts, e.g., underbar, overbar, and bold-face -- multiple impression -- for the line printer. 4L1A

(Grid'Coordinates) ??? ??? <Walter Bruce 4M

Information: 4M1

Fix up the Output Processor to work internally with grid coordinates instead of columns and lines and add directives that specify horizontal and vertical positions in grid coordinates. 4M1A

(FR80) ??? ??? <Walter Bruce 4N

Information: 4N1

Reinstate the FR80 COM as an output device. 4N1A

(Fonts) ??? ??? <Walter Bruce 4O

Information: 4O1

Allow input characters in various fonts and produce various fonts on output. The input fonts may first be handeled with directives, eventually perhaps by means of the feature (,Node'Property'List). 4O1A

(Portrayal'Generator) ??? ??? <Walter Bruce Charles 4P

Information: 4P1

Make one program that performs all the current functions

of Create Display, the Output Processor, TNLS Print command, and Quickprint. hP1A

(User'Program'Monitor) ??? ??? <WHP Charles Mimi Ken? Don? hQ

Information: hQ1

Develop tools for taking measurements, e.g., number of times each subroutine is executed, CPU time used by each subroutine, run-time required to execute a command, of user programs, e.g., NLS. hQ1A

(Calculator) ??? ??? <??? hR

Information: hR1

Reinstate the old Calculator, add graphics and ability to work on tabular data. hR1A

(Graphics) ??? ??? <??? hS

Information: hS1

Make a graphics package. May be intimately related to the calculator. hS1A

(Command'Backup) ??? ??? <Charles? WHP? Mimi? hT

Information: hT1

Allow user to undo one or more commands that have been executed. hT1A

Man-time: hT2

1 man-week *(Charles)* hT2A

(Reenter'NLS) 5/2 5/3 <WHP software hU

Information: hU1

Allow User to Reenter NLS after doing an Execute Quit. hU1A

(Node'Property'List) ??? ??? <WHP hV

Information: hV1

A statement becomes a node that can contain different kinds of things -- each thing identified by the node property list for that node. 4V1A

(Fast'Sort) ??? ??? <??? 4W

Information: 4W1

The Collector-Sorter needs a faster sort. 4W1A

Dialogue Support 5

(DSS) --- --- <WSD Jim 5A

Information: 5A1

Dialogue Support System. 5A1A

Dependencies: 5A2

DSS, the file system, Sets, Backlinks, Control File, planning tools and conventions, and catalogues are all rather intertwined. 5A2A

Design: 5A3

(Duvall, DSSPLAN,) 5A3A

(Journal'On-line'Distribution) --- ??? <Harvey WSD 5B

Information: 5B1

Automatic distribution of Journal entries on-line. 5B1A

Dependencies: 5B2

(,Control'File) 5B2A

Man-time: 5B3

2 man-weeks *[WSD]* 5B3A

(File'System) 4/1 ??? <WSD 5C

Information: 5C1

An open-ended file storage system with a least

semi-automatic moving of files from level to level according to use. 5C1A

Design: 5C2

See (Duvall, fstageo,), (Journal, 6357,), (Journal, 6256,), and (Journal, 5261,), for functional and user-interface specs. 5C2A

Additionally, see (journal, 6947,) 5C2B

Dependencies: 5C3

May depend on (,More'Open'Files) 5C3A

Man-time: 5C4

6-9 man-weeks 5C4A

(Sets) ??? ??? <WSD Bruce 5D

Information: 5D1

This is the set system so long thought about. 5D1A

see (Journal, 6207,) 5D1B

(Backlinks) ??? ??? <WSD 5E

Information: 5E1

A backlink is a mark of some sort attached to a point in a file that is pointed to by a link. The backlink includes information on the whereabouts of that link. 5E1A

Management Systems 6

(Roles) --- ??? <Doug ARC 6A

Information: 6A1

Developing the internal organization of ARC and defining what kinds of roles there are to play. 6A1A

(Baseline'Conventions) 4/2 5/1 <Bruce 6B

Information: 6B1

Develop second-stage conventions for keeping planning records. 6B1A

Dependencies: 6B2

There should be close coordination with (,DSS) 6B2A

(Baseline'Tools) 4/2 ??? <Bruce 6C

Information: 6C1

Develop tools to aid in manipulation of planning records. 6C1A

Dependencies: 6C2

There should be close coordination with (,DSS), and (,Sets) 6C2A

(Resource'Use'Monitor) ??? ??? <Jim Ed Ken Bruce ??? 6D

Information: 6D1

Develop ways of keeping track of how are our various resources are used. 6D1A

Documentation 7

(TNLS'Adapter) --- --- <Dirk 7A

Information: 7A1

This task will continue as long as TNLS fluxes fairly rapidly. 7A1A

(Initial'TNLS'Primer) 4/1 6/1 <Marilyn Dick 7B

Information: 7B1

An initial version of a TNLS Primer. 7B1A

Buyer(s): 7B2

(,Stage'O) 7B2A

(Journal'User'Guide) 4/1 6/1 <Marilyn Dick 7C

Information: 7C1

A users' guide for the Journal. 7C1A

Buyer(s): 7C2

(,Stage'0) 7C2A

(New'OP'User'Guide) 5/2 5/4 <Walter Bruce 7D

Information: 7D1

Update user guide to include new directive names, new directives, and new syntax and features. 7D1A

(RADC'Report) --- ??? <Dirk Doug Jim Don Walt 7E

Information: 7E1

Report was due 19 March. 7E1A

(ONR'Report) ??? 4/3 <Dirk Doug Jim 7F

Information: 7F1

Final report to the Office of Naval Research. 7F1A

(Tree-Meta'Report) ??? 6/1 <Harvey Don Dirk 7G

Information: 7G1

Interim report plus: 7G1A

more work on the Program Environment section 7G1B

a detailed example 7G1C

more examples in the semantic section 7G1D

a section on bootstrapping compilers 7G1E

possibly a section on history 7G1F

(NLS'Users''Guide) ??? ??? <Dirk Charles Mimi WHP 7H

Information: 7H1

A full-blown users' guide for NLS on TENEX. 7H1A

(L10'Report) ??? ??? <WHP Dirk 7I

Information: 7I1

A more formal/detailed L10 document. 7I1A

Priority: 7I2

No do? May just wait for (,Modular'Programming). 7I2A

(Station'Agent'Workbook) --- ??? <Dirk 7J

Information: 7J1

A workbook kind of thing for teaching TNLS users. Intended primarily for NIC Station Agents. 7J1A

RINS 8

(RINS) ??? ??? <Jean ??? 8A

Information: 8A1

Research INtelligence System. Mostly RINS needs to get started. An immediate task is to buy some books and documents. 8A1A

(NAS'Catalog) ??? ??? <Jean 8B

Information: 8B1

Get National Academy of Sciences documents into our cataloging system. 8B1A

Software Engineer Augmentation 9

(Modular'Programming'Talk) 5/2 5/2 <WHP 9A

Information: 9A1

Bill will talk about the modular programming system that is being developed. 9A1A

Design: 9A2

(Mitchell, processes,) 9A2A

(Modular'Programming) --- ??? <WHP Don Zerox-people 9B

Information: 9B1

Allow programmers to easily modify and debug large systems of programs by providing facilities for adding and replacing modules of the system and source language level debugging. 9B1A

Hardware Improvement 1O

(Printer'Stacker) ??? ??? <Ed 1OA

Information: 1OA1

Get a paper stacker that works put on our printer. 1OA1A

(Install'Bryant) 4/4 5/2 <Ed Roger Bryant-people 1OB

Information: 1OB1

Connect Bryant and check out hardware. 1OB1A

Dependencies: 1OB2

(,Bryant Driver), and (,Bryant Diagnostics) 1OB2A

(Hardware'Upgrade'Study) --- --- <Roger 1OC

Information: 1OC1

Keeping an eye on new developements in hardware with an eye to their being used here. This includes such things as: display systems, shift storage, graphic hardcopy, memories, terminals. 1OC1A

(Remote'Terminal'Lines) ??? ??? <Roger 1OD

Information: 1OD1

Study lines, datasets, and line scanner for high speed remote terminals. 1OD1A

(New'Cameras) ??? ??? <Martin 1OE

Information: 1OE1

Evaluate various TV cameras. 1OE1A

(Study'Graphic'Hardcopy) ??? ??? <Roger Walter 1OF

Information: 1OF1

Look at developing an in-house facility for producing text/graphic hardcopy output. 1OF1A

(Datatype'Study) ??? ??? <Roger 1OG

Information: 1OG1

Study the Datatype machine for possible use in a transcription service -- primarily for NIC. 1OG1A

Man-time: 1OG2

2 man-weeks (Roger) 1OG2A

(More'File'Space) 7/1 12/1 <Roger 1OH

Information: 1OH1

Aquire access to much more file space. Possibilities include disk packs and Santa Barbara. 1OH1A

(Modify'Keyboard) ??? ??? <Ed Fred 1OI

Information: 1OI1

Move rubout key and add a line feed key on display keyboards. 1OI1A

Collaboration 11

(SIG'Presentation) ??? ??? <Charles 11A

Information: 11A1

Charles is to give a talk about ARC to some Special Interest Group meetings at the Spring Joint. 11A1A

Man-time: 11A2

1-2 man-weeks (Charles) 11A2A

(Imlac'Interface'Spec) ??? ??? <WSD Charles? 11B

Information: 11B1

Specs for interfacing a remote Imlac to NLS. 11B1A

Miscellaneous 12

(Imlac'Support) ??? ??? <WSD 12A

Information: 12A1

Make an MOL for the Imlac. 12A1A

(TNLS'Course) 3/5 4/4 <Dirk 12B

Information: 12B1

A course on how to use TNLS given to ARC people. 12B1A

Service System Operations 13

(Software Maintenance) --- --- <Ken Bruce Charles Dave Don Harvey John Mimi Walter WHP WSD software 13A

Information: 13A1

Bug fixing, cleaning up, speeding up programs. 13A1A

Subtasks: 13A2

(Jump'Back) ??? ??? <??? 13A2A

Information: 13A2A1

The command Jump Back doesn't work at all. -- Bruce 13A2A1A

(Bug'Mark) ??? ??? <??? 13A2B

Information: 13A2B1

The bug mark does not appear when something in column 72 is bugged. -- Bruce 13A2B1A

(CONAN) ??? ??? <??? 13A2C

Information: 13A2C1

When the display is recreated with CONAN on, the first statement that passes is lost. Actually the only statement I've lost is the one containing the pattern. -- Bruce 13A2C1A

(Break'Statement) ??? ??? <??? 13A2D

Information: 13A2D1

A large number of Break Statements eventually results in an Exceed Capacity message. After the message its OK for a while. The sequence BS, JI, BS always produces the message (on a 'd I was giving as a LEVADJ). -- Bruce 13A2D1A

(Set) ??? ??? <Mimi 13A2E

Information: debug the set command 13A2E1

(Link'Parser) ??? ??? <Chuck 13A2F

Information: 13A2F1

Currently the link parser will only allow a word rather than a visible as a statement name. 13A2F1A

(Special'TTY'I/O) ??? ??? <John Ken 13A2G

Information: Fix so 15 and 30 character/second terminals don't drop characters. Also straighten out upper/lower case problems. 13A2G1

(NLS/Exec'Interface) 5/2 5/3 <Ken 13A2H

Information: Making control-c's, illegal UUO's, DNLS crashes do nice things. 13A2H1

(CHFDB'JSYS) ??? ??? <Ken 13A2I

Info: The JSYS that changes the file directory descriptor block works for everybody but Mil. 13A2I1

(Run-time'JSYS) 5/2 5/4 <Ken 13A2J

Info: Fix the JSYS that returns process run-time. 13A2J1

(GET'JSYS) ??? ??? <Ken 13A2K

Information: 13A2K1

The JSYS that does GETS doesn't work if there are overlapping pages in the running process and the file the GET is performed on. 13A2K1A

(NOUT'JSYS) ??? ??? <Ken 13A2L

Information: 13A2L1

The NOUT JSYS (number output) sometimes clobbers register 3. 13A2L1A

(Accounting) --- --- <Jim Bruce ??? 13B

Information: 13B1

Keeping track of money, peoples' time, computer time, supplies used. 13B1A

(Plans'Maintenance) --- --- <Bruce ARC 13C

Information: 13C1

Keeping the planning information up to date. 13C1A

(NIC'Operations) --- --- <Dick Jean ??? 13D

Information: 13D1

Updating catalogues and collections, etc. 13D1A

(Visitors) --- --- <??? 13E

Information: 13E1

Taking care of visitors. 13E1A

(Percolation) --- --- <Ed Ken Cindy 13F

Information: 13F1

Scheduling hardware use, doing dumps, handling tape library, getting supplies, etc. 13F1A

(Hardware'Maintenance) --- --- <Ed Martin Fred Jake Bo Roger 13G

Information: 13G1

Trouble-shooting, tweaking, and preventive hardware maintenance. 13G1A

Subtasks: 13G2

(Bryant'Disk'Mods) ??? ??? <Roger 13G2A

Information: 13G2A1

Modifications to the Bryant disk controller to clean it up. 13G2A1A

Priority: 13G2A2

Low. It hasn't caused any problems yet. 13G2A2A

Man-time: 13G2A3

1 man-week (Roger) 13G2A3A

(Printer-Imlac'Interference) ??? ??? <Ed 13G2B

Information: 13G2B1

Fix it so when the printer is down Duvall's Imlac isn't screwed. 13G2B1A

(Facility Operation) ??? ??? <Ed Mil Ken 13H

Information: 13H1

Whatever it takes to keep things going. 13H1A

(Clerical'Support) ??? ??? <??? 13I

Information: 13I1

We need more clerical people. 13I1A

BLP 11-MAY-71 17:23 6969
Current State of the Baseline Record -- (<MSR>Baserec)

<JOURNAL>6969.NLS;1, 11-MAY-71 17:24 BLP ;Title: Author(s): Bruce L. Parsley/BLP; Distribution: Marilyn F. Auerbach, Walter L. Bass, Roger D. Bates, Mimi S. Church, William S. Duvall, Douglas C. Engelbart, Beauregard A. Hardeman, Martin E. Hardy, Fred P. Hocker, J. D. Hopper, Charles H. Irby, Mil Jernigan, Harvey G. Lehtman, John T. Melvin, Jeanne B. North, James C. Norton, Cindy Page, Bruce L. Parsley, William H. Paxton, Jeffrey C. Peters, Barbara E. Row, Ed K. Van De Riet, Kenneth E. Victor, Dirk H. Van Nouhuys, Don I. Andrews, James A. Fadiman, Richard W. Watson/MFA WLB RDB MSC WSD DCE BAH MEH FPH JDH CHI MEJ HGL JTM JBN JCN CXP BLP WHP JCP BER EKV KEV DVN DIA JAF RWW; Keywords: baseline record; Clerk: BLP;
Origin: <MSR>BASEREC.NLS;41, 11-MAY-71 17:10 BLP ; :PLO=1;
:Tabstops = 30, 50;

KEV 12-MAY-71 10:42 6970

SNDMSG - A new subsystem

KEV 12-MAY-71 10:42 6970

SNDMSG - A new subsystem

There is a new subsystem called SNDMSG. 1

It enables you to send messages to people, such that at login time the EXEC will type out: YOU HAVE A MESSAGE. 1A

People can then see their message by typeing: TYPE MESSAGE.TXT$ 1B

Use of the subsystem is, i think, self explanatory, however, if you have any questions, please see me. 2

KEV 12-MAY-71 10:42 6970

SNDMSG - A new subsystem

<JOURNAL>6970.NLS;1, 12-MAY-71 10:42 KEV ;Title: Author(s): Kenneth E. Victor/KEV; Distribution: Marilyn F. Auerbach, Walter L. Bass, Roger D. Bates, Mimi S. Church, William S. Duvall, Douglas C. Engelbart, Beauregard A. Hardeman, Martin E. Hardy, Fred P. Hocker, J. D. Hopper, Charles H. Irby, Mil Jernigan, Harvey G. Lehtman, John T. Melvin, Jeanne B. North, James C. Norton, Cindy Page, Bruce L. Parsley, William H. Paxton, Barbara E. Row, Ed K. Van De Riet, Dirk H. Van Nouhuys, Don I. Andrews, James A. Fadiman, Richard W. Watson/MFA WLB RDB MSC WSD DCE BAH MEH FPH JDH CHI MEJ HGL JTM JBN JCN CXP BLP WHP BER EKV DVN DIA JAF RWW; Keywords: sndmsg subsystem; Clerk: KEV;
Origin: <VICTOR>SNDMSG.DOC;1, 12-MAY-71 10:31 KEV ;

DVN 12-MAY-71 10:47 6971

Disseminating Changes in DNLS

DVN 12-MAY-71 10:47 6971

Disseminating Changes in DNLS

Last Friday I leanred, among other things, that we had been able to freeze statments for several days, that you could chose to avoid a new version in updating a file by typing "o", and that if you changed the viewspecs of a link while browsing trouble followed. Each learning experience must have taken, say, 10 minutes. 1

In the case of the modification of output file, it seems to me possible that it took me longer to learn to use it than it took ot modify NLS. If every user finds out such things in the same way, the drain on ARC time must be considerable. 2

During March when TNLS was shifting substantially and fequently, I kept up to date a file which recorded the latest changes. I would be willing to try to do the same for NLS for as long as seems necessary if people were willing to tell me when they made chnages 3

In the case of the TNLS Adapter I tried out every item before I reported it. I do not have to time do that this month. 4

If enough of the adressees of this item affirm an intention to keep me posted, I will take up the project 5

6

7

8

DVN 12-MAY-71 10:47 6971

Disseminating Changes in DNLS

<JOURNAL>6971.NLS;1, 12-MAY-71 10:48 DVN ;Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: Charles H. Irby, Mimi S. Church, William H. Paxton, Harvey G. Lehtman, Richard W. Watson, James C. Norton, Marilyn F. Auerbach, William S. Duvall/CHI MSC WHP HGL RWW JCN MFA WSD;
Keywords: DNLS Changes Communication; Clerk: DVN;
Origin: <VANNOUHUYS>JOURDRAFT.NLS;4, 12-MAY-71 10:21 DVN ;

WSD 12-MAY-71 11:18 6972
Location of Journal Files

Some journal files have been moved to user AJOURNAL due to file space restrictins, so if you try to load a fle from Journal and it is not there, look under user AJOURNAL. The links in the file JCAT will be updated, so you may always find the documet by taking the link in JCAT 1

Description of Current Baseline Record System

Description of Current Baseline Record System

* This document is a description of the current Baseline Record System. It is an updating of (Journal, 6349,) with some additions. All statements that have been changed or added since 6349 start with and asterick. 1

The widespread use of the BRS (Baseline Record System) will require a fair sized change in the working methods of almost all of us -- which is a painful process. Unfortunately the BRS will be of little value unless it is widely used and worked on. Plans that are perhaps voluminous, but which are not up-to-date, are very nearly useless. 2

Thus the biggest problem with the BRS will probably be choosing a balance between the amount of information people want to have available and the amount which people are willing to write down and keep up to date. 3

There will be several things asked of people in the running of the BRS experiment: 4

The biggest thing is that everyone is asked to invest a fair amount of effort in entering and updating information in the BRS. 4A

Another is that people who use BRS information make the value the information has for them visible to others. This visibility could be a motivating force for people to make up-to-date information available. 4B

Another thing that will be asked (primarily of me I guess) is that there be a set of tools (NLS commands mostly) that make entering and updating information as painless as possible and a set of tools to aid getting various views and summaries of the information. 4C

There are several parts to the BRS: 5

The Baseline Record which is a collection of branches. Each branch contains information about one "task". 5A

The conventions for what information is to be kept about each task and the format of that information. 5B

The conventions about entering and updating task information. 5C

The tools that aid entering and updating information. 5D

Description of Current Baseline Record System

The tools that aid in viewing and summarizing the information in the Baseline Record. 5E

Perhaps the Done Tasks file(s) should be considered part of the BRS. 5F

Probably the Needs and Possibilities file(s) should be considered part of the BRS. 5G

The current state of each of the parts is: :PBS; 6

Baseline Record: 6A

The Baseline Record exists in the file (MSR, BASEREC, :wh). The file is still a ways from being up-to-date. 6A1

Eventually (or maybe even soon) the Baseline Record will probably be dispersed over many files -- each person having custody of all the tasks for which he is the Pusher. 6A2

Task information conventions: 6B

The conventions about which information is to be kept for a task and its format are described in the following two branches. These conventions are subject to change. 6B1

* (Task'Name) m/w m/w <Who
Conan-list 6B2

* Information: 6B2A

This branch should contain at least a description of the task (since the Task Name is usually not informative enough). It may contain anything else anyone wants to put here that does not fit any place else. This branch should always be present. 6B2A1

* Buyer(s): 6B2B

This branch would contain the names of all the "Buyers" of this task. As a start I suggest that the name of a buyer is either a goal of ARC or a link to a task branch. See memo of Doug handed out at meeting of 4/14 for things that can be considered ARC goals. 6B2B1

* Requirements: 6B2C

This branch would contain the "Requirements" for this task, usually as a link. The Requirements are the functional specs for this task. The Requirements are written by the Buyer. 6B2C1

* Design: 6B2D

This branch would contain links to any other files pertinent to this task. The (proposed) Design for satisfying the Requirements should be linked to here (or written here if its short). 6B2D1

* Milestones: 6B2E

A list of any dates when portions of the task are to be finished that may be of interest to people. 6B2E1

* Costs: 6B2F

An estimate of the cost of the task: peoples time in terms of man-weeks and any new hardware in terms of $. Later we may wish to have more detail here such as CPU time, file space, supplies, etc. 6B2F1

* People: 6B2G

The sublist of this statement would consist of one statement for each person listed under who for the task. Each statement might be of the form: 6B2G1

m/w m/w *[%-time]* <who 6B2G2

* Sub-Contractors: 6B2H

This branch should list all tasks (as links) which are "Sub-Contractors" for this task. (All Sub-Contractor task branches should list this task as a Buyer.) A Sub-Contractor task is probably any task upon which this one is dependent. 6B2H1

* Subtasks: 6B2I

Each branch of the substructure of this statement would have the same format as a task branch except that none of its sub-branches need be present. 6B2I1

Description of Current Baseline Record System

Conventions: 6B3

The name of the task should be a visible (use single quotes instead of spaces) of less than 28 characters enclosed in parens. 6B3A

m/w represents a date in the form of the wth week of the mth month, e.g., 4/2 means the 2nd week of the 4th month. 6B3B

The two m/w's after the task name are the begin-week (date work on the task is scheduled to begin) and the end-week (date the task is estimated to be completed). 6B3C

??? for a begin- or end-week means the start or completion of the task has not yet been scheduled 6B3D

--- for a begin- or end-week means the task started before this file was begun or the task goes on forever 6B3E

* <who is a list of the names of all the people (not including subcontractors, but including subtasks) who are to work on the task. The first name is the name of the Pusher of that task. 6B3F

<??? means nobody is yet slated to work on that task 6B3G

* Conan-list is a list of anything anyone wants to put there, separated from the <who list by a CR, for the purposes of grouping tasks using the Content Analyzer. When there are tools for viewing the Baseline Record this field will be deleted. 6B3H

See (MSR, BASEREC, :hwnsj) for examples. 6B3I

* When tabs and user-specified name delimeters work in NLS, I suggest the following format for the top statement of a Task: 6B3J

SP Task'Name TAB m/w SP m/w TAB <who 6B3J1

* Until there are adequate tools for viewing the Baseline Record, the Sub-Contractor branch can contain branches that are the same in format as a task branch, since this would duplicate information and cause difficulties in updating, the final convention will probably be that only subplex of links will be allowed here. 6B3K

It is not necessary that all the information be filled in, particularly for small tasks. The conventions for now are: 6B3L

the task name, begin-date, end-date, and <who must always be present even if the last three are question marks 6B3L1

the Information: branch must always be present since task names are usually not descriptive enough 6B3L2

when we become more organized and formal and so on, every task must have Buyer(s):, Requirements:, and Design:, branches; since it would require a lot of time to complete all of those right away, why don't we let them be filled out as people have time for it; it would be nice to get everything filled out soon. 6B3L3

the Sub-Contracts: branch would only be present if there are Sub-Contracts 6B3L4

the Dates: branch would probably only be present if the task were fairly long and somebody wanted to know when some stage of it would be completed (like if they were dependent on that part of it) 6B3L5

the Cost: branch will eventually probably always be present; it could be a great aid in figuring out people schedules and eventually money things 6B3L6

the Subtasks: and People: branches may be present anytime anyone wants them 6B3L7

Entering and updating task information conventions: 6C

* The Pusher and Buyer(s) of a task are responsible for keeping the information of that task up-to-date. The Buyer(s) is responsible for the Requirements: and Buyer(s): branch. The Pusher is responsible for everything else. No one else is supposed to alter a task's branch. 6C1

Each Pusher should check his tasks at least once a week. 6C2

* I would like to adopt the convention that the Baseline Record is assumed up-to-date on say noon of each Friday. I will then Journalize a copy each Friday afternoon. This also means that every Pusher should try and update his tasks at least once a week and before Friday noon. 6C3

If schedules change, it would be nice if the Baseline Record reflected those changes soon after the schedule change, particularly if any other tasks would be affected by the change. 6C4

* Please do either an Output File or an Update File (to a new version) each time after updating the Baseline Record. 6C5

Entering and updating task information tools: 6D

There are no tools currently planned to aid entering and updating information with the exception of the branch (MSR, BASEREC, Template :gwjvCn). Please let me know of any ideas you have. 6D1

Viewing and summarizing task information tools: 6E

There is one tool currently planned to aid in viewing and summarizing the information in the Baseline Record. The tool will be an Execute Evaluate Set command. This command will be the subject of a future (soon) memo. 6E1

Done Tasks file(s): 6F

The Done Tasks file(s) exists as the file (MSR, DONETASK,). The format of the entries in that file will be the subject of a future memo. For now just move the task branch from BASEREC to DONETASK. 6F1

Needs and Possibilities file(s): 6G

The Needs and Possibilities file(s) exists as the file (MSR, NP,). The format of the entries in that file will be the subject of a future memo. For now use the same format as in BASEREC. 6G1

Description of Current Baseline Record System

Questions (on which I would appreciate dialogue): 7

What information described above isn't necessary or is too much of a drag to keep up to date. 7A

What other information ought to be kept in the Baseline Record. 7B

What is a Task, a Subtask, or a Sub-Contract. 7C

Where is the dividing line between a task being in Needs and Possibilities and in Baseline Record and in Done Tasks. 7D

Who or what are possible Buyers? If the idea of ARC goals being the ultimate Buyers is accepted, what is on the list of our goals. 7E

What tools are wanted for viewing and updating the BRS. 7F

BLP 12-MAY-71 17:33 6975

Description of Current Baseline Record System

<JOURNAL>6975.NLS;1, 12-MAY-71 17:34 BLP ;Title: Author(s): Bruce L. Parsley/BLP; Distribution: Beauregard A. Hardeman, Marilyn F. Auerbach, Walter L. Bass, Roger D. Bates, Mimi S. Church, William S. Duvall, Douglas C. Engelbart, Martin E. Hardy, J. D. Hopper, Charles H. Irby, Mil Jernigan, Harvey G. Lehtman, John T. Melvin, Jeanne B. North, James C. Norton, William H. Paxton, Ed K. Van De Riet, Dirk H. Van Nouhuys, Kenneth E. Victor, Don I. Andrews, James A. Fadiman, Richard W. Watson/BAH MFA WLB RDB MSC WSD DCE MEH JDH CHI MEJ HGL JTM JBN JCN WHP EKV DVN KEV DIA JAF RWW; Keywords: baseline record system; Clerk: BLP; Origin: <MSR>TEMPPLANP.NLS;1, 12-MAY-71 16:58 BLP ;

TLINK - A NEW SUBSYSTEM

KEV 13-MAY-71 13:42 6976

TLINK - A NEW SUBSYSTEM

There is a new subsystem called TLINK. 1

It is used to control TTY links. 1A

Links are only output links, i.e., a 940 ADVISE mode does not exist. 1A1

Currently it works only for TTYs and not for displays. 1B

Its four commands are: 1C

L - link to TTY 1C1

A - accept links 1C2

R - refuse links 1C3

B - break links 1C4

A TTY must explicitly accept links before anyone can link to it. 1D

If a TTY is not accepting links and its bell starts ringing crazily, it means someone is trying to link to it. 1D1

1E

If you have any questions, ask me. 2

TLINK - A NEW SUBSYSTEM

<JOURNAL>6976.NLS;1, 13-MAY-71 13:42 KEV ;Title: Author(s): Kenneth E. Victor/KEV; Distribution: Marilyn F. Auerbach, Walter L. Bass, Roger D. Bates, Mimi S. Church, William S. Duvall, Douglas C. Engelbart, Beauregard A. Hardeman, Martin E. Hardy, Fred P. Hocker, J. D. Hopper, Charles H. Irby, Mil Jernigan, Harvey G. Lehtman, John T. Melvin, Jeanne B. North, James C. Norton, Cindy Page, Bruce L. Parsley, William H. Paxton, Barbara E. Row, Ed K. Van De Riet, Dirk H. Van Nouhuys, Richard W. Watson, Don I. Andrews, James A. Fadiman/MFA WLB RDB MSC WSD DCE BAH MEH FPH JDH CHI MEJ HGL JTM JBN JCN CXP BLP WHP BER EKV DVN RWW DIA JAF; Keywords: tlink subsystems; Clerk: KEV;
Origin: <VICTOR>TLINK.DOC;1, 12-MAY-71 13:35 KEV ;

WSD 12-MAY-71 11:18 6972
Location of Journal Files

Some journal files have been moved to user AJOURNAL due to file space restrictins, so if you try to load a fle from Journal and it is not there, look under user AJOURNAL. The links in the file JCAT will be updated, so you may always find the documet by taking the link in JCAT 1

WSD 12-MAY-71 11:18 6972
Location of Journal Files

(J6972) 12-MAY-71 11:18; (Expedite) Title: Author(s): William S. Duvall/WSD; Distribution: Marilyn F. Auerbach, Walter L. Bass, Mimi S. Church, Roger D. Bates, Douglas C. Engelbart, Beauregard A. Hardeman, J. D. Hopper, Charles H. Irby, Mil Jernigan, Harvey G. Lehtman, John T. Melvin, James C. Norton, Cindy Page, Bruce L. Parsley, William H. Paxton, Ed K. Van De Riet, Barbara E. Row, Kenneth E. Victor, Richard W. Watson, Dirk H. Van Nouhuys, Don I. Andrews, Jeanne B. North/MFA WLB MSC RDB DCE BAH JDH CHI MEJ HGL JTM JCN CXP BLP WHP EKV BER KEV RWW DVN DIA JBN; Clerk: WSD;

dissemination of information on NLS

dissemination of information on NLS

It is not clear whether the file (nls,status,)launched by WHP in (Journal,6973,)would in operation supersede my offer to handle similar information(Journal,6971,). Bill's entrye in the NLS Status file, "Vissibles for file processes..." is incomprehensible to me. The questions is, are there enough users to whom it would be incomprehensible to justify a derivative, more gneralized dissemination? 1

dissemination of information on NLS

(J6977) 13-MAY-71 15:41;Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: Charles H. Irby, Mimi S. Church, Bruce L. Parsley, William H. Paxton, William S. Duvall, James C. Norton, Marilyn F. Auerbach, Walter L. Bass, J. D. Hopper, Don I. Andrews, Richard W. Watson/CHI MSC BLP WHP WSD JCN MFA WLB JDH DIA RWW; Keywords: NLS information dissemination; Clerk: DVN;

The enclosed "Output Processor Reference Guide" replaces the former "Output Processor Brief User Guide" (6912) and includes information on several new directives described below. 1

Header Directives 2

It is now possible to have up to five running headers in a document. 2A

One of these headers, set by the HJournal directive, is primarily for use by the Journal. It is printed above the other four headers, is always set flush to the right margin and, once set using the HJournal directive, can neither be changed nor turned off by another directive. 2A1

The other headers, called H1, H2, H3, and H4, can be independently set, positioned, and turned on or off. They are printed one below the other, separated by directive-specified numbers of spaces. All references to "H" or "HED" will be interpreted as references to "H1" for compatibility with old documents. 2A2

The following directives control the headers in a document: 2B

HJournal, H1, H2, H3, H4: Define text for each header. 2B1

H1Sw, H2Sw, H3Sw, H4Sw: Turn headers on or off. 2B2

H1P, H2P, H3P, H4P: Set horizontal position for each header. 2B3

LBHJH1, LBH1H2, LBH2H3, HBH3H4: Number of blank lines between adjacent headers (Works only for adjacent headers -- e.g., if H1 and H3 were being printed without H2, there would be no blank lines between them.). 2B4

LFH: Number of blank lines following the header area (i.e., between the last header printed and the top of the body area). 2B5

DCase Directive 3

Normally the Output Processor recognizes identifiers /directive names, synonyms, options, etc./ only if the first letter is in upper-case. 3A

By changing the value of the DCase directive to 0 ("Either") the user can cause identifiers to be recognized regardless of the case of the first letter. 3B

By changing the value of the DCase directive to 1 ("Lower") the user can cause identifiers to be recognized only if the first letter is lower-case. 3C

Directive Delimiters 4

Normally the Output Processor recognizes directives only if they begin with '. (period) and end with '; (semi-colon). The period here is called the "directive left delimiter", and the semi-colon is called the "directive right delimiter." 4A

Two new directives, DLD and DRD, permit the user to declare other characters as left and right directive delimiters, respectively. 4B

By declaring as left delimiter some character which occurs infrequently in the document, the user should be able to get much faster response from the Output Processor then is possible when a frequently used character, such as the normal period, is used. This is because the Output Processor activates the directive compiler every time it sees the left delimiter character in a file which it is processing, and it can not continue putting out the text of the file until this compiler has determined whether there is a directive present. 4B1

The DLD and DRD directives take effect immediately after their execution -- i.e., the "old" delimiters are in effect during execution of the respective directives. 4C

For example, to change the delimiters to '< and '> either of the following sequence could be used: 4C1

.DLD='<; <DRD='>; <subsequent directives> 4C1A

.DRD='>; .DLD='<> <subsequent directives> 4C1B

ILCR and SLCRC Directives 5

Another indentation paramenter has been added to the Output Processor, ILCR -- Indentation per Line-ended-by-Carriage-Return. When ILCR is non-zero, the Output Processor will indent subsequent lines ILCR additional spaces every time it outputs a line which is ended with a carriage return (either a CR character or a GCR directive). 5A

For example (.D=Print;) -- if we set .ILCR ← 5; then .GCR;
our printout will look .GCR;
like this. (.ILCR ← 0;) 5A1

SLCRC -- Statement-Lines-ended-by-Carriage-Returns Count -- is a directive whose value is just the number of carriage returns occurring in the statement up to the point at which the SLCRC directive name appears. The value of SLCRC may be changed by the user so as to obtain better control of indentation when the ILCR directive is being used. 5B

6

Min	Max	T	ValType	Init	Name	Concise Description	
1	150	CS	Number	56	BM	Bottom Margin Setting	7
0	11	CL	Number	1	BodyP	Body Text Positioning Option	8
0	2	I	Number	0	CaseMode	Force Case to: 1=Lower, 2=Upper	9
0	35M	CL	Number	0	Center	Center 'N' Lines	10
40B	200B	CS	[Num/SR1]		Code	Set Output Code for a Character	11
		I	On/Off	Off	D	Print-Directives Switch	12
0	2	I	Number	2	DCase	Directive Case	13
0B	177B	I	[Num/SR1]	'.	DLD	Directive Left Delimiter	14
0B	177B	I	[Num/SR1]	';	DRD	Directive Right Delimiter	15
0B	177B	CS	[Num/SR1]	'-	Dash	'Dash' Character	16
		I	[UID]		DefSyn	Define Synonym for Directive	17
0	75	I	Num/Null		GCR	Generate Carriage Return(s)	18
		I	Null		GD	Generate Text for Current Date	19
		I	Null		GDT	Generate Text for Date and Time	20
		I	Num/Null		GPN	Generate Text for Page Number	21
0	148	NS	Number	0	GRB	Old Grab (Next Statement)	22
0	75	I	Num/Null		GSp	Generate Space(s)	23
0	10	I	Num/Null		GTab	Generate Tab(s)	24
		I	Null		GT	Generate Text for Time of Day	25
0	148	CS	Number	0	Grab	New Grab (Current Statement)	26
		CS	String	Null	H1	Text of First Page Header	27
1	11	CL	Number	1	H1P	Header 1 Positioning Option	28
		CS	On/Off	On	H1Sw	Page Header 1 Switch	29
		CS	String	Null	H2	Text of Second Page Header	30
1	11	CL	Number	1	H2P	Header 2 Positioning Option	31
		CS	On/Off	On	H2Sw	Page Header 2 Switch	32
		CS	String	Null	H3	Text of Third Page Header	33
1	11	CL	Number	1	H3P	Header 3 Positioning Option	34
		CS	On/Off	On	H3Sw	Page Header 3 Switch	35
		CS	String	Null	H4	Text of Fourth Page Header	36
1	11	CL	Number	1	H4P	Header 4 Positioning Option	37
		CS	On/Off	On	H4Sw	Page Header 4 Switch	38
		CS	String	Null	HJournal	Text of Journal Page Header	39
		I	Null	0	Halt	Ignore Rest of Input File	40
0	131	NL	Number	0	ICR	Ind for CR on Previous Line	41
0	131	NS	Number	0	IFirst	Ind for First Line of Statement	42
0	131	NL	Number	0	IL	Indentaton Per Line (in S)	43
0	131	NL	Number	0	ILCR	Ind Per Line-Ended-by-CR (in S)	44
-131	131	NL	Number	NLS	ILev	Indentation per Statement Level	45
0	131	NL	Number	48	IMax	Maximum Total Indentation	46
0	131	NL	Number	0	IOvr	Ind for Overflow of Previous L	47
0	131	NL	Number	0	IRel	Ind Rel First Vis in Previous L	48
0	131	NL	Number	0	IRest	Ind for S Lines After First	49
0	131	NS	Number	0	ISN	Ind to Replace S Numbers	50

Min	Max	T	ValType	Init	Name	Concise Description	
		I	Null	0	IgB	Ignore Branch	51
		I	On/Off	Off	IgD	Ignore Directives	52
		I	Null		IgRest	Ignore Rest of Statement	53
		I	Null	0	IgS	Ignore Statement	54
0	147	I	Number	0	LBH1H2	Lines Between Headers 1 and 2	55
0	147	I	Number	0	LBH2H3	Lines Between Headers 2 and 3	56
0	147	I	Number	0	LBH3H4	Lines Between Headers 3 and 4	57
0	147	I	Number	0	LBHJH1	Lines Between HJournal and H1	58
0	149	I	Number	0	LBL	Lines Between Lines (in an S)	59
0	147	CS	Number	NLS	LBS	Num Lines Between Statements	60
0	148	CS	Number	3	LFH	Num Lines Following Header(s)	61
-131	131	NL	Number	0	LM	Left Margin Setting	62
1	150	CS	Number	66	LMax	Number of Lines per Page	63
0	11	CL	Number	0	LP	Line Positioning Option	64
0	148	CS	Number	5	LPPN	Num Lines Preceeding Pag Num	65
		NL	On/Off	On	Leading	Print-Leading-Spaces Switch	66
		I	QueryOnly	NLS	Lev	Level of Current Statement	67
0	72	NS	Number	NLS	LevClip	Omit Levels Below 'N'	68
0	72	NS	Intervals	NLS	LevShow	Output Only These Levels	69
		I	*(Number)*		MaxVal	Maximum Value for Directive	70
		I	*(Number)*		MinVal	Minimum Value for Directive	71
		NS	On/Off	NLS	Names	Print-Statement-Names Switch	72
		I	Null		Null	Null Directive (No-op)	73
0	132	CS	Number	0	NumDash	Num of Dashes at End of Page	74
		CL	Null	0	PBL	Paginate Before Line	75
		CS	Null	0	PBS	Paginate Before Statement	76
		NL	Null	0	PEL	Paginate at End of Line	77
		NS	Null	0	PES	Paginate at End of Statement	78
		CS	On/Off	Off	PFit	Paginate to Fit Statement	79
0	35M	CS	Number	0	PLev	Paginate at Statement Level	80
4B11	35M	CS	Number	1	PN	Current Page Number	81
0	7	CS	Number	3	PNP	Page Number Position	82
0	6	CS	Number	1	PNType	Page Number Type	83
4B11	35M	CS	Interval	All	PShow	Output Only These Pages	84
		CS	On/Off	On	PSw	Pagination Switch	85
0	8	NS	Number	0	PlexNum	Plex Numbering Option	86
1	132	NLS	Number	NLS	RM	Right Margin Setting	87
		I	QueryOnly	1	SLC	Statement-Lines Count	88
		I	Number	0	SLCRC	S-Lines-Ended-by-CR Count	89
		NS	On/Off	NLS	SN	Print-Statement-Numbers Switch	90
0	132	CS	Number	NLS	SNF	Statement Number Format	91
0	30	CS	Number	0	SNS	Statement Number Size	92
0	11	CL	Number	0	SP	Statement Postiitioning Option	93
		I	On/Off	On	Scan	Scan (Use) Input	94
0	35M	CL	Number	0	SetL	Set 'N' Lines Flush Left	95
0	35M	CL	Number	0	SetR	Set 'N' Lines Flush Right	96
0	132	CS	Number	NLS	SigF	Statement Signature Format	97

Min	Max	T	ValType	Init	Name	Concise Description	
0	30	CS	Number	0	SigS	Statement Signature Size	98
		CS	On/Off	Off	StopCodes	Stop Codes Switch	99
1	148	CS	Number	3	TM	Top Margin Setting	100
0	144	I	Intervals	NLS	TabStops	Clear and Set Tab Stops	101
0	2	I	Number	1	Tabs	Output: 0=Null, 1=Tab, 2=Space	102
		I	/String/		Text	Define and Name a Text String	103
		NLS	On/Off	Off	Trailing	Print-Trailing-Spaces Switch	104
0	35M	CS	Number	NLS	Trun	Truncation Lines	105
4B11	35M	I	Number	0	U0	User Directive	106
4B11	35M	I	Number	0	U1	User Directive	107
4B11	35M	I	Number	0	U2	User Directive	108
4B11	35M	I	Number	0	U3	User Directive	109
4B11	35M	I	Number	0	U4	User Directive	110
4B11	35M	I	Number	0	U5	User Directive	111
4B11	35M	I	Number	0	U6	User Directive	112
4B11	35M	I	Number	0	U7	User Directive	113
4B11	35M	I	Number	0	U8	User Directive	114
4B11	35M	I	Number	0	U9	User Directive	115
0	148	CS	Number	2	WidowL	Number of Widow Lines	116
		I	QueryOnly	0	X	x-Coor of Current Character	117
		I	QueryOnly	0	XFirst	x-Coor of First Char in Line	118
		I	QueryOnly	0	Y	y-Coor of Current Line of Text	119
		I	QueryOnly	4	YBT	y-Coordinate of Body Top	120
		I	QueryOnly	0	YRel	y-Coor Rel to First L in S	121
							122

Old Name		New Name	Concise Description	
CAS	Synonym	Case	Set Output Case for a Character	123
CEN	Synonym	Center	Center 'N' Lines	124
CMD	Synonym	CaseMode	Force Case to: 1=Lower, 2=Upper	125
COD	Synonym	Code	Set Output Code for a Character	126
DLS	Antonym	Leading	Delete-Leading-Spaces Switch	127
DMAX	Synonym	MaxVal	Maximum Value for Directive	128
DMIN	Synonym	MinVal	Minimum Value for Directive	129
DPN	Antonym	Names	Don't Print Statement Names	130
DPR	Synonym	D	Directive Print	131
DSH	Synonym	Dash	Code for 'Dash' Character	132
DSN	Antonym	SN	Delete Statement Numbers Switch	133
DTS	Antonym	Trailing	Delete-Trailing-Spaces Switch	134
Dir	Synonym	D	Print-Directives Switch	135
GDATM	Synonym	GDT	Generate Text for Date and Time	136
GDate	Synonym	GD	Generate Text for Date	137
GTime	Synonym	GT	Generate Text for Time	138
GPGNM	Synonym	GPN	Generate Text for Page Number	139
GTB	Synonym	GTab	Generate a Tab	140
H	Synonym	Hl	Text of Page Header	141
HED	Synonym	Hl	Text of Page Header	142
HJB	Synonym	BodyP	Horizontal Justification of Body Area	143
HJH	Synonym	HlP	Horizontal Justification of Header	144
HJL	Synonym	LP	Horizontal Justification of Line	145
HJP	Synonym	PNP	Horizontal Justification of Page Number	146
HJS	Synonym	SP	Horizontal Justification of Statement	147
HLN	Synonym	LFH	Num of Lines Following Header	148
HLT	Synonym	Halt	Ignore Rest of Input File	149
HP	Synonym	HlP	Header Position	150
HSW	Synonym	HlSW	Header Switch	151
IBR	Synonym	IgB	Ignore Branch	152
IgDir	Synonym	IgD	Ignore Directives	153
ILC	Synonym	ICR	Indentation for CR on Previous Line	154
ILO	Synonym	IOvr	Indentation for Overflow of Previous Line	155
IMX	Synonym	IMax	Maximum Total Indentation	156
IND	Synonym	ILev	Indent-by-Level Switch	157
INS	Synonym	ILev	Indentation per Level	158
IRL	Synonym	IRel	Ind Rel to First Visible in Previous Line	159
IRS	Synonym	IgRest	Ignore Rest of Statement	160
ISB	Synonym	IRest	Ind for Statement Lines After First	161
ISF	Synonym	IFirst	Indentaton for First Line of Statement	162
ISL	Synonym	IL	Indentaton per Statement Line	163
IST	Synonym	IgS	Ignore Statement	164
LCP	Synonym	LevClip	Level Clipping	165
LFL	Synonym	SetL	Set 'N' Lines Flush Left	166
LMS	Synonym	LM	Left Margin Setting	167
LPP	Synonym	LPPN	Lines Preceeding Page Number	168
LSP	Synonym	ISN	Indentation to Replace Statement Numbers	169
LSL	Synonym	Leading	Print-Leading-Spaces Switch	170
LVL	Synonym	Lev	Level of Current Statement	171
LVLSHOW	Synonym	LevShow	Output Only These Levels	172
MCH	Synonym	RM	Maximum Characters per Line	173
MLN	Synonym	BM	Maximun Num Printing Lines per Page	174
NBL	OnePlus	LBL	Num CR's Between Lines (NBL=1+LBL)	175

Old Name		New Name	Concise Description	
NDH	Synonym	NumDash	Number of Dashes at End of Page	176
NPX	Synonym	PlexNum	Plex Numbering Option	177
NTP	Synonym	TM	Number Lines from Top of Page to Printing	178
NUL	Synonym	Null	Null Directive (No-op)	179
PGN	Synonym	PN	Current Page Number	180
PGP	Synonym	LPPN	Number of Lines Preceeding Page Number	181
PGSHOW	Synonym	PShow	Output Only These Pages	182
PLN	Synonym	LMax	Total Number of Lines per Page	183
PLO	Synonym	PLev	Paginate at Statement Level	184
PNO	Synonym	PNType	Page Number Type	185
PST	Synonym	PFit	Paginate if Statement Will Not Fit on Page	186
RES	Synonym	PES	Page Restore Here	187
RFL	Synonym	SetR	Set 'N' Lines Flush Right	188
SCR	OnePlus	LBS	Num CR's Between Stats (SCR=1+LBS)	189
SGF	Synonym	SigF	Statement Signature Format	190
SGS	Synonym	SigS	Statement Signature Size	191
SKP	Antonym	Scan	Skip (Scan does not execute directives)	192
SNA	Synonym	Names	Print-Statement-Names Switch	193
SNB	Synonym	SN	Print-Statement-Numbers Switch	194
SSW	Synonym	StopCodes	Stop Codes Switch	195
TAB	Synonym	Tabs	Output for Tab: 0=Null, 1=Tab, 2=Space	196
TLN	Synonym	Trun	Truncation Lines	197
TSL	Antonym	Trailing	Print-Leading-Spaces Switch	198
WLN	Synonym	WidowL	Number of Widow Lines	199
XCL	Synonym	X	x-Coor of Current Character	200
XFL	Synonym	XFirst	x-Coor of First Char in Line	201
YCL	Synonym	Y	y-Coor of Current Line of Text	202
YCR	Synonym	YRel	y-Coor Rel to First Line in Stat	203
				204

Options for Horizontal Positioning (HP, PNP, LP, SP, BodyP)

205

FL	=	1	Set Flush to Left Margin	205A
FR	=	2	Set Flush to Right Margin	205B
CM	=	3	Center Between Left and Right Margins	205C
CP	=	4	Center Between Left Edge of Page and R Margin	205D
CI	=	5	Center Between R Margin and Indented L Margin	205E
CFVM	=	6	Center First Visible Char Between Margins	205F
CFVP	=	7	Center FV Char Between L Edge and R Margin	205G
OddL	=	8	Set Odd/Even Pages Flush Left/Right	205H
OddR	=	9	Set Odd/Even Pages Flush Right/Left	205I

Options for Page and Plex Numbers (PNType, GPN, PlexNum)

206

Dec	=	1	Decimal Numbers	206A
LR	=	2	Lower Case Roman Numbers	206B
UR	=	3	Upper Case Roman Numbers	206C
LL	=	4	Lower Case Letters	206D
UL	=	5	Upper Case Letters	206E
Oct	=	6	Octal Numbers	206F
SNum	=	7	Statement Number Format	206G
DotNum	=	8	Dot Number Format	206H

Options for Case, DCase, and CaseMode

207

Either	=	0	Either or "Current" Case	207A
Lower	=	1	Lower Case	207B
Upper	=	2	Upper Case	207C

Options for Center, SetL, SetR, etc. (How Many to do)

208

None	=	0		208A
All	=	35M	(Largest Positive Number)	208B

Options for Switches

209

On	=	1		209A
Off	=	0		209B
True	=	1		209C
False	=	0		209D
Yes	=	1		209E
No	=	0		209F
Keep	=	1		209G
Delete	=	0		209H
Print	=	1		209I
NoPrint	=	0		209J

210

DIRECTIVES Table -- Contains information on all directives in the current version of the Output Processor. 211

Min -- Minimum value to which directive may be set. 211A

Max -- Maximum value to which directive may be set. 211B

W -- "When" directive takes effect: 211C

I = Immediately (following occurrence of directive) 211C1
CL = (at beginning of) Current Line 211C2
NL = (at beginning of) Next Line 211C3
CS = (at beginning of) Current Statement 211C4
NS = (at beginning of) Next Statement 211C5
NLS = (at beginning of) Next Line Segment 211C6

ValType -- Type of Value Field -- Examples: 211D

Number: .TM=3; .Dash=55B; .PN=-2; 211D1

On/Off: .Names=Print; .HSW=On; .Leading=Keep; .PFit=Yes; 211D2

Null: .GPN; .Halt; 211D3

Num/Null: .GCR; .GCR=3; [Generate Three Carriage Returns] 211D4

Interval: .PShow=I; Where I is one of the forms: n, =n, >n, <n, <=n, >=n, All, None, (n,m), (n,m], [n,m), [n,m]; "n" and "m" must be numbers, and a bracket indicates that the corresponding endpoint of the interval is included while a parenthesis indicates that the endpoint is not included. 211D5

Intervals: .LevShow=I,I,I,...,I; Where I is as above. 211D6

QueryOnly: Directive value may be used in expressions but not changed by the user -- for example:

.GSp=50-X; [Fill line with spaces out to column 50] 211D7

[Number]: The brackets indicate that the directive requires a functional argument; the value should be a number:

.MinVal[RM]=51; [Set Minimum Value for RM directive to 51] 211D8

[Num/SRl]: The brackets indicate that the directive requires a functional argument; the value may be a either number or a quoted character:

.Code['1]='I; [Print digit one as uppercase "I"]
.Code['*]=40B; [Print asterisks as spaces] 211D9

[String]: The brackets indicate that the directive requires a functional argument; the value should be a quoted text string:

```
.Text[Mark]="++++++";   ["Mark" (an Upper-Case
                         Identifier) is defined as a
                         directive which will cause a
                         string of six plus signs to
                         be output whenever it is
                         executed]                  211D10
```

[UID]: The brackets indicate that the directive requires a functional argument; the value should be an Upper-Case Identifier (a word made of letters and digits, beginning with an upper-case letter):

```
.DefSyn[IgS]=Kill;   ["Kill" is defined as a synonym
                      for IgS]                    211D11
```

Init -- Initial value of directive. 211E

Name -- Name of directive. *[Note: When using directive names in a file they must begin with an upper-case letter (unless the value of DCase has been changed to Lower or Either); however, subsequent letters may be either upper-case, lower-case, or any mixture thereof -- i.e., "IgDir", "IGDIR", "Igdir", and "IGDir" are all equivalent.]* 211F

SYNONYMS AND ANTONYMS Table -- Contains a listing of all predefined Synonyms, Antonyms, and "OnePlus"s in the Output Processor. 212

Synonyms may be used anywhere that the directive names to which they are related may be used, and their effect is identical -- e.g., ".HJH=2;" is equivalent to ".HP=2;". 212A

Antonyms are defined for some old switch names and are the same as synonyms except that the logical values are reversed -- e.g., ".DSN=On;" is equivalent to ".SN=Off;". 212B

OnePlus's are the same as the directive names to which they are equated except that the value of the old directive is one greater than the value of the new directive -- e.g., ".SCR=2;" is equivalent to ".LBS=1;". 212C

VALUE OPTIONS Table -- Contains a list of predefined constants which have mnemonic names making them particularly useful in certain directives -- e.g., ".SN=On;", ".SN=Keep;", ".SN=Print;", and ".SN=1;" are all equivalent. *[As with directive names, the case of first letter of each of these symbols is governed by the value of the DCase directive; remaining letters may be either upper- or lower-case.]* 213

<JOURNAL>6978.NLS;1, 13-MAY-71 16:53 WLB ;Title: Author(s): Walter L. Bass/WLB; Distribution: Marilyn F. Auerbach, Walter L. Bass, Roger D. Bates, Mimi S. Church, William S. Duvall, Douglas C. Engelbart, Beauregard A. Hardeman, Martin E. Hardy, J. D. Hopper, Charles H. Irby, Mil Jernigan, Harvey G. Lehtman, John T. Melvin, Jeanne B. North, James C. Norton, Cindy Page, Bruce L. Parsley, William H. Paxton, Barbara E. Row, Ed K. Van De Riet, Dirk H. Van Nouhuys, Kenneth E. Victor, Richard W. Watson, Don I. Andrews, James A. Fadiman/MFA WLB RDB MSC WSD DCE BAH MEH JDH CHI MEJ HGL JTM JBN JCN CXP BLP WHP BER EKV DVN KEV RWW DIA JAF; Keywords: ; Clerk: WLB;
Origin: <PORGEN>BUG.NLS;30, 13-MAY-71 16:46 WLB ;

Dialog on the Baseline Record System (BRS)

Dialog on the Baseline Record System (BRS)

In the memoes on the Baseline Record System -- (Journal, 6349,) and (6975,), I listed several major unanswered questions. In the following I will report on and contribute to the dialog. 1

Q: What is a Task, a Sub-Task, and a Sub-Contract and what are the criteria that distinguish them. 2

The question seems is important to answer soon since everyone who has attempted to use the BRS has run into it. 2A

I suggest that any activity that satisfies ANY of the following criteria is a task: 2B

1 It is a buyer. 2B1

2 It has more than one buyer. 2B2

3 There should be few tasks with an elapsed time (time from begin-date to end-date) of more than say 2 months or a man-cost (number of man-months required) of more than say 3 man-months. 2B3

Almost all such tasks may indeed be tasks themselves, but ought also be broken into more than one task. Then the "parent" (large) task would list the smaller tasks as Sub-Contracts, not as Sub-Tasks. 2B3A

The main idea here is that a Task is the basic entity dealt with in the BRS. Thus most things shoud be Tasks as opposed to Sub-Tasks, unless the Sub-Task applies exclusively to its parent-task. The Set System is to be used to group related Tasks for the convenience of users of the BRS. Tasks are explicitely related by the Buyer and Sub-Task relations and there will be tools provided to facilitate viewing of Tasks so explicitly related. 2C

Q: How does a thought in someone's head about something new needed or a new possibility get from the person's head to the NP file to the BASEREC file to the Done Tasks file? What are the conventions and procedures for its migration? 3

The following suggestions are offered: 3A

Anyone can enter something into <MSR>NP (the Needs and Possibilities file). 3B

The format and content of an entry would be the same as for the BaseRec file. The information required would be less

however. There should be a Task Name; an Info: branch; a list of potential buyers; if it is a Need, a Require: branch that describes why there is a need and perhaps something about priority; if it is a Possibility, a Design: branch; any other branch for which there is information. 3C

An NP entry is transfered to the BaseRec file at the time a Need has a Contractor, or a Possibility has a Buyer, or a decision is made by some appropriate person that the task will be performed. At that time the information in the entry should be expanded and updated. If a task has both a Buyer and a Contractor from its inception, then it need never be in NP. 3D

It is primarily the responsibility of the person making an entry in NP to make potential Contractors and/or Buyers aware of the entry. Everyone should have a look at NP every once in a while. 3E

A task is moved from BaseRec to the completed tasks file when the task is finished. A software or hardware Task is finished when no work is being done on it except to fix bugs as they are discovered by users. A study task is finished when the information gathered is conveyed to the Buyer by means of report or a design or otherwise. Mostly a Task is finished when the Buyer and Contractor agree the task is finished. 3F

Q: What tools are viewing and updating the BRS? 4

1. People need a way of gathering together any collection of Tasks for viewing and updating. 4A

2. Different portions of the information pertaining to a collection of Tasks should be viewable at one time, e.g., the task names and their Subtasks: and Sub-Contracts: branches:, and there should be formatting options. 4B

3. A tree or network of tasks (and information) related by Buyer, Sub-Contractor, Requirements, and/or Design could be gathered together. 4C

The collection of Tasks for viewing, not updating, will be a capability of the first version of the Execute Evaluate Set command. 4D

The capability of viewing different portions of the collected Task branches will probably be the second version of EES. 4E

All the other things mentioned above will probably become available thru further versions of EES -- probably by means of adding options to how a set can be defined. 4F

See a forthcoming memo on the Set System for details on how all of this might be done. 4G

I don't know how the ability to collect a set, edit it, and then rewrite the original elements of the set with the editing changes will be done. 4H

The following is an emasculated version of some dialogue that has taken place: 5

Q: additional information 5A

Fadiman: "It would be nice to have something about how firm the plan for a task is". 5A1

Bruce: "yes, but maybe there's already too much information. Also question marks for dates and who show infirmness." 5A2

Q: additional information 5B

Fadiman: "What about information on the status of a Task." 5B1

Bruce: "NO! (followed by a long harang which ought to be written down sometime since it needs justification -- the gist follows). The only status that anyone really cares about is when the task will be completed -- the end-week gives that." 5B2

Fadiman: "I agree with that." 5B3

Q: other ideas 5C

Ed?: "The Requirements of each of the Buyers could be kept together to facilitate keeping track of what was going on." 5C1

Bruce: "That's a good idea". 5C2

Q: additional information 5D

Somebody: "Maybe there is some way to keep track of bugs in the BRS." 5D1

Bruce: "OK. I'll make up task branches called

NLS'Maintain, TENEX'Maintain, Journal'Maintain, Output'Processor'Maintain, Compilor'Maintain, and Collector-Sorter'Maintain in BaseRec under the Service System Operations branch and anybody can enter bugs they find as Subtasks under the appropriate task." 5D2

Q: more information 5E

Ed: "There doesn't seem to be anything in the BRS to keep track of the dialog about requirements and why some design was chosen and others discarded." 5E1

Bruce: "True. But that's the function of the DSS as a whole rather than the BRS. Hopefully the Requirements: and Design: branches would point to the latest dialog on these matters and they in turn would be linked to all the rest of the dialog." 5E2

Q: more information 5F

Charles: "There ought to be some way to flag things that have changed or are important so that attention will be called to them." 5F1

Others: "Yes. That's very important." 5F2

Bruce: "The idea was that a Conan pattern checking the date in a signature would serve this end. However it doesn't work yet and anyway its probably too awkward." 5F3

DOES ANYBODY HAVE ANY IDEAS ON HOW TO DO THIS??? 5F4

Dialog on the Baseline Record System (BRS)

<JOURNAL>6979.NLS;1, 13-MAY-71 16:59 BLP ;Title: Author(s): Bruce L. Parsley/BLP; Distribution: Marilyn F. Auerbach, Walter L. Bass, Roger D. Bates, Mimi S. Church, William S. Duvall, Douglas C. Engelbart, Beauregard A. Hardeman, Martin E. Hardy, J. D. Hopper, Charles H. Irby, Harvey G. Lehtman, John T. Melvin, Jeanne B. North, James C. Norton, William H. Paxton, Ed K. Van De Riet, Dirk H. Van Nouhuys, Kenneth E. Victor, Don I. Andrews, James A. Fadiman, Richard W. Watson/MFA WLB RDB MSC WSD DCE BAH MEH JDH CHI HGL JTM JBN JCN WHP EKV DVN KEV DIA JAF RWW; Keywords: ; Clerk: BLP;
Origin: <MSR>TEEMPPLANP.NLS;1, 13-MAY-71 16:54 BLP ;

Status Report to the Network Working Group Meeting 16 May 1971

Status Report to the Network Working Group Meeting 16 May 1971

Computer and Network Status 1

The conversion to the DEC PDP 10, running the BBN operating system Tenex, has just about been completed. We have had a number of obscure bugs which caused delays recently. Several symptoms were traced to bad data being written into memory. This problem was diagnosed as a noisey ground on a chip in the drum-disk memory bus access control. With the problem fixed our reliability has improved significantly to about one crash every day or two. System attention has now been turned to system measurement and tuning and to bringing up an NCP and Telnet. 1A

We have been working to bring up the BBN NCP of Doc. #1 NIC (5143,) and BBN's Telnet. Because of our different configuration from BBN's and slightly different system we have not yet removed all the bugs caused by these differences. . As of May 14 we estimate that we are only a few hours away from completing this task. We need more testing before we can provide network service. We will bring up the NCP of RFC 107 NIC (5806) when we can obtain it from BBN and the official Telnet when it is specified and BBN can provide it to us. 1B

At present our local connect capacity allows for 12 displays and 24 typewriter terminals. With about 10 displays and 6 typewriter terminals running NLS, response is satisfactory, but marginal for display users. The delivery in June of new Bryant drums and the measurement and tuning in progress should increase capacity and response. How much improvement to expect is not known. 1C

The system processing required to support a network user is heavier than that required to support a local typewriter user. Therefore we are not sure how many network users we will be able to support without degrading response seriously or requiring us to limit local loading by administrative restrictions. Our guess at the moment is that we can handle 6 network users by middle summer with an optimistic expectation that we might be able to handle closer to 12. 1D

As there is only limited interactive experience over the network, we do not know what its response characteristics will be like. We may find that the delays caused by two timesharing systems and the network transmission may allow us to support the higher number of network users without adding serious incremental response delays. The loading caused by parallel processes controlling intersite file transfers is also an unknown factor at this point. 1E

We are pushing to increase our capacity by providing deferred execution facilities which will allow NLS compatible file preparation and editing offline or in local hosts and then will allow entry of the files so created into NLS for further manipulation. 1F

File capacity is also going to be a scarce resource and we are studying ways of using tape or the facilities at UCSB to give us an integrated auxiliary facilities. 1G

Our plans for providing online service to the network are briefly given below. There are intermediate stages possible. For example, if all goes well in the early part of Stage 0 we can probably allow more sites to participate in Stage 0. 1H

Stage 0 (June 18): 1H1

Stage 0 is to provide experimental access to the NIC for a limited number of West Coast sites (these sites provide a variety of hosts and having them on the West Coast simplifies communications for this initial trial period) so that we can learn how to handle any problems which may come up in actual network operation. 1H1A

Stage 0 will allow access to the Tenex Executive, NICTNLS(NIC version of Typewriter On Line System), an initial Network Dialog Support System-NICDSS (which will allow online creation and submission of messages and documents, with hardcopy mail delivery), and the first release of our users manual. 1H1B

We will allow an initial maximum of two network users on at once. 1H1C

There will be a two day NICTNLS course at SRI June 16-17 for the initial sites . 1H1D

Stage 1 (August 2): 1H2

Stage 1 is to provide access to the NIC from any site in the network having the appropriate access software. 1H2A

Stage 1 will allow access to a self contained version of NICTNLS not requiring access to the Tenex Executive, the NICDSS of Stage 0 with online access to documents and messages created online, online access of network related files such as the NIC Catalog, ARPA Network Resource Notebook and NIC documentation. 1H2B

We expect to provide training to sites desiring access. We will allow as many network users simultaneous access as we can, depending on initial success with system tuning. A reasonable guess is 4-8. 1H2C

Stage 2 (September 6): 1H3

Stage 2 will provide message delivery to files at remote sites (assuming the NWG establishes file transfer protocols soon and sites implement them), an initial deferred execution mode allowing users to prepare files on their systems and then have them entered into NICTNLS for further work, and improved query facilities of network online files. 1H3A

We hope to have improved Tenex-NLS performance so as to allow more network users simultaneous access than allowed in Stage 1. 1H3B

Offline System Status 2

Mailing: We mail RFC's and other material going to Liaison people as soon as we can get the material duplicated, which is usually within 24-48 hours after we receive it. We mail material to station agents once each week, usually on Fridays. 2A

When people do their own direct mailing to the Liaison list, please send us a good copy, preferably the original, for duplication and sending to the stations. 2B

Document Numbering: It is important for citation and cataloging purposes that each document created have a unique number. Even if a document is just an update of one previously issued, one should us a new NIC number and RFC number and indicate which document(s) it supercedes. There are lots of numbers so feel free to use them. 2C

Site Documentation: Our recommendations on how we would like to handle this type of document and the type of information these documents should contain are described in RFC's 115 NIC (5822) and 118 NIC (5830). We urge each Liaison person and station agent to read these carefully. 2D

Catalog: Our biggest problem caused by the computer transfer has been getting out an up-to-date catalog. We apologize for the inconvenience this has caused. Producing the catalog has turned out to be a good debugging tool, however. The most recent catalog, containing citations through 23 March, was

mailed 13 May. This catalog contains an RFC index through 5 May. Currently a catalog is being produced to bring us up-to-date. With the issuing of this catalog around the end of the month, we expect to produce an up-to-date catalog on a monthly basis. 2E

General: If there are any problems a station may be having in organizing or handling their collection which we could help with, please let our Information and Agent Coordinator Jeanne North know. If anyone has any suggestions for how we could improve our service or has any suggestions for services we should perform please let us know. 2F

2G

2H

RWW 18-MAY-71 10:22 6980

Status Report to the Network Working Group Meeting 16 May 1971

<JOURNAL>6980.NLS;3, 18-MAY-71 15:23 HGL ; (Expedite) Title: Author(s): Richard W. Watson/RWW; Distribution: Marilyn F. Auerbach, Mimi S. Church, William S. Duvall, Douglas C. Engelbart, Charles H. Irby, Harvey G. Lehtman, J. D. Hopper, Jeanne B. North, James C. Norton, Bruce L. Parsley, William H. Paxton, Ed K. Van De Riet, Kenneth E. Victor, Don I. Andrews/MFA MSC WSD DCE CHI HGL JDH JBN JCN BLP WHP EKV KEV DIA; Keywords: ; Clerk: HGL;
Origin: <WATSON>STATUS.NLS;16, 14-MAY-71 8:45 RWW ;;

These patches were put in the running system Thursday 5/13.
There was no great difference in response, probably because the
system was not very heavily loaded. They should be put in
permanently. 1

Insert at NEWST+17 octal: 1A

HRRZ 1,FKSTAT(7) 1A1

CAIN 1,WSITST 1A2

JRST NEWST1 1A3

This puts work station people who don't type ahead on queue
zero. 1A4

New values for QBASE and TBASE (in decimal): 1B

QBASE: 0. 1B1

5. 1B1A

20. 1B1B

400. 1B1C

20000. 1B1D

10000. 1B1E

TBASE: 100. 1B2

125. 1B2A

175. 1B2B

675. 1B2C

13000. 1B2D

These values are subject to change but seem to work fairly
well. 1B3

<JOURNAL>6982.NLS;1, 14-MAY-71 18:06 DIA ; Title: Author(s): Don I. Andrews/DIA; Distribution: Kenneth E. Victor, John T. Melvin, Richard W. Watson/KEV JTM RWW; Keywords: response; Clerk: DIA;
Origin: <ANDREWS>MEMO1.NLS;1, 14-MAY-71 17:56 DIA ;

BLP 14-MAY-71 18:13 6983

Dialog (with 6207) on the Set System

Dialog (with 6207) on the Set System

This document is meant as dialog on the proposed Set System. It is based on (Journal, 6207,) by Bill Duvall. 1

Branches 2 thru 4 of this file were originally copied from 6207. I have rewritten them to incorporate my suggested changes and additions. It is left as an exercise for the reader to discover where the two documents differ (and decide which he likes better in which differences). 1A

Overview 2

A Set Definition, as referred to in this document, is a branch in an NLS file. 2A

A Set Definition has two or more major sub-branches. 2B

The first of these is a Set Description, the second is a Domain Description, and any branches (there may be none) that follow are assumed to be Set Instantiations (also called (loosely) Sets). 2B1

A Set Description contains of the information necessary to create an instance of a Set, i.e. it is the information acted upon by the (to pick a name) Execute Instantiate Set command, which produces a(n instance of a) Set. 2B2

A branch which is a Set Definition may not be distinguished from any other NLS branch except by format. 2C

Thus Set Definitions may be edited, manipulated, copied, etc. via the normal NLS mechanisms. 2D

There may be an NLS 'sub-mode' of commands for manipulating Set Definitions and/or Sets (Set Instantiations) as special entities. 2E

There is also a Set Name which is basically a link that points to the top statement in a Set Definition. It is also (loosely) the string that is the NLS statement name of that statement (it may be fair to require that the top statement of all Set Definitions be named). 2F

There are some problems with terminology here. 2G

What I call a Set Definition, Bill called a Set and what I call a Set Description, Bill called a Set Definition. I like mine better because the term "Set" can be used in a more usual way -- a Set is herein a collection of elements

rather than a description of how to generate the collection plus a lot of instances of having formed the collection. In set theory a set is indeed a collection of elements. 2G1

My terminology gets into trouble because a Set Name points at a Set Definition rather than a Set. However the result of referring to a Set Name in a Set Definition, e.g. A = Set B union Set C, where "Set X" is a Set Name, and instantiating/evaluating a set is, in both Bill's and my systems, a collection of statements. I call that collection a Set (or more properly a Set Instantiation) while Bill calls it an EValuated Set, but in his system it is most assuredly not a Set. So in my system USING a Set Name results in a Set even if it points at a Set Definition. 2G2

Set Definition. 3

Set Description 3A

I will use Tree-Meta syntax to describe a Set Description. 3A1

setdescription = # element [modifier] <setfunction>; 3A2

setfunction = 3A2A

(".U" / ".UNION" / EMPTY) / 3A2A1

% binary union of sets % 3A2A1A

(".I" / ".Intersection") / 3A2A2

% binary intersection of sets % 3A2A2A

'- ; 3A2A3

% set theoretic difference of two sets, i.e., A - B = all the elements of A that are not also elements of B % 3A2A3A

element = 3A2B

setname / % the result is a Set % 3A2B1

link / % the result is the branch pointed to % 3A2B2

generator ; % a(n LLO) program that produces statements % 3A2B3

modifier = 3A2C

levelclip / % take only n levels of the branch % 3A2C1

viewspec / % other Viewspecs like names on/off % 3A2C2

filter / % a Conan pattern % 3A2C3

reformat / % a Content Analyzer-Reformatter program % 3A2C4

whichset ; % valid only for elements that are setname's; specifies whether to Instantiate the set or take an existing Instantiation % 3A2C5

I'm sure there are other elements, modifiers, and set functions that can be thought up. 3A2D

A Set Description and Domain Description are input data to the Execute Instantiate Set command, which produces a plex of branches (plus a header statement) which are the elements of a Set Instantiation. 3A3

Domain Description 3B

The Domain Description of a Set is a plex of links, each of which points to the head of a branch which is to be considered as a candidate when the set is instantiated. 3B1

Actually we could allow a Domain Description to be the same as a Set Description. 3B2

Actually the Domain Description is both redundant and (I think) a misnomer. 3B3

It's a misnomer because I think set theory talks of universes in this way as opposed to domains. 3B3A

Its redundant because you could just intersect the Set Definition with the Domain Definition in the Set Definition and get the same result. Its here because it will be more efficient of people put their most restrictive set here, because this will be acted upon before the Set Definition. 3B3B

Set Instantiations 3C

Any following branches are assumed to be instantiations of the Set described in the Set Description. 3C1

The top-level statement contains information pertaining to the instantiated of the Set, e.g. date/time of instantiation, who did it, etc. 3C1A

User Procedure. 4

The user, in creating a Set Definition, need simply to create an NLS branch of the proper format, roughly: 4A

(setex) SET DEFINTION 4A1

Set Description 4A1A

L1O: 4A1A1

FINISH 4A1A1A

(xxx, yyy, zzz :dbb) 4A1A2

&(aaa, bbb, ccc) % the '& means its a Set Name % 4A1A3

Domain Description 4A1B

(iii, jjj,) 4A1B1

Instantiated Set 14-MAY-71 19:10 BLP 4A1C

A new statement 4A1C1

This is set element 1 4A1C2

And this is element 2 4A1C3

and one last one 4A1C4

Instantiated Set 5-APR-71 19:10 WSD 4A1D

This is set element 1 4A1D1

And this is element 2 4A1D2

and one last one 4A1D3

The user then types EIS, bugs the statement named setex, and a

branch is created which is inserted after the Domain Description (or replaces a previous instantiation). 4B

BLP 14-MAY-71 18:13 6983

Dialog (with 6207) on the Set System

<JOURNAL>6983.NLS;1, 14-MAY-71 18:13 BLP ;Title: Author(s): Bruce L. Parsley/BLP; Distribution: William S. Duvall, Charles H. Irby, William H. Paxton/WSD CHI WHP; Keywords: set system dialog; Clerk: BLP; Origin: <PARSLEY>SETREPLY.NLS;5, 14-MAY-71 18:10 BLP ;

Bill: Look in (Engelbart, Letter,) for a modified version of your letter to Dan Bobrow. I assume that you will enter into the Journal (or already have) the enclosure, and so I marked in a link to it in the letter. I like to leave plenty of cross references in our dialogue. O.K. with me to have the letter be launched now. Doug 1

(J6985) 17-MAY-71 11:22;Title: Author(s): Douglas C. Engelbart/DCE;
Distribution: William S. Duvall/WSD; Clerk: DCE;

Jim: Re. NASA letter of Mar 12 from S. L. Butler, and Kasolas' note of 16 Mar -- I asked George K. to corresspond with RADC and with Butler to take care of this matter. George hadn't understood what Butler's letter was about. We are sending a copy of the NASA report to George so he can read the cited passages. Doug. 1

(J6986) 17-MAY-71 11:32;Title: Author(s): Douglas C. Engelbart/DCE;
Distribution: James C. Norton/JCN; Keywords: ; Clerk: DCE;

Received at ARC Week Ending 14 May 1971

Meetings 1

8th Annual Design Automation Workshop. June 28-30
Atlantic City 1A

Compilers and Operating Systems. June 7-10
U. of Maryland 1B

Information Structures. June 21-23
UCSB 1C

Translators and Translator Writing Systems. June 24-26
UCSB 1D

Computer Peripherals Management, AMA. June 21-23
N.Y.C. 1E

First General Assembly of World Future Society. May 12-15
(Program in Futurist. April 1971) 1F

Periodicals 2

R/D Research Development May 1971 2A

The Futurist April 1971
Contains: The Delphi Conference, p.55-57, in which the Delphi technique is used with computer record of teletype communication from the participants.
Also: Program for first General Assembly of the World Future Society 2B

SIGACT News April 1971
Contains: Key-to-Address Transform Technique: A Fundamental Performance Study on Large Existing Formatted Files, by V. Y. Lum and others, p.228-239 2C

Computers & Society (ACM SIGCAS) May 1971

Received at ARC Week Ending 14 May 1971

Contains: Effects of Time-Sharing in a Small Corporation: a Case Study. 2D

Business Automation May 1971
Contains: Microfilm: a new Survey Report, a survey of Business Automation readers pinpoints industries where microfilm is used as an active part of information processing systems. p.38-42
Also: The Navy's OCR PRISE Package, by Joseph B. Shelley, Jr. p.34-37 2E

Reports 3

BBN NIC 6753
Interface Message Processors for the ARPA Computer Network; Otly Tech. Report 9
Report 2123 April 1971
Chapters on Multi-Line Controller (MLC), terminal IMP software, throughput and protocol study. 3A

UCLA-NMC
RFC 143 Regarding Proferred Office ICP NIC 6728
by Taylor and Wong

RFC 145 Initial Connection Protocol Control Commands NIC 6739

RFC 149 Best Laid Plans..., by Crocker NIC 6752 3B

RAY
RFC 139 Discussion of Proposed TELNET NIC 6717
by O'Sullivan 3C

MAC
RFC 148 Comments on 123, by Bhushan NIC 6751 3D

LINC
RFC 147 Definition of a Socket, by Winett NIC

Received at ARC Week Ending 14 May 1971

6750

RFC 150 Use of IPC Facilities, by Kalin NIC 6754 3E

JBN 17-MAY-71 14:56 6987

Received at ARC Week Ending 14 May 1971

<JOURNAL>6987.NLS;1, 17-MAY-71 14:56 BER ;Title: Author(s): Jeanne B. North/JBN; Distribution: Jeanne B. North, Douglas C. Engelbart, ARC Black Board, Little Black Book, Barbara E. Row/JBN DCE ABB LBB BER; Clerk: BER;
Origin: <ROW>RECEIPTS.NLS;1, 17-MAY-71 14:46 BER ;