HGL 3-JAN-72 11:32 8361

LIGHTS AT THE ENDS OF TUNNELS -- MAKING OUR STATUS CRYSTAL CLEAR

Whenever we make changes in the system or fix bugs we should put a note in the file (nls,status,) in order to make documentation of te new NLS easier. The format used by BLP is quite good and may be seen in te current version. Even I am doing this now 1

HGL 3-JAN-72 11:32 8361

LIGHTS AT THE ENDS OF TUNNELS -- MAKING OUR STATUS CRYSTAL CLEAR

(J8361) 3-JAN-72 11:32; Title: Author(s): Harvey G. Lehtman/HGL; Distribution: Walter L. Bass, William S. Duvall, Mary S. Church, J. D. Hopper, Charles H. Irby, Harvey G. Lehtman, John T. Melvin, Bruce L. Parsley, William H. Paxton/NPG; Sub-Collections: SRI-ARC NPG; Clerk: HGL;

(J8362) 3-JAN-72 11:57; Title: Author(s): Don C. Wallace/DCW; Distribution: Don Limuti, William R Ferguson, Priscilla Lister, Robert L. Dendy, Linda L. Lane, Marilyn F. Auerbach, Walter L. Bass, Mary S. Church, William S. Duvall, Douglas C. Engelbart, Beauregard A. Hardeman, Martin E. Hardy, J. D. Hopper, Charles H. Irby, Mil Jernigan, Harvey G. Lehtman, John T. Melvin, Jeanne B. North, James C. Norton, Cindy Page, Bruce L. Parsley, William H. Paxton, Jeffrey C. Peters, Jake Ratliff, Barbara E. Row, Ed K. Van De Riet, Dirk H. van Nouhuys, Kenneth E. Victor, Don C. Wallace, Richard W. Watson, Don I. Andrews, Ray S. Tomlinson, Dan L. Murphy/SRI-ARC RST DLM; Sub-Collections: SRI-ARC; Clerk: DCW;

there is a new version of teco now available
as the standard <subsys> version
when you output a file via ";u" a header line of the form
<directory>file.ext;ver da-mo-yr hh:mm EDITED BY "login
directory"
will be output as the 1st line of the file. this line is treated
as
a macro or fail comment and is preceded by a semicolon ";".
subsequent edits will create this line leaving an
audit trail of edits to a specific file... smokey....

(J8363) 3-JAN-72 15:25; Author(s): Don C. Wallace/DCW; Distribution: Don Limuti, William R Ferguson, Priscilla Lister, Robert L. Dendy, Linda L. Lane, Marilyn F. Auerbach, Walter L. Bass, Mary S. Church, William S. Duvall, Douglas C. Engelbart, Beauregard A. Hardeman, Martin E. Hardy, J. D. Hopper, Charles H. Irby, Mil Jernigan, Harvey G. Lehtman, John T. Melvin, Jeanne B. North, James C. Norton, Cindy Page, Bruce L. Parsley, William H. Paxton, Jeffrey C. Peters, Jake Ratliff, Barbara E. Row, Ed K. Van De Riet, Dirk H. van Nouhuys, Kenneth E. Victor, Don C. Wallace, Richard W. Watson, Don I. Andrews, Ray S. Tomlinson, Dan L. Murphy/SRI-ARC RST DLM; Sub-Collections: SRI-ARC; Clerk: DCW;

DCE 3-JAN-72 17:24 8364

Notes on briefing to Management Policy Council on their 4 Nov 71 visit to SRI

Note: The following branches are the combination working notes and demonstration file used for briefing the Management Policy Council (MPC) on the morning of 4 Nov 71. MPC is an organization to which Charles Anderson belongs, and which periodically visits one of its member's organization and does an in-depth study of one or more of its host's activities or problem areas. AHC was chosen as one of SRI's activities; we had a fairly thorough presentation on Thursday morning, and then I (DCE) stood before them that afternoon for a question-answer discussion period. Main theme that I held to was: 1

The appearance of advanced augmentation systems (of some kind, if not descendents of this) is inevitable in organizations where effectiveness is important; 1a

there will be many years of evolution within an organization, during the process of its changing to adopt such systems, and during the evolution of the systems; 1b

any organization that agrees to the two first statements should begin soon taking steps to ensure that it knows when and with what sequence of stages it should actively begin such evolution; 1c

because of the long-term nature of this evolution, and of the pervasiveness of the associated changes throughout the organization, this evolution should be guided by a long-term systems activity that is well-supported and preferably internal to the organizaton; 1d

because of the complexity and sophistication of these system changes, and the attendant cost of exploratory development to guide them, it would be sensible for their internal systms group to belong to a cooperative external activity where the expense of the associated study, technique development, etc. is shared among many like participants for whom the techniques and principles of augmentation need not be regarded as proprietary (which I assumed would be the case for most of them). 1e

Reference data: 2

(R) Bare Roster (R:ebzntgD). 2a

Joseph H. Allen
Group Vice President
Publications and Business Services
McGraw-Hill Inc. 2a1

Notes on briefing to Management Policy Council on their 4 Nov 71 visit to SRI

Charles A. Anderson
President
Stanford Research Institute 2a2

James P. Baxter
Senior Vice President
The First National Bank of Chicago 2a3

Gerard W. Brooks
President
Diners Fugazy Travel Company 2a4

Peter H. Conze
Executive Vice President
Celanese Corporation 2a5

John H. Faunce, Jr.
Vice President
Research and Market Development
Lukens Steel Company 2a6

Harry J. Gray
President
United Aircraft Corporation 2a7

Robert V. Guelich
Divisional Vice President and Public Relations Director
Montgomery Ward 2a8

Robert W. Hubner
Vice President and Group Executive
International Business Machines Corp. 2a9

J. Emmet Judge
Executive Secretary
Management Policy Council 2a10

Robert W. Lear
President
Indian Head Inc. 2a11

James C. Richards
President
B. F. Goodrich Industrial Products Co.
Division of The B. F. Goodrich Company 2a12

Edward Russell, Jr.
Vice President, Marketing Services

Notes on briefing to Management Policy Council on their 4 Nov 71 visit to SRI

Champion Division
U. S. Plywood-Champion Papers Inc. 2a13

Thomas A. Staudt
Director of Marketing
Chevrolet Motors Division
General Motors Corporation 2a14

E. L. Tabat
President
Dictaphone Corporation 2a15

Garry Valk
Publisher,
LIFE Magazine, and
Vice President,
Time Inc. 2a16

Whole MPC Program (MPCProg, 1:hxnz) 2b

NIC Locator (NIC, Locator, 2:xbgn) 2c

For access to all the NIC collection of instruction manuas, resource listings, participant names, general reference catalogs, etc. 2c1

Journal Messages to DCE
(See -- DCE,Journal: ebtnz) 2d

Journal Catalog -- JCN has some private indices: 2e

Number sorted, in reverse
(Norton, J7886,:Chx) or 2e1

Author ['')] "author"; 2e1a

Author
(Norton, J7887,:Chx) 2e2

Title
(Norton, J7888,:Chx) 2e3

Baseline: 2f

(ATemp,1:xbn) 2f1

(MSR, BDriver, NL:egbn) For the parameters used in creating the weekly BSR reports. 2f2

```
LOCAL pst,val,flg,char,cnt,wdcnt,firstf;                    4a5a
REF outb;                                                   4a5b
CCPOS SF(stid);                                             4a5c
IF FIND > SNP ↑p1 $L ↑p2 THEN BEGIN                         4a5d
   *work* ← p1 p2;                                          4a5d1
   CCPOS *work*;                                            4a5d2
   END                                                      4a5d3
ELSE CCPOS SF(stid);                                        4a5e
wdcnt ← 0;                                                  4a5f
flg ← FALSE;                                                4a5g
firstf ← TRUE;                                              4a5h
WHILE num > 0 DO BEGIN                                      4a5i
   cnt←0;                                                   4a5i1
   val←0;                                                   4a5i2
   pst←chif+$val; %pointer into val%                        4a5i3
   WHILE cnt<5 AND NOT flg DO BEGIN                         4a5i4
      IF ((char←READC) = '@ AND NOT firstf) OR char =
      ENDCHR THEN BEGIN                                     4a5i4a
         flg←TRUE;                                          4a5i4a1
         EXIT; END;                                         4a5i4a2
      ↑pst←char;                                            4a5i4b
      BUMP cnt;                                             4a5i4c
      firstf ← FALSE;                                       4a5i4d
      END;                                                  4a5i4e
   outb←val;                                                4a5i5
```

```
            BUMP wdcnt;                                          4a5i6
            BUMP &outb;                                          4a5i7
            BUMP DOWN num;                                       4a5i8
            IF flg THEN EXIT;                                    4a5i9
            END;                                                 4a5i10
         RETURN (flg,wdcnt); END.                                4a5j
      FINISH                                                     4a6
   PROGRAM lastn %for sorting on last names%                      4b
      DECLARE STRING work[100];                                  4b1
      DECLARE TEXT POINTER p1, p2;                               4b2
      DECLARE FIELD chif=[0,7:35];                               4b3
      %return (num) value words at (outb) from statement with
      stid (stid)%                                               4b4
         %this procedure returns one key value enclosed in '@
         characters if it exists, otherwise it returns the text
         of the statement%                                       4b4a
      (lastn)PROCEDURE(stid,outb,num);                           4b5
         LOCAL pst,val,flg,char,cnt,wdcnt,firstf;                4b5a
         REF outb;                                               4b5b
         CCPOS SF(stid);                                         4b5c
         IF FIND 'p1 > [EOL/',] < $-(L) 'p2 $L 'p1 THEN BEGIN    4b5d
            *work* ← p1 p2;                                      4b5d1
            CCPOS *work*;                                        4b5d2
            END                                                  4b5d3
         ELSE CCPOS SF(stid);                                    4b5e
         wdcnt ← 0;                                              4b5f
```

```
        flg ← FALSE;                                                    4b5g
        firstf ← TRUE;                                                  4b5h
        WHILE num > 0 DO BEGIN                                          4b5i
           cnt←0;                                                       4b5i1
           val←0;                                                       4b5i2
           pst←chif+$val; %pointer into val%                            4b5i3
           WHILE cnt<5 AND NOT flg DO BEGIN                             4b5i4
              IF ((char←READC) = '@ AND NOT firstf) OR char =
              ENDCHR THEN BEGIN                                         4b5i4a
                 flg←TRUE;                                              4b5i4a1
                 EXIT; END;                                             4b5i4a2
              !pst←char;                                                4b5i4b
              BUMP cnt;                                                 4b5i4c
              firstf ← FALSE;                                           4b5i4d
              END;                                                      4b5i4e
           outb←val;                                                    4b5i5
           BUMP wdcnt;                                                  4b5i6
           BUMP &outb;                                                  4b5i7
           BUMP DOWN num;                                               4b5i8
           IF flg THEN EXIT;                                            4b5i9
           END;                                                         4b5i10
        RETURN (flg,wdcnt); END.                                        4b5j
     FINISH                                                             4b6
  PROGRAM company %for sorting on company names%                        4c
     DECLARE FIELD chif=[0,7:35];                                       4c1
```

```
DECLARE STRING work[100];                                          4c2

DECLARE TEXT POINTER p1, p2;                                       4c3

%return (num) value words at (outb) from statement with
stid (stid)%                                                       4c4

   %this procedure returns one key value enclosed in '@
   characters if it exists, otherwise it returns the text
   of the statement%                                               4c4a

(company)PROCEDURE(stid,outb,num);                                 4c5

   LOCAL pst,val,flg,char,cnt,wdcnt,firstf;                        4c5a

   REF outb;                                                       4c5b

   CCPOS SF(stid);                                                 4c5c

   IF FIND ↑p1 SE(p1) < $NP ↑p2 [EOL] > $NP ↑p1 THEN BEGIN         4c5d

      *work* ← p1 p2;                                              4c5d1

      CCPOS *work*;                                                4c5d2

      END                                                          4c5d3

   ELSE CCPOS SF(stid);                                            4c5e

   wdcnt ← 0;                                                      4c5f

   flg ← FALSE;                                                    4c5g

   firstf ← TRUE;                                                  4c5h

   WHILE num > 0 DO BEGIN                                          4c5i

      cnt←0;                                                       4c5i1

      val←0;                                                       4c5i2

      pst←chif+$val; %pointer into val%                            4c5i3

      WHILE cnt<5 AND NOT flg DO BEGIN                             4c5i4

         IF ((char←READC) = '@ AND NOT firstf) OR char =
         ENDCHR THEN BEGIN                                         4c5i4a
```

```
                flg←TRUE;                                          4c5i4a1
                EXIT; END;                                         4c5i4a2
            fpst←char;                                             4c5i4b
            BUMP cnt;                                              4c5i4c
            firstf ← FALSE;                                        4c5i4d
            END;                                                   4c5i4e
        outb←val;                                                  4c5i5
        BUMP wdcnt;                                                4c5i6
        BUMP &outb;                                                4c5i7
        BUMP DOWN num;                                             4c5i8
        IF flg THEN EXIT;                                          4c5i9
        END;                                                       4c5i10
    RETURN (flg,wdcnt); END.                                       4c5j
FINISH                                                             4c6
PROGRAM score %for sorting on score values -- as very last
number in statement%                                               4d
    DECLARE FIELD chif=[0,7:35];                                   4d1
    DECLARE STRING work[100];                                      4d2
    DECLARE TEXT POINTER p1, p2;                                   4d3
    %return (num) value words at (outb) from statement with
    stid (stid)%                                                   4d4
        %this procedure returns one key value enclosed in '@
        characters if it exists, otherwise it returns the text
        of the statement%                                          4d4a
    (score)PROCEDURE(stid,outb,num);                               4d5
        LOCAL pst,val,flg,char,cnt,wdcnt,firstf;                   4d5a
```

```
REF outb;                                                    4d5b
CCPOS SF(stid);                                              4d5c
IF FIND ↑p1 > [EOL] < $NP ↑p2 $D ↑p1 THEN BEGIN              4d5d
   *work* ← p1 p2;                                           4d5d1
   CCPOS *work*;                                             4d5d2
   END                                                       4d5d3
ELSE CCPOS SF(stid);                                         4d5e
wdcnt ← 0;                                                   4d5f
flg ← FALSE;                                                 4d5g
firstf ← TRUE;                                               4d5h
WHILE num > 0 DO BEGIN                                       4d5i
   cnt←0;                                                    4d5i1
   val←0;                                                    4d5i2
   pst←chif+$val; %pointer into val%                         4d5i3
   WHILE cnt<5 AND NOT flg DO BEGIN                          4d5i4
      IF ((char←READC) = '@ AND NOT firstf) OR char =
      ENDCHR THEN BEGIN                                      4d5i4a
         flg←TRUE;                                           4d5i4a1
         EXIT; END;                                          4d5i4a2
      ↑pst←char;                                             4d5i4b
      BUMP cnt;                                              4d5i4c
      firstf ← FALSE;                                        4d5i4d
      END;                                                   4d5i4e
   outb←val;                                                 4d5i5
   BUMP wdcnt;                                               4d5i6
```

```
        BUMP &outb;                                              4d5i7

        BUMP DOWN num;                                           4d5i8

        IF flg THEN EXIT;                                        4d5i9

        END;                                                     4d5i10

      RETURN (flg,wdcnt); END.                                   4d5j

   FINISH                                                        4d6

   Scoring sort (see-- roster:ebtgzDBh)                          4e

   (roster) MPC Attendance for meeting at SRI, November 4-5,
  1971 (16 People):                                              4f

     Joseph H. Allen                    468
     Group Vice President
     Publications and Business Services
     McGraw-Hill Inc.                                            4f1

     Charles A. Anderson                256
     President
     Stanford Research Institute                                 4f2

     James P. Baxter                    135
     Senior Vice President
     The First National Bank of Chicago                          4f3

     Gerard W. Brooks                   567
     President
     Diners Fugazy Travel Company                                4f4

     Peter H. Conze                     453
     Executive Vice President
     Celanese Corporation                                        4f5

     John H. Faunce, Jr.                247
     Vice President
     Research and Market Development
     Lukens Steel Company                                        4f6

     Harry J. Gray                      772
     President
     United Aircraft Corporation                                 4f7

     Robert V. Guelich                  377
```

What could be done for the really key man?	5a1a1
What would you ask of	5a1a2
the magic support staff?	5a1a2a
Very fast at routine services	5a1a2a1
Very accurate	5a1a2a2
Very trainable, recognizes highly differentiated vocabulary of service requests	5a1a2a3
an unlimited supply of slave labor?	5a1a2b
What components are significant in the system represented by an organization of people tackling a complex task?	5a1a3
Try a free-running approach:	5a2
The place we'd like the audience to be at the end of the hour would be:	5a2a
Having a gut feeling for:	5a2a1
What we mean by an augmentation system	5a2a1a
The potential value of future developments	5a2a1b
The dimensions of the new-tool level	5a2a1c
The depth of the whole system	5a2a1d
The complexity of a reasonably complete, early-stage new systems, and the even further complexity of changing	5a2a1e
Why it will be a long-term evolutionary process for an organization to become "of the new, augmented breed."	5a2a1f
Two evolutionary processes: "organic" and "designed"	5a2a1g
The relative roles of the two evolutionary processes in an organizations change to this new state.	5a2a1h

Notes on briefing to Management Policy Council on their 4 Nov 71 visit to SRI

Realizing that SRI/ARC is consciously seeking a strategy to facilitate/accelerate the evolution of augmentation systems in society's problem-solving organizations. 5a2a2

Appreciating the components of the BC approach 5a2a3

Or, alternative would be to try a simpler cut, such as: 5a2b

What the compleat aug sys might be for supporting the key man. 5a2b1

Or, a bigger cut -- the nested set of goals, leading to the next-stage preliminary formulation of a BC. See (worknote, 1f1:ebbtgzn), which I think is too complex -- so try this: 5a2b2

G1: To give man's institutions a better capability for evolution -- 5a2b2a

more rapidly to cope with the rate of change of the environment, 5a2b2a1

more "intelligently" to deal with the increasing complexity, 5a2b2a2

with better capability for learning from history, 5a2b2a2a

with better capability for extrapolating into the future, 5a2b2a2b

with better capability for understanding the current state of things, etc. 5a2b2a2c

G2: To faclitate the evolution of highly effective, conscious "organs of evolution" for human institutions. 5a2b2b

G3: To develop an institution specially for promoting the evolution of the evolutionary organs of other institutions. 5a2b2c

An "Augmentation Systems Industry" 5a2b2c1

G4: To develop an organ that will promote the evoluton of that insttution. 5a2b2d

Notes on briefing to Management Policy Council on their 4 Nov 71 visit to SRI

A Bootstrap Community 5a2b2d1

Or -- "Suppose there was discovered a truly effective approach for increasing the problem-solving effectiveness of an organization." 5a2b3

Suppose that gains of five to ten times as much capability were clearly seen as possible within the next decade, and again in the next. 5a2b3a

Suppose that to achieve the new gains required a fairly comprehensive reshuffling of ways of thinking and working, and the introduction of new technology, knowledge and skills. 5a2b3b

Suppose that every organization that wanted to convert to the new ways would have to rely continuuously and intimately upon a group of systems people to guide the stage by stage conversion -- for each successive stage, facilitating its new-facility acquisiton, its training, its shakedown period, etc. 5a2b3c

Assume that no single manufacturer was going to be able to supply all of the technological support for all the needs of even one large customer organization. 5a2b3d

JCN/DCE notes, NP etc. 5a3

Proportion the topic/emphasis? 5a3a

How keep track of the time? 5a3b

A clock?? 5a3b1

Give them anything? 5a3c

Like to have them have hard copy to compare with screen views. Will see if their MPC program will do. 5a3c1

Journalize beforehand?? Yes, if reasonably feasible. 5a3c1a

Else, had thought of using the FJCC reprint (but don't kno for sure where a good copy of the file is). 5a3c2

Resource material: 5a3d

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Notes on briefing to Management Policy Council on their 4 Nov 71 visit to SRI

Our proposal (7404,1:xhn) 5a3d1

Baseline, of course 5a3d2

Locator -- needs some exploring. 5a3d3

Net-participant listing. 5a3d3a

"What kind of terminals are being used at U. of Illinois?" MIT? Utah. 5a3d3b

Ident FIle -- e.g. is their a group, or where is Mr. xx situated. 5a3d3c

Journal -- Show the annunciator links in initial file. (Clean it up first). 5a3d4

(Note: Be sure that split-screen Jumps work now) 5a3d4a

Assume that they need a basic intro .. using their MPC Program. 5a3d5

Elemental definition/description of "Aug Sys", as in (Norton, JCN, Elements:gebbtnD) -- then open another level. 5a3d6

What kind of backup might be considered? 5a3e

Limit other system loading? 5a3f

Might be interesting to go to Exec, typ SYS, to show who is on -- in case some NET peple show up. 5a3f1

Let Net run, ask ARC users to be very light; and then have someone watching the loading carfully, and shut down anywone who puts too much load on. 5a3f2

Misc summary 5a4

Research Group(s) 5a4a

Equipment and operating-system industry 5a4b

User-systems (individual level) 5a4c

User sytem (organizatonal level) 5a4d

This is a comment on RWW's discusion of ARC as a service organization (journal, 8102,8). 1

I wrote it on a Dex tape in early December; machine problems have delayed its progress. 1a

A good service organization helps people with their problems. 2

It proceeds in the spirit of seeking out client's needs that it can satisfy. 2a

The gain to a bootstrapping organization of such a sprit is atleast twofold: 2b

Discovering problems to solve that they would not encounter within themselves. 2b1

There are thousands of uses for NLS we will never think of by ourselves. 2b1a

Satisifing customers and hence developing fuller relations with them. 2b2

From where I sit I have seen very little seeking out of client's needs in NIC or ARC. Reponse has been passive. 3

Some of the work invovled in net protocol is an exception. 3a

Perhaps the passive stance is a necessary stage in ARC'S evolotion, but to get the most out of being a service organization ARC should begin to change it. 3b

As a corolary, we should seek to limit the procedures we impose on clients. 4

To impose our procedures on a client is always in some degree to confront him with a new problem on top of the old ones he has brounght us. 4a

(J8365) 4-JAN-72 11:25; Title: Author(s): Dirk H. van Nouhuys/DVN;
Distribution: Richard W. Watson, Douglas C. Engelbart/RWW DCE(for your
information); Sub-Collections: SRI-ARC; Clerk: DVN;
Origin: <VANNOUHUYS>SERVICE.NLS;1, 3-JAN-72 10:23 DVN ;";

JBL 4-JAN-72 14:06 8366

Browse mode question

What can yowse mode via the
Joel

JBL 4-JAN-72 14:06 8366

Browse mode question

(J8366) 4-JAN-72 14:06; Title: Author(s): Joel B. Levin/JBL; Distribution: John T. Melvin/JTM; Keywords: browse; Sub-Collections: NIC; Clerk: JBL;

JBL 4-JAN-72 14:31 8367

Browse Mode 're-query'

My last message lost royally, I see. It was:
What can you do by entering or leaving browse mode via the Execute Browse command? I couldn't find in in the User's Guide.
It just occurred to me that my last message was screwed because i had paired double quotes in it. Sigh.
Thanx.
Joel

1

JBL 4-JAN-72 14:31 8367

Browse Mode 're-query'

(J8367) 4-JAN-72 14:31; Title: Author(s): Joel B. Levin/JBL; Distribution: John T. Melvin/JTM; Keywords: browse; Sub-Collections: NIC; Obsoletes Document(s): 8366; Clerk: JBL;

BAD 6-JAN-72 15:04 8395

Request for NIC 7104

Please send a one-time copy of the Network Protocol Notebook to

Mr. Harold Schwenk
Honeywell Information Systems
Mail Station 425-C
200 Smith Street
Waltham, Mass. 02154

1

BAD 6-JAN-72 15:04 8395

Request for NIC 7104

(J8395) 6-JAN-72 15:04; Title: Author(s): Bruce A. Dolan/BAD;
Distribution: Jeanne B. North/JBN; Sub-Collections: NIC; Clerk: BAD;

blap

(J8396) 6-JAN-72 15:19; Author(s): William S. Duvall/WSD;
Sub-Collections: SRI-ARC; Clerk: WSD;

PMK 10-JAN-72 8:34 8409

Additions to Mailing List B

Dick:
Please add the following two locations to Mailing List B. 1

1. Dave Twyver
Computing Center
University of British Columbia
Vancouver 8, Canada

(604) 228-3072 1a

2. Dr. D. D. Aufenkamp
Office of Computing Activities
National Science Foundation
1800 G Street, N.W.
Washington, D.C. 20550

(202) 632-7349 1b

You may want to check with Terry Shepard to see if the material being sent to him is still useful.
Thanks,
Peggy 2

PMK 10-JAN-72 8:34 8409

Additions to Mailing List B

(J8409) 10-JAN-72 8:34; Title: Author(s): Peggy M. Karp/PMK;
Distribution: Richard W. Watson, Steve D. Crocker/RWW SDC2;
Sub-Collections: NIC; Clerk: PMK;
Origin: <MITRE>MESSAGE.NLS;1, 10-JAN-72 7:53 PMK ;

RWW 10-JAN-72 8:42 8411

A Couple of Questions on DSS Operations

Text for this message lost by system error 1

RWW 10-JAN-72 8:42 8411

A Couple of Questions on DSS Operations

(J8411) 10-JAN-72 8:42; Title: Author(s): Richard W. Watson/RWW; Distribution: William S. Duvall, J. D. Hopper, James C. Norton/WSD JDH JCN; Sub-Collections: SRI-ARC; Clerk: RWW;

MEMO TO PROJECT FILE 1

To: Project 8457-20 File 2

From: Don Cone 3

Subject: I4 NASA Ames/ARC--Novar Equipment 4

In mid December during a discussion with Bill Jones of I4 group I reported to him that ARC was not acquiring the model 5-60 NOVAR terminals which we had been considering; that we were still looking for the best fit to our equipment and operational requirements, and that we would keep them informed regarding our decision relating to terminal acquisition. 5

It was my impression at the 12/8/71 meeting with Jones and Dahlquist that they had preceded us in exploring NOVAR equipment, and that NOVAR had provided them an experimental model 5-60 unit for experimentation prior to our visit. 6

Thus I believe their interest in Novar was self-generated and not based on the fact that ARC was considering acquisition of NOVAR equipment. 6a

(J8412) 10-JAN-72 10:25; Title: Author(s): Priscilla Lister/PL;
Distribution: Douglas C. Engelbart, Stephen W. Miller, James C.
Norton/DCE SWM JCN; Sub-Collections: SRI-ARC; Clerk: PL;
Origin: <LISTER>MEMO.NLS;1, 7-JAN-72 14:23 PL ;

BAD 10-JAN-72 10:48 8413

Request for NIC 6740

Please send one copy of the Network Resources Notebook (one-shot delivery, no binder)
to

Mr. Bud Francis
APL/JHU
8621 Georgia Ave.
Silver Spring, MD 20910 1

BAD 10-JAN-72 10:48 8413

Request for NIC 6740

(J8413) 10-JAN-72 10:48; Title: Author(s): Bruce A. Dolan/BAD;
Distribution: Jeanne B. North/JBN; Sub-Collections: NIC; Clerk: BAD;

JBP 10-JAN-72 11:43 8414

msg to crocker

Steve: What is the procedure for declaring protocols official? Alex and I are concerned since we are drafting the revisions of the Host-Host, and Telnet protocols called for at the October NWG. Also, we are working on the RJE protocol. (by the way, are there any plans for another NWG meeting?) I will be visiting UCSD this week (on THURS 13 JAN). bye. 1

JBP 10-JAN-72 11:43 8414

msg to crocker

(J8414) 10-JAN-72 11:43; Title: Author(s): Jon B. Postel/JBP; Distribution: Steve D. Crocker, Jon B. Postel/SDC2 JBP; Sub-Collections: NIC; Clerk: JBP;

JBN 10-JAN-72 13:18 8415

Why AAM did not get a copy in initial file.

Text for this message lost by system error 1

JBN 10-JAN-72 13:18 8415

Why AAM did not get a copy in initial file.

(J8415) 10-JAN-72 13:18; Title: Author(s): Jeanne B. North/JBN;
Distribution: Alex A. McKenzie, Jeanne B. North/AAM JBN;
Sub-Collections: SRI-ARC; Clerk: JBN;

JBP 10-JAN-72 13:33 8416

msg to alex

Link to document: (JOURNAL,JRNL3,J8416:gw) 1

JBP 10-JAN-72 13:33 8416

msg to alex

(J8416) 10-JAN-72 13:33; Title: Author(s): Jon B. Postel/JBP; Distribution: Alex A. McKenzie, Jon B. Postel/AAM JBP; Sub-Collections: NIC; Clerk: JBP;

how is our friend Perry Gluckman getting along ? 1

(J8417) 10-JAN-72 13:49; Title: Author(s): Jon B. Postel/JBP; Distribution: John T. Melvin, Jon B. Postel/JTM JBP; Sub-Collections: NIC; Clerk: JBP;

HGL 10-JAN-72 13:56 8418

COMMENTS ON ARC WORK HOURS

I have the following comments concerning (journal, 7701,) which deals with the question of ARC personnel work hours from the point of view of a software person. 1

All software personnel should be included in the list of people who, because of the nature of their jobs, would have reason to work abnormal hours at least occasionally. 1a

As long as we have a relatively heavy load from the network and from within ARC, it will be difficult for new features to be programmed into NLS and for bugs to be removed within the overlapping hours. 1b

A single hour in which compilations and loads can effectively be done within the 8 to 5 period is simply not enough. If we are to be restricted to "normal" hours, we should then consider restricting access to the system for non-programming uses for a greater amount of time-- an idea sure to raise the wrath of the NIC people. 1b1

Perhaps a solution would be to declare a different set of default hours for software people containing necessary overlap with the rest of ARC and still permitting interference-free debugging without energy draining system loads. 1c

It is, of course, unfortunate that such a discussion must take place at all. It is clear that rigid and inflexible adherence to the standard SRI policy will make currently rapid pace of ARC development much more difficult. 2

HGL 10-JAN-72 13:56 8418

COMMENTS ON ARC WORK HOURS

(J8418) 10-JAN-72 13:56; Title: Author(s): Harvey G. Lehtman/HGL; Distribution: Richard W. Watson, Charles H. Irby, Ed K. Van De Riet, James C. Norton, Walter L. Bass, William S. Duvall, Mary S. Church, J. D. Hopper, Charles H. Irby, Harvey G. Lehtman, John T. Melvin, Bruce L. Parsley, William H. Paxton/EMC NPG; Sub-Collections: SRI-ARC EMC NPG; Clerk: HGL;
Origin: <LEHTMAN>NEWFIL.NLS;1, 10-JAN-72 13:19 HGL ;

Content Analysis Language

For information about the language for specifying content analyser patterns, see (auerbach,crash,:). 1

Happy new year. 1a

Dirk 1b

DVN 10-JAN-72 14:24 8420

Content Analysis Language

(J8420) 10-JAN-72 14:24; Title: Author(s): Dirk H. van Nouhuys/DVN; Distribution: Ellen Westheimer/EW; Sub-Collections: SRI-ARC; Clerk: DVN; Origin: <VANNOUHUYS>JOURDRAFT.NLS;14, 10-JAN-72 14:14 DVN ;

JBN 10-JAN-72 17:49 8421

Further attempt to explain initial file message, and further attempt to work with it.

Alex* This is another attempt to try to get a Message, as contrasted to a Journal link, in your initial ffle, about your lack of an author copyof a Message you have sent. Bill Duvall wrote and effected an algobithm to suppress the sending of duplicate copies of the same document to addressees who appear on several lists, such asLiaisons who are in special groups. He has also written, but has not yet completeed for implementation, a system which will put in your file a report of messages and items you have sent, separate from thoose you receive.
Now I'll try again to get this text into your file, rather than a link. 1

JBN 10-JAN-72 17:49 8421

Further attempt to explain initial file message, and further attempt to work with it.

(J8421) 10-JAN-72 17:49; Title: Author(s): Jeanne B. North/JBN; Distribution: Alex A. McKenzie, Jeanne B. North, Linda L. Lane/AAM JBN LLL; Sub-Collections: SRI-ARC; Clerk: JBN;

MFA BLP 10-JAN-72 18:02 8422

Redesign and Maintenance of <nls>status

your comments are invited

Redesign and Maintenance of <nls>status

In an attempt to monitor system changes and their documentation counterparts, the programming staff and MUD (Maintenance of User Documntation) have redesigned and will maintain the file <NLS>STATUS. <NLS>STATUS now consists of four branches. 1

Branch 1 is named "Folklore" and documants all system changes not included in published user documentation. This branch is the responsibility of MUD and is user-oriented in style. Folklore consists of two branches: "Changes" and "Bugs". 1a

"Changes" is essentially a rewrite of user-pertinent information devived from branch 2. 1a1

"Bugs" is a copy of the Reported Bugs branch of the Basedata file. (Baseline Management supplies MUD with a copy of this branch on a weekly basis). Fixed bugs are treated as system changes i.e. reported via "Changes". 1a2

Branch 2 is named "Running" and is written by the software staff. The information in this branch is derived from branch 3 and is separated into two branches: "User" and "Tech". 1b

"User" contains changes that exist in the current version of NLS that are not yet documented in branch 1. MUD is responsible for deleting information from this branch. 1b1

"Tech" contains changes which pertain only to the programming staff. The programming staff is responsible for deleting information from "Tech". 1b2

Branch 3 is named "NIC'NLS" and contains information about new features in the current <NIC'NLS>NLS.sav version of NLS. 1c

Branch 4 is named "REL'NLS" and contains information about new features in the current <REL'NLS>NLS.sav version of NLS. 1d

Software staff is responsible for writing/maintaining branches 2, 3, and 4. Each entry in these branches is "signed" by the IDENT of the programmer responsible for the change. MUD is responsible for monitoring branch 2 and writing/maintaining branch 1. 2

<NLS>STATUS will be the only vehicle for informing ARC of system changes. 3

<DOCUMENTATION>FOLKLORE will consist only of information relevant to Network users which is not already covered in the TNLS and Journal User Guides. 4

MFA BLP 10-JAN-72 18:02 8422
Redesign and Maintenance of <nls>status

(J8422) 10-JAN-72 18:02; Title: Author(s): Marilyn F. Auerbach, Bruce L. Parsley/MFA BLP; Distribution: Paul Rech, Stephen W. Miller, Michael D. Kudlick, George J Eilers, Donald R. CONE, Bonnar Cox, David R. Brown, Don Limuti, William R Ferguson, Priscilla Lister, Robert L. Dendy, Linda L. Lane, Marilyn F. Auerbach, Walter L. Bass, Mary S. Church, William S. Duvall, Douglas C. Engelbart, Beauregard A. Hardeman, Martin E. Hardy, J. D. Hopper, Charles H. Irby, Mil Jernigan, Harvey G. Lehtman, John T. Melvin, Jeanne B. North, James C. Norton, Cindy Page, Bruce L. Parsley, William H. Paxton, Jeffrey C. Peters, Jake Ratliff, Barbara E. Row, Ed K. Van De Riet, Dirk H. van Nouhuys, Kenneth E. Victor, Don C. Wallace, Richard W. Watson, Don I. Andrews/SRI-ARC; Sub-Collections: SRI-ARC; Clerk: MFA;
Origin: <AUERBACH>UPDATE.NLS;2, 10-JAN-72 17:58 MFA ;

11-11-71 PSST MEETING

11-11-71 PSST Meeting 1

Present were Don Cone, Beau Hardeman, Harvey Lehtman, Walter Bass, Marilyn Auerbach, Mil Jernigan, Dirk van Nouhuys, Cindy Page, Barbara Row, and Steve Miller. 1a

Absent were Linda Lane and Jeanne North. 1b

Before Steve Miller arrived, Don went over some of the requirements of the PSST. We must meet on-coming needs and prepare to meet expansions. Secondary goals are to minimize costs and document procedures for groups within and without the ARPA Net. We can't let the PSST work seriously interfere with all the things we are already doing. 1c

How do we do all this? We can't just say work harder. Don said he was not a time and motion study person, nor was he an efficiency expert; but he would see if he could help us eliminate tasks which might be unnecessary or suggest ways to increase our output. 1d

Another possibility is that we hire more people, but that would be only a small part of the answer. Don said they're looking for typing help but they're concerned about keeping ARC at a compatible size. Expansion can only be very limited. 1e

Mil questioned whether anyone would be hired at all. Don said he understood we were authorized to hire one typist and enlist temporary help when we have peak loads. 1f

Another problem Don is working on is more effective use of the space we have available to us. Jim Norton has a date set up to talk to Dave Brown about shifting people around and making more space available for the PSST operation. One plan involves moving the shop out of J2028 and using that area for files and possibly offices for some of us. 1g

More and better equipment is another area of concern. There has been talk of installing another PDP-10. There are printers that go faster and do more interesting printouts than the Data Products printer we have now. Information International has a phototypesetter with reasonably high quality graphic art capabilty. The machine is in the $100,000 to $400,000 area, depending on the options you purchase. It can be used on a time-sharing basis. Steve Miller is checking to see if the company might be willing to set up a servicee bureau in the area that we could buy from. The machine is designed for COM

and has different type fonts. Special characters can be added to the fonts that exist. RCA has an electronic composer which is not selling too well, but is a possiblity. Don and Steve were especially interested in TRENDATA's selectric typewriter that uses standard Phillips cassettes and has a phone connection. Mil was interested in how corrections were made. Harvey explained that any corrections, assuming we use these machines at all, would be made through DEX-1. Harvey said any machines we buy should meet our requirements for hardware and software. For example, to consider buying a MTST with its limited software which is not compatible with our system is ridiculous; we don't need merge tape or correction devices. Everyone agreed with this. 1h

Don mentioned other areas that need our attention: improvements in the audio recording of meetings, Xerox copiers or an electroprint processor, training people to use DEX-1 techniques. One problem is that our work is undefined. PSST may take over the coffee operation and provide a two-week calendar that Charles requested be set up. RADC wants help on its baseline management system. 1i

When Steve arrived he wanted to know what the purpose of this meeting was. Don explained it was meant to be a get acquainted session to discuss what our goals are and that later we would discuss some of the problems that might be coming up. 1j

Steve said he understood that there are people outside of SRI who desire to use ARC facilitis in the task of generating, controlling, and producing documents -- RADC, Ames, and the University of Illinois. Steve has had several discussions with people at Ames and one with Illinois. 1k

At Ames the primary problem is that the ILLIAC IV is largely undocumented. Phase II will be really a redesign, so the documentation will involve documenting more fully the present system and documenting the redesign of the Phase II system. Ames expects between 75 and 100 separate subcontracts, all of which will be generating documents and who would like those documents to be created with the aid of this system. We don't know how many people these subcontracts represent, probably several hundred. At the present time they have in various states of completion (rough drafts, completed drafts, finished documents turned out by the ILLIAC, maintenance manuals from Burroughs for the hardware of the ILLIAC IV) about 40 shelf feet of documents that are uncatalogued. These documents have to be put into some system that allows for changes. Their

number one requirement is to get a librarian who can live in that room and generate a bibliography so that somebody knows what's there. It hasn't been decided whether that somebody should be from here or from there. If we're going to supply service to Ames, will it include that person? Do we have that somebody who can provide that service? 1l

Harvey wanted to know what service we can provide -- the promise of a service? He said the software people discussed this question on Wednesday. They concluded we're pushing too hard at an expansion that we're not ready to do. 1m

Steve went back to the discussion of Ames' needs. How will that bibliography be generated? The research reports that are written must be put out in some kind of finished hard copy at some time. Are we ready to provide them some kind of service, including fast turn around? Who can classify the documents that are there so subset bibliographies can be generated? Eventually somebody needs to read those documents so an annotated bibliography can be provided. 1n

Dirk was interested in how these documents related to NLS. Do they have graphics which we cannot accept. Somebody from ARC or somebody familiar with NLS would have to go through these documents. 1o

Marilyn felt we were looking at things backwards. We should be considering what services we have to offer, not what services these people need. Steve disagreed. His task is to find out what services these people need. We have to see what services they should get from the outside and what they should get from us. Harvey said they should agree to work in a primitive state until we get things designed and implemented. 1p

Steve named two things we are prepared to offer: some kind of offline collection device like a TRENDATA 1700 which will allow the librarian to collect things on a Phillips cassette, have a courier bring that up here, crank out the rough draft, have the courier take it back to the librarian, have the librarian blue pencil it and somebody up here make the corrections and to plan some kind of high quality output device available to ARC. 1q

Dirk agreed that Steve's plans for offline text entering sounded feasible and practical. Marilyn felt we were one step ahead of where we are. Harvey felt certain we wouldn't be expected to begin next week. Steve had an appointment for 11

o'clock on Friday morning to look at the TRENDATA terminal. He wanted to dial directly into our computer; Smokey said he would have to go through the TIP at Ames. 1r

In the area of high-quality output devices, Steve explained that it was unlikely that an FR-80 COM 80 would be hooked up to our PDP-10. It is far more likely that we'll try to convince somebody to establish a service center that ARC and other parts of SRI could use. In turn ARC would guarantee X number of dollars in return for some kind of priority on their services. Maybe within a year we can turn out finished documents of reasonably high quality. 1s

Dirk said that he has been hearing for six months that NASA needs some documentation help, but this is the first time he has had any notion of what it was. He needed to know what they needed, not what we could do. 1t

Steve explained that Doug told him to spend as much time as needed to work both sides of the question -- What services does Ames need and what services can we provide them. 1u

Mil asked how soon it would be before we had better microphones. Harvey, Don, and Steve felt this was a simple problem and could be solved by early next week. 1v

Beau wanted to know what we had resolved as a result of this meeting. Don said that wasn't even on the agenda. The purpose of the meeting was for Don and Steve to tell the rest of us the things that they've been doing and to discuss the relations with NASA and the ILLIAC IV that will be going on for a number of months. 1w

JBN BER CXP DVN MEJ MFA WLB HGL BAH DRC SWM LLL JBN 11-JAN-72
9:30 8423

11-11-71 PSST MEETING

(J8423) 11-JAN-72 9:30; Title: Author(s): Jeanne B. North, Barbara E. Row, Cindy Page, Dirk H. van Nouhuys, Mil Jernigan, Marilyn F. Auerbach, Walter L. Bass, Harvey G. Lehtman, Beauregard A. Hardeman, Donald R. CONE, Stephen W. Miller, Linda L. Lane, Jeanne B. North/JBN BER CXP DVN MEJ MFA WLB HGL BAH DRC SWM LLL JBN; Distribution: Linda L. Lane, Jeanne B. North, Barbara E. Row, Cindy Page, Dirk H. van Nouhuys, Mil Jernigan, Marilyn F. Auerbach, Walter L. Bass, Harvey G. Lehtman, Beauregard A. Hardeman, Donald R. CONE, Stephen W. Miller, Linda L. Lane/LLL JBN BER CXP DVN MEJ MFA WLB HGL BAH DRC SWM LLL; Sub-Collections: SRI-ARC;
Clerk: LLL;
Origin: <LANE>BLANK.NLS;41, 11-JAN-72 8:51 LLL ; ;

JBL 11-JAN-72 9:16 8424

Problems in Alex's Initial File (AAM)

In looking at Alex's initial file, we found your message, repeated
n times (where n is more than we cared to print out). Each repetition was identical and occupied its own statement (1a,1b,etc.).
Your message got there succesfully, but any attempt to do anything
besides print statement .journal just started gobbling up time.
That initial file is thus virtually unuseable and is probably all screwed up. Could someone look at it? Thanx. 1

JBL 11-JAN-72 9:16 8424

Problems in Alex's Initial File (AAM)

(J8424) 11-JAN-72 9:16; Title: Author(s): Joel B. Levin/JBL;
Distribution: Jeanne B. North/JBN; Sub-Collections: NIC; Clerk: JBL;

CHI 11-JAN-72 10:04 8425

Proposed journal changes and the new file system

Dave, I am now developing a proposal for a new file system which incorporates backlinks, comments (associated with links and anotative), archiving, and allowing for a set system. The file I am workingin is (irby, filesys,). You may find it interesting, and I would like to have your reaction and I would like to know what affect it has on the proposed journal changes. 1

CHI 11-JAN-72 10:04 8425

Proposed journal changes and the new file system

(J8425) 11-JAN-72 10:04; Title: Author(s): Charles H. Irby/CHI; Distribution: J. D. Hopper, William S. Duvall, William H. Paxton/JDH WSD WHP; Sub-Collections: SRI-ARC; Clerk: CHI;

JBL 11-JAN-72 10:40 8426

Testing distribution to self and others.

Hello.
Alex has asked me to make another test since we don't trust his tests
using his initial file.

1

JBL 11-JAN-72 10:40 8426

Testing distribution to self and others.

(J8426) 11-JAN-72 10:40; Title: Author(s): Joel B. Levin/JBL; Distribution: Jeanne B. North, Ellen Westheimer, Julie B. Moore, Joel B. Levin/JBN EW JBM JBL; Sub-Collections: NIC; Clerk: JBL;

JBN 11-JAN-72 11:00 8427

xerox - NEED FOR COPIER TO EDI CHAMBERS 1

JBN 11-JAN-72 11:00 8427

TO: Edi Chambers
27-DEC-71 1a

FROM: Don Cone 1b

SUBJECT: Urgent Need for Xerox or Equal Quality Copier 1c

---------- 1d

1e

The NIC needs for its exclusive use a Xerox 4000 copier.
Background for this demand is as follows: 1f

As Network Information Center (NIC) for the ARPA Network, the Augmentation Research Center is charged with production and distribution of formal and informal documents supporting the communication on the Network. 1f1

All NIC documents should be of compatible quality. The necessity of producing parts of documents for updating and distribution calls for a reproduction machine capable of producing small quantities of documents of the same high quality as large production runs. 1f2

New procedures in the NIC work require greatly increased use of a copier for internal records as well as for distributed materials. It is essential for efficiency to have a copier immediately available to the staff. 1f3

An examination of the product from all makes of copier used at SRI showed that none but the Xerox 4000 would provide the quality including halftone reproducibility and surface texture, demanded for the NIC. 1f4

This equipment is to be charged to Contract 8457-80. 1g

JBN 11-JAN-72 11:00 8427

c: R. Wing
J. Norton

lh

(J8427) 11-JAN-72 11:00; Title: Author(s): Jeanne B. North/JBN;
Distribution: Jeanne B. North/JBN; Sub-Collections: SRI-ARC; Clerk: LLL;
Origin: <LANE>BLANK.NLS;43, 11-JAN-72 10:26 LLL ; ;

MFA HGL JBN 11-JAN-72 17:08 8428

PSO is alive and twitching!!!

please

MFA HGL JBN 11-JAN-72 17:08 8428

PSO is alive and twitching!!!

The following services have recently been defined by PSO and as such necessitate that certain procedures and accompanying forms be used when these services are rendered. These procedures are a first pass at the business of structuring and organizing some of the support functions performed at ARC. Admittedly, the use of these forms may seem unwieldy to ARC personnel, but it is hoped that they will be used. Their usage along with (heartily welcomed) feedback from the ARC staff will serve PSO to formulate better procedures and vehicles for getting the job done. 1

All forms mentioned in this document will be kept in the clearly labeled Forms Bin in the PSO Shop (currently in Cindy's office, soon to be in the olde shoppe). Hopefully they are self explanatory; however, if they are not, please question JBN or MFA and perhaps effect a redesign. 2

TRANSCRIPTION WORK 2a

Any ARC person requiring transcrition of text from/to any medium should use this form. 2a1

A copy of this form should be attached to the item to be transcribed and deposited in the PSO in-basket. 2a2

The PSO in-basket has two levels, RUSH and NORMAL/LOW priority. RUSH means as soon as possible, i.e. in one to four hour and depending on the size of the job. 2a2a

PSO reviews the content of the in-baskets periodically and allocates the jobs on the basis of immediacy and the availability and capabilities of the current PSO staff. 2a3

PSO reproduces the transcription worksheet and places the copy in chronological order in the PSO work log notebook in the Shop. The original transcription worksheet remains with the material to be transcribed. 2a4

Once a transcription job is completed by PSO, the original transcription sheet is marked as complete; it replaces the corresponding copy in the work log; and it is returned to the requestor by hand accompanied by the product requested or its record. 2a5

The original material is placed in a holding file maintained by PSO unless specified otherwise by the requestor. Periodically, old originals will be expunged from this file. 2a5a

PSO is alive and twitching!!!

MESSAGE LOG FOR NIC SITE CONTACTS 2b

Most messages from the Network will be taken by PSO. However, any ARC person taking a phone message from a Network member should complete this form. Copies of this form are available at each NIC phone (presently located in JBN's, JTM's, MEJ's, WRF's, CXP's offices) and upon request as well as in stock in the PSO Shop. 2b1

Once this form is completed, it should be returned to the NIC Shop and deposited in the NIC in-basket. 2b2

ARC MASTER CATALOG DOCUMENT ENTRY 2c

The ARC Master Catalog is a collection of citations of all materials held in both the ARC and Journal hardcopy collections. 2c1

Materials include reports, books, periodicals, abstracts, films, slides, etc. on subjects of interest to ARC. 2c1a

Materials cited in the ARC Master Catalog are physically accesible to all ARC members. Books suggested for inclusion in the Catalog must be purchased by ARC, and other materials must exist in at least copy form. 2c2

Insisting on the physical availability of materials included in the Collection should greatly improve the usability of the ARC Library. 2c2a

ARC members submitting items to the Collection are urged to either surrender the item to ARC, request that ARC purchase/obtain a copy of the item (see the Document Acquisition Form), or to have the item (after cataloging) charged out to them for an undetermined period of time. 2c2b

An item is submitted by an ARC member for inclusion in the Master Catalog by using the Document Entry Form. Note that all Journal items are automatically included in the ARC Master Catalog and hence do not require formal submission. 2c3

An item being submitted to the Catalog should be accompanied by this form and placed in the Catalog In-box in the PSO Shop. 2c4

PSO is alive and twitching!!!

Items submitted will be processed by PSO, included in the Library, copied, or returned to the requestor on an loan basis as appropriate. 2c5

PSO will periodically announce new materials included in the Collection. 2c5a

ACQUISITION REQUEST 2d

ARC may request that documents (books, reports, etc.) be obtained by PSO for inclusion in the ARC Collection by using the Document Request Form. 2d1

After processing by PSO, a copy of this form will be returned to the requestor with an indication of the action taken by PSO. 2d2

JOURNAL ENTRY 2e

ARC members may request that items be journalized by PSO by using the Journal Entry Form. 2e1

As a means of informing the requestor of task completion, PSO will cause the Journal system to place a link to the newly created Journal item in the initial file of the requestor. 2e2

IDENTFILE ENTRY AND MODIFICATION 2f

ARC members may request that items be entered and/or modified in the IDENTFILE by PSO by using the Identfile entry Form. 2f1

After processing by PSO, a copy of the Status command output for the new/changed entry and the original request form will be returned to the requestor. 2f2

PREASSIGNED CATALOG AND RFC NUMBERS 2g

ARC members may request that preassigned catalog and RFC numbers be obtained by PSO by using the Preassinged Numbers Form. 2g1

The followup by PSO is identical to that for Identfile Entry and Modification. 2g2

CHARGES FROM COLLECTION 2h

PSO is alive and twitching!!!

ARC members may borrow items from the Collection by using the Charge Cards located in the Cave and in the Vault. 2h1

Charge Cards in the Cave are for books and journals maintained on the library shelves. 2h1a

Charge Cards in the Vault are for reports maintained in the files in the vault. These require that in addition to filling out the required information, that the borrower insert the card itself in the report's location in the file. 2h1b

There is no time limit on items borrowed from the Library. 2h2

Items should be returned to the Return box in the Cave, from which they will be discharged from the records and refiled in the Collections. 2h3

MFA HGL JBN 11-JAN-72 17:08 8428

PSO is alive and twitching!!!

(J8428) 11-JAN-72 17:08; Title: Author(s): Marilyn F. Auerbach, Harvey G. Lehtman, Jeanne B. North/MFA HGL JBN; Distribution: Paul Rech, Stephen W. Miller, Michael D. Kudlick, George J Eilers, Donald R. CONE, Bonnar Cox, David R. Brown, Don Limuti, William R Ferguson, Priscilla Lister, Robert L. Dendy, Linda L. Lane, Marilyn F. Auerbach, Walter L. Bass, Mary S. Church, William S. Duvall, Douglas C. Engelbart, Beauregard A. Hardeman, Martin E. Hardy, J. D. Hopper, Charles H. Irby, Mil Jernigan, Harvey G. Lehtman, John T. Melvin, Jeanne B. North, James C. Norton, Cindy Page, Bruce L. Parsley, William H. Paxton, Jeffrey C. Peters, Jake Ratliff, Barbara E. ROW, Ed K. Van De Riet, Dirk H. van Nouhuys, Kenneth E. Victor, Don C. Wallace, Richard W. Watson, Don I. Andrews/SRI-ARC; Sub-Collections: SRI-ARC; Clerk: MFA;
Origin: <AUERBACH>PSONOW.NLS;12, 11-JAN-72 16:22 MFA ;

RWW 13-JAN-72 6:26 8429

Some Random Thoughts on Reliability and Capacity

We have been suffering for the past several months from a constant string of reliability problems hardware, Tenex, Journal, many of them interconnected. These problems have been aggravated by capacity problems when the system has been functioning. 1

One of the conclusions I draw from this situation is that we exist in a situation where the level of complexity of the total hardware software environment is greater than we can effectively handle with our present augmented intellects. 2

We know that we can improve our augmentation by better tools, training, and procedures and methods. We must do so as I sense that the tolerance of both our own staff and definitely that of our outside users is wearing thin. The outside users are beginning to depend on us. 3

The following suggestions have occured to me as things we could do to help our situation, many of which we have discussed before and even all agreed to do, but some how we keep slipping into old habits and do not really try them. 4

First we have to recognize clearly once and for all that we are a service center both to ourselves and to others and that we are to be up solid Tenex and Journal between 5 am and 6 pm come rain or shine. This means system work and dumps etc. must be completed before 5 am unless there has been some previous negotiation and notification to users. 5

When the system is acting up and there is no alternative but to use the users as fodder and to run with softwhere bugs or hardware problems aclear possibly lengthy statement of where we are at and expected time of improvement needs to go out to users as they log in, particularly net users so they can know what to expect. There should probably be two or three classes of Journal down messages as WSD suggested yesterday. 6

Now that Tenex 128 is here I think we should not put anymore changes in the monitor until it is known to be very solid, then future versions should be brought up with an agreement that they run until a software crash and then are immediately backed up to an old version and returned to the workshop for further checkout before being brought backup again. 7

We must be extra careful about checkout of versions that require changes in NLS such that there is no going back to old versions. We are still suffering from the change to the new character stuff. In fact I think that when such a watershed is crossed operations should be willing to backup both Tenex and NLS if

necessary even if it means some inconvenience because NLS features are unavailable for several more days until the bugs have been found. We lose much more from down time and lost work than we can possibly gain from a new feature or two. 8

If checkout of new systems requires real live users then it should be done after 6 pm. 9

Yesterday we ran very close to using up our disk space again even after we set up procedures to avoid this problem some time back. I do not understand why we should ever be allowed by operations to get within 3000 pages of the end of the disk. 10

yesterday we filled up the Journal's directory and distroyed it causing the Journal to be unavailable and NLS to locked out. This problem has happened so frequently in the past the it clearly fall in the avoidable class by appropriate procedures. 11

The history of the Bryant disk indicates to me that it may well be unrepairable or maintainable and we should be prepared to scrap it if one final try by Bryant after the disk packs arrive can't get its reliability up to some acceptable point. 12

The Bryant drum has had some problem for some time, but we have not actively pursued the problem at least as far as I know and instead have concentrated on bringing up version 128. It seems to me we need to adopt the attitude that any problem anywhere in the system is serious even if we can run inspite of it, because of backup or user adaptability, and pursue each problem as if our livelyhood depended on it, as it does, dropping work on new things if necessary until the old continues to work. 13

As we see both in our own environment and in the soceity around us there is a rate of change which when exceeded tends to make the whole system border on instability and self destruction, we may be bordering on the point with the present rate of change going on with Tenex. 14

We should make hardware plans which lead to the removal of as much nonstandard core hardware, so as to decrease the amount our hardware people have to know and keep track of to help keep us on the the air. 15

The complexity in the hardware area ,I believe is much greater than in the software area and therefore more augmentation is needed there or we need to simplify in that area as much as possible. 16

Some Random Thoughts on Reliability and Capacity

About the question of capacity, a couple of points. 17

We definitely need to restrict the number of users based on load factor averaged over some recent time period, but we have to allow some minimum number of net users in at any time (say 4). Such a restriction will create tensions when someone can not get on and feels his task is more important thatn someone who is on. We will have to learn how to handle this problem, but one thing each of us can do is to have several things always available to do that can be done offline. 17a

We should probably just go ahead and order 32K of more memory based on what we know about Tenex memory management and NLS working set characteristics and past experience when a core box had to be taken out of the system. 17b

Although there are probably a few more things that we can do to improve Tenex, I feel that there probably are going to be a number of changes that can be made to NLS to improve performance, which will show up once the new superwatch program is operational in the next few days. NLS is a very costly system to run in its present form and we must learn about how to cut this cost if it is to survive in a nonsubsidized environment. 17c

RWW 13-JAN-72 6:26 8429

Some Random Thoughts on Reliability and Capacity

(J8429) 13-JAN-72 6:26; Title: Author(s): Richard W. Watson/RWW; Distribution: Paul Rech, Stephen W. Miller, Michael D. Kudlick, George J Eilers, Donald R. CONE, Bonnar Cox, David R. Brown, Don Limuti, William R Ferguson, Priscilla Lister, Robert L. Dendy, Linda L. Lane, Marilyn F. Auerbach, Walter L. Bass, Mary S. Church, William S. Duvall, Douglas C. Engelbart, Beauregard A. Hardeman, Martin E. Hardy, J. D. Hopper, Charles H. Irby, Mil Jernigan, Harvey G. Lehtman, John T. Melvin, Jeanne B. North, James C. Norton, Cindy Page, Bruce L. Parsley, William H. Paxton, Jeffrey C. Peters, Jake Ratliff, Barbara E. Row, Ed K. Van De Riet, Dirk H. van Nounuys, Kenneth E. Victor, Don C. Wallace, Richard W. Watson, Don I. Andrews/SRI-ARC; Sub-Collections: SRI-ARC SRI-ARC; Clerk: RWW;

TOWARD A FRAMEWORK FOR NETWORK INFORMATION CENTER EVOLUTION 1

INTRODUCTION 2

The main emphasis of this piece is to consider NIC "business" evolution more than its detailed "technical" evolution. 2a

This planning needs close coordination and feedback from and to ARC's planning more generally. 2a1

Before going on to discuss a framework for the Network Information Center's evolution some brief background on the evolution of the network and my present understanding of the Bootstrap Community plans is worthwhile. 2a2

ARPANET EVOLUTION 3

The character of the network and its planned future has significantly changed since it was initially conceived and SRI-ARC volunteered to be the Network Information Center (NIC). 3a

The initial plan was for a small number (approximately 12) of research sites to be experimentally interconnected. 3a1

The number of research sites is presently around fifteen, but the total number of sites is planned to grow to around thirty by May 1972. 3a2

The number of sites should increase at the rate of about two a month throughout the remainder of 1972. 3a3

There are many applications from universities, government agencies, and corporations for access to the net. 3a4

There is strong pressure in some agencies (such as NSF) and from some universities (such as the University of California) to create their own independent network probably using ARPANET technology. 3a5

There are other growing computer networks run by various computer utilities such as Tymshare, CDC, GE, etc. 3a6

In fact there is a high probability that the ARPANET and Tymshare's net will be linked experimentally by late 1972. 3a7

3a8

All of these factors are creating pressure on ARPA to give control of the network to some private firm as a specialized common carrier. 3b

A committee of ARPA's research, Principle Investigators, has been formed to study this problem from the point of view of present network participants and more globally and make recommendations to ARPA. 3b1

The point of the above is that by January 1973 there will probably be as many as 40-50 sites on the network, some with two or more computers. 3c

The number of people having access to the net through these computers by the end of 1972 could be on the order of 1000, although only 100-200 would be active users at that point. 3c1

Further, a national computer network is clearly going to come into being which will have many computers and terminals directly connected and will have links to other private networks and subnetworks. 3c2

At the point when a specialized common carrier is formed growth of connection and access to the network is going to be explosive. 3c3

ARC GOALS 4

ARC's (we have a naming problem involving distinguishing between the name of the laboratory entity and its subpieces- I would recommend changing the name of the laboratory entity) stated goal, as I understand it, is to work toward giving and receiving support of system development groups. 4a

These system development groups are either supporting NLS based augmentation systems possibly with specialized services or are developing systems not NLS based, but they need augmentation for their work. 4a1

Many of these system development groups will be members of the network community. 4a2

It is my understanding that ARC is not interested in supporting non system development individuals or groups, but is strongly interested in seeding and encouraging the development of an augmentation industry to serve these end users. 4a3

The system development groups supporting end user communities would then probably find it advantageous to associate with the ARC bootstrap community (BC). 4a4

Many organizations and centers dedicated to serve important special interest groups will undoubtedly come on the network or evolve with the network and will naturally want to offer various NLS based augmentation services to their end users. 4b

The system developers for these groups would then be candidates for membership in the BC. 4b1

A rough guess of how the bootstrap community would function would be that it would support a central non-profit group like ARC much as various groups such as the American Petroleum Institute, and other industry wide groups are supported to coordinate information, research, and other activities of an industry wide nature. 4b2

ARC would evolve to be such a group for the "augmentation industry" or system development industry. 4b3

One possible way the BC might be governed is that each independent organization belonging to the BC might appoint a representative to form a board of directors for ARC with power to "tax" the member organizations for common developments and help set priorities or arbitrate resource allocation disputes. 4b4

Member organizations could also contract directly with ARC for specific developments. 4b5

The whole contracting, funding, accounting problem for ARC will definitely be nontrivial. 4b6

FRAMEWORK FOR NIC 5

The framework for NIC evolution that I would like to create is one that recognizes the special information needs of the network, such as network resource infomation, and protocol information, and meets these needs (for this special information the NIC would be used by members of the bootstrap community), functions itself as an entity independent from the BC parts of ARC serving end users with augmentation functions (NIC system developers would be members of BC), and helps seed, by its service example and contact with user communities, other augmentation services supporting special

end user organizations whose system developers would then become members of BC. 5a

In other words NIC would 5b

1) supply special network information and services network wide. 5b1

2) supply augmentation services, dialog support as now and later other functions as may seem appropriate to people and groups on the network which are not members of BC or supported by some other organization. 5b2

Looking at the network as a market place being served by specialized and general services, facilities, and data bases there will probably be many augmentation services or subsystems offered by commercial and other organizations serving similar or different customer groups. 5c

NIC would just be one of these, possibly buying some of its functions "wholesale" from other organizations who specialize in one function or another. 5c1

NIC's prime aim would be on service-delivery-marketing to end users on the network who do not have more appropriate or competitive places to turn for such services, such as BC, and to providing network wide information not available elsewhere. 5d

Even for network wide information NIC would not have a monopoly as other services would undoubtedly develop to cover areas not adequately handled by NIC, missed by NIC, or to compete head on with NIC. 5d1

The ultimate definition of the NIC would be left to market forces and network evolution. 5e

NIC probably would not do much general system development work, but would obtain this support from ARC or others and would only do itself functions particular to its needs or make adaptations from systems supplied by ARC or BC. 5f

The relationship between ARC and BBN for Tenex development is probably a reasonable model here. 5f1

The way then that we would like people to view NIC is as a separate entity from ARC presently growing within ARC and helping ARC to grow and vice versa (the first member of BC with an end user clientele). 5g

If the above framework is accepted then, the goal of a plan for NIC's evolution is to slowly make more explicit the separate nature of NIC from ARC and to formalize and make clearer its boundaries and interface to ARC as a prototype member of BC. 5h

This plan should contain such steps as are needed for both NIC and ARC's growth and health. 5h1

A very crude set of stages might be as given below with the goal of smooth transition from highly integrated within ARC as now to an independent entity. 5h2

The time frames suggested maybe too short or long, and can be clearer as NIC and ARC planning proceed. 5h3

More detailed planning will come later if the above general framework seems reasonable. 5h4

The key constraints that NIC must presently operate within are 50% of ARC's computer resources (how do we define this?), and 30% of ARC's other resources, as discussed in June with ARPA. 5h5

In expansion beyond these resources NIC would have to obtain further funding from ARPA or other sources (direct billing, for example). 5h6

STAGE 1 6 -- 12 months 6

1) Setting up an accounting system and resource allocation so as to find out NIC costs. 6a

2) Set up a crude pricing structure for present NIC services. 6b

3) Essentially no marketing as now with continuing emphasis on development of supporting NLS functions, such as catalog system, network access, DSS, PSO and OSO capabilities. 6c

4) Hire NIC operations coordinator. 6d

5) Work more closely with BBN or obtain complete editorship of resource notebook. 6e

6) Begin setting up a NIC team within ARC for NIC programming, PSO, and operations support. 6f

7) Begin formulation of NIC's relation to ARC as prototype member of BC. 6g

8) Study possibilities for running NIC computer operations on some service machine in network other than at ARC. 6h

STAGE 2 12 -- 24 months 7

1) More separation of NIC PSO and ARC PSO support. 7a

2) With costs and pricing understood and clearer picture of resources available more marketing effort. 7b

3) More emphasis on special NIC functions. 7c

4) NIC possibly offering more augmentation services than DSS. 7d

6) NIC operations definitely running on machine not at ARC, if not accomplished in Stage 2. 7e

STAGE 3 18 -- 24 months 8

1) NIC separate business from ARC within SRI as prototype member of BC. 8a

STAGE 4 24 -- 36 months 9

1) NIC transfers to Network Specialized Common Carrier (NSCC), stays in SRI, or goes independent outside SRI, or other possibility when network is transfered to NSCC. 9a

Some Miscellaneous Notes 9b

In setting up NIC separate from ARC there will be two main classes of problems:
Those problems unique to ARC and NIC's relationship.
Those problems which will occur with other members of the bootstrap community. 9b1

There are several categories of matters dealing with pricing, accounting, barter which need to be worked out. For example we can see the following categories of system developments. 9b2

Developments only of interest to one or some number of BC clients. 9b2a

Developments initially of interest to one client which later are used by ARC or other clients. 9b2b

ARC developments of no interest to a client such as NIC. 9b2c

ARC developments of central interest to one or more clients. 9b2d

ARC developments not immediately of interest to a BC client,but a later interest occurs. 9b2e

Other problems will occur in accounting for general maintenance, changing the accounting as more members join, seeing that BC clients have proper leverage to see that those features or subsytems in general use but specifically of interest to them are adequately maintained and evolved. 9b3

Another problem which needs solution fairly soon is setting up a charging mechanism for PDP-10 time. 9b4

We probably need to automatically log people out if they have not entered a character when it is waiting for one in some time frame, say 10 minutes? 9b4a

Right now NIC and ARC priorities are intermixed. 9b5

One goal even with shared staff is to try and separate these priorities. 9b5a

One possible way might be to set up long term (like a year) tasks for ongoing NIC programming, PSO, and CSO support where the people involved have some well defined percent time commitments to ARC and NIC and if there are tasks in eiher category, then work on the priorities as defined for each and if there is nothing to do in one then more work could be done in the other. 9b5b

Possibilities for Special Network Information Needs Which NIC Is or Probably Should Meet 9c

NIC does not have to originate all this information, but just have it available. 9c1

Hardware information for interfacing to IMPs and TIPs. 9c2

Types and kinds of terminals which can be or have been attached to TIPs. 9c3

Sources of help for hardWare interfacing or software protocol writing or transfer. 9c4

Protocol specifications, answers to questions such as, what computers have which protocols been implemented on, how to contact the appropriate people or network user group responsible for protocol development and design. 9c5

It should be easy for people to find out what facilities are available on the network and how to access these facilities. 9c6

The kind of thing needed here is an expanded, reorganized resource notebook in catalog form so that many different relevant views can be produced (the beginning of an SDIAS capability). 9c6a

Directories of people involved with the network, a fancy telephone book type thing with several views. 9c7

Catalog of the NIC collection possibly with indices to catalogs of dialog maintained in other systems, or access to other catalogs of information collections bibliographic or otherwise available on the network. 9c8

NIC as an information clearing house for network related information. 9c9

Is there a need for a network-wide ident file even if several facilities are offering DSS service? 9c10

Is the NIC the standard place to get manuals for other people's system? The NIC should certainly have a catalog of available manuals and how to obtain them. 9c11

Would NIC offer as a service to keep an inventory of who had what manuals and provide an update service? 9c12

Some Things That NIC Should be Doing or Helping to Push 9c13

Document Handling 9c13a

Need to document our handling of Functional Documents. 9c13a1

Need better system for document filing inventory control. 9c13a2

RWW 13-JAN-72 6:29 8430

Some Known ARC Problems

(J8430) 13-JAN-72 6:29; Title: Author(s): Richard W. Watson/RWW; Distribution: Douglas C. Engelbart, Richard W. Watson, Charles H. Irby, Ed K. Van De Riet, James C. Norton, William H. Paxton, William S. Duvall, Jeanne B. North/DCE EMC WHP WSD JBN; Sub-Collections: SRI-ARC EMC; Clerk: RWW;

RWW 13-JAN-72 6:33 8431

One More View of ARC Functions

Doug, it occurs to me as I am thinking about NIC evolution, and ARC marketing, delivery, operations functions that one more wseful way to view aggragates of ARC laboratory functions is as follows (I think we need a different name for the laboratory): 1

A research and development center (ARC?) to work on new features, techniques, and subsystems for functions such as DSS, DPCS, PBMS, RINS etc.. 1a

An augmentation function store for the BC (name?) which handles marketing, delivery, operations (CSO and PSO) of raw NLS power and augmentation functions such as DSS, DPCS, PBMS etc. to the bootstrap community. 1b

A NIC which handles development, marketing, delivery, operations of special NIC and general augmentation functions to end users on the network as per (8430,), but relies on its membership in BC for basic NLS support. (NIC probably runs on a separate computer from the above) 1c

RWW 13-JAN-72 6:33 8431

One More View of ARC Functions

(J8431) 13-JAN-72 6:33; Title: Author(s): Richard W. Watson/RWW; Distribution: Douglas C. Engelbart, Richard W. Watson, Charles H. Irby, Ed K. Van De Riet, James C. Norton/DCE EMC; Sub-Collections: SRI-ARC EMC; Clerk: RWW;

RWW 13-JAN-72 6:35 8432

Some Known ARC Problems

1

2

3

4

ARC is presently going through a period of change and growth and therefore I feel a need to understand what our problems are both to help me in NIC planning and to see where I can help more generally. The list below is a crude start and may be of use to others. 5

One problem it seems to me is lack of good long range, medium range goals strategy tactics etc. well thought out and written down as a basis for ARC dialogue. 6

Plans Needed 6a

ARC Longrange plans - 1 year or longer 6a1

These should include BC plans, alternatives to a BC stategy, ARPA funding extrapolation, alternate sources of government funding, projection of funding requirements. 6a1a

Some questions for BC planning. 6a1b

What are the criterion for membership in BC? 6a1b1

What are the classes of potential members. 6a1b2

What services do we plan to offer which will make it attractive for members of these various classes to be BC members and maintain their membership? 6a1b3

How is the BC going to function, be managed, governed? 6a1b4

How is the cost of operating the BC and ARC to be apportioned among the members? 6a1b5

Besides money what do we expect from the members of various classes? 6a1b6

What rate of growth do we want to strive for? What factors affect this rate of growth? 6a1b7

Which classes of members do we want to encourage joining BC first? 6a1b8

A plan for NIC evolution. 6a1c

Some technology evolution projection and assessment of possible competitive developments by Xerox, IBM, SDC, universities others which might alter our planing. 6a1d

ARC Mediumrange Plans - 6 months to a year 6a2

A well thoughtout plan to organize and manage ARC that meets requirements for accountability(ie things don't fall through the cracks as often happens at present) and allows room for maximum effective group, subgroup and team participation. 6a2a

Technical and other specific tasks in some ranges like 6mo. 1 yr 2 yrs. 6a2b

A plan for conversion of NLS to MPS- what political, technical factors need to be part of this plan? 6a2c

Manpower requirements and a recruiting plan to meet it. 6a2d

Plans for running NLS on other systems (both Tenex and other such as 360) on and off the Network. 6a2e

Plans for achieving reliable delivery and operation to ARC and others of NLS subsystems as they become availble. 6a2f

Computer Capacity Plans that take into account the facilities on or likely to be available on the network. 6a2g

Allocation scheme for resources among various ARC functions. 6a2h

Delivery and pricing of our computer services. 6a2i

Plans for our pending opportunities, Ames, Rand, DSS support of speech group, McCarthy's Journal,RADC, Xerox, NIC future. 6a2j

ARC Short Term Plan 6a3

What are the major things that need doing in the next 1-3 months. 6a3a

Other problems (most of which are being actively being worked on) 7

Space problems and layout 7a

We need enough office and work space for the center. 7a1

The present layout of the central work area seems often congested, and not conducive to effective work because of noise and general social bs going on. Some rearrangement into smaller areas which allow those needing to work together to do so ,but giving more privacy, quiet etc. would seem desirable. 7a2

Getting on top of the hardware reliability maintenance problems. 7b

Bringing the PSO into existence 7c

Getting procedures written down and defining classes of present services offered seems the big problem here. 7c1

Cost of PSO services and possible pricing is needed. 7c2

Recruiting of NLS system programmers (we seem to need 4 or 5) 7d

There are probably at least two levels of experience. skill required 7d1

Good designers, implementation. 7d1a

People who are good at maintanence and implementation. 7d1b

Recruiting people to interface to outside groups with whom we are going to be working with. 7e

Making the present DSS facilities runnable by operations , and capable of being run by other installations which may get NLS. 7f

RWW 13-JAN-72 6:35 8432

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(J8432) 13-JAN-72 6:35; Title: Author(s): Richard W. Watson/RWW; Distribution: Douglas C. Engelbart, Richard W. Watson, Charles H. Irby, Ed K. Van De Riet, James C. Norton, William H. Paxton, William S. Duvall/DCE EMC WHP WSD; Sub-Collections: SRI-ARC EMC; Clerk: RWW;

RWW 13-JAN-72 6:38 8433

Correction to Title on 8430

In my orgy of Journal submissions this morning in the wee hours,item 8430 was mistitled. Its title should be "Toward a Framework for NIC Evolution-1"

1

RWW 13-JAN-72 6:38 8433

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RWW 13-JAN-72 6:43 8434

Demonstration of NLS by Network People to Various Dignitaries

Yesterday Jan. 12, NBS demonstrated the network and our system to the secretary of commerce and some visiting Russian dignitaries, today MITRE is demonstrating the network and our system to other government officials. We can expect more of this type of thing as time goes on and this increases the pressure on us to be reliable both because our reputation is at stake and because these demonstrations are improtant to those people giving them. 1

RWW 13-JAN-72 6:43 8434

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RWW 13-JAN-72 6:51 8435

NWG Meeting of the Subgroup on Distributed Data Management

There is going to be a meeting of the Network Working Group committee on distributed data management in the network Feb. 23 24 at MITRE which I presently plan to attend. I will be asked to discuss NIC s expected needs for distributed entry and storage of dialog and problems of incompatible text editors etc. The group will send out an announcement of its other topics soon which I will make available. The group will spend one day trying to come up with a simple initial protocol. Others at ARC may want to attend, and I definitely will want to talk to the appropriate people about the above problems in the next month. 1

RWW 13-JAN-72 6:51 8435
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RWW 13-JAN-72 8:18 8437

Toward a Framework for NIC Evolution-1

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A rough guess of how the bootstrap community would function would be that it would support a central non-profit group like ARC much as various groups such as the American Petroleum Institute, and other industry wide groups are supported to coordinate information, research, and other activities of an industry wide nature. 4b2

ARC would evolve to be such a group for the "augmentation industry" or system development industry. 4b3

One possible way the BC might be governed is that each independent organization belonging to the BC might appoint a representative to form a board of directors for ARC with power to "tax" the member organizations for common developments and help set priorities or arbitrate resource allocation disputes. 4b4

Member organizations could also contract directly with ARC for specific developments. 4b5

The whole contracting, funding, accounting problem for ARC will definitely be nontrivial. 4b6

FRAMEWORK FOR NIC 5

The framework for NIC evolution that I would like to create is one that recognizes the special information needs of the network, such as network resource infomation, and protocol information, and meets these needs (for this special information the NIC would be used by members of the bootstrap community), functions itself as an entity independent from the BC parts of ARC serving end users with augmentation functions (NIC system developers would be members of BC), and helps seed, by its service example and contact with user communities, other augmentation services supporting special

end user organizations whose system developers would then become members of BC. 5a

In other words NIC would 5b

1) supply special network information and services network wide. 5b1

2) supply augmentation services, dialog support as now and later other functions as may seem appropriate to people and groups on the network which are not members of BC or supported by some other organization. 5b2

Looking at the network as a market place being served by specialized and general services, facilities, and data bases there will probably be many augmentation services or subsystems offered by commercial and other organizations serving similar or different customer groups. 5c

NIC would just be one of these, possibly buying some of its functions "wholesale" from other organizations who specialize in one function or another. 5c1

NIC's prime aim would be on service-delivery-marketing to end users on the network who do not have more appropriate or competitive places to turn for such services, such as BC, and to providing network wide information not available elsewhere. 5d

Even for network wide information NIC would not have a monopoly as other services would undoubtedly develop to cover areas not adequately handled by NIC, missed by NIC, or to compete head on with NIC. 5d1

The ultimate definition of the NIC would be left to market forces and network evolution. 5e

NIC probably would not do much general system development work, but would obtain this support from ARC or others and would only do itself functions particular to its needs or make adaptations from systems supplied by ARC or BC. 5f

The relationship between ARC and BBN for Tenex development is probably a reasonable model here. 5f1

The way then that we would like people to view NIC is as a separate entity from ARC presently growing within ARC and helping ARC to grow and vice versa (the first member of BC with an end user clientele). 5g

If the above framework is accepted then, the goal of a plan for NIC's evolution is to slowly make more explicit the separate nature of NIC from ARC and to formalize and make clearer its boundaries and interface to ARC as a prototype member of BC. 5h

This plan should contain such steps as are needed for both NIC and ARC's growth and health. 5h1

A very crude set of stages might be as given below with the goal of smooth transition from highly integrated within ARC as now to an independent entity. 5h2

The time frames suggested maybe too short or long, and can be clearer as NIC and ARC planning proceed. 5h3

More detailed planning will come later if the above general framework seems reasonable. 5h4

The key constraints that NIC must presently operate within are 50% of ARC's computer resources (how do we define this?), and 30% of ARC's other resources, as discussed in June with ARPA. 5h5

In expansion beyond these resources NIC would have to obtain further funding from ARPA or other sources (direct billing, for example). 5h6

STAGE 1 6 -- 12 months 6

1) Setting up an accounting system and resource allocation so as to find out NIC costs. 6a

2) Set up a crude pricing structure for present NIC services. 6b

3) Essentially no marketing as now with continuing emphasis on development of supporting NLS functions, such as catalog system, network access, DSS, PSO and CSO capabilities. 6c

4) Hire NIC operations coordinator. 6d

5) Work more closely with BBN or obtain complete editorship of resource notebook. 6e

6) Begin setting up a NIC team within ARC for NIC programming, PSO, and operations support. 6f

7) Begin formulation of NIC's relation to ARC as prototype member of BC. 6g

8) study possibilities for running NIC computer operations on some service machine in network other than at ARC. 6h

STAGE 2 12 -- 24 months 7

1) More separation of NIC PSO and ARC PSO support. 7a

2) With costs and pricing understood and clearer picture of resources available more marketing effort. 7b

3) More emphasis on special NIC functions. 7c

4) NIC possibly offering more augmentation services than DSS. 7d

6) NIC operations definitely running on machine not at ARC, if not accomplished in Stage 2. 7e

STAGE 3 18 -- 24 months 8

1) NIC separate business from ARC within SRI as prototype member of BC. 8a

STAGE 4 24 -- 36 months 9

1) NIC transfers to Network Specialized Common Carrier (NSCC), stays in SRI, or goes independent outside SRI, or other possibility when network is transfered to NSCC. 9a

Some Miscellaneous Notes 9b

In setting up NIC separate from ARC there will be two main classes of problems:
Those problems unique to ARC and NIC's relationship.
Those problems which will occur with other members of the bootstrap community. 9b1

There are several categories of matters dealing with pricing, accounting, barter which need to be worked out. For example we can see the following categories of system developments. 9b2

Developments only of interest to one or some number of BC clients. 9b2a

Developments initially of interest to one client which later are used by ARC or other clients. 9b2b

ARC developments of no interest to a client such as NIC. 9b2c

ARC developments of central interest to one or more clients. 9b2d

ARC developments not immediately of interest to a BC client,but a later interest occurs. 9b2e

Other problems will occur in accounting for general maintenance, changing the accounting as more members join, seeing that BC clients have proper leverage to see that those features or subsytems in general use but specifically of interest to them are adequately maintained and evolved. 9b3

Another problem which needs solution fairly soon is setting up a charging mechanism for PDP-10 time. 9b4

We probably need to automatically log people out if they have not entered a character when it is waiting for one in some time frame, say 10 minutes? 9b4a

Right now NIC and ARC priorities are intermixed. 9b5

One goal even with shared staff is to try and separate these priorities. 9b5a

One possible way might be to set up long term (like a year) tasks for ongoing NIC programming, PSO, and CSO support where the people involved have some well defined percent time commitments to ARC and NIC and if there are tasks in eiher category, then work on the priorities as defined for each and if there is nothing to do in one then more work could be done in the other. 9b5b

Possibilities for Special Network Information Needs Which NIC Is or Probably Should Meet 9c

NIC does not have to originate all this information, but just have it available. 9c1

Hardware information for interfacing to IMPs and TIPs. 9c2

Types and kinds of terminals which can be or have been attached to TIPs. 9c3

Sources of help for hardware interfacing or software protocol writing or transfer. 9c4

Protocol specifications, answers to questions such as, what computers have which protocols been implemented on, how to contact the appropriate people or network user group responsible for protocol development and design. 9c5

It should be easy for people to find out what facilities are available on the network and how to access these facilities. 9c6

The kind of thing needed here is an expanded, reorganized resource notebook in catalog form so that many different relevant views can be produced (the beginning of an SDIAS capability). 9c6a

Directories of people involved with the network, a fancy telephone book type thing with several views. 9c7

Catalog of the NIC collection possibly with indices to catalogs of dialog maintained in other systems, or access to other catalogs of information collections bibliographic or otherwise available on the network. 9c8

NIC as an information clearing house for network related information. 9c9

Is there a need for a network-wide ident file even if several facilities are offering DSS service? 9c10

Is the NIC the standard place to get manuals for other people's system? The NIC should certainly have a catalog of available manuals and how to obtain them. 9c11

Would NIC offer as a service to keep an inventory of who had what manuals and provide an update service? 9c12

Some Things That NIC Should be Doing or Helping to Push 9c13

Document Handling 9c13a

Need to document our handling of Functional Documents. 9c13a1

Need better system for document filing inventory control. 9c13a2

RWW 13-JAN-72 8:18 8437

Toward a Framework for NIC Evolution-1

(J8437) 13-JAN-72 8:18; Title: Author(s): Richard W. Watson/RWW; Distribution: Richard W. Watson/RWW; Sub-Collections: SRI-ARC; Obsoletes Document(s): 8430; Clerk: RWW;

RWW 13-JAN-72 13:58 8439

Bad Membership List in NF Group

Peggy, The edit I made this morning did not seem to prevent the bad distribution on your facilitator message. I saw the problem in the way the ident file had been set up. That has been fixed and the problem should not happen again.
Were we up for your demo? 1

RWW 13-JAN-72 13:58 8439

Bad Membership List in NF Group

(J8439) 13-JAN-72 13:58; Title: Author(s): Richard W. Watson/RWW; Distribution: Peggy M. Karp, Jeanne B. North/PMK JBN; Sub-Collections: SRI-ARC; Clerk: RWW;

AAM 14-JAN-72 6:07 8441

TEST

THIS IS A TEST MESSAGE, WHICH I AM TRYING TO SEND TO MYSELF & JBL 1

AAM 14-JAN-72 6:07 8441

TEST

(J8441) 14-JAN-72 6:07; Title: Author(s): Alex A. McKenzie/AAM; Distribution: Alex A. McKenzie, Joel B. Levin/AAM JBL; Sub-Collections: NIC; Clerk: AAM;

RWW 14-JAN-72 8:53 8442

A Couple of Glitches in RFC Distribution

Bill, Dave,
There are a couple of glitches in the way RFC are being delivered that I would appreciate very much if you could fix.RFC's are frequently being delivered without the author field having anything in it; this confuses the people receivving the item and creates problems for catalog making. The second problem is that the syntax of the way the RFC number is formated looks like a link to the system. 1

RWW 14-JAN-72 8:53 8442

A Couple of Glitches in RFC Distribution

(J8442) 14-JAN-72 8:53; Title: Author(s): Richard W. Watson/RWW; Distribution: J. D. Hopper, William S. Duvall/JDH WSD; Sub-Collections: SRI-ARC; Clerk: RWW;