Counting How Often a File is Read

In order to determine what files to keep on-line for the Network users, the NIC would like to have "access counts" kept and available for periodic printing (using either the Tenex "Copy to LPT" or the NLS "Output Quickprint"). 1

The simplest, easiest to use scheme I can think of would be to have the counts printed by the Tenex "DIR, EVERYTHING" command. 2

The basic information needed is the number of times a file has been read (one counter per file, not one per file version). 2a

(We can live with one counter per file version, but it would be much more useful to have one counter per file). 2a1

If there is room to keep other data, then it would be nice to have these, in addition to the basic "number of reads" counter: 2b

1) an incremental counter, giving the number of file reads since the last time this counter was set to zero; 2b1

(This implies, of course, that there be an easy way --- a command --- to set the incremental counter back to zero.) 2b1a

2) a date field, giving the date at which the incremental counter was last set to zero; 2b2

Please let me have your comments on the feasibility of the basic "number of reads" counter, using the "DIR, EVERYTHING" command. 3

Any other ideas you have would be most welcome, also. 4

MDK 1-MAR-73 14:06 14847

Counting How Often a File is Read

(J14847) 1-MAR-73 14:06; Title: Author(s): Kudlick, Michael D. /MDK;
Distribution: /jcn rww dcw kev ; Sub-Collections: SRI-ARC; Clerk:
MDK;
Origin: <KUDLICK>ACCESS-COUNTS.NLS;2, 1-MAR-73 14:01 MDK ;

User Feedback

Marilyn ... 1

I got this journal message (14806,) from Dave Walden at BBN-NET (Ident = DCW3). 2

> THIS IS MY FIRST JOURNAL MESSAGE. I AM TRYING TO LEARN TO USE NLS. I THINK THE PAGE NUMBERS IN THE TNLS BEGINNERS GUIDE TABLE OF CONTENTS (7 AUG 72) ARE INCORRECT. ALSO, THE SAMPLE JOURNAL SESSION GIVEN IN THE ABOVE GUIDE SHOULD DEMONSTRATE MESSAGE TEXT AT LEAST TWO LINES LONG SO THE LEARNER CAN FIGURE OUT HOW TO GO ON TO THE NEXT LINE OF THE MESSAGE TEXT. ALSO, THE ABOVE MENTIONED MANUAL DOESN'T SEEM TO BE VERY UP TO DATE WHICH IS A LITTLE CONFUSING. 2a

Would you please respond to him, and let him know whether he's wrong or we're wrong? If we're wrong, could you please fix it and let him know that? Thanks. ... Mike 3

User Feedback

(J14848) 1-MAR-73 14:34; Title: Author(s): Kudlick, Michael D. /MDK;
Distribution: /mfa ; Sub-Collections: SRI-ARC; Clerk: MDK;
Origin: <KUDLICK>DCW3/MDK/MFA.NLS;1, 1-MAR-73 14:28 MDK ;

MDK 1-MAR-73 15:38 14849

On Sub-Collections, Etc.

Dave ... 1

Some answers to recent questions of yours: 2

1) Every journal item you send goes into the NIC sub-collection. Every one that I send goes into the SRI-ARC sub-collection. 2a

Those are the two defaults that we have, and the choice of default depends on whether you (as author) belong to SRI-ARC or not. 2a1

There may be room for argument about this, but no work is going on at the present to change the arrangement. 2a1a

You can also use the journal subcommand "SU" (for subcollection) and specify whatever valid subcollections you wish your note to be in. 2a2

However, an unanswered question is, if you use the "subcollection" command and don't specify NIC, will the default of NIC be erased? 2a2a

(That is the way other default fields work. For example, the default for author is the person who is logged in, but this can be overridden by using the "A" (author) subcommand.) 2a2b

One final comment: The subcollection field is also influenced by the DISTRIBUTION list, as well as by the author list. Again, the criterion as to whether it will be subcollection NIC is whether the distribution list contains an ident which has been marked as a network ident rather than an SRI-ARC ident. 2a3

2) Your comments about the need for a full SYSTAT were most welcome. As a result, we have re-instated the old way: try it now. 2b

The reason we cut back was that whenever the response was slow, every one here would do a SYSTAT to see who was causing the response to deteriorate. This sometimes caused as much load as another user would, so we cut it out. 2b1

We have advised our own people to use "where" when they want to find someone. In this regard, if you could use an up to date list of SRI-ARC people, let me know. 2b2

On Sub-Collections, Etc.

3) I have sent your note on use of the beginners manual to MFA (Marilyn Auerbach) who wrote the manuals. She will respond to you separately. 2c

Many thanks for your questions and comments. Hope this reply helps.
... Mike Kudlick. 3

n Sub-Collections, Etc.

(J14849) 1-MAR-73 15:38; Title: Author(s): Kudlick, Michael D. /MDK
; Distribution: /dcw3 ; Sub-Collections: SRI-ARC; Clerk: MDK;
Origin: <KUDLICK>NOTES.NLS;4, 1-MAR-73 15:37 MDK ;

DLS 2-MAR-73 13:16 14850

Minutes of Meeting on Terminal Proposal

Includes revvisions based on comments recieved

Minutes of Meeting on Terminal Proposal

TERMINALS 28 FEB 73 1

PURPOSE: 1a

To review (IJOURNAL, 14826, 1:w)--proposed terminal buy--and to generally review status/plans for terminals.enerally discuss terminal effort status/plans. 1a1

ATTENDEES: 1b

DLS JLM EJK TFL JHB 1b1

DISCUSSION: 1c

The proposal was reviewed and accepted with the following modification: 1c1

MAC felt that two CRTs should be ordered for Bill Bethke and Col Thayer. They would be used at the 300 baud rate in TNLS mode, but should have the ability to transmit cursor position in the event SRI creates ?NLS software. This order might act as a catalyst to start serious work at SRI on the ?NLS software. 1c1a

Include an additional TYCOM for Mitzi. 1c1b

Approval for TYCOMs should be persued now, but no orders for them should be placed until we have some experience with the first two. 1c1c

The terminal proposal to be presented to BB would look like: 1c2

User Type	numb.	Teleprinter		Display		
		THERMAL	IMPACT	GRAPHIC	TEXT	
MANAGERS	4	8*			2**	
SECRETARY	4		5			
ADMIN	2		1***			
ENGINEER	36	12		6		
TOTALS	46	20	6	6	2**	

1c3 1c4 1c5 1c6 1c7 1c8 1c9 1c10 1c11 1c12 1c13

ON-HAND	11	0	3	0	1c14
ON-ORDER	0	3	0	0	1c15
--					1c16
TO-ORDER	9	3	3	2**	1c17

* The 8 managers include the 4 in ISI and Bill Bethke, Col. Thayer, Capt Stinson and Danny Loretto. When the TEXT CRTs are fully specified (probably not until the end of FY-73) the managers will have their teleprinters replaced with CRTs. 1c17a

**To be ordered in addition to TI-700's for Bill and Col. Thayer. 1c17b

***The I/O forms printer; which is also a terminal. 1c17c

Jim felt that we should look into the possibility of a display system where several units are driven by one miniprocessor. This would reduce the cost of individual units; as compared with the IMLACs. There are several of these on the market now--see Modern Data Tech File--but the amount of development work to make them compatable with DNLS is unknown. 1c18

Mac indicated that he would like Tom to be pusher on this buy. DLS was reluctant to release his role as pusher for the overall terminal area, but agreed that he could use help on the paperwork and followup legwork. 1c19

The MTSTs were discussed at some length. It was decided that they can no longer be justified as part of the AHI experiment. Their lease runs out on 30 June 73, and we will let it go at that time. The girls in ISI (Marcel and Jo) should begin using DEX and NLS. Indeed if the MTSTs are retained it may slow transferal to NLS and we may never find out if the system can actually support office work if we have alternate off-line backup capability. This does not mean that backup capability is undesireable, but that a period of forced abstinence is necessary before we can make this determination. 1c20

Ways of increasing the use of the CMC were discussed. These include: 1c21

Moving it out of Mitzi's office. 1c21a

Relocating the unit in Mitzi's office so that users would not have to "timeshare" her chair/desk as well. 1c21b

Teaching Mitzi how to output files for users. This approach seemed best. If it works it would provide a real service to people. If it doesn't then we can worry about the other alternatives. 1c21c

We will retain one dictation unit and one transcriber unit for experimentation with input to NLS via DEX. 1c22

The question of lines and the possible "rotary" on the TIP seems premature. If we get enough more dial up lines to warrent a rotary, we would still want some dial up lines to experiment with diverting output to other ports, etc where one needs to know the port number. 1c23

UNRESOLVED ITEMS: 1d

Who will train Mitzi and set up procedures for getting her to output files. 1d1

We need to review status of evaluation effort--Jim should call meeting in near future on the "whole thing". 1d2

ACTION ITEMS: 1e

DLS--will revise plan according to above meeting notes and send to Bill Bethke with info copy to Capt. Stinson. 1e1

TFL--will take over paper work on this buy as soon as it is approved by B B. as it is approved by WEB 1e2

TFL--will look again into the phone line problem--if none available on base then determine Rome line cost and report back. 1e3

EJK--will check with C. Breece to get him to try interfacing the IMLAC to DRIPS with a TV camera looking at the IMLAC screen. 1e4

JLM--will get with Stinson and BB to determine who is responsible for buying terminals these days. 1e5

COMMENTS: 1f

DLS--meeting took two hours, with little wandering or side

trips. TFL did not show up until almost over--apparently did not get SNDMSG or verbal invitation. 1f1

Date: 2-MAR-73 601 1f2

From: MCNAMARA 1f3

Re: terminal min 1f4

------- 1f5

It occours to me that we forgot that as oranized their are 3 branch chiefs so I would suggest that we increase the ti,s by one.Talked briefly to b stinson .He asked was it possible that we could use the br2200 we bought for madaps .I said no due the lack of a curser but I wander if maybe we should reconsider seeing we do own those.He agreed to meet with me as sonn as our plan was ready to be submitted I would like that asp.He finally said he felt some one like m kessleman could male the drips be a slave to a IMLAC in a few days?. 1f5a

Date: 2-MAR-73 601 1f6

From: BAIR 1f7

Re: Minites of terminal meeting 1f8

cc: MCNAMARA 1f9

-------- 1f10

I concur with <stone>min except for 1 item. It is very important that we do not bring Loretto into AHI for any purpose until we have annalyzed the vertical communication chain from ISIM to IS. This should be complete by JULY. I don't think it is possible to bring someone like this into close contact with AHI on a limited basis --it just cannot be controlled that easily, especially when it involves a higher level manager. Further we need the comparative communication channels. **Note: we cannot return the dictation equipment until 30 Ju 73 because of the lease requirements...must come up with the $. QUESTION: Who is to train Mitzi? NOTE** Dr. Borden will be here Mon., 5 Mar. 1f10a

14850 Distribution

Kennedy, Edmund J. , McNamara, John L. , Bair, James H. , Lawrence, Thomas F. , Bethke, William P. ,

DLS 2-MAR-73 13:16 14850

Minutes of Meeting on Terminal Proposal

(J14850) 2-MAR-73 13:16; Title: Author(s): Stone, Duane L. /DLS; Distribution: /ejk jlm jhb tfl wpb ; Sub-Collections: RADC; Clerk: DLS;

Design Considerations for Knowledge Workshop Terminals

INTRODUCTION 1

The theme of this paper ties directly to that developed in a concurrent paper "The Augmented Knowledge Workshop," [1], and assumes that: "intelligent terminals" will come to be used very, very extensively by knowledge workers of all kinds; terminals will be their constant working companions; service transactions through their terminals will cover a surprisingly pervasive range of work activity, including communication with people who are widely distributed geographically; the many "computer-aid tools" and human services thus accessible will represent a thoroughly coordinated "knowledge workshop"; most of these users will absorb a great deal of special training aimed at effectively harnessing their respective workshop systems -- in special working methods, conventions, concepts, and procedural and operating skills. 1a

Within the Augmentation Research Center (ARC), we have ten years of concentrated experience in developing and using terminal systems whose evolution has been explicitly oriented toward such a future environment; from this background, two special topics are developed in this paper: 1b

1) What we (at ARC) have learned about controlling interactive-display services, and the means we have evolved for doing it -- the particular devices (mouse, keyset, keyboard), feedback, and protocol/skill features; and design data, usage techniques, learnability experience, and relevant needs and possibilities for alternatives and extensions. 1b1

2) Our considerations and attitudes regarding the distribution of functions between terminal and remote/shared resources -- including assumptions about future-terminal service needs, our networking experience, and foreseen trends in the associated technologies. 1b2

The references [2-19] include considerable explicit description of developments, principles, and usage (text, photos, and movies) to support the following discussion. Annotation is included, not only to provide a guide for selective follow up, but also to supplement the substance to the body of the paper by the nature of the commentary. 1c

CONTROL MEANS 2

INTRODUCTION 2a

Our particular system of devices, conventions, and command-protocol evolved with particular requirements: we assumed, for instance, that we were aiming for a workshop in which these very basic operations of designating and executing commands would be used constantly, over and over and over again, during hour-after-hour involvement, within a shifting succession of operations supporting a wide range of tasks, and with eventual command vocabularies that would become very large. 2a1

THE MOUSE FOR DISPLAY SELECTION 2b

During 1964-65 we experimented with various approaches to the screen selection problem for interactive display work within the foregoing framework. The tests [6,7] involved a number of devices, including the best light pen we could buy, a joy stick, and even a knee control that we lashed together. To complete the range of devices, we implemented an older idea, what became known as our "mouse," that came through the experiments ahead of all of its competitors and has been our standard device for eight years now. 2b1

The tests were computerized, and measured speed and accuracy of selection under several conditions. We included measurement of the "transfer time" involved when a user transferred his mode of action from screen selection with one hand to keyboard typing with both hands; surprisingly, this proved to be one of the more important aspects in choosing one device over another. 2b2

The nature of the working environment diminished the relative attractiveness of a light pen, for instance, because of fatigue factors and the frustrating difficulty in constantly picking up and putting down the pen as the user intermixed display selections with other operations. 2b3

The mouse is a screen-selection device that we developed in 1964 to fill a gap in the range of devices that we were testing. It is of palm-filling size, has a flexible cord attached, and is operated by moving it over a suitable hard surface that has no other function than to generate the proper mixture of rolling and sliding motions for each of the two orthogonally oriented disk wheels that comprise two of the three support points. 2b4

Potentiometers coupled to the wheels produce signals that the computer uses directly for X-Y positioning of the display cursor. It is an odd-seeming phemomenon, but each wheel tends to do the proper mix of rolling and sideways sliding so that, as the mouse is moved, the wheel's net rotation closely matches the component of mouse movement in the wheel's "rolling" direction; one wheel controls up-down and the other left-right cursor motion. 2b4a

Exactly the same phenomenon, applied in the mechanical integrators of old-fashioned differential analyzers, was developed to a high degree of accuracy in resolving the translation components; we borrowed the idea, but we don't try to match the precision. Imperfect mapping of the mouse-movement trajectory by the cursor is of no concern to the user when his purpose is only to "control" the position of the cursor; we have seen people adapt unknowingly to accidental situations where that mapping required them to move the mouse along an arc in order to move the cursor in a straight line. 2b4b

That the mouse beat out its competitors, in our tests and for our application conditions, seemed to be based upon small factors: it stays put when your hand leaves it to do something else (type, or move a paper), and re-accessing proves quick and free from fumbling. Also, it allows you to shift your posture easily, which is important during long work sessions with changing types and modes of work. And it doesn't require a special and hard-to-move work surface, as many tablets do. A practiced, intently involved worker can be observed using his mouse effectively when its movement area is littered with an amazing assortment of papers, pens, and coffee cups, somehow running right over some of it and working around the rest. 2b5

ONE-HANDED, CHORDING KEYSET AS UNIVERSAL "FUNCTION" KEYBOARD 2c

For our application purposes, one-handed function keyboards providing indvidual buttons for special commands were considered to be too limited in the range of command signals they provided. The one-handed "function keyboard" we chose was one having five piano-like keys upon which the user strikes chords; of the thirty-one possible chords, twenty six represent the letters of the alphabet. One is free to design any sort of alphabetic-sequence command language he wishes, and the user is free to enter them

through either his standard (typewriter-like) keyboard or his keyset. 2c1

The range of keyset-entry options is extended by co-operative use of three control buttons on the mouse. Their operation by the mouse-moving hand is relatively independent of the simultaneous pointing action going on. We have come to use all seven of the "chording" combinations, and for several of these, the effect is different if while they are depressed there are characters entered -- e.g. (buttons are number 1 to 3, right to left) Button 2 Down-Up effects a command abort, while "Button 2 Down, keyset entry, Button 2 Up" does not abort the command but causes the computer to interpret the interim entry chords as upper case letters. 2c2

These different "chord-interpretation cases" are shown in the table of Appendix A; Buttons 2 and 3 are used effectively to add two bits to the chording codes, and we use three of these "shift cases" to represent the characters available on our typewriter keyboard, and the fourth for special, view-specification control. ("View specification" is described in [1].) 2c3

Learning of Cases 1 and 2 is remarkably easy, and a user with but a few hours practice gains direct operational value from keyset use; as his skill steadily (and naturally) grows, he will come to do much of his work with one hand on the mouse and the other on the keyset, entering short literal strings as well as command mnemonics with the keyset, and shifting to the typewriter keyboard only for the entry of longer literals. 2c4

The keyset is not as fast as the keyboard for continuous text entry; its unique value stems from the two features of (a) being a one-handed device, and (b) never requiring the user's eyes to leave the screen in order to access and use it. The matter of using control devices that require minimum shift of eye attention from the screen during their use (including transferring hands from one device to another), is an important factor in designing display consoles where true proficiency is sought. This has proven to be an important feature of the mouse, too. 2c5

It might be mentioned that systematic study of the micro-procedures involved in controlling a computer at a terminal needs to be given more attention. Its results could give much support to the designer. Simple analyses,

for instance, have shown us that for any of the screen selection devices, a single selection operation "costs" about as much in entry-information terms as the equivalent of from three to six character strokes on the keyset. In many cases, much less information than that would be sufficient to designate a given displayed entity. 2c6

Such considerations long ago led us to turn away completely from "light button" schemes, where selection actions are used to designate control or information entry. It is rare that more than 26 choices are displayed, so that if an alphabetic "key" character were displayed next to each such "button," it would require but one stroke on the keyset to provide input designation equivalent to a screen-selection action. Toward such tradeoffs, it even seems possible to me that a keyboard-oriented scheme could be designed for selection of text entities from the display screen, in which a skilled typist would keep his hands on keyboard and his eyes on the screen at all times, where speed and accuracy might be better than for mouse-keyset combination. 2c7

NOTE: For those who would like to obtain some of these devices for their own use, a direct request to us is invited. William English, who did the key engineering on successive versions leading to our current models of mouse and keyset is now experimenting with more advanced designs at the Palo Alto Research Center (PARC) of Xerox, and has agreed to communicate with especially interested parties. 2c8

LANGUAGE, SKILLS AND TRAINING 2d

I believe that concern with the "easy-to-learn" aspect of user-oriented application systems has often been wrongly emphasized. For control of functions that are done very frequently, payoff in higher efficiency warrants the extra training costs associated with using a sophisticated command vocabulary, including highly abbreviated (therefore non-mnemonic) command terms. and requiring mastery of challenging operating skills. There won't be any easy way to harness as much power as is offered, for closely supporting one's constant, daily knowledge work, without using sophisticated special languages. Special computer-interaction languages will be consciously developed, for all types of serious knowledge workers, whose mastery will represent a significant investment, like years of special training. 2d1

I invite interested skeptics to view a movie that we have available for loan [13], for a visual demonstration of flexibility and speed that could not be achieved with primitive vocabularies and operating skills that required but a few minutes (or hours even) to learn. No one seriously expects a person to be able to learn how to operate an automobile, master all of the rules of the road, familiarize himself with navigation techniques and safe-driving tactics, with little or no investment in learning and training. 2d2

SERVICE NETWORK 3

One's terminal will provide him with many services. Essential among these will be those involving communication with remote resources, including people. His terminal therefore must be part of a communication network. Advances in communicatiion technology will provide very efficient transportation of digital packets, routed and transhipped in ways enabling very high interaction rates between any two points. At various nodes of such a network will be located different components of the network's processing and storage functions. 3a

The best distribution of these functions among the nodes will depend upon a balance between factors of usage, relative technological progress, sharability, privacy, etc. Each of these is bound to begin evolving at a high rate, so that it seems pointless to argue about it now; that there will be value in having a certain amount of local processor capability at the terminal seems obvious, as for instance to handle the special communication interface mentioned above. 3b

EXTENDED FEATURES 4

I have developed some concepts and models in the past that are relevant here, see especially [5]. A model of computer-aided communication has particular interest for me; I described a "Computer-Aided Human-Communication Subsystem," with a schematic showing symmetrical sets of processes, human and equipment, that serve in the two paths of a feedback loop between the central computer-communication processes and the human's central processes, from which control and information want to flow and to which understanding and feedback need to flow. 4a

There are the human processes of encoding, decoding, output transducing (motor actions), and input transducing (sensory actions), and a complementary set of processes for the technological interface: physical transducers that match input and output signal forms to suit the human, and coding/decoding processes to translate between these signal forms in providing I/O to the main communication and computer processes. 4a1

In Reference [5], different modes of currently used human communcation were discussed in the framework of this model. It derived some immediate possibilities (e.g., chord keysets), and predicted that there will ultimately be a good deal of profitable research in this area. It is very likely that there exist different signal forms that people can better harness than they do today's hand motions or vocal productions, and that a matching technology will enable new ways for the humans to encode their signals, to result in significant improvements in the speed, precision, flexibility, etc. with which an augmented human can control service processes and communicate with his world. 4a2

It is only an accident that the particular physical signals we use have evolved as they have -- the evolutionary environment strongly affected the outcome; but the computer's interface-matching capability opens a much wider domain and provides a much different evolutionary environment within which the modes of human communication will evolve in the future. 4a3

As these new modes evolve, it is likely that the transducers and the encoding/decoding processes will be built into the local terminal. This is one support requirement that is likely to be met by the terminal rather than by remote nodes. 4a4

To me there is value in considering what I call "The User-System, Service-System Dichotomy" (also discussed in [5]). The terminal is at the interface between these two "systems," and unfortunately, the technologists who develop the service system on the mechanical side of the terminal have had much too limited a view of the user system on the human side of the interface. 4b

> That system (of concepts, terms, conventions, skills, customs, conventions, organizational roles, working methods, etc.) is to receive a fantastic stimulus and opportunity for evolutionary change as a consequence of the service the computer can offer. The user system has been evolving so placidly in the past (by comparison with the forthcoming era), that there hasn't been the stimulus toward producing an effective, coherent system discipline. But this will change; and the attitudes and help toward this user-system discipline shown by the technologists will make a very large difference. Technologists can't cover both sides of the interface, and there is critical need for the human side (in this context, the "user system") to receive a lot of attention. 4b1

What sorts of extensions in capability and application are reasonable-looking candidates for tomorrow's "intelligent terminal" environment? One aspect in which I am particularly interested concerns the possibilities for digitized strings of speech to be one of the data forms handled by the terminal. Apparently, by treating human speech-production apparatus as a dynamic system having a limited number of dynamic variables and controllable parameters, analysis over a short period of the recent-past speech signal enables rough prediction of the forthcoming signal, and a relatively low rate of associated data transmissioon can serve adequately to correct the errors in that predictions. If processors at each end of a speech-transmission path both dealt with the same form of model, then there seems to be the potential of transmitting good quality speech with only a few thousand bits per second transmitted between them. 4c

The digital-packet communication system to which the "computer terminal" is attached can then become a very novel telephone system. But consider also that then storage and delivery of "speech" messages are possible, too, and from there grows quite a spread of storage and manipulation services for speech strings, to supplement those for text, graphics, video pictures, etc. in the filling out of a "complete knowledge workshop." 4d

If we had such analog-to-digital transducers at the display terminals of the NLS system in ARC, we could easily extend the software to provide for tying the recorded speech strings into our on-line files, and for associating them directly with any text (notes, annotations, or transcripions). This would allow us, for instance, to use cross-reference links in our text in a manner that now lets us by pointing to them be almost instantly shown the full text of the cited passage. With the speech-string facility, such an act could let us instantly hear the "playback" of a cited speech passage. 4e

Records of meetings and messages could usefully be stored and cited to great advantage. With advances in speech-processing capability, we would expect for instance to let the user ask to "step along with each press of my control key by a ten-word segment" (of the speech he would hear through his speaker), or "jump to the next occurrence of this word". Associated with the existing "Dialogue Support System" as discussed in [1], this speech-string extension would be very exciting. There is every reason to expect a rapid mushrooming in the range of media, processes, and human activity with which our computer terminals are associated. 4f

REFERENCES 5

1 D C ENGELBART R W WATSON J C NORTON
The Augmented Knowledge Workshop
AFIPS Proceedings National Computer Conference June 1973
(SRI-ARC Journal File 14724) 5a

2 D C ENGELBART
Augmenting Human Intellect: A Conceptual Framework
Stanford Research Institute Augmentation Research Center
AFOSR-3223 AD-289 565 October 1962 (SRI-ARC Catalog Item
3906) 5b

The framework developed a basic strategy that ARC is still following -- "bootstrapping" the evolution of augmentation systems by concentrating on developments and applications that best facilitate the evolution and application of augmentation systems. See the companion paper [1] for a picture of today's representaton of that philosophy; the old report still makes for valuable reading, to my mind -- there is much there that I can't say any better today. 5b1

In a "science-fiction" section of the report, I describe a console with features that are clear precedents to the things we are using and doing today -- and some that we haven't yet gotten to. 5b2

3 D C ENGELBART
A Conceptual Framework For the Augmentation of Man's Intellect
Vistas in Information Handling Howerton and Weeks (Editors)
Spartan Books Washington D C 1963 pp 1-29 (SRI-ARC Catalog
Item 9375) 5c

This chapter contains the bulk of the report [2]; with the main exclusion being a fairly lengthy section written in story-telling, science-fiction prose about what a visit to the augmented workshop of the future would be like. That is the part that I thought tied it all together -- but today's reader probably doesn't need the help the reader of ten years ago did. I think that the framework developed here is still very relevant to the topic of an augmented workshop and the terminal services that support it. 5c1

4 D C ENGELBART P H SORENSON
Explorations in the Automation of Sensorimotor Skill Training
Stanford Research Institute NAVTRADEVCEN 1517-1 AD 619 046
January 1965 (SRI-ARC Catalog Item 11736) 5d

Here the objective was to explore the potential of using computer-aided instruction in the domain of physical skills rather than of conceptual skills. It happened that the physical skill we chose, to make for a manageable instrumentation problem, was operating the five-key chording keyset. Consequently, here is more data on keyset-skill learnability; it diminished the significance of the experiment on computerized skill training because the skill turned out to be so easy to learn however the subject went about it. 5d1

5 D C ENGELBART
Augmenting Human Intellect: Experiments, Concepts, and Possibilities - Summary Report
Stanford Research Institute Augmentation Research Center
March 1965 (SRI-ARC Catalog Item 9691) 5e

This includes a seven-page Appendix that describes our first keyset codes and usage conventions -- which have since changed. Two main sections of about twelve pages, each of which is very relevant to the general topic of "intelligent terminal" design, are discussed above under "Extended Features". 5e1

6 W K ENGLISH D C ENGELBART B HUDDART
Computer Aided Display Control - Final Report
Stanford Research Institute Augmentation Research Center
July 1965 (SRI-ARC Catalog Item 9692) 5f

About twenty percent of this report dealt explicitly with the screen-selection tests (that were published later in [7]); most of the rest provides environmental description (computer, command language, hierarchical file-structuring conventions, etc.) that is interesting only if you happen to like comparing earlier and later stages of evolution, in what has since become a very sophisticated system through continuous, constant-purpose evolution. 5f1

7 W K ENGLISH D C ENGELBART M A BERMAN
Display-Selection Techniques for Text Manipulation
IEEE Transactions on Human Factors in Electronics Vol HFE-8
Number 1 pp 5-15 March 1967 (SRI-ARC Catalog Item 9694) 5g

This is essentially the portion of [6] above that dealt with the screen-selection tests and analyses. Ten pages, showing photographs of the different devices tested (even the knee-controlled setup), and describing with photographs the computerized selection experiments and displays of

response-time patterns. Some nine different bar charts show comparative, analytic results. 5g1

8 J C R LICKLIDER R W TAYLOR E HERBERT
The Computer as a Communication Device
International Science and Technology Number 76 pp 21-31 April 1968 (SRI-ARC Catalog Item 3888) 5h

The first two authors have very directly and significantly affected the course of evolution in time-sharing, interactive-computing, and computer networks, and the third author is a skilled and experienced writer; the result shows important foresight in general, with respect to the mix of computers and communications in which technologists of both breeds must learn to anticipate the mutual impact in order to be working on the right problems and possibilities. Included is a page or so describing our augmented conferencing experiment, in which Taylor had been a participant. 5h1

9 D C ENGELBART
Human Intellect Augmentation Techniques, Final Report
Stanford Research Institute Augmentation Research Center
CR-1270 N69-16140 July 1968 (SRI-ARC Catalog Item 3562) 5i

A report especially aimed at a more general audience, this one rather gently lays out a clean picture of research strategy and environment, developments in our user-system features, developments in our system-design techniques, and (especially relevant here) some twenty pages discussing "results," i.e. how the tools affect us, how we go about some things differently, what our documentation and record-keeping practices are, etc. And there is a good description of our on-line conferencing setup and experiences. 5i1

10 D C ENGELBART
Augmenting Your Intellect (Interview With D C Engelbart)
Research/Development pp 22-27 August 1968 (SRI-ARC Catalog Item 9698) 5j

The text is in a dialog mode -- me being interviewed. I thought that it provided a very effective way for eliciting from me some things that I otherwise found hard to express; a number of the points being very relevant to the attitudes and assertions expressed in the text above. There are two good photographs: one of the basic work station (as

described above), and one of an on-going augmented group meeting. 5j1

11 D C ENGELBART W K ENGLISH
A Research Center for Augmenting Human Intellect
AFIPS Proceedings-Fall Joint Computer Conference Vol 33 pp 395-410 1968 (SRI-ARC Catalog Item 3954) 5k

Our most comprehensive piece, in the open literature, describing our activities and developments. Devotes one page (out of twelve) to the work-station design; also includes photogaphs of screen usage, one of an augmented group meeting in action, and one showing the facility for a video-based display system to mix camera-generated video (in this case, the face of Bill English) with computer-generated graphics about which he is communicating to a remote viewer. 5k1

12 R HAAVIND
Man-Computer 'Partnerships' Explored
Electronic Design Vol 17 Number 3 pp 25-32 1 February 1969 (SRI-ARC Catalog Item 13961) 5l

A very well-done piece, effectively using photographs and diagrams to support description of our consoles, environment, working practices, and experiences to a general, technically oriented reader. 5l1

13
Augmentation of the Human Intellect - A Film of the SRI-ARC Presentation at the 1969 ASIS Conference, San Francisco (A 3-Reel Movie)
Stanford Research Institute Augmentation Research Center
October 1969 (SRI-ARC Catalog Item 9733) 5m

14 R K FIELD
Here Comes the Tuned-In, Wired-Up, Plugged-In, Hyperarticulate Speed-of-Light Society - An Electronics Special Report: No More Pencils, No More Books -- Write and Read Electronically
Electronics pp 73-104 24 November 1969 (SRI-ARC Catalog Item 9705) 5n

A special-feature staff report on communications, covering comments and attitudes from a number of interviewed "sages." Some very good photographs of our terminals in action provide one aspect of relevance here, but the rest of the article does very well in supporting the realization

that a very complex set of opportunities and changes are due to arise, over many facets of communication. 5n1

15 D C ENGELBART
Intellectual Implications of Multi-Access Computer Networks
Paper presented at Interdisciplinary Conference on
Multi-Access Computer Networks Austin Texas April 1970
Preprint (SRI-ARC Journal File 5255) 5o

This develops a picture of the sort of knowledge-worker marketplace that will evolve, and gives examples of the variety and flexibility in human-service exhanges that can (will) be supported. It compares human institutions to biological organisms, and pictures the computer-people networks as a new evolutionary step in the form of "institutional nervous systems" that can enable our human institutions to become much more "intelligent, adaptable, etc." This represents a solid statement of my assumptions about the environment, utilization and significance of our computer terminals. 5o1

16 D C ENGELBART SRI-ARC STAFF
Advanced Intellect-Augmentation Techniques - Final Report
Stanford Research Institute Augmentation Research Center
CR-1827 July 1970 (SRI-ARC Catalog Item 5140) 5p

Our most comprehensive report in the area of usage experience and practices. Explicit sections on: The Augmented Software Engineer, The Augmented Manager, The Augmented Report-Writing Team, and The Augmented Presentation. This has some fifty-seven screen photographs to support the detailed descriptions; and there are photographs of three stages of display-console arrangement (including the one designed and fabricated experimentally by Herman Miller, Inc, where the keyboard, keyset and mouse are built onto a swinging control frame attached to the swivel chair). 5p1

17 L G ROBERTS
Extensions of Packet Communication Technology to a Hand Held
Personal Terminal
Advanced Research Projects Agency Information Processing
Techniques 24 January 1972 (SRI-ARC Catalog Item 9120) 5q

Technology of digital-packet communiation can soon support mobile terminals; other technologies can soon provide hand-held display terminals suitable for interactive text manipulation. 5q1

18 R SAVOIE
Summary of Results of Five-Finger Keyset Training Experiment, Project 8457-21
Stanford Research Institute Bioengineering Group 4 p 29 March 1972 (SRI-ARC Catalog Item 11101) 5r

Summarizes tests made on six subjects, with an automated testing setup, to gain an objective gauge on the learnability of the chording keyset code and operating skill. Results were actually hard to interpret because skills grew rapidly in a matter of hours. General conclusion: it is an easy skill to acquire. 5r1

19
DNLS Environment
Stanford Research Institute Augmentation Research Center 8 p 19 June 1972 (SRI-ARC Journal File 10704) 5s

Current User's Guide for ARC's Display Online System (DNLS). Gives explicit description on use of the keyset, mouse, and the basic interaction processes. 5s1

APPENDIX A: MOUSE AND KEYSET, CODES AND CASES 6

Note: We generally use the keyset with the left hand; therefore, "a" is a "thumb-only" stroke. Of the three buttons on the mouse, the leftmost two are used during keyset input effectively to extend its input code by two bits. Instead of causing character entry, the "fourth case" alters the view specification; any number of them can be concatenated, usually terminated by the "f" chord to effect a re-creation of the display according to the altered view specification. 6a

Mouse Buttons:	000	010	100	110	6b
Case:	-0-	-1-	-2-	-3-	

Keyset Code				
0 0 0 0 X	a	A		show one level less
0 0 0 X 0	b	B	"	show one level deeper
0 0 0 X X	c	C	#	show all levels
0 0 X 0 0	d	D	$	show top level only
0 0 X 0 X	e	E	%	current statement level
0 0 X X 0	f	F	&	recreate display
0 0 X X X	g	G	'	branch show only
0 X 0 0 0	h	H	(	g off
0 X 0 0 X	i	I	)	show content passed
0 X 0 X 0	j	J	@	i or k off
0 X 0 X X	k	K	+	show content failed
0 X X 0 0	l	L	-	show plex only
0 X X 0 X	m	M	*	show statement numbers
0 X X X 0	n	N	/	hide statement numbers
0 X X X X	o	O	!	frozen statement windows
X 0 0 0 0	p	P	0	frozen statement off
X 0 0 0 X	q	Q	1	show one line less
X 0 0 X 0	r	R	2	show one line more
X 0 0 X X	s	S	3	show all lines
X 0 X 0 0	t	T	4	first lines only
X 0 X 0 X	u	U	5	normal refresh display
X 0 X X 0	v	V	6	inhibit refresh display
X 0 X X X	w	W	7	all lines, all levels
X X 0 0 0	x	X	8	one line, one level
X X 0 0 X	y	Y	9	blank lines on
X X 0 X 0	z	Z	=	blank lines off
X X 0 X X	,	<	[	(nothing)
X X X 0 0	.	>	]	(nothing)
X X X 0 X	;	:	←	(nothing)
X X X X 0	?		ALT	centerdot
X X X X X	SP	TAB	CR	(nothing)

APPENDIX B: Photographs

Figure 1. Our current standard work station setup: Mouse in right hand controls cursor on screen; keyset under left hand supplements keyboard for special, two-handed command execution operation. Separation of control and viewing hardware is purposeful, and considered by us to be an advantage enabled by computerized work stations.

Figure 2. Closeup of Keyset. Finger pressure and key travel are quite critical. It took many successive models to achieve a really satisfactory design.

Figure 3. Closeup of Mouse. There are characteristics of the "feel", depending upon the edging of the wheels, the kind of bearings, etc. that can make considerable difference. We happened to hit on a good combination early, but there have been subsequent trials (aimed at improvements, or where others more or less copied our design) that didn't work out well. The play in the buttons, the pressure and actuating travel, are also quite important.

Figure 4. Closeup of underside of mouse (old model), showing orthogonal disk-wheels. We now bring the flexible cable out the "front". Size and shape haven't changed, in later models. Bill English (the operator in Fig. 1, and mentioned in the text above) is now experimenting with new mouse sizes and shapes.

ACKNOWLEDGEMENTS

During the 10 year life of ARC many people have contributed to the development of the workshop using the terminal features described here. There are presently some 35 people -- clerical, hardware, software, information specialists, operations researchers, writers, and others -- all contributing significantly toward our goals.

ARC research and development work is currently supported primarily by the Advanced Research Projects Agency of the Department of Defense, and also by the Rome Air Development Center of the Air Force and by the Office of Naval Research. Earlier sponsorship has included the Air Force Office of Scientific Research, and the National Aeronautics and Space Administration. Most of the specific work mentioned in this paper was supported by ARPA, NASA, and AFOSR.

DCE 14-MAR-73 17:15 14851

Design Considerations for Knowledge Workshop Terminals

(J14851) 14-MAR-73 17:15; Title: Author(s): Engelbart, Douglas C. /DCE ; Sub-Collections: SRI-ARC; Clerk: DCE ;

DCE 14-MAR-73 17:15 14851

Design Considerations for Knowledge Workshop Terminals

Paper Submitted for the National Computer Conference, New York City, June 1973

LINKing

Dear Mike,

I wish to object, in the strongest possible terms, to either the use or the documentation of the link command (or both). On March 2 at about8am (your time) I had typed about 10 minutes worth of a journal message (I can only type with one finger) when I was "linked to" by marilyn auerbach who was "trying to get a hold ofDave Walden". I got out my copy of the TNLS Users Guide to see what to do and it assured me (section 1, page 9) that the link wouldn't hurt me.. Nevertheless, my journal document was terminated by the linking action (or something related). The folklore around here now tells me that I should have typed a Control C to escape harm, but my TTY had just printed an "@". Its very annoying to be trying to use your system, typing myself rather than using my secretary and the mail (or the phone) and getting screwed up like this.

Alex McKenzie 1

LINKing

(J14852) 2-MAR-73 8:24; Title: Author(s): McKenzie, Alex A. /AAM;
Distribution: /MDK MFA JBN; Sub-Collections: NIC; Clerk: AAM;

DCW3 2-MAR-73 4:24 14853

A COUPLE OF THINGS

HI MIKE, THANKS FOR YOUR REPLY, YES I'D VERY MUCH LIKE AN UPTODATE LIST OF SRI-ARC SYSTEM PEOPLE WHO I COULD CALL ON-LINE FOR HELP AND ADVICE. IS IT TRUE THAT ONE CAN'T CONTROL-C OUT OF NLS, CHANGE ONES ECHO MODE (HALF TO FULL, SAY) , AND CONTINUE NLS AND HAVE THE NEW ECHO MODE TAKE AFFECT? I DON'T REALLY CARE ABOUT 1

A COUPLE OF THINGS

(J14853) 2-MAR-73 4:24; Title: Author(s): Walden, David C. /DCW3;
Distribution: /MDK; Sub-Collections: NIC; Clerk: DCW3;

Doesn't NMC get TIP User's Group stuff via its station agent and isn't that sufficient? Who is CCBS -- please give me a complete name and address of the person in charge there. Does CCBS have a station agent? Dave 1

(J14854) 2-MAR-73 7:01; Title: Author(s): Walden, David C. /DCW3;
Distribution: /DHC; Sub-Collections: NIC; Clerk: DCW3;

Viewing really deep down

When you view a statement on the 18th level, the display can't recreate because of an exceed capacity at stvect+16, called at openseq+63. 1

DSK 2-MAR-73 16:55 14855

Viewing really deep down

(J14855) 2-MAR-73 16:55; Title: Author(s): Kaye, Diane S. /DSK;
Distribution: /bugs ; Sub-Collections: SRI-ARC BUGS; Clerk: DSK;

DRAFT Outline of Quarterly Managemnt Report

II MAJOR ACCOMPLISHMENTS 1

Network Information Center (NIC) 1a

Dialog Support System (DSS) 1b

Documentation Production and Control System (DPCS) 1c

Software Engineering Augmentation System (SEAS) 1d

ICCC participation 1e

Branch 1 above is the top two levels of the branch reporting accomplishments in the last quarterly namagement report.(journal, 13744,3) 2

I suggest we use the following outline for the upcomming report, to be writen as the idents indicate: 3

II MAJOR ACCOMPLISHMENTS 4

Network Information Center (NIC)--MDK 4a

Dialog Support System (DSS)--CHI 4b

Documentation Production and Control System (DPCS)---DvN 4c

Software Development---RWW 4d

Preparation for Utility---JCN 4e

DRAFT Outline of Quarterly Managemnt Report

(J14856) 2-MAR-73 17:15; Title: Author(s): Van Nouhuys, Dirk H. /DVN; Distribution: /jcn chi (for your information) mdk (for your information) rww (for your information) ; Sub-Collections: SRI-ARC; Clerk: DVN;
Origin: <VANNOUHUYS>NEWQUART.NLS;1, 2-MAR-73 17:05 DVN ;

AI's Coffee Burden

The people in AI responsible for keeping their coffee urn bubling feel that maybe half their coffee is going to outsiders and the largest number of the outsiders are from ARC. 1

The amount of time they spend making coffee is beginning to bug them; they have asked us to find a way to reduce their labor. 2

Two suggestions have been made: 3

We stop drinking their coffee. 3a

We share the labor of maing it. 3b

We need to accept one of these alternatives or make a counter proposal. 4

If you have suggestions, please bring them to me by Wednesday (3/6). 5

AI's Coffee Burden

(J14857) 2-MAR-73 8:08; Title: Author(s): Van Nouhuys, Dirk H. /DVN;
Distribution: /SRI-ARC ; Sub-Collections: SRI-ARC; Clerk: DVN;
Origin: <VANNOUHUYS>COFFEE.NLS;1, 2-MAR-73 8:06 DVN ;

DVN 2-MAR-73 8:59 14858

Form Generator Review Plan

This responds to (14164,0160) 1

My plans to review the development of the form generator begin with the expectation of reviewing a revision of the specification (13779,) written by Duane Stone. The revision to be written by Elizabeth and the rest of the form generator team at a time not presently clear. Since I also act as a kind of information funnel from RADC I expect to follow the course of development of the form generator with more than passing interest. 2

When Duane Stone visited here recently he and I and Elizabeth Michael and John McNamara met to discuss the specifications. 2a

I suggest that it is in the spirit of distributed dialog that Duane Stone be formally made a member of this review team. 3

14858 Distribution

Watson, Richard W. , Lehtman, Harvey G. , Michael, Elizabeth K. ,
Stone, Duane L. , Bass, Walt ,

Form Generator Review Plan

(J14858) 2-MAR-73 8:59; Title: Author(s): Van Nouhuys, Dirk H. /DVN;
Distribution: /rww hgl ekm dls wlb ; Sub-Collections: SRI-ARC;
Clerk: DVN;
Origin: <VANNOUHUYS>FORMGEN.NLS;2, 2-MAR-73 8:54 DVN ;

GPH 3-MAR-73 0:35 14859

MIX & MIXAL RESPONSE

SOME PEOPLE AT UTAH HAVE IMPLEMENTED THE MIX & MIXAL TYPE STUFF YOU'VE REQUESTED. TO GET MORE INFORMATION, YOU SHOULD DO A SNDMSG TO W-GREER@UTAH-10 OR TO PAT MILLIGAN (MILLIGAN@UTAH-10). THEY HAVE IMPLEMENTED THE REQUESTED PROGRAMS FOR THE FOLLOWING MACHINES: W-GREER FOR THE PDP-10 (DONE IN SAIL), AND PAT MILLIGAN FOR THE UNIVAC 1108 SYSTEM. NOTE: AS FAR AS I UNDERSTAND, W-GREER'S IMPLEMENTATION HAS NO ASSEMBLER... INSTRUCTIONS ARE ENTERED ALA DDT TYPE STUFF.....?... TO THE BEST OF MY KNOWLEDGE, BOTH SYSTEMS ARE 'OPERATIONAL'. (AS AN ASIDE, W-GREERS FIRST NAME IS BILL.) HAVE FUN WITH IT.. 1

14859 Distribution
Walden, David C. ,

MIX & MIXAL RESPONSE

(J14859) 3-MAR-73 0:35; Title: Author(s): Hicks, Gregory P. /GPH;
Distribution: /DCW3; Sub-Collections: NIC; Clerk: GPH;

KIRK 1-MAR-73 22:29 14860

Re--14840,4a:w> and--14708,3d:w> DVN Training and Video Messages

I would like to point out that I HAVE given SRL and other people training in DNLS and have PROPOSED giving training in DEX. That I enjoy training people and have had experience in this role in many of my pre-ARC social situations. 1

Also that I am very interested in working with video. 2

14860 Distribution

Watson, Richard W. , Norton, James C. , Auerbach, Marilyn F. , Lawrence, Thomas F. , Neigus, Nancy J. , Kudlick, Michael D. , Van Nouhuys, Dirk H. ,

KIRK 1-MAR-73 22:29 14860
Re--14840,4a:w> and--14708,3d:w> DVN Training and Video Messages

(J14860) 1-MAR-73 22:29; Title: Author(s): Kelley, Kirk E. /KIRK ;
Distribution: /RWW JCN MFA TFL NJN MDK DVN ; Sub-Collections:
SRI-ARC; Clerk: KIRK ;

KIRK 2-MAR-73 20:27 14861

Simplified LOCATOR use.

This is my plan for doing away with unnecessary entry branches in locator.

Simplified LOCATOR use.

There is theoretically only one command that is necessary to access every piece of information available through locator. this command has three variations: 1

p[rint] b[ranch] .STATEMENTNUMBER SP ↑ CR CR 1a

p[rint] b[ranch] .STATEMENTNUMBER CR w CR 1b

p[rint] b[ranch] .STATEMENTNAME CR CR 1c

However, a deluge of cludgy sometimes inaccurate or nonexistant directions are in each file and are very confusing to DNLS users and TNLS users alike not to mention time consuming to continue putting in files that do not yet have them and updating those that do. 2

There is a very simple and elegant way of letting the user know which command to use without the hard to keep up, innefficient, confusing, duplication of printing the syntax of many different commands every time a new file is accessed. 3

If a file is to be accessed by statement names, the current method of adding a special branch that gives the syntax of the command would be used used and would go away soon as query takes over these files. 3a

If the User did not get any special instructions he would have two automatic cues to tell him when to use .STATEMENTNUMBER CR w CR. 3b

The first cue is the echoed filename and is already documented in the HOW TO ACCESS LOCATOR branch. 3b1

The second cue is the message ILLEGAL LINK, and would catch any one who didn't see the echoed file name and let them know to type .STATEMENTNAME CR w CR instead of .STATEMENTNUMBER SP ↑. 3b2

After loading and printing less than a page of locator, any TNLS user would have the following instructions avalable to him at all times. 4

The Locator organizes selected NIC documents so that you can reach and read any part of documents online with few commands. 4a

In the syntax for commands,
* = the prompt FROM the system
SP = space

Simplified LOCATOR use.

CR = carriage return which is COMMAND ACCEPT.
& = the ampersand key, (not "and").
STATEMENTNUMBER = the characters at the beginning of every statement when statement numbers are on.
The text inclosed in [square brackets] is echoed on full-duplex terminals. 4b

To load locator type: 4c

*SP (nic,locator, CR 4c1

To print the introduction and instructions: 4d

*p[rint] b[ranch] .1 SP ↑ CR CR 4d1

To list documents that you can reach with Locator: 4e

*p[rint] b[ranch] .2 SP ↑ CR CR 4e1

To see the table of contents for a specific document: 4f

*p[rint] b[ranch] .STATEMENTNUMBER SP ↑ CR CR 4f1

When you link to a new file from LOCATOR, the system prints a view of the new file and then responds with its <DIRECTORY>FILENAME. 4g

At this point, unless other instructions are printed, pick the heading of interest to you and print the branch with the viewspecs set to display the complete text by typing: 4h

*p[rint] b[ranch] .STATEMENTNUMBER CR w CR 4h1

To return to LOCATOR, type;
*SP & CR until the system responds with;
<NIC>LOCATOR.NLS; 4i

4i1

Type CTRL X for command delete. (Control X, ↑X) 4j

Type CTRL O to stop printing. (Control O, ↑O) 4k

more on AMES-TIP carrier dropping

Just thought I'd let you know that the problem with the Ames TIP carrier hasn't gone away. It still hangs up at around 2 am with regularity. I also don't believe that how long I've been on has to anything do with it, since it has happened when I have just called up. Also, even when calling back, I sometimes get bumped.

14862 Distribution
Neigus, Nancy J. , Hathaway, A. Wayne ,

LMM 3-MAR-73 16:30 14862

more on AMES-TIP carrier dropping

(J14862) 3-MAR-73 16:30; Title: Author(s): Masinter, Larry M. /LMM;
Distribution: /NJN AWH; Sub-Collections: NIC; Clerk: LMM;
Origin: <SU-HP>MESS.NLS;1, 3-MAR-73 16:16 LMM ;

Some Questions on the Journal Subcollections Mechanism

Some Questions on the journal mechanism, "Subcollections" 1

1) Does the affiliation of the author ALWAYS determine that the subcollection default is either SRI-ARC or NIC? 2

Are there any other defaults? 2a

Is there any way to override (negate) the default? 2b

2) Do the idents in the distribution field control the default values of the subcollection field? 3

For example, I sent an article to the ident "NIC" and it wound up in the NIC subcollection. Is this a special case or is there a general rule? 3a

3) Where is an indication made in the numbering system (or elsewhere in the files) that a document has a "NIC number"? 4

(I know the concept of NIC number is merely a convention that network users have when they refer to journal items by number, but we STILL should know which journal items get stamped by the NIC station agent with a big bold NIC XXXXX on the top, and we should, in my opinion, have this fact in the computer, not only in a manual notebook.) 4a

4) Is the distinction between NIC journal items and ARC journal items solely that the one belongs to the SRI-ARC subcollection and the other to the NIC subcollection? 5

Where do the journal files that belong to NEITHER subcollection get indexed? 5a

5) What IS the NIC subcollection? 6

Where is it kept? (apparently, no such collection exists at the NIC) 6a

6) Does anybody know anything else about subcollections that I haven't been smart enough to ask ??? If so, please volunteer the information 7

MDK 2-MAR-73 9:19 14863

Some Questions on the Journal Subcollections Mechanism

(J14863) 2-MAR-73 9:19; Title: Author(s): Kudlick, Michael D. /MDK ; Distribution: /dce rww jcn jbn dvn mfa mej jdh wlb dia pr srl bah chi ; Sub-Collections: SRI-ARC; Clerk: MDK;
Origin: <KUDLICK>SU.NLS;2, 2-MAR-73 9:01 MDK ;

In response to (14806,)

MFA 2-MAR-73 8:29 14864

In response to (14806,)

I read your missive to Mike Kudlick and was asked by him to reply to you. 1

About the page numbers in the Beginners Guide - yes, some are off. 1a

About multi-line Journal messages. Your point about using a multi-lne example in the sample session is well taken and will probably result in my doing just that in succesive documentation. 1b

About the timliness of the document. Except for one change in the Journal system (Catalog numbers are now issued on a deferred basis, i.e., not when you submit the item to the Journal, vs. immediate assignment at submission time as desribed in the Guide), the Beginners Guide is pretty accurate. It's hard for me to respnd to you on this point as I need more specific references. Generally, the only "errors" I am aware of are result of minor stuff such as system feedback changes. But please get back to me if you feel the problems with the document are more substantive. 1c

The Beginners Guide was not really designed as a primer. It was a quick hash and was meant as an alternative to laying the massive reference manuals on the inexperienced user. I'm just about to begin a proper primer and would appreciate any comments you might have. 1c1

Currently, the only update mechanisms for user documentation are republishing and issuing the NIC Folklore file. It would be well worth your looking at the latter; it's available through your station-agent in hardcopy, and the most recent version is online (see -- documentation, folklore,) 1d

14864 Distribution
Walden, David C. , Kudlick, Michael D. ,

MFA 2-MAR-73 8:29 14864

In response to (14806,)

(J14864) 2-MAR-73 8:29; Title: Author(s): Auerbach, Marilyn F. /MFA ; Distribution: /DCW3 (link to me online if you have any specific problems in the system and I'll try to help you out) MDK ; Sub-Collections: SRI-ARC; Clerk: MFA ;

Response to RFC 464

Mike--

I just got your RFC and I want you to know that I support your vision of the information world. We know there will always be complaints about reliability when a single server (or system) is involved, but I feel that a large job like the maintenance of information files cannot be properly accomplished without at least strong central coordination if not responsibility.

You have hit several things right:

there is too much probing going on (see RFC 459 from Kantrowitz) and it is always the "good" cooperative people who bear the brunt of it. Uncooperative sites simply remain uncooperative, and for them it takes a strong central hand (power and responsibility go together) to bring them around.

the problem with the single server is that he easily gets worn down and then becomes unresponsive to the problems of those he is serving. For this you need help and I agree that there should be regional coordinators (at least) to help you. In addition to coordinating and centralizing the probing, they could help in preparation of the data.

Another thing to consider is back-up from other server sites. There is a real problem when the one site that guards the information is unreachable. Some well used tenexes might volunteer to keep a "second copy" of your information files around ; and some IBM installations might want to do the same for their community.

My big fear is that in the movement toward a total on-line world, the role of hard-copy will be forgotten. There are always reasons why certain people won't use on-line systems--inaccessibility, too much to learn, sheer laziness. The same people who still believe batch processing is the only mode of operation in this world. They must have hardcopy. And it must be distributed widely. If the Network Resource Notebook is too big or expensive for this, then a cheaper condensed alternative must be available.

And there is also the situation where one is doing a job that can't be interupted to look up the unknown fact on-line much less log into another site to find out the information.

This is a pitch for the kind of documentation that Dave and I are putting together. The technical level that we are

approaching is exactly where this uninterruptable situation occurs. 4a1

I still think a meeting is necessary to throw around these ideas some more and to work out the details of the coordinated effort, though I am beginning to detest meetings (seven hours of fight followed by one of accomplishments). 5

The new date is somewhat better for me, but my vacation plans have gotten so badly screwed up by this point that it doesn't matter. Do you think it will go into a second day? Or should I first ask if there has been enough response to warrant a meeting? I'd appreciate knowing as soon as you do, so I can arrange my other plans accordingly. 5a

Thanks muchly --Nancy 6

NJN 2-MAR-73 11:47 14865

Response to RFC 464

(J14865) 2-MAR-73 11:47; Title: Author(s): Neigus, Nancy J. /NJN;
Distribution: /MDK; Sub-Collections: NIC; Clerk: NJN;

NJN 2-MAR-73 12:40 14866

Hostatus stops at the gate

There are two points I wish to make concerning SRI and then hostatus: 1

1. Last week and the beginning of this week Sri was having trouble with their monitor. This was an internal problem. Some bug in their NCP code was allowing connections to be opened but not getting to the EXEC. They seem to have fixed this somewhat this week, but, in general, there is nothing the network can do about internal bugs except to put pressure on the people involved to fix them. 1a

2. The hostatus facility offers two kinds of services--survey and status of hosts. A survey is taken about every 15 minutes which consists of an attempt to open connections between the host's logger and the surveying host (now DMCG). If it determines that the host's logger socket responds (which is the same as saying that you can open the connection) then it reports that all is well. The status consists of exchanging resets with the host, which does not give as much inofrmation (only determines that the NCP is awake and functioning) but occurs more often, i.e. every 2 minutes. Thus even in the best case hostatus cannot tell you whether a system is functioning properly. It has no grasp on internal matters in the system and I am sure that no (or very few) hosts would allow any further probing by foreign sites on any kind of regular basis. 1b

I would probably agree with you that the survey is better than the status report because it gives a little more information, but this is played off against the fact that it is less up to date and often DMCG cannot be accessed. I have spoken to the Tenex people about changing the status report but they seem reluctant to do this. In any case there is really no more information than survey provides that you can get without sacrifices from the hosts. So I think you will have to be content with the current situation . 2

14866 Distribution
Cotton, Ira W. ,

NJN 2-MAR-73 12:40 14866

Hostatus stops at the gate

(J14866) 2-MAR-73 12:40; Title: Author(s): Neigus, Nancy J. /NJN;
Distribution: /IWC; Sub-Collections: NIC; Clerk: NJN;

RWW 2-MAR-73 10:09 14867

Second Request for Plans and Review Status

A couple of weeks ago I requested task area pushers and review pushers to send me brief plans and time estimates and status of where thy planned to start in the design review cycle outlined in (14164,). Some people responded, others like me didn't. The last two weeks or so have been incredibly hectic for most people so I understand, but the next wek or so looks better so please send me the requested info next week if you haven't already. Thanks 1

RWW 2-MAR-73 10:09 14867

Second Request for Plans and Review Status

(J14867) 2-MAR-73 10:09; Title: Author(s): Watson, Richard W. /RWW; Distribution: /pr mfa mdk dvn kev chi jew wrf jfv dia jcn cfd jdh dsk ekm hgl jake jbn wlb ; Sub-Collections: SRI-ARC; Clerk: RWW;

RWW 2-MAR-73 10:13 14868

Request to set up 14724 for COM

Dean could you please set up document (14724,) for COM like you have 12445. Thanks Dick 1

RWW 2-MAR-73 10:13 14868

Request to set up 14724 for COM

(J14868) 2-MAR-73 10:13; Title: Author(s): Watson, Richard W. /RWW;
Distribution: /ndm jcn dvn wlb dce ; Sub-Collections: SRI-ARC;
Clerk: RWW;

RWW 2-MAR-73 13:41 14869

Visit Log: Andres Zellweger visit 3/2/73

Visit Log: Andres Zellweger, Transportation Systems Center (TCD), U.S. Dept. of Transportation, Kendall Square, Cambridge Mass. 02142.

Andres is seriously interested in the possibility of getting the Dept. of Transportation to subscribe to the Utility. He asked good searching questions about transfer of the technology to people outside our group (i.e. RADC), about costs of both the service and DNLS terminals. He has access to the ARPANET through a TIP and plans to begin playing with TNLS seriously. I gave him MFA and DVN's names as people to contact if he needed help. He talked to JCN about the RADC experience and took with him a copy of (14724,). He was here about 90 minutes. 1

Visit Log: Andres Zellweger visit 3/2/73

(J14869) 2-MAR-73 13:41; Title: Author(s): Watson, Richard W. /RWW;
Distribution: /mdk jcn dce mfa dvn ; Sub-Collections: SRI-ARC;
Clerk: RWW;

DLS 5-MAR-73 6:20 14870

IS AKW TERMINALS--a draft plan

HIS REPRESENTS THE TERMINAL REQUIREMENTS IF THE ENTIRE DIVIDION WERE TO USE NLS--IT IS ROUGH--AM JOURNALING TO FREE UP SOME FILE SPACE.

IS AKW TERMINALS--a draft plan

The following reasoning and criteria were used in specifying the terminal mix for the ISI branch for the AHI Evaluation project. To a large extent they seem to be valid for specifying IS Division requirements--particullarly if Division wide use of NLS is contemplated in the near future.

The terminals must be commerically available and have some history of adequate performance.

The terminals must be compatable with the TIP, PDP-10 and the H635 system with a minimum of changes.

The mix of terminals must be reasonably cost effective--ie, not everyone can make use of IMLACs.

There are four general types of users

managers
secretaries
administrators
engineers

The system will be accessed in four different modes:

off-line via text placed on a magnetic cassette tape recorder (DEX)
on-line via a teleprinter (TNLS)
on-line via an alpha numeric display (?NLS)
on-line via a graphics display. (DNLS)

The manager type user is not expected to do a lot of textual input and editing. They are expected to do a lot of scanning of other's files and display of summmary information extracted from engineers' files by themselves and/or their administrators. For these reasons it is recommended that the managers be provided with a reasonably fast alphanumeric display. They would access the system in a modified teleprinter mode but the files would be displayed instead of printed alla Execuport.

IS AKW TERMINALS--a draft plan

Each of the secretaries in the branch should have their own teleprinter terminal with a cassette recorder for off-line prepration of material. SRI indicates that the keybooard should be as close to the normal typwriter keyboard as possible to minimize retraining problems. Therefore, terminals other than Execuports will be procured for them (TYCOM or some version of the 2741 are likely candidates). These type terminals would provide excellent hardcopy output for finished correspondence and, since managers and secretaries are generally co-located, could eliminate the need for a hardcopy device attached to the managers' terminals.

There are only two administrative type users in the branch. One teleprinter should be adequate for updating of their files. If graphics capability is required for constructing flow charts or briefing aids they will use the IMLACs.

The engineers will have varing tasks to accomplish using the system, some of which may require graphics. The IMLACs with mouse and keyset will be used for this. Indeed they are to be prefered for input and editing tasks, however they cost 3-4 times as much as the teleprinter terminals. A 2 to 1 ratio of teleprinter terminals to IMLACs is recommended. Furthermore, a 2 to 1 ratio of people to terminals is recommended (this is a conservative estimate but more can be purchased later if required). SRI has closer to a 1 to 1 ratio of people to terminals, however their use of the system is probably much heavier than ours would be.

The planned terminals for the AHI Evaluation project are:

User Type	numb.	Teleprinter		Display	
		THERMAL	IMPACT	GRAPHIC	TEXT
MANAGERS	4				3
SECRETARY	4		4		
ADMIN	2	1			
ENGINEER	32	10		5	

IS AKW TERMINALS--a draft plan

TOTALS	42	11	4	5	3
ON-HAND		11	0	3	0
ON-ORDER		0	3	0	0
TO-ORDER		0	1	2	3

IS AKW TERMINALS--a draft plan

There are the following types of potential users in the IS Division at this time (1MAR73):

ORGAN	MANAGER	SECRETARY	ADMIN	ENGINEER	TOTAL
IS	3	4	1	0	8
ISI	4	4	2	36	46
ISC	4	3	2	18	27
ISF	4	3	1	36	44
TOTAL	15	14	6	90	125

IS AKW TERMINALS--a draft plan

If the same reasoning were applied to the IS Division as was applied to the ISI branch, then the following terminal mix would result:

User Type	numb.	Teleprinter		Display		
		THERMAL	IMPACT	GRAPHIC	TEXT	
MANAGER	15				15	
SECRETARY	14		14*			
ADMIN	6		4**			
ENGINEER	90	30		15		
TOTALS	125	36	18	15	15	
ON-HAND		11	3	3	0	
TO-ORDER		19	15	12	15	
UNIT-COST		3000	5000	16000	5000	
ADDITIONAL $		57000	75000	192000	TOTAL 75000	404000

* This includes a typewriter type device and a digital cassette recorder as a single terminal configuration.

** These devices would be a flexible "forms printer" for general administrative printing of finished reports, memos, and forms. They are also terminals and could be used by the administrator for interaction with any system.

IS AKW TERMINALS--a draft plan

It is clear from this analysis that the largest single terminal buy would be for IMLAC type devices. It is doubtful that the Division could really use this many. Therefore a more realistic terminal mix for the engineers would be:

2:1 ratio of terminals to engineers,

2:1 ratio of teleprinters to displays,

2:1 ratio of Alpha/numeric displays to Graphic displays.

User Type	numb.	Teleprinter		Display		
		THERMAL	IMPACT	GRAPHIC	TEXT	
MANAGER	15				15	
SECRETARY	14		14			
ADMIN	6		4			
ENGINEER	90	30		5	10	
TOTALS	125	30	14	5	25	
ON-HAND		11	3	3	0	
TO-ORDER		19	11	2	25	
UNIT-COST		3000	5000	16000	5000	
ADDITIONAL $		57000	55000	32000	TOTAL 125000	269000

APPENDIX I

ALPHA-NUMERIC CRTS source--Modern Data Techfile May71

This file contains a list of alphanumeric crt displays culled from the above source. The criteria for culling out these were:

must have ability to display both upper and lower case,

must have full ASCII character set,

must have at least 300 baud (full duplex) transmission rate,

should be able to transmit and receive cursor location (difficult to determine in all cases)

and 80 column screen is desireable.

They seem to fit the general category of displays that might lie between Execuports and IMLACs in capability. (Organization of table is by largest to smallest screen size and by price within screen size.)

MANUFACTURER	CHAR'S	COL/ROW	PRICE	MATRIX
Spira Systems	4608	80X32	8000	monoscope
Acme-Divac	2400	80X30	3900	9X14
Computer Optics	3840	80X30	8450	???
Delta Data	3000	80X27	3500	7X9
Lear Siegler	2000	80X25	3000	5X7
Conrac	2000	80X25	3500	5X7
Computer Term	2048	80X24	2900	5X7
Courier Term	1920	80X24	4850	7X8
Acrodyne	1600	80X20	3200	5X7
Behive IIIA				
**1600	80X20	3600	5X7	
Hazeltine	1998	74X27	2995	5X7
Unicomp	1998	74X27	4500	5X7
Video Systems	2592	72X18	2870	5X7

14870 Distribution
McNamara, John L. , Kennedy, Edmund J. , Lawrence, Thomas F. ,
Bethke, William P. ,

IS AKW TERMINALS--a draft plan

(J14870) 5-MAR-73 6:20; Title: Author(s): Stone, Duane L. /DLS;
Distribution: /JLM EJK TFL WPB; Sub-Collections: RADC; Clerk: DLS;
Origin: <STONE>ISTERM.NLS;2, 5-MAR-73 5:53 DLS ;

DLS 5-MAR-73 6:34 14871

PROPOSAL FOR ADDITIONAL AHI TERMINALS

THIS REPRESENTS THE FINAL THINKING FROM ISIM ON ADDITIONAL TERMINALS FOR AKW EVALUATION EFFORT. WE NEED QUICK ACTION ON THIS IF WE ARE TO BUY ANY BEFORE THE END OF FY-73

PROPOSAL FOR ADDITIONAL AHI TERMINALS

This plan came from a draft proposal (IJOURNAL, 14826, 1:w); which was modified by a meeting of ISIM people (IJOURNAL, 14850, 1:w). Check these for additional backup information. For additional info on terminal requirements for entire division see (IJOURNAL,14870,1:W).

During the summer of 72 the terminal requirements for the ISI branch for the AHI evaluation project were specified and reviewed by CC. (10863,1:wznC)

The terminals specified and the current status of the buys are:

User Type	numb.	Teleprinter		Display	
		THERMAL	IMPACT	GRAPHIC	TEXT
MANAGERS	4				3
SECRETARY	4		4		
ADMIN	2	1			
ENGINEER	32	10		5	
TOTALS	42	11	4	5	3
ON-HAND		11	0	3	0
ON-ORDER		0	3	0	0
TO-ORDER		0	1	2	3

Since then a number of things have changed.

Additional people have been added to the ISI branch.

Additional people outside the initially planned experimental group have started using the system or have indicated a desire to do so.

These people for the most part are in the IS office and should not jepordize the comparitive aspects of the evaluation. (They could in fact, give an added dimension to the evaluation by allowing an additional level in the organizational hierarcy to be included in the study).

We have been unable to order the TEXT Displays, since their characterisics will be defined to some degree by SRI; who has yet to come up with a design document for ?NLS.

Perhaps most important--we have found that TERMINAL AVAILABILITY is a key factor in motivation to use the system. It seems that terminals should be treated like telephones--in the since that one should not have to walk up the hall, find one, bring it back to his desk, etc.

PROPOSAL FOR ADDITIONAL AHI TERMINALS

We realize that we cannot afford one per person; but perhaps the 1:2 ratio of terminals to engineers is a little too conservative.

Based on these considerations, we would like to propose the following terminals be purchased. (We realize that we run the risk of a reorganization which may invalidate these figures; however the totals should remain about the same and if we don't act soon we won't be able to act at all --at least not in FY-73)

PROPOSAL FOR ADDITIONAL AHI TERMINALS

		THERMAL	IMPACT	GRAPHIC	TEXT
MANAGERS	8	8*			2**
SECRETARY	5		5***		
ADMIN	2		1****		
ENGINEER	36	12		6	
TOTALS	51	20	6	6	2
ON-HAND		11	0	3	0
ON-ORDER		0	3	0	0
TO-ORDER		9	3	3	2

* The 8 managers include the 4 in ISI and Bill Bethke, Col. Thayer, Capt. Stinson and Danny Loretto. When the TEXT CRTs are fully specified (probably not until the end of FY-73) and ordered; the managers will have their teleprinters replaced with CRTs.

** To be ordered in addition to TI-700's for BB and Col. Thayer.

*** The 5 secretaries include the 4 in ISI and Mitzi.

**** The I/O forms printer; which is also a terminal, would probably be located in ISI or IS Admin office.

PROPOSAL FOR ADDITIONAL AHI TERMINALS

We could purchase the 9 teleprinters (Texas Instrument-700's this time) and the 3 graphics (IMLACS) terminals before the end of the year if we get the OK befro 1 MARCH 73. Any later than this and we run the risk of a delivery date later than 30 JUNE 73. There is little or no risk in buying these terminals since they have proven reliable and useful both at RADC and at SRI. The cost would be roughly 27K for the TI-700's and 48K for the IMLACs.

We could also order 3 more TYCOMs for the secretaries, however we would prefer to have the first 2 in use for a month or so before ordering more. If we get them in the next month (which we should) we still may have time to order the last two--particularily if we have already PROCESSED THE APPROVAL THROUGH Hq. AFSC. The cost would be about $9600.

One of the three TYCOMs would be for Mitzi. The lease on the CMC runs out on 30 JUNE 73. If the TYCOMs work out we would prefer Mitzi have one since she can then output files for BB and Col Thayer. The TYCOM is $3200 compared with the CMC at $9000. If a Termicette recorder is included it brings the total to $5000--still significantly less than the CMC and much more compatable with NLS.

We are proposing to order 2 CRTs for BB and Col Thayer for several reasons. In the beginning they would be used in the TNLS mode at 300 baud. This would allow reading of the text generated from "print" commands. They would be more convenient for use in their offices (particularily if Mitzi is trained to output quality hard copy on her CMC). We need experience with CRTs to be better able to specify in detail the desireable terminal characteristics for the ?NLS terminal (between the IMLAC and the Execuport). The total cost would be about $10,000.

If this plan is followed (and the managers' teleprinters are eventually replaced with CRTs in FY-74) it would result in 26 terminals for 36 engineers in the ISI branch; or roughly a 2:3 ratio of terminals to engineers. This is a little better than the 1:2 ratio. Past experience has shown that there are generally 1-3 terminals unavailable at any given time; either because they're in the shop for maintence or some one is borrowing them for use with the H635/645.

A note of caution--We will have to install more TIP phones or start putting in local lines in the building to accomodate the additional terminals. It is recommended that managers' and secretaries' terminals be hardwired into the TIP, since their location with be relatively stable and there IS A SCARCITY OF DIAL UP LINES.t is recommended that manager's and secretaries' terminals be hardwired into the TIP, since their terminals will be relatively fixed and tere is a scarcity of dial up lines.

PROPOSAL FOR ADDITIONAL AHI TERMINALS

If the number of TIP lines increase significantly, it may be desireable to get a rotary switch for the TIP so there is only one or two mumbers to remember. We would always want to retain a few TIP ports which can be called directly, for experimentation with directing output to other ports (or other processes which require that one know the port number to which a terminal is attached).

An alternative to this would be to engrave a TIP number on each terminal and that number, and only that number, would be used in calling the TIP from that terminal.

PROPOSAL FOR ADDITIONAL AHI TERMINALS

(J14871) 5-MAR-73 6:34; Title: Author(s): Stone, Duane L. /DLS;
Distribution: /JLM EJK TFL JHB WPB; Sub-Collections: RADC; Clerk: DLS;
Origin: <STONE>TERMBUY.NLS;2, 5-MAR-73 6:28 DLS ;

Response To Activity Status Request

RESPONSE TO ACTIVITY STATUS REQUEST 1

BASIC FILE SYSTEM 1a

The basic file system design activity is presently awaiting review and feedback by the NMDT as part of their NLS system modeling and specification activity. 1b

Preliminary design issues have been documented, and basic implementation strategies have been developed. These preliminary specifications will be extended in order to achieve compatiblity with the entire scope of NLS facilities as defined by NMDT. 1c

Some pertinent preliminary design decisions include: 1d

1) Integration of NLS partial copy files with the "old file". 1d1

2) A single functional port for all interface to the file system. 1d2

3) Built in facilities for extending the capabilities of the system. 1d3

4) extended addressing and data representation capabilities for NLS files. 1d4

Planning schedule: 1e

Modifications are made to the data base of design information about the basic file system as more information becomes available. This activity is not expected to occupy a significant amount of time until until sometime into April. 1e1

The NMDT should have clearly established the anticipated needs of the file system by early April. The basic file system in the base module for the NLS system, thus should be the first NLS module to be implemented in MPS. It appears that it will take 3-6 man months work to implement the basic file system and NLS file system (this estimate is extremely crude, as it is impossible to evaluate development complexities in the MPS environment). 1e2

CFD 5-MAR-73 11:52 14872

Response To Activity Status Request

(J14872) 5-MAR-73 11:52; Title: Author(s): Dornbush, Charles F. /CFD ; Distribution: /RWW ; Sub-Collections: SRI-ARC; Clerk: CFD ;

THANKS AND CLARIFICATION

THANKS FOR YOUR LENGTHY REPLY -- GLAD TO HEAR YOU'RE WORKING ON A PRIMER -- I FOUND THE BEGINNERS GUIDE VERY HELPFUL IN LIEU OF READING THE MASSIVE REFERENCE MANUALS FOR NLS -- I LOVE EXAMPLE AND URGE YOU TO USE LOTS OF THEM IN YOUR PRIMER (AS YOU DO IN THE BEGINNERS GUIDE) -- EXAMPLES SAVE A LOT OF STUDY FOR THOSE WHO ARE SATISFIED WITH FOLLOWING A COOKBOOK -- PERHAPS MY COMMENT ON INACCURACIES WAS PROMPTED BY THE CHANGE IN WHEN CATALOG NUMBERS ARE ASSIGNED (I CAN'T REMEMBER NOW) -- I SENT THE MESSAGE I THINK WHEN THE SECOND LINE I'D EVER SEEN THE JOURNAL SYSTEM TYPE WAS WRONG (YOU SEE I TURNED RIGHT TO THE SAMPLE JOURNAL SESSION EXAMPLE AND STARTED SENDING A MESSAGE WITHOUT READING ANYTHING AND WAS A LITTLE DISCONCERTED WHEN IMMEDIATELY THE SYSTEM DIDN'T SEEM TO FOLLOW THE EXAMPLE.) I'M GETTING MORE FACIL (SP?) WITH THE SYSTEM NOW AND WILL PASS ON ANY RANDOM COMMENTS I HAVE FOR WHAT THEY'RE WORTH. 1

THANKS AND CLARIFICATION

(J14873) 5-MAR-73 17:57; Title: Author(s): Walden, David C. /DCW3;
Distribution: /MFA; Sub-Collections: NIC; Clerk: DCW3;

DCW3 5-MAR-73 17:59 14874

THANKS

THANKS FOR THE MIX AND MIXAL INFO. I'VE ALSO LEARNED ABOUT AN IMPLEMENTATION INCLUDING AN ASSEMBLER ON THE CCN 360/91 BY BOB BRADEN AND STU FEIGIN. 1

THANKS

(J14874) 5-MAR-73 17:59; Title: Author(s): Walden, David C. /DCW3;
Distribution: /GPH; Sub-Collections: NIC; Clerk: DCW3;

DLS 5-MAR-73 11:15 14875

SRI help for RADC on SAB briefing

SRI help for pitch 1

We have tried several ways of getting a larger display for the briefing. Tom Lawrence is working with IMLAC to see if we can't still get a large screen monitor. It seems that they are having trouble with their vendors and don't have any tubes in-house right now. They may be able to divert one unit that has been ordered by someone else--or put additional pressure one their vendor to come up with one in time. 1a

As one form of backup we have obtained a cable from IMLAC that will slave one of the IMLAC screens to another. This would double the audience size from 2 to 4, maybe. 1b

Last Friday we tried putting a TV camera on the IMLAC screen. By tweeking the IMLAC, TV camera, TV amplifier and the monitor we got a readable picture--just barely acceptable. Further work with this approach could give us the capability to drive several monitors. Since these are 23" screens, the number of potential viewers per screen might go to 4. 1c

If the larger character size was working in the IMLAC, the TV monitor approach would be adequate. We tried it and the characters were misplaced but quite legible--certainly as good as the TASKERS The larger character size is also required before we could even think of using the DRIPS system here; since it further degrades the picture. IS THERE ANY CHANCE OF GETTING THIS TO WORK BEFORE THE 13th??? 1d

Regarding COM--I'm thinking of having a large 3X5 foot buletinboard type static display indicating the ways in which we can interact with the system (Termicette, Execuport, Beehive, IMLAC) and the types of output available (Execuport, golfball, line printer and COM). If we had the same file for all four types of output it might provide a good comparison. The file might be an expanded version of the SABPITCH with more narritive and examples in place of the links. Depending on the lead time for COM, we could use multiple copies of the COM output for handouts--if we're already too late then lineprinter output would be fine and any sample of COM OK. 1e

If we are still thinking of a shared screen exercise we had better start trying it. Right now anyone even linking to the IMLAC from a TNLS terminal "blows" the IMLAC's mind--and we have to restart from scratch. 1f

Never mind the slides or the printer paper for now (looks like the printer is having more problems). 1g

DLS 5-MAR-73 11:15 14875

SRI help for RADC on SAB briefing

(J14875) 5-MAR-73 11:15; Title: Author(s): Stone, Duane L. /DLS;
Distribution: /jcn dvn ; Sub-Collections: RADC; Clerk: DLS;

DLS 5-MAR-73 11:26 14876

partial copy problems

We have had troubles here at RADC on a number of occasions with partial copies. Ex. recently EJK loaded my file <stone>min and entered a statement. When he tried to update it the system would not let him--as would be expected. When I entered the system it would not let me do any work in MIN. It said File Locked by EJK. Kennedy's directory had listed a partial copy of my file. I could get around this by logging out, logging back in as Kennedy, loading <stone>min and doing an execute unlock. When I logged out and logged back in as myself everything was OK.--If my understanding of the system is correct; it never should have let him enter a statement in the first place--there was no special access code on this file. 1

DLS 5-MAR-73 11:26 14876

partial copy problems

(J14876) 5-MAR-73 11:26; Title: Author(s): Stone, Duane L. /DLS;
Distribution: /bugs ; Sub-Collections: RADC BUGS; Clerk: DLS;

DLS 5-MAR-73 11:32 14877

Automatically updated Journal Index links in initial file

It would be convenient to have a named branch in each person's initials file (index); which would contain links to the author, keyword, and number indices and to have this branch automatically updated whenever new indices were made. 1

DLS 5-MAR-73 11:32 14877

Automatically updated Journal Index links in initial file

(J14877) 5-MAR-73 11:32; Title: Author(s): Stone, Duane L. /DLS;
Distribution: /np ; Sub-Collections: RADC NP; Clerk: DLS;

DLS 5-MAR-73 11:39 14878

Character Size #3 not working on RADC IMLAC's

The character size #3 does not work on our IMLACs. We can get larger characters, but they are skewed to the upper right hand corner of the screen. We have occasion to use this whenever we are giving demos--particullarly to older people who have difficulty in viewing size #2. We have important demo coming up the 13th of March. If it is a relatively eas fix we would appreciate it before then--THANKS 1

DLS 5-MAR-73 11:39 14878

Character Size #3 not working on RADC IMLAC's

(J14878) 5-MAR-73 11:39; Title: Author(s): Stone, Duane L. /DLS;
Distribution: /bugs ; Sub-Collections: RADC BUGS; Clerk: DLS;

DLS 5-MAR-73 9:07 14879

Buisness World Marches on Paper

Took this from the Utica Press. It has some interesting numbers on the paperwork explosion in the U.S. Hopefully we have a better soloution to the problem than the author of the article.

BUSINESS WORLD MARCHES ON PAPER

by Hal Boyle

NEW YORK (AP)--Paper...paper...paper

So many things are made of plastic these days that now and then one fears we may all be strangled by this magic substance. But if we are to be strangled by any man made material, it is more likely to be simple old fashioned paper.

Napoleon Bonaparte said an army marches on its stomach. But the modern U.S. business world marches on paper. The American economy produces an estimated one million pages of new documents every minute, of which some 250 billion pages a year must be stored, temporarily at least.

Busines firms alone--leaving out the work of government paper shufflers--now store and maintain more than a trillion pieces of paper in 200 million file drawers. Each year they are adding 175 billion new pieces of paper to this enormous trove. Storage costs alone now run into billions of dollars annually.

The problem of handling all this material has given rise to a new profession--records management--says Dr. Maxwell Pollak, president of Van Dyk Research Corp., of Whippany, N. J., a firm active in communications technology.

Dr. Pollack predicts that in the future this paper blizzard will intensify rather than lessen and have far reaching effects on the economy.

"More paperwork is inevitable in a fast paced and increasingly computerized world," he said. "The profussion of electronic machines in offices will not cut employe levels but add to them, thus creating a need for legions of Girl Fridays.

"The clerical work force is growing five times faster than the general population, and now receives about $80 billion a year in salaries."

"The 10 million clerical employes now on the job is almost double the 1940 total."

Dr. Pollack noted that despite the current recession there is still a shortage of stenographers and trained secretaries. Other studies have shown that business managements often are more reluctant to cut their office clerical staffs than their factory employes.

The job future today is also brighter for office workers. The government has predicted there will be a need for at least 200,000 new secretaries a year for some time to come.

The paper storm is heightened by the increasing output of educational institutions. It is estimated that more than a majority of all the scientists ever born on earth are still alive. They are producing fresh paper mountains of documents, graphs, research reports and learned journals. One of the biggest problems of science is how to digest its own output.

It won't be long, some experts figure, before America will be using 500 pounds of paper a year for each man, woman and child in the population.

So what can we do about all this? I don't know about you, but I know what I'm going to do. I'm going to clean out a couple of file drawers--and I'm also going to plant a few trees in my back yard. I don't want my descendants to run out of paper.

14879 Distribution

Engelbart, Douglas C. , Norton, James C. , Van Nouhuys, Dirk H. ,
McNamara, John L. , Kennedy, Edmund J. , Bethke, William P. ,

DLS 5-MAR-73 9:07 14879

Buisness World Marches on Paper

(J14879) 5-MAR-73 9:07; Title: Author(s): Stone, Duane L. /DLS;
Distribution: /dce jcn dvn jlm ejk wpb ; Sub-Collections: RADC;
Clerk: DLS;
Origin: <STONE>PAPER.NLS;1, 5-MAR-73 7:53 DLS ;

SRI Business Phone Suggestion

Two factors lead me to recommend that we obtain an exact estimate from the phone company for changing my home SRI phone from a Sunnyvale business phone to a Los Altos or Mountain View number. 1

There have been enough times in the last 3 months when I found the TIP unusable, that I am running up somewhat of a bill dialing in as a local user. 1a

Ben Briggs at Ames has made a survey and concluded that TIP usage from outside will have to be watched carefully, and that I should call if I intend to increase present usage. In other words, I am becoming a less desirable user for them than previously. 1b

The present scheme suits me fine, and I think this matter is of rather low priority. However, let me know if we should do anything about it. 2

DSK 5-MAR-73 13:31 14880

SRI Business Phone Suggestion

(J14880) 5-MAR-73 13:31; Title: Author(s): Kaye, Diane S. /DSK;
Distribution: /jcn ; Sub-Collections: SRI-ARC; Clerk: DSK;

Novice/Expert Task Report

Status 1

The first Novice/Expert Design and Review teams meeting has taken place and is documented in (14541,). As you can tell, we are in the very early stages of definition here. 1a

1b

By March 20, we should have 1c

approved the list of commands to be covered in the Primer. 1c1

prepared our guidelines for any sort of Novice design 1c2

1d

At this point we are still investigating several HELP approaches and looking into command language changes which could clear up the DLS or TNLS atmosphere, so I cannot give time estimates. 1e

2

Scope of Project 3

We are proceeding with the understanding that the scope of this project is DNLS and TNLS, both pre-utility and, if applicable, MPs and that the DNLS Help task is included. 3a

4

I personally feel that the choice of membership for this team was well made. It is clear to me that you do require more specific details as soon as we can get them. 5

Novice/Expert Task Report

(J14881) 5-MAR-73 14:30; Title: Author(s): Kaye, Diane S. /DSK ;
Distribution: /rww ; Sub-Collections: SRI-ARC; Clerk: DSK;
Origin: <KAYE>STATE.NLS;1, 5-MAR-73 12:49 DSK ;

DVN 5-MAR-73 8:20 14882

Please enter items about COM in the DPCS subcollection

This item is addressed to Dick Watson, but goes to all of you for information.

DVN 5-MAR-73 8:20 14882

Please enter items about COM in the DPCS subcollection

When you send journal items to Dean asking for COM services, such as (journal,14868,), it would be a service if you would specify subcollection DPCS as well as SRI-ARC. By the way, you can only do so in TNLS. 1

DVN 5-MAR-73 8:20 14882

Please enter items about COM in the DPCS subcollection

(J14882) 5-MAR-73 8:20; Title: Author(s): Van Nouhuys, Dirk H. /DVN; Distribution: /SRI-ARC DLS JHB TFL EHF NJN JI JP; Sub-Collections: DPCS SRI-ARC; Clerk: DVN;

JBN 5-MAR-73 18:59 14883

Need to have "affiliation" changed to "organization" in Idenfile

Charles -- How can we get the term "affiliation" in the Identfile changed to "organization"? We no longer use the term "affiliation" anywhere else and want to get this cleaned up. -- Jeanne 1

JBN 5-MAR-73 18:59 14883

Need to have "affiliation" changed to "organization" in Idenfile

(J14883) 5-MAR-73 18:59; Title: Author(s): North, Jeanne B. /JBN;
Distribution: /chi nicsta mdk ; Sub-Collections: SRI-ARC NICSTA;
Clerk: JBN;

JBN 5-MAR-73 22:02 14884

Progress of ARPANET NEWS, Note to Iseli

Jean--Still holding for Cerf's summary and stuff from Patrick, otherwise in good shape. Also, Jed D says check with LBL because he thinks they are not to be on the new until summer, so I'll call Fink tomorrow to make sure we have the horse's mouth. The NEWS is in three places at present, <NIC> <NIC-WORK> and <NORTH> all the same version. If you haven't tried it, enter nic instead of nls, type b[ring]<nic>arpanews and see how it looks. Talk to you tomorrow.--Jeanne 1

14884 Distribution
Iseli, Jean , Watson, Richard W. , Kudlick, Michael D. ,

JBN 5-MAR-73 22:02 14884

Progress of ARPANET NEWS, Note to Iseli

(J14884) 5-MAR-73 22:02; Title: Author(s): North, Jeanne B. /JBN;
Distribution: /ji rww mdk ; Sub-Collections: SRI NIC ; Clerk: JBN;

JEW 5-MAR-73 16:54 14885

DNLS Bug, Output File Repositions Command Marker Randomly

Has anyone noticed in DNLS that, after an 'Output File', the user is moved to some (it would seem) arbitrary point in his file by the recreate dislay which terminates the output operation? 1

JEW 5-MAR-73 16:54 14885

DNLS Bug, Output File Repositions Command Marker Randomly

(J14885) 5-MAR-73 16:54; Title: Author(s): White, James E. (Jim) /JEW; Distribution: /bugs ; Sub-Collections: SRI-ARC BUGS; Clerk: JEW; Origin: <WHITE>BUG.NLS;2, 5-MAR-73 16:53 JEW ;