tickler for week of 20 August

(am4) 20 August	1
0830 hrs. Branch Chief's Meeting	1a
Directly following above, WWMCCS Progress Meeting - Capt Daughtry focal	1b
(at4) 21 August	2
(aw4) 22 August	3
After Branch Chief's Meeting, Discussion on Dr. Wave's SAB Letter	3a
Laboratory Activity Reports are due tomorrow.	3b
(ath4) 23 August	4
Laboratory Activity Reports due today: Bucciero must have them by 1000, ISM must have them by 1100, and DOT must have them by 1600.	4a
(af4) 24 August	5
For TB and Bobbie - Travel figures due in at 1200 hrs.	5a

FJT 17-AUG-73 06:00 18485

tickler for week of 20 August

(J18485) 17-AUG-73 06:00; Title: Author(s): Frank J. Tomaini/FJT;
Distribution: /RADC; Sub-Collections: RADC; Clerk: FJT;

sam dinitto

The following are Sam DiNitto's inputs for the TPO. 1

3.11.2 Specific Goals and Technical Approaches 1a

3.11.2.1 Compiler Technology - The goals of this effort are to produce tools to test Higher Order Language (HOL) compilers, and to produce high quality compilers in an expedient, low cost manner so that they will be more readily available for Air Force use. 1a1

The development of compiler validation systems is one part of this effort. A compiler validator for JOVIAL/J3 called JCVS has been developed and augmented to a degree where it is the most complete single test of a compiler in existence. The success of this tool has prompted the development of a similar system for JOVIAL/J73 compilers. An evaluation of compiler validators already in the field for COBOL and FORTRAN is also underway. A BASIC compiler validator is under development, in-house, and a follow-on is planned to utilize modern "theorem-proving" techniques to build an "absolute" compiler validator. 1a2

In an attempt to capitalize on state-of-the-art compiler building techniques, a compiler building tool called JOCIT will be completed in FY-74 for JOVIAL/J3, which will produce high quality transferrable JOVIAL compilers with reduced cost and effort. The first compiler will be ready for use by the WWMCCS community by November 73, as can be seen from the milestone chart. Again looking at the chart, it is apparent that a follow-on effort to develop a JOCIT system for JOVIAL/J73 will be completed in FY-76. 1a3

There are also efforts in the program which will provide the Air Force with the ability to evaluate its applications with respect to which HOL and/or compiler will meet its needs, and the ability to better specify the HOL or compiler. 1a4

3.11.2.2 Language Control - The products of this program are directed toward giving the Air Force a measure of control over the HOLs it uses. The first effort undertaken was to develop a HOL, called JOVIAL/J73, that is more responsive to Air Force needs. The specification of this HOL was completed in FY-73 as shown by the milestone chart. 1a5

The problem of multiple interpretations of programming languages, arising from incomplete, ambiguous specifications, was attacked by the development of a system called SEMANOL which enables one to precisely specify and check out the syntax and semantics of a HOL. SEMANOL was applied to JOVIAL/J3 in

FY-73 with satisfying results and will be utilized to "debug" the JOVIAL/J73 specification mentioned above in FY-74. Future plans include the application of this system to other Air Force standard HOLs such as FORTRAN and COBOL. 1a6

In order to collect proper data on HOL use in the Air Force so that constructive changes can be added, statistics gathering packages for JOVIAL and BASIC are being developed. These packages will utilize information available to HOL compilers to provide the data which was drastically lacking in the past when HOL or compiler updates were attempted. 1a7

Other work in this area includes studies into HOL requirements of specific Air Force systems such as DAIS (Digital Avionics Information System), the comparison of all Command and Control HOLs in use by DOD, the development of one Extensible Language as a contrast to the Air Force's support of several disjoint HOLs, and the development of a translator which will automatically rewrite computer programs from older JOVIAL dialects to the new dialect, J73, thus saving programming costs and easing the transition. 1a8

The last product on the milestone chart, in FY-77, represents the gathering of the tools and technology developed from the Compiler Technology and Language Control area into one neat package which will give the Air Force complete control over any HOL it chooses to use. 1a9

3.11.3 Related Efforts 1b

AFAL has a program entitled the Digital Avionics Information System (DAIS) under the TPO-S1 which is attempting to choose a HOL for Avionics programming. They are seriously considering JOVIAL/J73 for the follow-on system. 1b1

NASA presently has a contract with McDonnell Douglas (Contract No. NASA-27202) to design a compiler-compiler capable of producing compilers for all HOLs which NASA uses, or plans to use, such as FORTRAN, SPL, CLASP, etc. 1b2

NELS has a contract with Intermetrics Corporation (Contract No. N00123-73-C-1177) to design a HOL for the RADC computer. This effort is under Project W3150, Program Element 63202N. 1b3

The U. S. Army Electronics Command is developing a Compiler Generation Tool for TACPOL, a PL-1 Command and Control Subset. This work is being performed in-house under System Software Program Element 627703, Program Element 15662703A327, Task Element 03, Work Element 361C8. 1b4

IBM Federal Systems Division, Owego, is working on a compiler-compiler to handle several DOD HOLs. 1b5

Boeing Corporation is performing an anlaysis of present HOLs for B-1 follow-on implementations. At the present time, JOVIAL/J73 is the strongest contender. 1b6

Univac of Minneapolis is using IR&D funds to develop translators between the Command and Control HOLs in use by DOD, namely JOVIAL, CMS-2, and TACPOL. 1b7

The following are Dick Robinson's inputs. 2

3.11.2 Specific Goals and Technical Approaches 2a

The goals of this task are to investigate and develop techniques to reduce the time and cost of procurement and increase the reliability of complex system software. 2a1

3.11.2.1 Software Design Technology - The development of complex software systems necessitates the need for increasingly more reliable techniques for designing and controlling the software development process. Study efforts completed during FY-73 demonstrated that structured programming technology may significantly increase programmer productivity and software reliability. Contractual efforts have accordingly been initiated in FY-74 which will attempt to develop a complete environment for software production. A detailed set of guidelines will be produced that will serve to transfer present technology in structured programming (SP), top down programming, chief programmer team (CPT) and programming support libraries (PSL) to the Air Force for further application. Areas to be investigated include: the development of SP language standards for COBOL, FORTRAN, JOVIAL J3 and J73; analysis of data structuring methods; development of requirements for a CPT and PSL; etc. Other aspects of software quality architecture and software quality engineering will also be explored including the metrics of software quality. 2a1a

3.11.2.2 Software Test Techniques - Another aspect of software that currently requires vast expenditures of manpower and computer resources is the area of testing. Because of the size and complexity of current software systems, it has become virtually impossible to certify system software performance. To increase software reliability, automated verification techniques are being increasingly employed. A contractual effort was initiated in FY-74 to explore the feasibility of developing

verification tools for use on software written in JOVIAL. Future versions will also be able to process software written in other HOLs, such as FORTRAN and COBOL. 2a1b

AVS systems allow segmentation of source code into user defined segments and based upon a given set of input data, the program produces counts on the number of times each segment is executed (if at all). Cumulative statistics are collected over many test cases to determine the efficiency and thoroughness of testing. Concurrent in-house evaluation of existing AVS designs will be performed to further assess the merit of such systems for eventual transfer to other Air Force commands. 2a1b1

3.11.2.3 Software Error Analysis Facility - Initial design of a centralized software data file on software reliability models, statistics, and software error data was initiated in FY-73. Several contractual efforts were also initiated in FY-73 to study the nature of software reliability modeling, software errors, their classification and number, their removal during testing and correction, the prediction of their occurrence, and techniques for writing low error content software. An effort was also initiated in FY-73 to study existing methods of detecting and evaluating software failures during testing and operational phases of large Command and Control Software Systems. 2a1c

3.11.3 Related Efforts 2b

NASA/MSC has implemented an AVS for FORTRAN programs written for the Univac 1108 as part of the Mission Trajectory Control Program and the Skylab Activities. The Air Force is currently AVS testing FORTRAN programs on the IBM 360/370 and Assembly Code on the IBM 7090 written as part of the Minuteman Program; the Army is investigating the problem of verifying Safeguard Software at Huntsville, Alabama; the Navy is investigating the software verification problem in support of system software activities at NEL. Projects employing Structured Programming and Chief Programmer Teams and Top Down Programming include government sponsored programs such as: Safeguard (PAR Program), AWACS/JOVIAL Support, RTCC/Skylab Real Time Computing Complex/); /Skylab)/kylab); Systems 7, 370/EMS (Energy Management System), NMCS, NIPS System 360 FFS (National Intelligence Processing System 360 Formatted File System), etc. 2b1

Software Reliability studies at Carnegie-Mellon University, University of Wisconsin and MIT in Common Base Languages (Dennis) and NSF sponsored work at SRI and University of

California at Irvine are also on-going government sponsored programs. 2b2

Air Force sponsored work on the Attack Assessment Program for SAMSO includes provisions for collection and analysis of software error data. 2b3

U.S. Army and Navy sponsored work at PIB (Shooman) involves software error collection/analysis and procedures for software modeling and reliability prediction. 2b4

3.11.4 REQUIREMENTS 2c

JLM 17-AUG-73 07:51 18486

sam dinitto

(J18486) 17-AUG-73 07:51; Title: Author(s): John L. McNamara/JLM;
Distribution: /JLM DLS; Sub-Collections: RADC; Clerk: JLM;
Origin: <MCNAMARA>TPOINPUTS.NLS;1, 13-AUG-73 12:49 JLM ;

DCE 17-AUG-73 09:33 18487

Welcome message to Mario Grignetti for ARC visit on week of 20 Aug -- cf (nnnnn,) and (nnnnn,)

He has arranged a direct visit contact with Dirk, but I expect to seem him, too.

DCE 17-AUG-73 09:33 18487

Welcome message to Mario Grignetti for ARC visit on week of 20 Aug -- cf (nnnnn,) and (nnnnn,)

Mario: I have been vacationing; sorry not to have had my mail taken care of (cf your 9 Aug message -- 18331,1:wl). Dirk tells me that you had to call him, and that he has arranged to meet with you in case I didn't get back. He will be a good one for you to visit with in any event, so I suggest that you call on him. I will most likely be here most of the week (although I am taking the last part of my vacation in little dabs that are as yet unplanned), and I would like to meet you and to talk about the overlap in our activities and goals.

1

DCE 17-AUG-73 09:33 18487

Welcome message to Mario Grignetti for ARC visit on week of 20 Aug
-- cf (nnnnn,) and (nnnnn,)

(J18487) 17-AUG-73 09:33; Title: Author(s): Douglas C. Engelbart/DCE
; Distribution: /jcn rww dvn hgl pr dls mcg ; Sub-Collections:
SRI-ARC; Clerk: DCE ;

jon,
1) Since we're trying to hire you to work at the BBN Washington office, I don't know if I'd suggest anyother possibilities if I knew of them; I'm saved from that decision because I don't.
2) I have been meaning to look at the FTP/RJE issue for quite a while, and will do it eventually if no one else beats me to the punch, but from a realistic point of view I doubt that I'll have any free time until at least October (I'll be away for three weeks in September).
Regards,
Alex

1

(J18488) 17-AUG-73 10:11; Title: Author(s): Alex A. McKenzie/AAM;
Distribution: /JBP; Sub-Collections: NIC; Clerk: AAM;

JDH 17-AUG-73 12:32 18489

Interim Dual-site Journal and Ident systems preliminary design

The following design is the result of the meeting on 16-AUG-73 of JEW, JDH, DSK, CHI, HGL. 1

The result of the design is to make the two site system look essentially like one system. 2

Journal catalogs have the same contents. 2a

All items submitted on one machine are also stored on the other (although it is hoped that items not distributed to people on a given machine will be archived and deleted quickly). 2b

The prime consideration in this design is to minimize system changes and additions. This is done at the expense of efficiency. 3

The inefficiency of this system (essentially duplicating submission of any item on the remote system even though it may be of only local interest) is hopefully bad enough to motivate us to get a less kludgey multi-site system up (famous last words). 3a

System changes/additions--brief description 4

Interim Ident system 4a

No ident changes allowed from slave 4a1

User entry in ident file has: 4a2

Network mailbox address: host,user 4a2a

NLS mailbox address: host,directory,file 4a2b

could have branch added to the above 4a2b1

User entry no longer has fields: 4a3

host 4a3a

user 4a3b

Interim Journal system 4b

Journal Delivery 4b1

Skip NLS deliv if not TO local user 4b1a

as defined by host field of NLS mailbox address 4b1a1

Skip Network delivery if not FROM local user 4b1b

JDH 17-AUG-73 12:32 18489
Interim Dual-site Journal and Ident systems preliminary design

(J18489) 17-AUG-73 12:32; Title: Author(s): J. D. Hopper/JDH;
Distribution: /JDDT JCN; Sub-Collections: SRI-ARC JDDT; Clerk: JDH;

AAM 17-AUG-73 14:23 18490

The NCC is possibly Missing som TSRs; Can you send New Copies?

Dear Ed,
I am trying to get our set of 1973 TSRs (those of the form
AO-day mon 73-xxxx)
--

up to date. I have listed below the numbers of all those which Hawley Rising has in his file. If any of the "missing" TSRs relate to ARPA Network circuits, we would appreciate it if you would send new copies to Hawley.
Regards,
Alex McKenzie (MCKENZIE@SRI-ARC)

1

AO-day mon 73-0001
0001A
0002
0003
0004
0005
0010
0011
0012
0033
1003
1003A
1007
1011
1012
1013
1014
1015
1016
1017
1018
1022
1026
1027
1028
1029
1030
1033
1034
1035

1a

AAM 17-AUG-73 14:23 18490

The NCC is possibly Missing som TSRs; Can you send New Copies?

(J18490) 17-AUG-73 14:23; Title: Author(s): Alex A. McKenzie/AAM;
Distribution: /EPS; Sub-Collections: NIC; Clerk: AAM;

JBN 17-AUG-73 14:35 18491

Visit from George Thoren

On August 17, "George" Thoren visited ARC from Royal Institute of Technology, Stockholm. He is in the area to attend the AI conference at Stanford, and visited SRI to see AI and text-handling people. 1

He was shown how the Hierarchical structure of NLS works and can be edited. 2

Visit from George Thoren

(J18491) 17-AUG-73 14:35; Title: Author(s): Jeanne B. North/JBN;
Distribution: /JBN; Sub-Collections: SRI-ARC; Clerk: JBN;
Origin: <NORTH>F.NLS;1, 17-AUG-73 14:33 JBN ; H1="Visit from George
Thoren JBN 18 AUG 73 4:42AM

Network Working Group
Request for Comments: # 560

D. Crocker
J. Postel
20 AUG 73

NIC # 18492

Categories: Protocols, TELNET

Remote Controlled Transmission & Echoing TELNET Option

1

Currently, a terminal in character-at-a-time transmission and foreign-host echo causes four Network Messages for each character struck. (The character sent from local to foreign host; its RFNM; the echoed character sent from the foreign to the local host; and its RFNM.) 1a

By eliminating most echoing (1/2 as many messages) and packaging the characters into useful units (assuming an average of five character per unit; therefore another 80 per cent reduction), it is believed that almost a 90 per cent reduction in character-mode interactive Network terminal traffic can be attained. 1b

The packaging of characters and elimination of foreign echoing should also lessen the load placed on the foreign hosts. 1c

Remote Controlled Transmssion and Echoing Telnet Option

2

1. Command name and code: 2a

RCTE 2a1

2. Command meanings: 2b

IAC WILL RCTE 2b1

The sender of this command REQUESTS or AGREES to use the RCTE option, and will send instructions for controlling the other side's terminal printer. 2b1a

IAC WON'T RCTE 2b2

The sender of this option REFUSES to send instructions for controlling the other side's terminal printer. 2b2a

IAC DO RCTE 2b3

The sender REQUEST or AGREES to have the other side (sender of WILL RCTE) issue commands which will control his (sender of the DO) output to the terminal printer. 2b3a

IAC DON'T RCTE 2b4

The sender of this command REFUSES to allow the other side to control his (sender of DON'T) terminal printer. 2b4a

IAC SB RCTE <cmd> [BC1 BC2] [TC1 TC2] 2b5

where: 2b5a

<cmd> is one 8-bit byte having the following flags (bits are counted from the right): 2b5a1

Bit Meaning 2b5a1a

0 0 = Ignore all other bits in this byte and repeat the last <cmd> that was sent. Equals a 'continue what you have been doing'.
1 = Perform actions as indicated by other bits in this byte. 2b5a1b

1 0 = Print (echo) Break character
1 = Skip (don't echo) Break character 2b5a1c

2 0 = Print (echo) text up to Break character
1 = Skip (don't echo) text up to Break character 2b5a1d

3 0 = Continue using same classes of Break characters.
1 = The two 8-bit bytes following this byte contain flags for the new Break classes. 2b5a1e

4 0 = Continue using same classes of Transmit characters.
1 = Reset Transmit classes according to the two bytes following 1) the Break classes bytes, if the Break classes are also being reset, or 2) this byte, if the Break classes are NOT also being reset. 2b5a1f

Value (decimal) of the <cmd> byte and its meaning: 2b5a1g

0 = Continue what you have been doing 2b5a1g1

1 = Print (echo) up to AND INCLUDING Break character 2b5a1g2

3 = Print up to Break character and SKIP (don't echo) Break character 2b5a1g3

5 = Skip text (don't echo) up to Break character, but PRINT Break character 2b5a1g4

7 = Skip up to and including Break character 2b5a1g5

Add one of the previous non-zero values to one of the following values, to get the total decimal value for the byte (Note that Classes may not be reset without also resetting the printing action; so an odd number is guaranteed): 2b5a1g6

8 = Set Break classes (using the next two bytes [BC1 BC2]) 2b5a1g7

16 = Set Transmission classes (using the next two bytes [TC1 TC2]) 2b5a1g8

24 = Set Break classes (using the next two bytes [BC1 BC2]) and the Transmission classes (using the two bytes after that [TC1 TC2]). 2b5a1g9

Sub-commands (IAC SB RCTE...) are only sent by the Controlling Host and, in addition to other functions, functionally replace the Go-Ahead (IAC GA) Telnet Command. 2b5b

3. Default: 2c

WON'T RCTE -- DON'T RCTE 2c1

Neither host asserts special control over the other host's terminal printer. 2c1a

4. Motivation for the option: 2d

RFC's 1, 5 and 51 discuss Network and process efficiency and smoothness. 2d1

RFC 357, by John Davidson, introduces the problem of echoing delay that occurs when a remote user accesses a full-duplex host, thru a satellite link. In order to save the many thousands of miles of transit time for each echoed character, while still permitting full server responsiveness and clean terminal output, an echo control similar to that used by some Time-sharing systems is suggested for the entire Network. 2d2

In effect, the proposed option involves making a user host carefully regulate the local terminal printer according to explicit instructions from the foreign (serving) host. 2d2a

An important additional issue is efficient Network transmission. Implementation of the Davidson Echoing Scheme will eliminate almost all server-to-user echoing. 2d3

The proposed option also requests using hosts to buffer a terminal's input to the foreign host until it forms a useful unit (with "useful unit" delimited by Break or Transmission characters as described below). Therefore, fewer messages are sent on the user-to-server path. 2d3a

N.B.: This option is only intended for use with full-duplex hosts. The Go-Ahead Telnet feature is completely adequate for half-duplex server hosts. 2d4

5. Explicit description of control mechanism: 2e

A. Overview of Interaction 2e1

(1) Agree to use RCTE option 2e1a
(2) User holds echo printing until instructed by server to do otherwise 2e1b
(3) Server may send output to terminal printer. 2e1c
(4) Network output is printed up to an RCTE command 2e1d
(5) Server sends IAC SB RCTE <cmd> 2e1e
(6) User acts upon the command up to a Break character or until receipt of output from the server host. 2e1f
(7) Go to (2)
2e1g

Note: Output from the server host may occur at any time, in which case, the flow of control switches to (2) and then proceeds to (3), (4), etc. 2e1h

B. Explanation: 2e2

(1) Both Hosts agree to use the RCTE option. After that, the using host (IAC DO RCTE) merely acts upon the Controlling (serving) host's commands and does not issue any RCTE commands unless and until it (using host) decides to stop allowing use of the option (by sending IAC DON'T RCTE). 2e2a

(2) User host begins synchronization between the serving host and itself by suspending terminal echo printing until directed to do otherwise by the controlling host, thru an IAC SB RCTE <cmd>. 2e2b

(3) The server may send output to the terminal printer, either in response to input from the user (in which case it is already synchronized with the terminal input) or spontaneously. In the latter case, flow of control automatically switches to (2) and continues from there. Output from the server is defined as completed when step (5) occurs. That is, text from the Server to the terminal printer MUST end with an RCTE command. 2e2c

(4) Any output from the server is printed on the terminal IMMEDIATELY. Again note that the end of such output is defined to be the occurrence of an IAC SB RCTE <cmd> command. 2e2d

(5) Server sends an RCTE command. The command may redefine Break and Transmission classes, Action to be performed on Break characters, and action to be performed on text. Each of these independent functions is controlled by separate bits in the <cmd> byte. 2e2e

a. A Transmission character is one which REQUIRES the User Host to transmit all text accumulated up to and including its occurrence. (For Net efficiency, User hosts are DISCOURAGED from sending before the occurrence of a Transmission character). 2e2e1

If the Transmission Classes bit (Bit 4) is on, the two bytes following the two Break Classes bytes (or immediately following the <cmd> byte, if the Break Classes bit is not on) will indicate what classes are to be enabled. 2e2e1a

If the Bit is OFF, the Transmission classes remain unchanged. When the RCTE option is first initiated, NO CLASSES are in effect. That is, no character will be considered a Transmission character. (As if both TC1 and TC2 are zero.) 2e2e1b

b. A Break character has the effect of a Transmission character, but also causes the User host to stop its print/discard action upon the User's input text, until directed to do otherwise by another IAC SB RCTE <cmd> command from the Serving host. Break characters therefore define printing units. "Break character" as used in this document does NOT mean Telnet Break character. 2e2e2

If the Break Classes bit (Bit 3) is on, the two bytes following <cmd> will indicate what classes are to be enabled. There are currently nine (9) classes defined, with room for expansion. 2e2e2a

If the bit is OFF, the Break classes remain unchanged. When the RCTE option is initiated, CLASSES 4, 5, and 9 are to be in effect. That is, Format Effectors, Non-format effector Control Characters and DEL, and Punctuation characters are to be Break characters. 2e2e2b

c. The list of character classes, used to define Break and Transmission classes are listed at the end of this document, in the "Tables" Section. 2e2e3

d. Because Break characters are special, the print/discard action that should be performed upon them is not always the same as should be performed upon the rest of the input text. 2e2e4

For example, while typing a filename to TENEX, I want the text of the filename to be printed (echoed); but I do not want the <escape> (if I use the name completion feature) to be printed. 2e2e4a

If Bit 1 is ON The Break character is NOT to be printed. 2e2e4b

e. A separate bit (Bit 2) signals whether or not the text itself should be printed (echoed) to the terminal. If Bit 2 = 0, then the text IS to be printed. 2e2e5

f. Yet another bit (Bit 0 - right-most bit) signals whether or not any of the other bits of the command should be checked. If this bit is OFF, then the command should be interpreted to mean "coninue whatever echoing strategy you have been following, using the same Break and Transmission classes." 2e2e6

This is particularly useful for the <cmd> command that follows spontaneously generated output from the Serving host (such as "System Going Down") which needs to signal End-of-Message, but does not usually want to reset any other conditions. 2e2e6a

The server may, however, alter user action after a spontaneous message, but it is possible that text will be lost, or printed when it should not be, since there is no guarantee that the RCTE <cmd> from the serving host will be properly synchronized with the terminal input. 2e2e6b

(6) Input from the terminal is (hopefully) buffered up to the occurrence of a Transmission or Break character; and the input text is echoed or not echoed, up to the occurrence of a Break Character. The most recent RCTE command determines the echo, Transmission and Break actions. 2e2f

(7) When a Break character is typed, the cycle of control is complete and action re-commences at (2). Action also automatically switches to (2) upon receipt of any text from the Server host. 2e2g

C. Notes, Comments, Etc.: 2e3

(1) Even-Numbered Commands, greater than zero, are in error, since they will have the low-order bit off. The command should be interpreted as equal to zero, which means that any Classes Reset bytes ([TC1 TC2] [BC1 BC2]) will be in error. 2e3a

(2) Servers will generally instruct Users NOT to echo Break Characters, even tho it might be alright to echo most Break characters. For example, <cr> is usually a safe character to echo but <esc> is not. TENEX Exec is willing to accept either, during filename specification. Therefore, the user must be instructed NOT to echo ANY Break Characters. 2e3b

This is generally a tolerable problem, since the server has to send an RCTE command at this point, anyhow. Adding the Break character to the message (so that it appears to be echoed) will not cause any extra Network traffic. 2e3b1

(3) The RCTE Option entails a rather large overhead. In a true character-at-a-time situation, this overhead is not justified. But on the average, it should result in significant savings, both in Network traffic and Host wake-ups. 2e3c

(4) A severe (User) site-dependent problem will be buffering type-ahead input from the terminal. It is possible, especially in the case of TIPS, that the input buffer will overflow often. If the receiving (serving) host will permit, the accumulated text should be transmited at this point. If the text cannot be transmited and further typing by the user will result in lost text, the user should be notified. 2e3d

D. Sample Interaction: 2e4

"S:" is sent from Serving (WILL RCTE) host to Using host.
"U:" is sent from Using (DO RCTE) host to Serving host.
"T:" is entered by the terminal user.
"P:" is printed on the terminal.

Text surrounded by square brackets ([ ]) is commentary.
Text surrounded by angle brackets (<>) is to be taken as a single unit. E.G., carriage return is <cr>, and the decimal value 27 is represented <27>. 2e4a

The following interaction shows a Logon to a Tenex, initiation of the DED editor, insertion of some text and the return to the Exec level. A Telnet connection has already been opened, but the TENEX prompt has not yet been issued. The hosts first discuss using the RCTE option: 2e4b

S: <IAC><WILL><RCTE> 2e4c

U: <IAC><DO><RCTE> 2e4d

S: TENEX 1.31.18, TENEX EXEC 1.50.2 <cr><lf>@
<IAC><SB><RCTE><11><1><24> 2e4e

[Print the Herald and echo input text upto a Break Character, but do not echo the Break Character. Classes 4 (Format Effectors), 5 (Non-format effector Controls and <DEL>), and 9 (<space>) act as Break Characters.] 2e4e1

P: TENEX 1.31.18, TENEX EXEC 1.50.2 <cr><lf>@ 2e4f

T: LOGIN ARPA <cr> 2e4g

P: LOGIN 2e4h

U: LOGIN <space> 2e4i

S: <space><IAC><SB><RCTE><0> 2e4j

P: <space>ARPA 2e4k

U: ARPA <cr> 2e4l

S: <cr><lf> (PASSWORD): <IAC><SB><RCTE><7> 2e4m

P: <cr><lf> (PASSWORD): 2e4n

T: WASHINGTON 1000<cr> 2e4o

[The password "WASHINGTON" is not echoed. Action on "1000<cr>" is withheld] 2e4o1

U: WASHINGTON <space> 2e4p

S: <space><IAC><SB><RCTE><3> 2e4q

P: <space> 1000 2e4r

U: 1000<cr> 2e4s

S: <cr><lf> JOB 17 ON TTY41 7-JUN-73 14:13 <cr><lf>@
<IAC><SB><RCTE><0> 2e4t

P: <cr><lf> JOB 17 ON TTY41 7-JUN-73 14:13 <cr><lf>@ 2e4u

T: DED <esc><cr> 2e4v

P: DED 2e4w

U: DED<esc> 2e4x

S: .SAV;1 <IAC><SB><RCTE><0> 2e4y

P: .SAV;1 2e4z

U: <cr> 2e4a@

S: <cr><lf><lf> Ded 3/14/73 DRO,KRK <cr><lf>:
<IAC><SB><RCTE><15><1><255> 2e4aa

[The program is started and the DED prompt ":" is sent. At the command level, DED responds to every character.] 2e4aa1

P: <cr><lf><lf> DED 3/14/73 DRO,KRK <cr><lf>: 2e4ab

T: IThis is a test line.<cr> This is another test line.<↑Z> Q 2e4ac

["I" means Insert Text. The text follows, terminated by a Control-Z. The "Q" instructs DED to Quit.] 2e4ac1

U: I 2e4ad

S: I<cr><lf>* <IAC><SB><RCTE><11><0><24> 2e4ae

[DED prompts the user, during text input, with an asterisk at the beginning of every line.] 2e4ae1

P: I<cr><lf> *This is a test line. 2e4af

U: This is a test line.<cr> 2e4ag

S: <cr><lf>* <IAC><SB><RCTE><0> 2e4ah

P: <cr><lf>* This is another test line. 2e4ai

U: This is another test line.<↑Z> 2e4aj

S: ↑Z<cr><lf>: <IAC><SB><RCTE><15><1><255> 2e4ak

[The returned "↑Z" is two characters, not the ASCII Control-Z.] 2e4ak1

U: Q 2e4al

[Note that the "Q" is not yet printed on the terminal, since it is a Break character.] 2e4al1

S: Q<cr><lf>@ <IAC><SB><RCTE><11><1><24> 2e4am

P: Q<cr><lf> @ 2e4an

And the user is returned to the Exec level. 2e4ao

E. Tables: 2e5

(1) <cmd> is one 8-bit byte having the following flags (bits are counted from the right): 2e5a

Bit Meaning 2e5a1

0 0 = Ignore all other bits in this byte and repeat the last <cmd> that was sent. Equals a 'continue what you have been doing'.
1 = Perform actions as indicated by other bits in this byte. 2e5a2

1 0 = Print (echo) Break character
1 = Skip (don't echo) Break character 2e5a3

2 0 = Print (echo) text up to Break character
1 = Skip (don't echo) text up to Break character 2e5a4

3 0 = Continue using same classes of Break characters.
1 = The two 8-bit bytes following this byte contain flags for the new Break classes. 2e5a5

4 0 = Continue using same classes of Transmit characters
1 = Reset Transmit classes according two the two bytes following 1) the Break classes bytes, if the Break classes are also being reset, or 2) this byte, if the Break classes are NOT also being reset. 2e5a6

Byte value (decimal) and its meaning: 2e5a7

0 = Continue what you have been doing 2e5a7a

Even numbers greater than zero (i.e., numbers with the right-most bit off) are in error and should be interpreted as equal to zero. When the <cmd> is an even number greater than zero, Classes bytes TC1 & TC2 and/or BC1 & BC2 MUST NOT BE SENT. 2e5a7b

1 = Print (echo) up to AND INCLUDING Break character 2e5a7c

3 = Print up to Break character and SKIP (don't echo) Break character 2e5a7d

5 = Skip text (don't echo) up to Break character, but PRINT Break character 2e5a7e

7 = Skip up to and including Break character 2e5a7f

Add one of the previous non-zero values to one of the following values, to get the total decimal value for the byte (Note that Classes may not be reset, without also resetting the printing action; so an odd number is guaranteed): 2e5a7g

8 = Set Break classes (using the next two bytes [BC1 BC2]) 2e5a7h

16 = Set Transmission classes (using the next two bytes [TC1 TC2]) 2e5a7i

24 = Set Break classes (using the next two bytes [BC1 BC2]) and the Transmission classes (using the two bytes after that [TC1 TC2]). 2e5a7j

(2) Classes for Break and Transmission (The right-most bit of the second byte (TC2 or BC2) represents Class 1; the left-most bit of the first byte (TC1 or BC1) represents the currently undefined Class 16): 2e5b

1: Upper-Case Letter (A-Z) 2e5b1

2: Lower-case letters (a-z) 2e5b2

3: Numbers (0-9) 2e5b3

4: Format Effectors (<BS> <CR> <LF> <FF> <HT> <VT>) 2e5b4

5: Non-format effector Control Characters, <DEL> and <ESC> 2e5b5

6: . , ; : ? 2e5b6

7: { [(< >)] } 2e5b7

8: ' " / % @ $ & # + - * = ↑ ← | 2e5b8

9: <Space> 2e5b9

And Telnet commands (IAC . . .) are ALWAYS to have the effect of a Break character. 2e5b10

NWG/RFC# 560 DHC JBP 18-AUG-73 14:18 18492
Remote Controlled Transmission and Echoing Telnet Option

(J18492) 18-AUG-73 14:18; Title: Author(s): David H. Crocker, Jonathan B. Postel/DHC JBP; Distribution: /MLK NLG SA; Keywords: Protocols Telnet; Sub-Collections: NWG NIC NLG; RFC# 560; Clerk: DHC;

DHC 18-AUG-73 16:24 18493

Request for Network Mailbox address

Marcia Keeney has sent out a note requesting Group Coordinators to try to get the Network mailing addresses (online) of group members.

So please send me yours (DHC thru Journal, DCROCKER at ISI).

Thanks. --Dave Crocker

1

Request for Network Mailbox address

(J18493) 18-AUG-73 16:24; Title: Author(s): David H. Crocker/DHC;
Distribution: /USERS USING; Sub-Collections: USING USERS; Clerk: DHC;

DHC 18-AUG-73 16:26 18494

Jim -- How do you FTP NLS files between Tenex's. I've tried once and couldn't find the right parameters.

--dave

1

(J18494) 18-AUG-73 16:26; Title: Author(s): David H. Crocker/DHC;
Sub-Collections: NIC; Clerk: DHC;

LPD 19-AUG-73 00:29 18495

Don't like current Net Journal distribution

I disapprove of the current Net Journal Distribution procedure. The TENEX READMAIL facility is a far less convenient form in which to maintain a permanent record of Journal items addressed to me than my Initials file at ARC. The overhead of transferring such notices to a permanent file is also odious. Until and unless the NIC can make a subsystem (such as NLS) available to aid in this process, I would like my Journal items delivered BOTH to my "home" host and to my NIC Initials file. If it is impossible to do both, I would prefer the latter to the former. 1

LPD 19-AUG-73 00:29 18495

Don't like current Net Journal distribution

(J18495) 19-AUG-73 00:29; Title: Author(s): L. Peter Deutsch/LPD;
Distribution: /JDH NP; Sub-Collections: NIC NP; Clerk: LPD;

Network Information Center and Computer-Augmented Team Interaction/Quarterly Management Report 8 Covering May 9 1973 through August 9 1973

ARPA Order Number: - Program: - 1

Title: "Network Information Center and Augmentation System Development" 1a

Contractor: Augmentation Research Center, Stanford Research Institute. 1b

Date of Contract: 10 May 1972. 1c

Amount of Contract: $2,270,000. 1d

Contract Number: F30602-72-C-0313. 1e

Principal Investigator: Dr. Douglas C. Engelbart, phone (415) 326-6200, ext. 2220. 1f

Contract Expiration Date: 10 February 1974. 1g

I RESEARCH PROGRAM AND PLAN 2

As per our proposal and contract, work is progressing in the following areas: 2a

Developing service functions for: 2a1

External users - the Network Information Center (NIC) 2a1a

Internal users - prototype systems, such as: 2a1b

Dialog Support System (DSS) 2a1b1

Documentation Production and Control System (DPCS) 2a1b2

Software Engineering Augmentation System (SEAS) 2a1b3

System Developers' Handbook System (SDHS). 2a1b4

Developing service delivery and marketing principles and practices. 2a2

Providing operational marketing and delivery of services within the ARC and NIC customer markets. 2a3

II MAJOR ACCOMPLISHMENTS 3

Network Information Center 3a

Network Information Center and Computer-Augmented Team Interaction/Quarterly Management Report 8 Covering May 9 1973 through August 9 1973

During the past quarter, the major accomplishment has been a thorough review of the NIC: its costs, services, and plans for the future. The results of this analysis are outlined in our proposal to ARPA for a two-year extension of our contract beginning in February, 1974. 3a1

Upgrading and cleanup of the NIC Query Language is proceeding to make it easier to use and more powerful. 3a2

Dialog Support System 3b

During the last quarter we received in excess of 150 requests for network Journal delivery in response to a recent questionnaire distributed by the NIC, and we updated the Ident system accordingly. Many ARPANET Journal users are now regularly receiving messages and citations at their own sites via the network. 3b1

Our FTP server process was modified to permit a network user to retrieve Journal files in sequential, unstructured form without explicit login to the ARC system or aid from NLS. 3b2

Our File Transfer Protocol (FTP) server process was further modified to permit users to enter messages or files into the ARC Journal from their own local mail systems via the network, again without explicit login or use of NLS. 3b3

Design work for the Multi-site Journal and Ident system is continuing. As an outgrowth of this work, we have designed and specified a mail protocol, currently under review by members of the Network Working Group, for general network use. 3b4

Software Development 3c

In this quarter, we brought into operation a group allocation system to control user login and thus allocate our computer resources. A study made by Analysis indicated that controlling access to the system (login) was an adequate resource allocation scheme. 3c1

We designed and partially implemented a new command language interpreter and a new command language based on user feedback and training experience. 3c2

We began work on Alpha-Numeric Display NLS to permit display NLS to run on many display terminals without graphics

capabilities. We designed and built a Line Processor which uses Intel MCS-4 computer chips. 3c3

A Network Graphics Protocol proposal was developed and submitted to the Network Graphics Group. 3c4

We developed mechanisms for generation of a System Guide to NLS based on the object and source code. The guide consists of an alphabetic listing of all data and procedures used in NLS (along with comments, calling arguments, and location in source code files) and an index based on non-trivial words in comments on procedures. A cross reference facility shows what procedures call other procedures, etc. 3c5

Dex II is in operation (missing some of the more sophisticated features). 3c6

The NLS Calculator was released to users. 3c7

Analysis 3d

The identity of the Analysis function within ARC has been emerging steadily. Over the last three months, Analysis has been working in the following areas: 3d1

Analysis of the NIC. 3d1a

Telephone survey of NIC Station Agents. 3d1a1

Evaluation of costs of NLS support for a medium sized community of users. 3d1a2

Survey of NIC-PSO work and expenditures. 3d1a3

Analysis of evolutionary information centers. 3d1b

Technological transfer to VELA community. 3d1c

Analysis of needs for personal information management. 3d1d

Definition of functions of Analysis and participation in proposal writing. 3d1e

Analysis of office automation requirements. 3d1f

Analysis of the Journal system. 3d1g

Comparisons of text editors. 3d1h

Comparisons of user accounts reported by SUPERWATCH and the "Accounts" files (There is still a discrepancy). 3d1i

Login and duration of connection Statistics. 3d1j

Preparation for Workshop Utility 3e

Interaction with Tymshare on Utility computer preparations and staffing continued. 3e1

Tymshare has selected a lead operator and a systems programmer. We are discussing operational procedures and the facility configuration. 3e2

We now estimate service will begin between October 15 and November 1. 3e3

At ARC, we have hired a behavioral psychologist experienced in NLS who will coordinate training and user development for the Utility user groups. 3e4

Our Utility systems programmer is working on procedures for quality assurance as new versions of NLS come into operation on the Utility. 3e5

III PROBLEMS ENCOUNTERED 4

No outstanding problems. 4a

IV FISCAL STATUS 5

Estimated expenditures and commitments to date are: $1,740,000, excluding computer lease commitments. Funds required to complete the work within funding limitations are: $530,000. Estimated date of completion of work: February 10, 1974. 5a

V ACTION REQUIRED BY THE GOVERNMENT 6

None. 6a

VI Next Quarter Plans 7

Network Information Center 7a

Work has begun to allow NIC catalogs to be produced on the 360

at UCSB, which is a more appropriate machine for this type of work than ARC's PDP-10. 7a1

The analysis of the NIC begun last quarter will continue, and changes in NIC services suggested by the analysis will begin . 7a2

Dialog Support System 7b

During the next quarter, our work on the Multi-site Journal will continue. An initial, two-site system will be implemented to support the Utility. Specifications for the full system will be completed, and work on its implementation will begin. 7b1

We will continue to bring our work in this area to bear upon the development of the general network mail protocol. 7b1a

We plan to develop ways to enter items into the journal system without subsequent archival and cataloging and to accept a greater variety of addresses for distribution. 7b2

Software Development 7c

We will finish the new command language which will include extensive help facilities for new users. 7c1

We will get Alpha-Numeric Display NLS to work and modify display support code in Tenex so DNLS can be run under standard Tenex using Imlac protocol or Alpha-Numeric Displays. 7c2

Specification of the Forms System will be completed. 7c3

Specification of privacy features for the Journal will be completed. 7c4

Specification of a new display system for ARC will be completed. 7c5

Specification of the Networks Graphics Protocol (help) will be completed. 7c6

Analysis 7d

Plans for the next quarter are to: 7d1

Continue analysis of the NIC. 7d1a

Begin analysis of the dialog support system. 7d1b

Analyze needs of network communities (energy communities first). 7d1c

Develop the "evolutionary information center" concept and survey other existing information centers. 7d1d

Analyze needs of community special interest groups. 7d1e

Assess our group allocation system which partitions computer access to users according to their type of work. 7d1f

Preparation for Workshop Utility 7e

Final stages of operational planning will take place, leading to initial service late in the reporting period . 7e1

Approved by

:

D. C. Engelbart, Principal Investigator

8

DVN 19-AUG-73 10:07 18496

Network Information Center and Computer-Augmented Team Interaction/Quarterly Management Report 8 Covering May 9 1973 through August 9 1973

(J18496) 19-AUG-73 10:07; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /; Sub-Collections: SRI-ARC NIC RADC; Clerk: DVN; Origin: <VANNOUHUYS>QMR.NLS;1, 19-AUG-73 09:57 DVN ;

State of QMR and IPTPROP

QMR 1

Through SRI Editing, changes read in, reproofed. Ready to go for approval. I journalized to null distribution, If no changes arise from approval we can do a secondary distribtion. If changes arise, we can rejornalize. (a haiku) 1a

IPTPROP 2

It had a fairly rough time in SRI editiing. With Dean and Susan's help I read the editing bak in Thursday and Friday. I just now reassembled it and am printng a copy from (documentation,assiptprop,). I think it may need some reproofing since I assembled files with print directives and did global subsitutes. I will leave the copy on the second chair in my office. 2a

DVN 19-AUG-73 10:29 18497

State of QMR and IPTPROP

(J18497) 19-AUG-73 10:29; Title: Author(s): Dirk H. Van Nouhuys/DVN;
Distribution: /JCN SRL NDM RWW; Sub-Collections: SRI-ARC; Clerk: DVN;

JHB 20-AUG-73 05:42 18498

Net Reloading effect on users -- suggestions.

RADC: For your information. (guiea = guinea)

JHB 20-AUG-73 05:42 18498

Net Reloading effect on users -- suggestions.

Mr. Mckenzie: Thank you for the time to explain the rationale for loading new Network programs and the Net down time that results. 1

As you will recall, I suggested that (1) notice be given at least one day in advance to remind Net users that the system will be down routinely and that there is an increased probabilty of failures subsequent to the software modification, (2) that this activity be scheduled from 3 - 5 PM EDT rather than the current time of 7 - 9 AM (TUES), and (3) that special concern be given to users attempting to accomplish work of a non-experiemntal or otherwise not of a Net development nature. It was noted that the latter group are unwitting guiea pigs, and there are no resources alocated to support Network experimentation by many of these users. 2

As per your request, the users at RADC are : 3

BAIR BETHKE BERGSTROM CAVANO LAMONICA RZEPKA STONE LAWRENCE KENNEDY TOMAINI THAYER IUORNO PANARA MCNAMARA SLIWA and RADC 3a

All users at RADC are addressable through the Journal with the single group ident: RADC. 3b

Perhaps we should continue to use the system for interaction about the Net and associated problems, through both send message and Journal, and for other users of the SRI-ARC as well. 4

Copies: All RADC Users 5

JHB 20-AUG-73 05:42 18498

Net Reloading effect on users -- suggestions.

(J18498) 20-AUG-73 05:42; Title: Author(s): James H. Bair/JHB;
Distribution: /AAM RADC; Sub-Collections: RADC; Clerk: JHB;
Origin: <BAIR>BBNNET.NLS;1, 20-AUG-73 05:33 JHB ;

Attempts to use O D E T

i tried the O D E T command on my initial file (The quick brown fox, etc.) with rather unsatisfactory results. results were: LBS=0 single space, LBS=1 single space,LBS=2 two spaces, LBS= 3 two spaces, LBS = 4 two spaces.let me know when it's appropriate for me to try again. Thanks for the efforts. john.

1

Attempts to use O D E T

(J18499) 20-AUG-73 06:47; Title: Author(s): John S. Perry/JSP;
Distribution: /DVN; Sub-Collections: NIC; Clerk: JSP;

NJN 20-AUG-73 06:49 18500

Distribution lists

Hi, Dirk. Sorry i haven't contacted you in so long, but I have been very busy and very happy, and that is not a good combination for letter writing, at least for me. But it is coming soon. Laura Gould told me that you sent me a copy of the NLS language changes, or rather that I was on the proper distribution list. I didn't receive a copy, though I will get one from Alex. This has happened before, i.e. that I should have received some item and didn't and so I am led to believe that I am not on the appropriate distribution list. For one thing I am not in the INLS USERS Group. This is an oversight. I think I should be in that group, and since you are the coordinator, you arein a position to do something about it. Ah greatly appreciate yoah efforts in this matter. --nancy

1

Distribution lists

(J18500) 20-AUG-73 06:49; Title: Author(s): Nancy J. Neigus/NJN;
Distribution: /DVN; Sub-Collections: NIC; Clerk: NJN;

NJN 20-AUG-73 07:19 18501

Using note 4

Marcia--
the file that contains the USING Meeting notes is
(bbn-net,usingnotes,). I have put the appropriate headers and title
on it. This is to be USING Note 4, NIC 18259. The RFC # and NIC #
that you had previously assigned to dhc are RFC 554 and NIC 17827.
Don't release them yet, since Dave and I are still fighting about
whether they should go out as an RFC or not. When we decide for
sure, I will let you know. Thanks very much, --Nancy

1

NJN 20-AUG-73 07:19 18501

Using note 4

(J18501) 20-AUG-73 07:19; Title: Author(s): Nancy J. Neigus/NJN;
Distribution: /MLK; Sub-Collections: NIC; Clerk: NJN;

tickler for month of July

TITLE:
COMMENT:
AUTHOR(S):FJT
DISTRIBUTION:
SUBCOLLECTION:
CLERK:FJT
GO. 1

TITLE:
COMMENT:
AUTHOR(S):FJT
DISTRIBUTION:
SUBCOLLECTION:
CLERK:FJT
GO. 2

(jm1) 2 3

(jt1) 3 4

(jw1) 4 5

Laboratory Activity Reports are due tomorrow. 5a

(jth1) 5 6

Laboratory Activity Reports due today: Bucciero must have them by 1000, ISM must have them by 1100, and DOT must have them by 1600. 6a

(jf1) 6 7

(jm2) 9 8

(jt2) 10 9

(jw2) 11 10

Laboratory Activity Reports are due tomorrow. 10a

(jth2) 12 11

Laboratory Activity Reports due today: Bucciero must have them by 1000, ISM must have them by 1100, and DOT must have them by 1600. 11a

(jf2) 13 12

(jm3) 16 13

(jt3) 17 14

tickler for month of July

Confessions are this Thursday. Topic write-ups must be collected tomorrow 14a

(jw3) 18 15

Laboratory Activity Reports are due tomorrow. 15a

Collect topic write-ups today by noon for confessions. 15b

(jth3) 19 16

Laboratory Activity Reports due today: Bucciero must have them by 1000, ISM must have them by 1100, and DOT must have them by 1600. 16a

Confessions today 16b

(jf3) 20 17

(jm4) 23 18

(jt4) 24 19

(jw4) 25 20

Nelson/McNamara dry runs 1300 for Col T - Program call 20a

Laboratory Activity Reports are due tomorrow. 20b

(jth4) 26 21

Nelson/McNamara center program review - all morning 21a

Laboratory Activity Reports due today: Bucciero must have them by 1000, ISM must have them by 1100, and DOT must have them by 1600. 21b

(jf4) 27 22

For TB and Bobbie only - Submit travel figures to ISM/Aggie by 1200 hrs. 22a

FJT 20-AUG-73 07:41 18502

tickler for month of July

(J18502) 20-AUG-73 07:41; Title: Author(s): Frank J. Tomaini/FJT;
Distribution: /JPC; Sub-Collections: RADC; Clerk: FJT;

again, file for july tickler

(jt1) 3 1

(jw1) 4 2

Laboratory Activity Reports are due tomorrow. 2a

(jth1) 5 3

Laboratory Activity Reports due today: Bucciero must have them by 1000, ISM must have them by 1100, and DOT must have them by 1600. 3a

(jf1) 6 4

(jm2) 9 5

(jt2) 10 6

(jw2) 11 7

Laboratory Activity Reports are due tomorrow. 7a

(jth2) 12 8

Laboratory Activity Reports due today: Bucciero must have them by 1000, ISM must have them by 1100, and DOT must have them by 1600. 8a

(jf2) 13 9

(jm3) 16 10

(jt3) 17 11

Confessions are this Thursday. Topic write-ups must be collected tomorrow 11a

(jw3) 18 12

Laboratory Activity Reports are due tomorrow. 12a

Collect topic write-ups today by noon for confessions. 12b

(jth3) 19 13

Laboratory Activity Reports due today: Bucciero must have them by 1000, ISM must have them by 1100, and DOT must have them by 1600. 13a

Confessions today 13b

(jf3) 20 14

again, file for july tickler

(jm4) 23 15

(jt4) 24 16

(jw4) 25 17

Nelson/McNamara dry runs 1300 for Col T - Program call 17a

Laboratory Activity Reports are due tomorrow. 17b

(jth4) 26 18

Nelson/McNamara center program review - all morning 18a

Laboratory Activity Reports due today: Bucciero must have them by 1000, ISM must have them by 1100, and DOT must have them by 1600. 18b

(jf4) 27 19

For TB and Bobbie only - Submit travel figures to ISM/Aggie by 1200 hrs. 19a

(jm5) 30 20

(jt5) 31 21

form 2's (employee time expenditures) are due today. 21a

form 6's (projected nampower) are due today. 21b

FJT 20-AUG-73 08:01 18503

again, file for july tickler

(J18503) 20-AUG-73 08:01; Title: Author(s): Frank J. Tomaini/FJT;
Distribution: /JPC; Sub-Collections: RADC; Clerk: FJT;

toll calls

All toll calls to Utica & Syracuse will be made via tie lines. There will be no direct toll charges to Utica or Syracuse while tie lines are in effect. Hopefully, this and your strict control of other toll calls will rec reduce the base's large toll charges...fjt 1

toll calls

(J18504) 20-AUG-73 08:34; Title: Author(s): Frank J. Tomaini/FJT;
Distribution: /JPC EJK JLM DLS WER RFI JHB RBP; Sub-Collections: RADC;
Clerk: FJT;

FJT 20-AUG-73 08:39 18505

WWMCCS Progress Meetings

WWMCCS Progress Meetings, directly following Branch Chief's meetings on Monday mornings wil no longer exist. They will be replaced by on-call meetings as required by Capt daughtry or management personnel WHEN REQUIRED and you will be notified as far as in advance as possible. FJT

1

FJT 20-AUG-73 08:39 18505

WWMCCS Progress Meetings

(J18505) 20-AUG-73 08:39; Title: Author(s): Frank J. Tomaini/FJT; Distribution: /WPB JPC DLS JLM RFI RBP WER JHB; Sub-Collections: RADC; Clerk: FJT;

DVN 20-AUG-73 09:01 18506

TU problems

Marcia, would you put Nancy Neigus (NJN) on TU if she is not already?...Further you and I should sit down and go over TU. It is clear that some people who ought to be on it aren't....Thanks. 1

TU problems

(J18506) 20-AUG-73 09:01; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /MLK NJN(happyness is your great enemie of correspondence, atleast for people who are not really fixated on writing.); Sub-Collections: SRI-ARC NIC; Clerk: DVN;

AAM 20-AUG-73 09:03 18507

Network Software Maintenance

This is a reminder that Network Software Maintenance is scheduled between the hours of 0700 and 0900 (Eastern Time) tomorrow, Tuesday 21 August 1973. Although software releases are checked out as much as possible in the BBN test cell, there are sometimes problems of scale which are not detected until after a release; hence the Network MAY be shakey for a few hours after the scheduled release.
Sincerely,
Alex McKenzie (for the Network Control Center)

1

Network Software Maintenance

(J18507) 20-AUG-73 09:03; Title: Author(s): Alex A. McKenzie/AAM;
Distribution: /RADC; Sub-Collections: NIC RADC; Clerk: AAM;

Peter, I changed your delivery to both Online (in your NLS file at ARC) and Network (Deutsch @ PARC-MAXC). -- Charles. 1

(J18508) 20-AUG-73 10:48; Title: Author(s): Charles H. Irby/CHI;
Distribution: /LPD; Sub-Collections: SRI-ARC; Clerk: CHI;

RWW 20-AUG-73 11:22 18509

request to set up a software production facility dialog group in the NIC

Bob, This message is a test of network journal delivery and a request for your opinion. I am willing to offer NIC help in supporting dialog of the spf group by creating such a group from your last mailing list. This would allow people in the group to send hardcopy to the NIC and we would distribute the stuff o the group or to use the NIC J
urnal with its new network entry and delivery capabilities to send stuff online by simply addressing it to spf. I know you have been trying to get people to use forum so I haven't offered before, but dialog there seems spotty and possibly additional channels might help. Let me know if I should proceed. Thanks Dick

1

RWW 20-AUG-73 11:22 18509

request to set up a software production facility dialog group in the NIC

(J18509) 20-AUG-73 11:22; Title: Author(s): Richard W. Watson/RWW; Distribution: /RMB; Sub-Collections: SRI-ARC; Clerk: RWW;

JEW 20-AUG-73 12:18 18511

NLS Bug, Output Assembler Clobbers 257th Character in Statement

Retrieval of NLS files via the Net and FTP suffers because of this bug.

NLS Bug, Output Assembler Clobbers 257th Character in Statement

'Output Assembler', no-force-upper-case, clobbers the 257th character of a statement. Just perform Output Assembler on this file beginning with statement 2 and see what happens. 1

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxx 2

123456789012345678901234567890123456789012345678901234567890123456789
012 3

JEW 20-AUG-73 12:18 18511

NLS Bug, Output Assembler Clobbers 257th Character in Statement

(J18511) 20-AUG-73 12:18; Title: Author(s): James E. (Jim) White/JEW; Distribution: /BUGS KP RCC; Sub-Collections: SRI-ARC BUGS KP; Clerk: JEW;
Origin: <WHITE>TESTASM.NLS;2, 20-AUG-73 12:11 JEW ;

JPC 20-AUG-73 12:56 18512

Meeting Notes on Jocas Cost Estimating

A meeting was held on August 17,1973 to discuss the introduction of Cost Estimates for JOCAS (RADC Form 38). Attending were Frank Tomaini, Thomas Bucciero, Joe Cavano, Sgt. John Johnson, and Donna Robilotta. RADC Form 38(Test) is broken down into quarterly expenditures of various cost categories. As an offshoot to this meeting, FY74 PRS and Form 30a's will be added to the database when Tom supplies us with the data. 1

Although it is too late to help much in this particlar implementation of cost estimates, it was decided that we should set up programs to query our database for the actual designated expenses that we cover: direct labor/military & civilian,contract service r & d, and direct travel. The report will serve two purposes.. 2

1 can be used to more accurately project estimates in there categories for the following years.. 2a

2. used to compare against past estimate for variance reports. 2b

A meeting will be held later this week to determine the exact nature and shape that these programs will take. Don VanAlstine will work with Sgt. Johnson on the programming and Roger Panara and Joe Cavano will serve as consultants (fees to be determined later through the Syracuse contract). Since Sgt. Johnson will be leaving in another month, Don will have to pick up some of the slack in the programming of application jobs on the IDS database. It should be quickly determined how much time Don will have available for this. 3

JPC 20-AUG-73 12:56 18512

Meeting Notes on Jocas Cost Estimating

(J18512) 20-AUG-73 12:56; Title: Author(s): Joe P. Cavano/JPC;
Distribution: /FJT(Bobbie: Please distribute copies of this to Frank,
Tom and DonVanAlstine) EJK JLM RBP; Sub-Collections: RADC; Clerk: JPC;
Origin: <CAVANO>JOCAS.NLS;1, 20-AUG-73 12:47 JPC ;

A problem with retrieving cited files such as "SRI-ARC <mjournal>18340.nls;xnls " is that there is no format control such as CRLF's in the file making printing a difficult task for the retrieving program. 1

(J18513) 20-AUG-73 13:18; Title: Author(s): Abhay K. Bhushan/AKB;
Distribution: /JEW MDK; Sub-Collections: NIC; Clerk: AKB;

largescaleinformationsystems

Large Scale Infor Systems 1

ATTEM(NDEES:J Mac,D Ward 2

DISCUSSION: 3

The main topic was the proposal.We reviewed each effort and its relvance or lack of the IS,s prgram.J M proposed that the ceiling for the effort should be around the 350k/annum rate and agreeed to check the role of the asp in view of this goal. 3a

Mahaorota was not included in the proposal.J m agreed to chec H Webb out on his interst in his wrok for the following year. 3a1

It was agreed to fly the efforts by the respective menand see if the efforts lined up with their enterest.Also, it was agreed that we would explore the possibility of using Stabler on software first if his role on ASP was not clear. 3a2

D Ward said that he felt interst at SU could be generated if our org was intersted in the whole area of software first. 3a2a

Finally it was agreed to check with Mike and Ray and the desirablity of having Goel and Sargent submit a joint propasal. 3a3

largescaleinformationsystems

(J18514) 20-AUG-73 13:36; Title: Author(s): John L. McNamara/JLM;
Distribution: /FJT JLM; Sub-Collections: RADC; Clerk: JLM;
Origin: <MCNAMARA>SUMIN.NLS;1, 19-JUN-73 05:35 JLM ;

Documentation

Ira, we have not published anything in the public domain under the ARPA/IPT project. We are, however, in the final stages of publishing a Users Handbook which contains an assortment of rectangular array characterizations of select server attributes as well as general information. Susan Poh should be contacted for Draft copies [don't know that we have any] - the handbook should be published shortly and when it is i would be pleased to send you a copy [or copies if you like].

There are several progress reports floating around but think they would be of little use to you - Jack and Erika are about to publish the results of the RESDIR effort [an on-line resource directory and support system] - when that is available, will also send to you.

Take care, Jean

1

(J18515) 17-AUG-73 07:35; Title: Author(s): Jean Iseli/JI;
Distribution: /IWC(how are things going - whcha up to?);
Sub-Collections: NIC; Clerk: JI;

Please review the contents of this proposal and respond to me with comments or criticisms by next Wednesday, 29 August; I will issue this as an RFC on the 31st.

RFC # 561
NIC # 18516

Abhay Bhushan (AKB) MIT-DMCG
Ken Pogran (KP) MIT-MULTICS
Ray Tomlinson (RST) BBN-TENEX
Jim White (JEW) SRI-ARC
xx August 73

*** DRAFT ***
# Standardizing Network Mail Headers

1

One of the deficiences of the current FTP mail protocol is that it makes no provision for the explicit specification of such header information as author, title, and date. Many systems send that information, but each in a different format. One fairly serious result of this lack of standardization is that it's next to impossible for a system or user program to intelligently process incoming mail.

2

Although the long-term solution to the problem is probably to add commands for specifying such information to the mail protocol command space (as suggested in RFC 524 -- 17140,), we hereby propose a more quickly implemented solution for the interim.

3

We suggest that the text of network mail, whether transmitted over the FTP telnet connection (via the MAIL command) or over a separate data connection (with the MLFL command), be governed by the syntax below:

4

Example:

4a

```
From: White at SRI-ARC
Date: 24 JUL 1973  1527 PDT
Subject: Multi-Site Journal Meeting Announcement
NIC: 17996

At 10 AM Wednesday 25-JULY there will be a meeting
to discuss a Multi-Site Journal in the context of
the Utility.  Y'all be here.
```

4a1

Formal Syntax:

4b

```
<mailtext>     ::= <header> <CRLF> <CRLF> <message>          4b1
<header>       ::= <headeritem>   <headeritem> <header>      4b2
<headeritem>   ::= <item> <CRLF>                             4b3
```

```
<item>          ::= <authoritem>   <dateitem>
                    <subjectitem>   <miscitem>                          4b4
<authoritem>    ::= From: <SP> <user> <SP> at <SP> <host>               4b5
<dateitem>      ::= Date: <SP> <date> <SP> <SP> <time> -
                    <zone>                                              4b6
<subjectitem>   ::= Subject: <SP> <line>                                4b7
<miscitem>      ::= <keyword> : <SP> <line>                             4b8
<date>          ::= <dayofmonth> <SP> <month> <SP> <year>               4b9
<dayofmonth>    ::= one or two decimal digits                           4b10
<month>         ::= JAN   FEB   MAR   APR   MAY   JUN
                    JUL   AUG   SEP   OCT   NOV   DEC                 4b11
<year>          ::= four decimal digits                                 4b12
<zone>          ::= EST   EDT   CST   CDT   MST   MDT
                    PST   PDT   GMT   GDT                               4b13
<time>          ::= four decimal digits                                 4b14
<user>          ::= <word>                                              4b15
<host>          ::= a standard host name                                4b16
<message>       ::= <line> <CRLF>   <line> <CRLF> <message>             4b17
<keyword>       ::= <word>                                              4b18
<line>          ::= a string containing any of the 128 ASCII
                    characters except CR and LF                         4b19
<word>          ::= a string containing any of the 128 ASCII
                    characters except CR, LF, and SP                    4b20

<CRLF>          ::= CR LF                                               4b21
```

Notes: 4c

(1) <authoritem>, <dateitem>, and <subjectitem> may each appear at most once in <header>. The order is insignificant, but they must proceed all occurrences of <miscitem>. 4c1

(2) The case (upper or lower) of keywords should be as specified. 4c2

(3) No attempt has been made to legislate the format of <user>, except to exclude spaces from it. 4c3

(4) The time has no internal punctuation. 4c4

(5) No provision is made for multiple authors. 4c5

We recommend that mail-sending subsystems which prefix header information to the text of the user's message be modified appropriately, and that other hosts recommend the above conventions to their users. 5

(J18517) 20-AUG-73 16:46; Title: Author(s): James E. (Jim) White/JEW; Distribution: /RST AKB KP JCN RWW LGR JDH; Sub-Collections: SRI-ARC KP; Clerk: JEW;
Origin: <WHITE>HDRPROP.NLS;5, 20-AUG-73 16:36 JEW ;

Visit in Washington, August 28.

Next week, on August 28, I shall be at ARPA in Washington to participate in a presentation to be made by SRI about a preliminary study on a contemplated DOD energy data management system. (The contact in ARPA being Rudy Black). 1

I am part of this study team. I believe that there might be an opportunity for ARPA computer communications and information handling technologies (including some of the NLS features) to be usefully applied in that general area. We are not yet at a proposal stage, but I hope sometimes later this year to be able to indicate how this could be done and what benefits ARPA could derive from such a project. 2

While in Washington, next week, I could tell you about our interest in this application area and discuss with you some of the implications for the utilization of the ARPANET and NLS. 3

Should you wish to discuss these matters, Tuesday afternoon (August 28) would be best for me. Please advise before noon, August 24. 4

Paul Rech (from ARC) 5

Visit in Washington, August 28.

(J18518) 20-AUG-73 18:26; Title: Author(s): Paul Rech/PR;
Distribution: /JSP RWW JCN DCE; Sub-Collections: SRI-ARC; Clerk: PR;
Origin: <RECH>VISIT.NLS;2, 20-AUG-73 18:23 PR ;

DIRT minutes--20 Aug 73

The Documentation Instigation and Review Team met on Monday, August 20, at 9:30 am to continue discussing our work on the Help System Database. Attending were Dirk vanNouhuys, Jeanne Beck, and Dean Meyer. 1

Each of us has reviewed the first six commands completed by another. At the meeting we discussed as a group our discrepancies and suggestions. We reached some further, and confirmed some old, agreements on elements of style, explanation and convention in the database. 2

We will show in our examples that the system will capitalize the first character of the first word in any command field echoed. In the recognition mode we have chosen for the user, we want her to type (in lower case) only the first word of the command field and then type either a space or Altmode for recognition and/or noise words. 2a

Certain links are to be added as substatements under the function statements which mention them: links to the concepts of CM, address, and entity. 2b

Certain mass substitutions will be done by Dean in the database after our files have been completed and conbined: 2c

"CM points to" for "CM is on" 2c1

Carriage return inserted between statement names and warp links. 2c2

We had some questions on the operation of some of the commands not clear from the Command Summary. We reached tentative conclusions on what was meant and agreed to seek clarification from the programmers. Two of these commands were: 3

Append structure-entity: we assume that a group or plex or branch is appended just like a statement is--made one text string all in the one statement. 3a

Question mark command: where does the question mark leave the user; is the ? printed? 3b

We agreed to continue editing each others' already written commands. 4

The following commands have yet to be done, and have been assigned to these individuals: 5

DVN--help system commands 5a

NDM--Protect file, Output Journal quickprint, Logout 5b

JMB--Print, Insert Journal submission form, Connect Display, Connect to file directory, Disconnect terminals, Simulate terminal type, Comments 5c

We will meet again Wednesday, August 22, at 9:30 am. 6

DIRT minutes--20 Aug 73

(J18519) 20-AUG-73 20:37; Title: Author(s): Documentation Instigation and Review Team /&DIRT; Distribution: /DIRT; Sub-Collections: DIRT; Clerk: JMB;
Origin: <BECK>DIRT.NLS;2, 20-AUG-73 20:10 JMB ;

JCN 21-AUG-73 07:35 18520

Re (18399,1) Dave Crocker's Question About Group Limit Changes--Autologout

Dave: I've been on vacation and just came across your message (18399,1). As I understand it, the last user to log in under the "newly over-allocation" group will be advised that he is to be logged off if he is still offquota in 5 minutes..a status that he just earned when his group allocation became more) less than the number already logged in under his group. The same for any other of the group's users who are over the limit due to the change in the limit at that point in the day. I'm sending a copy of this to Smokey Wallace. If there's any difference in how it really operates, he'll let us know.

1

18520 Distribution

David H. Crocker, Donald C. (Smokey) Wallace, Ferg R. Ferguson,

JCN 21-AUG-73 07:35 18520

Re (18399,1) Dave Crocker's Question About Group Limit Changes--Autologout

(J18520) 21-AUG-73 07:35; Title: Author(s): James C. Norton/JCN; Distribution: /DHC DCW WRF; Sub-Collections: SRI-ARC; Clerk: JCN;