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This is a polished version of my raw notes.

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(DATE) 19 and 20 March 1974	1
(BY) Lieberman (RLL)	2
(ATTENDEES)	3
Duane Stone (DLS) = RADC	3a
Bobbie Carrier (RJC) = RADC	36
John McNamara (JLM) - RADC	3c
Deane Bergstrom (DFB) = RADC	3 d
Ed Kennedy (EJK) = RADC	3e
Robert Lieberman (RLL) = SRI=ARC	3f
(MEDIUM) Medium of contact = FACE=TO=FACE	4
(WHERE) Rome, New York (RADC)	5
(ACTION=ITEMS) none	6
(DISTRIBUTION) JCN JNB DCE RWW NDM DLS	7
(REMARKS)	8
INTRODUCTION	8a
On March 19 and 20 I visited Rome Air Development Center (RADC) in Rome, New York, During these two days I spent most of my time talking to several people who have been using NLS. This report represents my impressions and notes from this trip.	8a1
For almost a day and a half I spoke to Duane Stone (RADC architect) on a wide range of subjects related to NLS. These included NLS itself, the ARPANET, user philosophy, etc. My overall objective was to find out what RADC was during with their Office=1 slots and gain an impression of their feelings towards an augmented environment.	882
The RADC project which is using NLS was originally one to evaluate the system for management.	8a3
Other personnel contacted were Bobbie Carrier, Deane Bergstrom, John McNamara, and Ed Kennedy,	8a4
PROBLEMS AND SUGGESTIONS	8b

An outstanding feature of all of my conversations with RADC people is the lack of any real complaints about the NLS system itself. This could be due to several reasons. First, they are preoccuppied with the terminal and TIP problems; second, they are possibly only using a limited part of the system, thus are not ready to offer suggestions or confident to make helpful complaints; third, NLS is a "wonderful" system.

Terminals

Among the problems mentioned were the lack of display terminals, the small screen of the IMLACs, the unreliability of the TI and Execuports, and the need for cheap display devices (about the cost of a TI). Another request was for user oriented keyboards, specifically, the touch, spacing, placement of keys, and selection of keys (character set on the keyboard). These complaints were mostly from the typists and, in fact, dominated their thoughts when asked to discuss NLS. However, it was admitted that one could eventually adjust and find happiness with the new touch, keyboard, etc. Only the reliability problem is a persistent one.

Holmes Tycom Inc. is making terminals for RADC: typewriter=like plus blackbox to print high quality output. It will include special automated LF+CR and full ASCII character set.

The mouse and Keyset were mentioned by the few who used the IMLACS.

The mouse got very good marks for being a very effective method to address textual material. The keyset was completely unused by the RADC personnel. The difficulties with network or TIP delays compensated for the better interaction of the keyset; for this reason and because it represented a learning exercise, the keyset was considered either unusable or ineffective. 85251

It just did not improve (in their estimation) the interaction between man and machine.

The implications for ARC are clear; it might behoove us to find more reliable terminals so that the users can be spared the agony of finding good ones and, what is more important, so that unreliable terminals do not cause the downfall of NLS at any particular site.

The TIP and ARPANET

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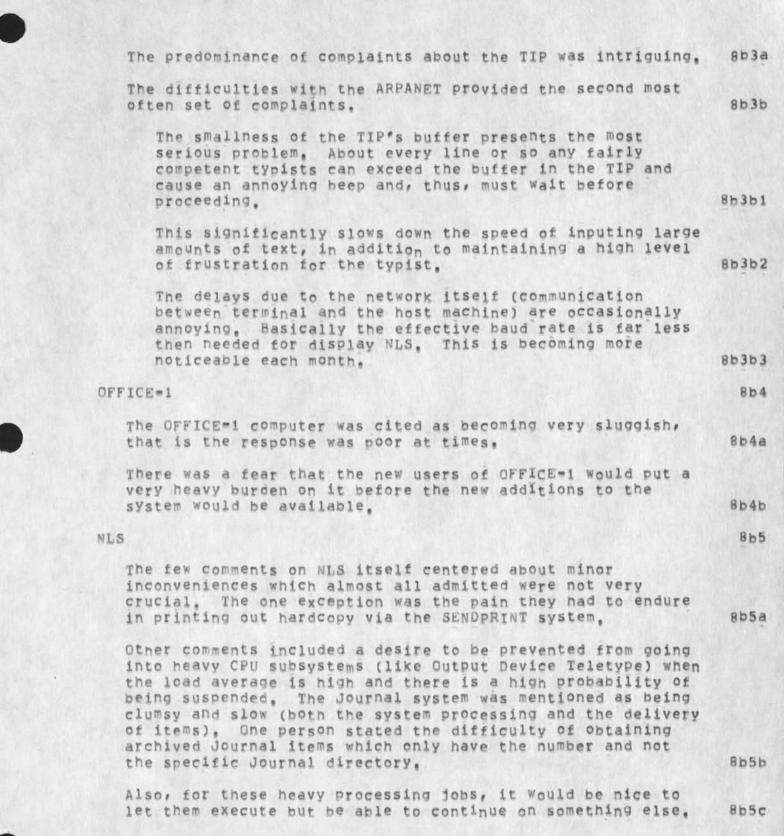
862

8b2a

8b2a1

8b2b

Trip report to RADC



Trip report to RADC

	he viewspecs were considered a pain but very useful.	81
	comment was made as to the difficulty of appreciating the evels in a large document when using TNLS.	81
Т	he DEX system was also not exercised very much,	81
	The lack of editing flexibility at typing time and the problems of characters being dropped were cited by one typist. Furthermore, it required one hour of babysitting time while the cassette was being transmitted for each original one hour of time spent in loading the tape by the typist.	855
£	s to be expected from the typist viewpoint the editing unctions of NLS were the outstanding advantages of the ystem,	81
Trai	ning	
wa	he need for additional follow=up courses was stated. This ould help in reinializing the use of rarely used concepts nd in introducing more advanced concepts in an orderly ashion.	81
i h q	his will also assist in the problem one typist mentioned; t seems there are many ways of doing things in NLS, owever, training is done more or less informally by the uestioner asking any available person. This leads to onfusion among the more naive users of NLS,	81
sugg	estions	
g	mong some of the other suggestions were the desire to have raphics capabilities (simple block diagrams and management evel flow charts and graphs),	81
d s	he need for a better way of grouping idents for effective istribution was mentioned. Perhaps the idents, in general, hould be more than three letters to permit easier ecognition and recall of people.	81
a) m a ti	n the management sector, I found very little evidence of ny real objections. In fact, the three levels of anagement that I spoke to all agreed that NLS was, indeed, useful tool. This does not mean that they all agreed on he time scale to incorporate it and degree of effectiveness r that they fully appreciated all the various capabilities f the system (which they freely admitted).	81

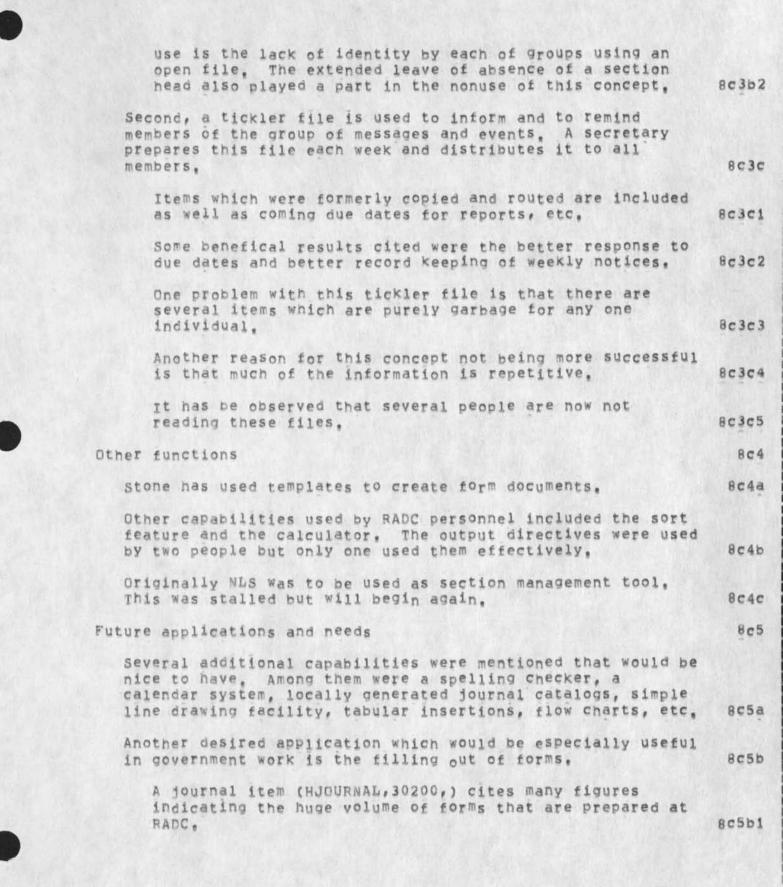
IN general, it was observed by those interviewed that upper management accept the augmentation concepts more readily than middle=management.	8b7d
A general comment was made that ARC should concentrate on the interface problems instead of building subsystems,	8b7e
APPLICATIONS	8c
A list of applications as was provided by Duane Stone is the following;	8c1
= Engineer's notebook	scia
an informal diary of running dialog	8c1a1
- Contract folders	8c1b
notes from contract contacts; has all the official paper plus reports, etc.; has forms filled in.	8c1b1
= Interoffice memos	8c1c
somewhat official; needed high quality output; mostly originator inputs it; partly lack of PSO (personal service office)	8c1c1
= minutes of meetings	8c1d
= staff meetings	scie
- Upline reporting	SCIE
= reminder/due dates	8c1g
- AF documentation - project, TPD	scih
finished technical reports/papers	8c11
= remote collaboration	8c1j
= briefings	8c1k
JOVIAL manual	8c2
Currently, their major application is a JOVIAL report of	

over 530 pages. Duane Stone's group has been given the go ahead for a brief period to do as much as possible in

Trip report to RADC

preparing this document. After this time period, Dick Nelson, who heads the JOVIAL project, will make a decision.	8c2
Stone is proceeding as if he had the complete go ahead, This makes good sense if, in fact, he receives the green light, and as a reasonable approach to demonstrate this procedure to Dick Nelson,	8c2
Dick Nelson was in California at the time of this visit to RADC. He was talking to a contractor who might perform the complete document preparation,	8c2
Tentatively, this contractor has given RADC a quote of \$50,000 which would include creation of a cross index, type setting, and output in camera ready form, Additionally it would cost \$50 per page for quantity printing,	8c2c
The present form of the manual has explicit codes for setting the typeset. It was prepared by another contractor.	8c2
The manual is basically inserted by clerks; edited by Stone with an IMLAC; and reviewed by several other people. A content editor marks up a hardcopy,	8c:
At the moment the NLSizing of the manual looks very cost effective,	BC
In response to my question on the potentially costly work of putting in output directives, Duane said he hoped that there will be few type fonts, etc.	8c:
They are considering other manuals for NLSizing,	8c2
Messages	80
NLS is being used as a communication tool within the section,	8¢3
There are two basic methods to communicate messages, etc. to members of the group. First, an open file is used for collecting journal items, SNDMSGs, telephone conversations, trip reports, etc. pertinent to a particular project.	8¢.
The open file has replaced a staff meeting that the section head had held,	8C31
Messages may be inserted by anyone; consequently, the file became messy. Another reason for a recent lack of	

Trip report to RADC



Trip report to RADC

Currently, only templates are used. Also, an attempt to have the travel forms automated with NLS is under way. 8c5b2 For the calculator, some facility to add all the numbers in 8c5c a particular column would be quite useful, Two individuals indicated a desire to have the design part of WWMCCS augmented with NLS. Since the various sites working on WWMCCS are diverse geographically, they could 8c5d benefit from such a system. It was indicated that the future of NLS at RADC is bright 8c5e and will be used in an ever expanding way. There is hope that the full Section will be using NLS as a communication medium (messages, forms, memos, reports, etc.). Initially the branch is undergoing augmentation. 8c5e1 Eventually it is hoped that all the administrators at RADC will be using NLS for communication. Further in the future, there is a desire to have the action officers at 8c5e2 the Pentagon form an NLS community. Other comments mentioned were that a computer based system for retrieving documents would be better than the manual filing systems currently used. There would be a better probability of finding what you wanted, Also, an online system such as NLS is very nice for redistributing documents. 8c5f The availability of several sections of a document being reviewed or edited concurrently is a very valuable feature of NLS. Large reports that eventually have many "final versions" would be greatly aided. 8c5g Another class of documents which would benefit from NLS is the cyclic documentation which is constantly being referred 8c5h to and updated. In response to a question on microfiche/film, Stone thought it would not be profitable to add microfilm capability to NLS since one cannot do anything with it (edit or move it) and there are no decent readers around at the current time, Furthermore, the cost of discs are coming down so that maintaining digital data will not be very expensive in the 8c51 future.

> Additionally, since there are so many articles, one would be more successful to filter this information before

Trip report to RADC



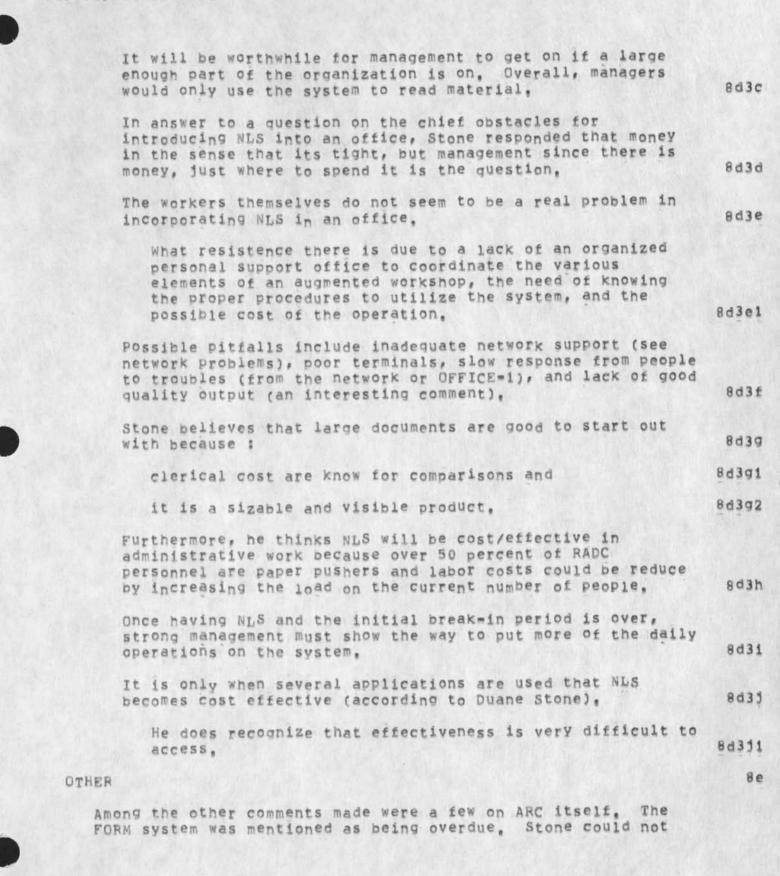
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placing it onto microfilm/fiche. This would also hold true for placing data onto mass storage.	8c511
The need for Information Retrieval and Storage system within the NLS environment is not pressing since the group at RADC is not in the intelligence community where such a system is needed, [according to Stone]	8c5j
A central data management system still has the problems of privacy and local control as well as prestige,	8¢5k
The problems associated with duplicating the functions of the signature or initialing procedure in management must be approached,	8c51
PHILOSOPHY	8 d
Several good comments were made on the general philosophy of a augmented environment (mostly by Stone).	8d1
People	8d2
It has been observed at RADC that some people do not like to work from a display because they find the screen difficult to read.	8d2a
This might be a comment on the IMLACS rather than on displays in general,	8d2a1
Still others seem to have a mental or intellectual block against communicating with an on-line computer,	8d2b
A few of these people may never use NLS,	8d2b1
Another group appears to resent additional training and, hence, have not used the system as effectively as possible,	8d2c
This anti=training behavior might be due to poor experiences or over=confidence. In any case ARC should determine the cause.	8d2c1
combining the above reasons with a lack of display terminals, most editing is sill done by marking hardcopy,	8d2d
Dispite all of these barriers, it was felt most people could eventually learn to use NLS. After which the system tends to sell itself.	8d2e

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However, it is inappropriate to have, for example, managers performing typist chores on the system,	8d2£
According to one secretary, some personnel should not use the system at all,	8d2g
In order to effectively train people three suggestions were made,	8d2h
First, you have to have on-line help for new people,	8d2h1
Second, one important part of an individual's work must be augmented by the system,	8d2h2
Third, the imagination of at least one person must be excited if the office is going to effectively use NLS,	8d2h3
Furthermore, the training process is aided by actually showing people the system working on real information,	8d21
Two people stated the advantage of having training classes outside ones normal working environment. This would reduce the interruptions and provide a better environment for	8d2j
concentration,	0023
In all, training was considered very important and might be much more costly than is realized,	8d2k
From both the management and staff I was told that it would be nice to have managers ask questions to the system rather than to have managers ask each staff member about the daily status of his work,	8d21
Also, some fear was expressed that an individual would	
become too dependent on the system, when this happens the reliability requirements must increase,	8d2m
Selling and Effectiveness	8d3
NLS is a very good activity to show to visitors but the display version is what impresses.	8d3a
The speed, the added features, and the neatness of operation add much to the visual and mental effects on people,	8d3a1
For management a "pay as you go" basis initially would sell much better than requiring large "chucks",	8d3b

Trip report to RADC



understand why it was taking so long to complete a simple subsystem; he felt ARC was messy around with what was just 8e1 suppose to be a simple task. In general, Duane thought many of RADC's suggestions were listened to by ARC but very little was ever done unless ARC was convinced. 8e2 So that RADC would not be dependent on ARC and because of the flexiblity and convenience, Stone felt they needed the capability of L10 programming locally for small jobs or very special RADC systems (has his eye on someone now). 8e3 Stone questioned if it was possible to use the PDP=10 computer nearby (currently SRI=AI) to augment our computer power. He mentioned this since he believes that project will be 8e4 terminated soon. Duane stated that the architect community was not very close and their range of interest and desires were quite wide. Thus, this community did not function as well as it could. 8e5 8£ SUMMARY For some unknown reason nearly everyone was desireous of using or at least having available the NLS system. It would be nice to pinpoint these reasons. 8£1 Unfortuately, I found an overall lack of proper training and 8£2 sophistication at RADC in the use of NLS. ARC cannot permit even enthusiasic supporters (like RADC) to be 8£3 insufficiently trained. In general, complaints centered upon peripheral issues foreign to the basic philosophy and use of the system. 8£4 Nevertheless, the interface problems (TIP, Network, and terminals) have served to frustrate several users. This should be taken as a important warning to ARC, we cannot allow terminals and the like to determine the success or failure of a 8£5 knowledge workshop environment. Although the project at RADC was investigating the utility of NLS in management use, the expected results from the JOVIAL

NLS in management use, the expected results from the JOVIAL documentation preparation will probably serve to convience management of the advantages of our augmented facilities. I would think this indicates that NLS needs to have a few more

niceties before it is clearly "marketable" as a management capability,	8£6
(DOCUMENTS) none	9
(GIVEN) Date and documents given	9a
(RECEIVED) Date and documents received	9b





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(J23305) 8=JUN=74 13:46; Title: Author(s): Robert N. Lieberman/RLL; Sub=Collections: SRI=ARC; Clerk: RLL;

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show file marker list error

error in using show file marker list, will not show me the list but gives a system error message,

show file marker list error

(J23306) 8=JUN=74 18:34; Title: Author(s): Robert N. Lieberman/RLL; Distribution: /FDBK([ACTION]); Sub=Collections: SRI=ARC; Clerk: RLL; I'm still getting 'exceed capacity' alot

All and

I'm still getting "exceed capacity" with verify file in <kelley,wuc,>. The maximum levels it uses is 31. I also get "exceed capacity" with output quickprint. The guickprint bug leaves you in a weird state with a busy file in printer directory so you can't print anything from that file. The verify file problem seems to be associated with other nifty things like writing funny control and <NULL> characters on the screen as if in your file. "exceed capacity" also appears frequently (but not always until it has appeared once) when jumping to link containing a content analyzer pattern. I'm still getting 'exceed capacity' alot

- A

(J23307) 9=JUN=74 05:54; Title: Author(s): Kirk E. Kelley/KIRK; Distribution: /BUGS([ACTION]); Sub=Collections: SRI=ARC BUGS; Clerk: KIRK;



SUMMARY:

The Augmentation Research Center (ARC) of Stanford Research Institute proposes to purchase and operate its existing PDP=10 TENEX facility and to supply service for six months to a set of ARPANET users to be selected by ARPA. At the end of the six=month service period, the TENEX facility will be transferred to another ARPA contractor for its operation and use.

OBJECTIVES:

ARC's objectives are:

To operate the SRI=ARC PDP=10 TENEX system (starting with the current SRI=ARC TENEX configuration and running a standard version as soon as possible) in order to supply TENEX service to an ARPA=selected group of ARPANET users including the ARC development effort.

= To transfer the facility about January 1, 1975, to another ARPA contractor in an effective, smooth manner,

BACKGROUND AND TECHNICAL NEED:

In light of ARC's planned development efforts in the National Software Works (NSW) program there is a need for stable TENEX system service to the ARC development staff. There is also a need for additional TENEX service on the Network, During the transition period from the present until ARC transfers the TENEX facility to another ARPA contractor, we propose to continue operation of the facility, supplying service to the ARC effort and to other ARPANET users.

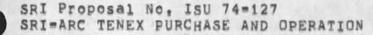
ACCOMPLISHMENTS:

ARC has operated an ARPANET computer facility for several years, providing service to the ARC research efforts as well as to the Network Information Center (NIC) staff and NIC user groups,

We have provided TENEX service during March, April, May, and June of this year to another ARPA contractor to ease the service requirements on the USC=ISI TENEX machine.

PROPOSED EFFORT:

ARC will manage the continued operation of the SRI=ARC TENEX system during the six-month period from July 1, 1974 to January 1, 1975. This service will be provided from the facility located at SRI. About January 1, 1975, the facility will be moved from SRI to the site of



another ARPA contractor for their use. The current configuration of the SRI=ARC facility is outlined in Journal document; (21963,8a).

RELEVANCE TO DOD/ARPA MISSION AND FUNCTIONS:

The added TENEX facility service will provide useful computer resources to ARPANET users selected by ARPA. It is the relevance of their work that makes this service relevant to DoD purposes.

TRANSFER PLAN:

In the transfer of the SRI=ARC TENEX facility to another ARPA contractor, ARC will cooperate in working out an arrangement satisfactory both to ARPA and the other contractor. All arrangements for the physical move of the TENEX equipment to the other ARPA contractor's facility will be made by that organization, coordinating with ARC operational needs and personnel.

WORK STATEMENT:

ARC will manage the operation of the SRI=ARC PDP=10 TENEX system on a seven=day, 24=hour basis (less maintenance periods) during the next six months. TENEX service will be supplied from the present SRI site,

ARC will institute an appropriate service=scheduling system (as it becomes available) to be supplied by Bolt, Beranek, and Newman, Inc. (BBN) to further ensure equitable management and distribution of system resources to user organizations. Until such a system is implemented, we will allocate system resources on the basis of the present group allocation system in coordination with ARPA. Determination of specific amounts of service to be offered to user organizations will be made with the guidance of ARPA. In this regard, ARC will need the assistance of specifically=designated ARPA personnel for the allocation and administration of system resources.

ARC will offer a standard BBN EXEC and as nearly standard internal TENEX software as possible. Efforts are now under way to bring present ARC system differences into standard TENEX.

ARC will provide operator coverage during all scheduled uptime hours. Methods for handling special services (such as tape archival of user files and printout requests) will be worked out between ARC, RADC and ARPA as the needs arise.



MILESTONES:

July 1, 1974 Initial service for ARPA=selected users September 1, 1974 Installation of an appropriate pie=slice scheduler mechanism to be supplied by BBN, January 1, 1975 Transfer of the facility to another ARPA contractor.

PERSONNEL:

Included on the following pages are biographies of personnel likely to be involved with the effort proposed. In addition, ARC will be hiring one or more additional computer operators. Other ARC staff will be called on as needed.

REFERENCES:

Donald C. Wallace and William R. Ferguson, ARPA TENEX Resource Management, 17 February 1974, 10p, ARC Journal 21963,





ESTIMATED TIME AND CHARGES

It is proposed that the work outlined herein be performed during a period of six months commencing 1 July 1974, Since the SRI=ARC PDP=10 TENEX facility is already under monthly lease and in operation, it is imperative that the purchase and continued operation contract be made effective July 1, 1974,

Pursuant to the provisions of ASPR 16=206.2, attached are a cost estimate and support schedules in lieu of the DD Form 633=4. Also enclosed is a signed form complete except as to the Detailed Discussion of Cost Elements."

REPORTS

Due to the nature of the work outlined herein, reports will be limited to periodic reports of system usage,

CONTRACT FORM



Because of the nature of the work proposed, it is requested that any contract resulting from this proposal be awarded on a cost=plus=fixed=fee basis.

ACCEPTANCE PERIOD

This proposal will remain in effect until 1 August 1974, If consideration of the proposal requires a longer period, the Institute will be glad to consider a request for an extension of time,



COST ESTIMATE FOR 6 MONTHS, STARTING 1 JULY 1974

Personnel Costs

Supervisory 500 hrs.		
Professional 1000 hrs.		
Technical 4200 hrs.		
Clerical 500 hrs.		
Total Direct Labor	\$	32,030
Payroll Burden @ 28%		8,968
Total Labor and Burden		40,998
Overhead @ 107%		43,868
Total Personnel Costs	\$	84,866
Direct Costs *		
Travel	\$	1,317
3 Trips East @ 354 = \$ 1,062		
6 Days Subsist, @ \$42,50 = 255		
Computer Facility and Terminals *	\$	444,562
Communication		500
Total Direct Costs	\$	446,379
Total Estimated Cost	s	531,245
Fixed Fee		18,594
Total Estimated Cost Plus Fixed Fee	\$	549,839

* See Schedules that follow.



[2]

SCHEDULE A DIRECT LABOR

Direct labor charges are based on the actual salaries for the staff members contemplated for the project work plus a 2% judgmental factor of base salary for merit increases during the contract period of performance. The precise factor applied is dependent on the estimated period of performance. Frequency of salary reviews and level of merit increases are in accordance with the Institute's Salary and Wage Payment Policy as published in Topic No. 505 of the SRI Administration Manual and as approved by the Defense Contract Administration Services Region.

SCHEDULE B OVERHEAD AND PAYROLL BURDEN

These rates have been found acceptable by the Department of Defense for billing and bidding purposes for the calendar year of 1974. We request that these rates not be specifically included in the contract, but rather that the contract provide for reimbursement at billing rates acceptable to the Contracting Officer, subject to retroactive adjustment to fixed rates negotiated on the basis of historical cost data. Included in payroll burden are such costs as vacation, holiday and sick leave pay, social security taxes, and contributions to employee benefit plans.

SCHEDULE C TRAVEL COSTS

Air fare is based on prices for travel to Washington D.C. at s354 round trip tourist established in the Official Airline Guide dated June 1, 1974. Domestic subsistence rates and travel by private auto are established standards based on cost data submitted to and approved by DCAA.

SCHEDULE D COMPUTER SUPPORT COSTS

1) PDP=10 SYSTEM		
a) EQUIPMENT (purchase)	\$405,000	= \$ \$405,000
b) DEC MAINTENANCE		
1) 16hrs/d, 5d/wk	\$4,500/mo X	
2) will=call	\$500/mo X 6	= 3,000
2) TERMINALS		
a) TNLS TERMINALS		
1) TI (incl maint) (4)	\$156/mo X 4	X 6 = 3,744
3) LINE PRINTER		
a) MAINTENANCE	\$443/mo X 6	= 2,658
b) SUPPLIES:		
1) paper \$15/box		6 = 900
2) ribbon \$20/rol	e X 4/mo X	6 = 480
4) DUMP TAPES \$10/tap	e X 13/mo X	6 = 780
5) MISC		1,000

TOTAL = \$ 444,562







JCN 28=JUN=74 18:40 23308

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SRI Proposal No. ISU 74=127 SRI=ARC TENEX PURCHASE AND OPERATION

> 27 June 1974 SRI=ARC 23308

SRI Proposal No. ISU=74=127

SRI=ARC TENEX PURCHASE AND OPERATION

Part One===Technical Proposal

Prepared for:

Information Processing Techniques Office Advanced Research Projects Agency 1400 Wilson Boulevard Arlington, Virginia

Attention: Col, David C, Russell

Rome Air Development Center Grifiss Air Force Base Rome, New York

Attention: Duane L. Stone

Prepared by:

James C. Norton Assistant Director Augmentation Research Center

Approved:

Douglas C. Engelbart, Director Augmentation Research Center

Bonnar Cox, Executive Director Information Science and Engineering Division Stanford Research Institute





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SRI Proposal No. ISU 74=127 SRI=ARC TENEX FURCHASE AND OPERATION

> 27 JUne 1974 SRI=ARC 23308

SRI Proposal No. ISU=74=127

SRI=ARC TENEX PURCHASE AND OPERATION

Part Two - Contractual Provisions

Prepared for:

Information Processing Techniques Office Advanced Research Projects Agency 1400 Wilson Boulevard Arlington, Virginia

Attention: Col, David C, Russell

Rome Air Development Center Grifiss Air Force Base Rome New, York

Attention: Duane L, Stone





(J23308) 28=JUN=74 18:40; Title: Author(s): James C. Norton/JCN; Distribution: /DLS([ACTION]) DCR2([INFO=ONLY]) RWW([INFO=ONLY]) DCE([INFO=ONLY]) MEH([INFO=ONLY]) JCP([INFO=ONLY]) MLK([INFO=ONLY]); Sub=Collections: SRI=ARC; Clerk: JCN; Origin: (NORTON, ARPAPROP.NLS;2,); 28=JUN=74 18:09 JCN;

Biographies will include: NORTON HARDY FERGUSON VICTOR Other staff are: KEENEY PETERS BEACH BONDURANT plus 2 operators



SRI Proposal Nc. ISD 74=128 Knowledge Workshop Support for the Hudson Institute

(J23309) 9=JUL=74 20:44; Title: Author(s): James C. Norton/JCN; Distribution: /DCE([INFO=ONLY]) RWW([INFO=ONLY]]) JHB([INFO=ONLY]) MEH([INFO=ONLY]]) SRL([INFO=ONLY]]) MDK([INFO=ONLY]])) WRF([INFO=ONLY]]) JCP([INFO=ONLY]]) JDH([INFO=ONLY]]); Sub=Collections: SRI=ARC; Clerk: JCN; Origin: (NORTON, HUDSONPROP.NLS;2,), 6=JUL=74 12:28 JCN;

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SRI Proposal Ne. ISD 74=128 Knowledge Workshop Support for the Hudson Institute

I INTRODUCTION

A. Brief scope statement

The purpose of this proposal is to request support for extending the use of the knowledge workshop technology developed at the Augmentation Research Center (ARC) of SRI to the Hudson Institute. The extension will be to those Hudson people who would be willing to undertake exploratory use of augmented knowledge workshop techniques.

The support is required for two activities: computer services and technical services.

The computer services are being supplied through the ARPANET to geographically distributed user groups from a computer facility maintained and operated by a commercial timesharing company. The online portion of this service is being run under a subcontract with ARC. As prime contractor, ARC handles all service subcontracts.

The technical services provided by ARC personnel have the following objectives:

Maintain and update the "utility" version of our application software.

Support the user groups in learning how to use these tools.

Descriptions of the applications being suggested for exploratory use are given in a paper by Engelbart, Watson, and Norton [15] and in an earlier paper by Engelbart [16], Copies of these documents are included with this proposal as Attachments A and B.

B. organization of this Proposal

This proposal is divided into two parts, each of which is broken down into several sections.

Part one is the Technical Proposal, covering the proposed work and its background and context.

Section I is the introduction.

SRI Proposal No. ISD 74=128 Knowledge Workshop Support for the Hudson Institute

Section II is a summary outline of proposed project activity.

Section III is an extended discussion of proposed project activity,

Section IV is a list of selected references.

Part Two contains the Contractual Provisions, with sections covering such topics as estimated time and charges, reports, contract form, acceptance period, and a cost estimate with supporting schedules.

The Attachments contain additional supporting material,

C. ARC's "Community Plan"

Introduction

ARC is a one-organization community of researchers and system developers, supported by several different contracts. The research and development activities of ARC are aimed at exploring the possibilities for augmenting individuals and groups in the performance of knowledge work with the help of computer aids. These aids range from offline batch to online real-time. Exploratory development and operation of augmentation systems have been our substantive work.

ARC's Initial Research and Development Strategy

The researchers within ARC do as much of their work as possible using the range of capabilities offered. Thus they have served not only as researchers, but also as the subjects for the analysis and evaluation of the augmentation systems that they have been developing. Consequently, an important aspect of the augmentation work done within ARC is that the techniques being explored are implemented, studied, and evaluated with the advantage of intensive everyday use. We call this research and development strategy "bootstrapping."

In our experience, complex man=machine systems can evolve only in a pragmatic mode, within real=work environments where there is an appropriate commitment to conscious, controlled, and exploratory evolution. For over ten years the evolution of our "augmented knowledge workshop" system has developed within such an environment.

Part One==Technical Proposal

SRI Proposal No. ISD 74=128 Knowledge Workshop Support for the Hudson Institute

The Next Stage in ARC's Research and Development Strategy

The next stage of application is now being established. We want to involve a wider group of people so that we can begin to transfer the fruits of our past work to others, and so that we can obtain feedback needed for further evolution from wider application than is possible in our Center alone. We want to provide workshop support service to selected groups who are willing to take extra trouble to be exploratory, but who?

1) are not necessarily oriented to being workshop system developers (they have their own work to do),

2) can see enough benefit from the system's application and from the experience of trying it so that they can justify the extra risk and expense of being "early birds," and

3) can accept our assurance that reliability, system stability, and technical application help will be available to meet their conditions for risk and cost.

Establishment of a Workshop Utility and promotion of the type of service work proposed herein are part of ARC's long=term commitment to pursue the continued development of augmented knowledge workshops in a pragmatic, evolutionary manner. Note that our last few years of work have concentrated on the means for delivering support to a distributed community, for providing teleconferencing and other basic processes of collaborative dialogue, etc.==consciously aiming toward having experience and capabilities especially applicable to support remote and distributed groups of exploratory users for this next stage of wider=application bootstrapping. SRI Proposal No, ISD 74=128 Knowledge Workshop Support for the Hudson Institute

II SUMMARY OF PROPOSED PROJECT ACTIVITY

The proposed project work will include:

Providing training as appropriate in the use of Display NLS (DNLS), Typewriter NLS (TNLS), and Deferred Execution (DEX) software subsystems.

Providing technical assistance to a Hudson office "workshop architect" in the formulation, development, and implementation of augmented knowledge work procedures within selected laboratories at Hudson.

This technical assistance will include help in the development of NLS use strategies suitable to the Hudson environment, procedures within the Hudson organization for implementing these strategies, and possible special=application NLS extensions (or simplifications) to handle the mechanics of particular Hudson needs and methodologies.

The service will also include the availability 16 hours a day, 6 days a week of Workshop Utility service via the ARPANET from a PDP 10 TENEX system operated by commercial facility management.



SRI Proposal No. ISD 74=128 Knowledge Workshop Support for the Hudson Institute

III EXTENDED DISCUSSION OF PROPOSED PROJECT ACTIVITY

A, Objective

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The objective of this effort is to work with Hudson personnel in the mutual development and use of procedures, methodology, software features, and other online tools; and in the training of users that will allow their exploratory use of Augmented Workshop systems. This objective has the following key components:

i) Building a Hudson User group whose members will find real value in applying the service, and whose participation will contribute to Hudson research goals both directly (by making the users Hudson=related activities more effective) and indirectly (by accelerating the maturation and acceptance of augmented knowledge workshop techniques).

 Developing ARC's know=how and capability for integrating innovation with new=development transfer.

B, Background

The Augmentation Research Center has developed, over a period of years under government sponsorship, a general=purpose interactive augmentation system centering about what we now call an "Augmented Knowledge Workshop," abbreviated below as "Workshop". The goal of ARC's work has been to evolve a prototype Workshop system that will significantly improve the performance of individuals and teams engaged in Knowledge=work activities, where the Workshop "system" involves daily use of coordinated tools, procedures, methodologies, and languages.

For further background discussion, see [15] and [16], and the references in Section IV.

While the discussion in Attachment B is oriented toward communities of discipline or mission oriented users, the same types of services and knowledge workshop orientation apply to individuals and groups of workers in a local environment.

Part One==Technical Proposal

C. Scope of Proposed Work

Introduction

It now appears appropriate for the technology, as currently developed, to be used by a number of Hudson people in their day to day work over an extended period of time.

The types of workshop services that we can begin to support at varying levels of capability are described in [16] under the headings:

Collaborative Dialogue Document Development, Production, And Control Research Intelligence Community Handbook Development Computer=Based Instruction Meetings And Conferences Community Management And Organization Special Knowledge Work By Individuals And Teams

Our present capabilities in the above areas are briefly indicated in [15] and [16]. For each area, there is an immediate applicability of the basic NLS provisions for composing, modifying, studying, publishing, collaborating, etc., and we have additional special provisions specifically supporting almost every area. We are dedicated to continuing the evolution of each area in a persistent, year=after=year strategy where the profile of evolutionary effort expended at any given time over the array of application specialties is to be responsive to the profile of application needs and values of the user communities.

Technology Transfer

we are beginning to transfer technology from our local group of experienced users to a wider group of inexperienced, geographically separate users. This technology consists of online software capabilities; a coordinated repertoire of online=assistance tools; associated concept and language additions dealing with the tools and with the information organization and task processes associated with their use; new aspects to intragroup organization and working methodology. Training a group in these new matters is necessary to the transfer; and to help others learn to train people in the new technology requires a transfer of the additional technology used to support the training.

> The process of technology transfer is not a simple process, judged by our and others" experience. We base our "Community Plan" strategy upon our experience that there are at least two main requirements for a successful transfer process that proceeds at a reasonable speed and cost:

1) The group originating the technology and having the experience, enthusiasm, and initial commitment to its value must follow through with training and application support of the end user groups until a critical mass of equivalently experienced and enthusiastic end users has developed.

2) The end user groups must each have at least one properly placed, active supporter of the transfer process. We have been using the term "local workshop architect" for this role.

This second requirement seems similar to what Thomas Allen of MIT, who has studied the technology transfer process in some detail [13], calls a "gate keeper," His "gate keeper" is a person oriented both toward the problems of his organization and toward Capabilities developing outside his organization. He functions as the gate through which new ideas and technology enter his organization.

We find that Allen's concept of a "gate keeper" is highly relevant in our considerations, both for the successful transfer of our technology and for keeping the cost of this transfer to a reasonable level.

We would like to give particular emphasis to this second requirement==that each coherent group planning to integrate the proposed services into its working life should have at least one member serving as a "workshop architect." The function of this person is to be familiar in detail with both the needs of his organization and the capabilities we are proposing. This person, knowing his group's needs and our capabilities, would help introduce a workshop system meeting these needs into his organization in the appropriate evolutionary stages. ARC personnel would work closely with the workshop architect==in training him, in initially giving him significant help in his role, and in a continuing exchange of technical information.

The labor=funding levels in this proposal are based on the assumption that when a client group is allocated a portion of the Utility Online Services, the corresponding allocation

> of direct technical support will go primarily to its workshop architect. We assume that much of the responsibility for integrating the Workshop service into his organization or community will be handled by this person, If a workshop architect is not available within a client group, or if extra people need our direct technical support, then additional funding will have to be provided to ARC.

For any group of users we would expect evolutionary growth of their workshop service application, in both quantity and range. This growth will take guidance and support of the sort that in the commercial computer world would be offered by the applications specialists and "systems engineers." These people work with the end user organizations in integrating the manufacturer's or service company; s technology into its operations. To follow through with our Community Plan, it is essential for ARC to offer a similar type of service, and this is our biggest challenge in establishing the workshop Utility Service.

Services Offered

The proposed Workshop Utility service consists of two components: computer support and people support. We discuss these components in detail below.

Computer Services

The Underlying Computer Service Support

We are offering a workshop Utility version of ARC's online system (NLS), serviced over the ARPANET, at least 16 hours a day, six days a week. NLS features are described in the documents listed in Section IV.

This service is provided by a computer system operated and managed by a commercial timesharing utility company, rather than from a system directly operated by ARC. There are two important reasons for this arrangement:

1) A commercial firm has the experience, facilities, leverage on vendors, and redundant equipment that make possible more reliable service than can be produced in a research and development environment,

2) It be will possible to expand the service in a

more flexible manner in increments of whole or partial machines as usage grows,

Service Partitioning

We are currently using a "group allocation" scheme for partitioning online access and service between groups of users. This guarantees each group its fair share of access to system resources while preserving both adequate responsiveness and independence for each group to plan its own usage loading.

File Privacy

The Workshop Utility will provide (via the ARPANET) the necessary standard TENEX software and facility operating procedures to ensure some privacy of file access. However, the visibility and availability of planning information and other recorded dialog in ARC's currently open Journal System provides some of the more significant potential of our Workshop system.

We assume that ARC online=service personnel may occasionally have to access clients' user files (at a client's request only) as required from an operational standpoint; however, other users of the Workshop Utility service will be denied read, write and list access to a client's files, unless he specifically releases files for general use.

People Support Services

We don't yet know the amount and nature of people support services that a successful Workshop Utility will need, particularly as direct client support category. The levels specified in this proposal seem to us to be minimal.

Overhead Services

The entire operation, including the interface between the Utility and the clients, will need competent administration.

Documentation of the basic user features of the system and of their application techniques needs to be more complete and must have various special versions tailored for particular types of users.

> The version of NLS that runs on the Utility needs maintenance and quality assurance. A systematic means is being provided for features found useful in the development version of the system to be integrated into the version running on the Utility.

Clerical support of various types are needed,

Direct Client Support Services

The clients' users must be trained to varying levels of competence, depending upon the nature of their jobs and the tasks they perform. New procedures and methods may have to be developed or learned to allow effective use of the system in their working environments. Specifying these procedures may require help in analyzing the group's needs and present operations.

Therefore the following types of services will be required,

Assistance in training Utility clients to make special use of the system for applications that are peculiar to their user environments.

Assistance to Utility clients in developing related documentation, procedures, records, and methods as needed locally to support their special use of the system.

Help for the above areas would come in several forms:

Sessions at SRI for training and application=system design.

Brief residency of SRI personnel at client sites to offer analytic or design help and training,

"Circuit riders" who periodically visit client sites to discuss problems, receive feedback on how to improve the service, and offer training or analytic help.

Part One==Technical Proposal

[11]

IV SELECTED REFERENCES

- 1 ARC 3906, D. C. Engelbart, "Augmenting Human Intellect: A Conceptual Framework," Summary Report, Contract AF 49(638)=1024, SRI Project 3578, Stanford Research Institute, Menlo Park, California, AD 289 565, October 1962.
- 2 ARC 5139, D. C. Engelbart and Staff of Augmentation Research Center, "Computer=Augmented Management=System Research and Development of Augmentation Facility," ARPA=TR=82, Final Report of Contract F30602=68=C=0286, SRI Project 7101, Stanford Research Institute, Menlo Fark, California, April 1970.
- 3 ARC 5140, D. C. Engelbart and Staff of Augmentation Research Center, "Advanced Intellect-Augmentation Techniques," Final Report NASA Contract NAS1=7897, SRI Project 7079, Stanford Research Institute, Menlo Park, California, July 1970.
- 4 ARC 5255, D. C. Engelbart, "Intellectual Implications of Multi=Access Computer Networks," paper presented at the Interdisciplinary Conference on Multiple=Access Computer Networks, Austin, Texas, April 20=22, 1970.
- 5 ARC 8276, D. C. Engelbart, "Experimental Development of a Small Computer=Augmented Information System," Annual Report, Office of Naval Research (ONR) Contract N00014=70=C=0302, SRI Project 8622, Stanford Research Institute, Menlo Park, California, April 1971.
- 6 ARC 8277, D. C. Engelbart and Staff of Augmentation Research Center, "Network Information Center and Computer=Augmented Team Interaction," Interim Report, Air Force (ARPA) Contract F30602=70=C=0219, SRI project 8457, Stanford Research Institute, Menio park, California, July 1971.
- 7 ARC 10045, D. C. Engelbart, "Experimental Development of a Small Computer=Augmented Information System," Annual Report, Office of Naval Research (DNR) Contract N00014=70=C=0302, SRI Project 8622, Stanford Research Institute, Menlo Park, California, April 1972.
- 8 ARC 10575, D. C. Engelbart and Staff of Augmentation Research Center, "Online Team Environment = Network Information Center and Computer=Augmented Team Interaction," Final Report, Air Force (RADC) Contract F30602=70=C=0219, SRI Project 8457, Stanford Research Institute, Menio Park, California, May 1972.
- 9 ARC 12445, D. C. Engelbart, "Coordinated Information Services for

> Discipline= and Mission=oriented Communities," Stanford Research Institute, Augmentation Research Center, 12 December 1972, Also published in "Time Sharing: Past, present, Future," Proceedings of the Second Annual Computer Communications Conference at California State University, San Jose, California, January 24=25 1973, pp 2.1=2.4.

- 10 ARC 13580, P. Rech, "User Allocation By Group Accounts," Stanford Research Institute, Menlo Park, California, 28 December 1972.
- 11 ARC 13859, T. J. Allen, Alfred P. Sloan School of Management, Massachusetts Institute of Technology, Cambridge, Massachusetts, "Technology Transfer to Developing Countries: The International Technological Gatekeeper," ERIC Document Reproduction Service, Bethesda, Maryland, Report No. ED=052,796. February 1971, 29p.
- 12 ARC 13976, T. J. Allen, Alfred P. Sloan School of Management, Massachusetts Institute of Technology, Cambridge, Massachusetts, "Meeting the Technical Information Needs of Research and Development Projects," ERIC Document Reproduction Service, Besthesda, Maryland, Report No. 431=69, November 1969, 29p.
- 13 ARC 13977, T. J. Allen, "Roles in Technical Communication Networks", Chapter 7, of Communication Among Scientists and Engineers, Edited by Carnot E, Nelson and Donald K, Pollock, D. C. Heath and Company, Lexington, 1970, p.191=208.
- 14 ARC 13978, T. J. Allen, "Managing the Flow of Scientific and Technological Information," report to the Office of Science Information Service, National Science Foundation, 1966.
- 15 ARC 14724, D. C. Engelbart, R. W. Watson, J. C. Norton, "The Augmented Knowledge Workshop," AFIPS Proceedings National Computer Conference, June 1973.
- 16 ARC 14851, D. C. Engelbart, "Design Considerations for Knowledge Workshop Terminals," AFIPS Proceedings National Computer Conference, June 1973.

I ESTIMATED TIME AND CHARGES

It is proposed that the work outlined herein be performed during a period of six months commencing 18 July 1974.

The proposed project will result in Workshop Utility service being made available to offices selected by Hudson.

The costs of the total Workshop Utility service will be accounted for separately by the Institute, with the amount charged to Hudson under this contract being determined as a proportion of the total cost of the Workshop Utility operation based on its availability for Hudson-directed use, Costs will include Utility Unline support subcontract costs and Utility People Support costs associated with Utility management and coordination, system software efforts, documentation, user interface and training as needed.

It is anticipated that approximately 5 percent of the initial Utility Online Support and associated People Support will be available for Hudson=directed use from the start of the contract period until 18 January 1975, We expect that this will provide guaranteed access to one user "jobslot" 16 hours per day, 6 days per week.

Pursuant to the provisions of ASPR 16=206.2, attached is a cost estimate and support schedules in lieu of the DD Form 633=4,

The estimated costs shown in the cost attachment are for the total Workshop Utility service operation, Costs expected to be borne by Hudson are estimated to be about 5 percent of the total six_month cost (based on the 12=month estimate shown) or \$ 20,763 as shown.

A contract resulting from this proposal should be for that amount.

The proportion of Hudson contract charges that will be for Utility Online support as opposed to Utility People support may vary and will be determined during the course of the contract on the basis of needs as they arise.

II UTILITY COMPUTER SUPPORT SUBCONTRACT

On the basis of an evaluation of competitive bids over a year ago, Tymshare, Inc. in cupertino, california was selected as the Online Support subcontractor by the Institute, A formal subcontract has been

negotiated and service for other subscribers started on 18 January 1974,

III REPORTS

Because of the support nature of the efforts proposed herein, there will be no technical reports produced under this contract. Rather, documentation will be provided along the lines outlined below,

The technical documentation will include:

TNLS and Deferred Execution User Guides and updates

DNLS User Guide and updates

IV CONTRACT FORM

Because of the nature of the work proposed, it is requested that any contract resulting from this proposal be awarded on a cost=plus=fixed=fee basis.

V ACCEPTANCE PERIOD

This proposal will remain in effect until 18 July 1974. If consideration of the proposal requires a longer period, the Institute will be glad to consider a request for an extension of time.

COST ESTIMATE FOR FIRST YEAR WORKSHOP UTILI (total facility) Personnel Costs	TY SERVICE
Senior Prof 4087 hrs. Prof 4799 hrs. Clerical 1600 hrs. Total Direct Labor S Payroll Burden @ 28%	84,246 23,589 107,835 115,383
Total Personnel Costs Direct Costs Travel 30 trips East @ \$335 = \$ 10,050 120 Days Subsistence @ \$42,50= 5,100 Auto Rental 60 days @ \$15 = 900	223,218 16,050 3,000
Communications Materials and Supplies (tape, paper) Utility Online Support Subcontract Documentation Costs Total Direct Costs	1,500 535,080 4,648 560,278
Total Estimated Cost Fixed Fee Total Estimated Cost Plus Fixed Fee \$	783,496 47,010 830,506
Prorated Cost for 6 months: \$ Hudson CONTRACT SHARE: 5% = \$	415,253

See following Schedules.

Part Two==Contractual Provisions

Cost Schedules:

4



SCHEDULE A DIRECT LABOR

Direct labor charges are based on the actual salaries for the staff members contemplated for the project work plus a judgmental factor applied to base salary for merit increases during the contract period of performance. Frequency of salary reviews and level of merit increases are in accordance with the Institute's Salary and Wage Payment Policy as published in Topic No. 505 of the SRI Administration Manual and as approved by the Defense Contract Administration Services Region.

SCHEDULE B OVERHEAD AND PAYROLL BURDEN

These rates have been found acceptable by the Department of Defense for billing and bidding purposes for the calendar year of 1974. We request that these rates not be specifically included in the contract, but rather that the contract provide for reimbursement at billing rates acceptable to the Contracting Officer, subject to retroactive adjustment to fixed rates negotiated on the basis of historical cost data. Included in payroll burden are such costs as vacation, holiday and sick leave pay, social security taxes, and contributions to employee benefit plans.

SCHEDULE C TRAVEL COSTS

Air fare is based on prices for travel to washington D.C. at \$335 round trip tourist established in the official Airline Guide dated April 1, 1974.

Domestic subsistence rates and travel by private auto are established standards based on cost data submitted to and approved by DCAA.

SCHEDULE D

DOCUMENTATION COSTS

Report Costs are estimated on the basis of the number of pages of text and illustrations and the number of copies of reports to be produced, in accordance with the following rates per page which have been reviewed by DCAA:

The following is a breakdown of the estimated cost of report production:

Printing, 507 pages at \$ 6.06 per page = \$ 3,072 (including editing, composition, report coordination, proofreading) Press and bindery at \$.021 per printed page = 1,176 (for 180 printed pages = 200 copies, and 200 printed pages = 100 copies) Mailing Costs = 400 Total Estimated Documentation Costs \$ 4,648

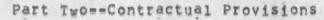
SCHEDULE E

UTILITY COMPUTER SUPPORT SUBCONTRACT COSTS Based on the SRI/Tymshare subcontract, P.O. Number 13872, executed 22 March 1974.



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> 10 JUL 74 SRI=ARC 23309

SRI Proposal No. ISD 74-128

KNOWLEDGE WORKSHOP SUPPORT FOR THE HUDSON INSTITUTE

part One===Technical proposal

Prepared for:

The Hudson Institute Croton=on=Hudson New York 10520

Attn: Rudy L. Ruggles, Jr.

Prepared by:

James C. Norton, Assistant Director Augmentation Research Center

Approved:

Douglas C, Engelbart, Director Augmentation Research Center

Bonnar Cox, Executive Director Information Science and Engineering Division Stanford Research Institute

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SRI Proposal No. ISD 74=128 Knowledge Workshop Support for the Hudson Institute

> 10 JUL 74 SRI-ARC 23309

SRI Proposal No. ISD 74=128

KNOWLEDGE WORKSHOP SUPPORT FOR THE HUDSON INSTITUTE

part Two ===Contractual provisions

Prepared for:

The Hudson Institute Croton=on=Hudson New York 10520

Attn: Rudy L. Ruggles, Jr.

Bug in jump next command when there is no next.

One gets error message and is returned to exec level after Jump Next bug when the bugged statement is in fact the last one in file, FST entry ... message would be ok (it is not very discriptive but..)however woul not ike to forced o reset and reenter nls as I am now. Bug in jump next command when there is no next.

(J23312) 9=JUN=74 21:45; Title: Author(s): Robert N. Lieberman/RLL; Distribution: /FDBK([ACTION]); Sub=Collections: SRI=ARC; Clerk: RLL;

1

New TNLS still deminstitutes CONAN programs

Still finding that in TNLS, the mere act of quitting PROGRAM subsystem and then rementering to Show Status seems to knock out of Content=Analyzer institution whatever program I have instituted there. New TNLS still de=institutes CONAN programs

(J23313) 10=JUN=74 08:41; Title: Author(s): Douglas C. Engelbart/DCE; Distribution: /FDBK([ACTION]); Sub=Collections: SRI=ARC; Clerk: DCE; DCE 10=JUN=74 11:05 23314 Visit, 10 Jun 74: Professor William Horne, Boston College, and Leo Moll, SRI

Note connection to United Shoe Machinery company



Visit, 10 Jun 74: Professor William Horne, Boston College, and Leo Moll, SRI

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DCE 10-JUN=74 11:05

Horne was visiting Moll, and the latter asked me if he could bring him by. Total stay was about 15 minutes.

Professor William Horne Boston College Scool of Management Department of Finance Boston, Mass 02167 (617) 969=0100, ext 2652

Leo Moll Electronics Industries Research Department Economics Division Ext 3661

Professor Horne was until recently associated with USM Corp., Boston, Mass. He was a corporate officer, now moved into academia, and apparently still retains close ties. United Shoe Machinery (Old name) == has 26,000 employees, 16,000 abroad, 10,000 domestic. Operates in 30 countries (for 70 years), Has 22,000 stockholders, grosses 640 million/year, net profit of about \$19 million.

He was very appreciative of our AKW approach, seemed guite knowledgeable in the area of computer aids, terminals, etc. Instantly connected with Drucker's "Knowledge worker", acquainted with some of Ted Nelson's concepts, etc.

He urged me to contact him any time we would like an introduction to USM.

Horne may be of retirement age, but he certainly is vigorous, alert, and enthusiastic. Corporate=executive background, and knowledgeability of terminals, etc., plus appreciation of AKW, would seem to make of him a good prospect for helping move AKW out into industry.

Gave Professor Horne the following documents:

D. C. Engelbart, AUGMENTING HUMAN INTELLECT: A CONCEPTUAL FRAMEWORK, SRI Project AFOSR=3223, October 1962 (XDOC == 3906,)

D. C. Engelbart and W. K. English. "A Research Center for Augmenting Human Intellect", AFIPS Proceedings, Fall Joint Computer Conference, 1968, Washington, D.C. (XDOC == 3954.)

D. C. Engelbart, COORDINATED INFORMATION SERVICES for a DISCIPLINE= OR MISSION=ORIENTED COMMUNITY, paper presented at the Second Annual Computer Communications Conference, San Jose, DCE 10-JUN=74 11:05 23314 Visit, 10 Jun 74: Professor William Horne, Boston College, and Leo Moll, SRI

California, 24 January 1973, (Journal, dated 12 Dec 72 == Mjournal, 12445,1: xhmz)

D. C. Engelbart, R. W. Watson, J. C. Norton, THE AUGMENTED KNOWLEDGE WORKSHOP, paper presented at the National Computer Conference, New York City, June 1973, (IJOURNAL, 14724,)

J. C. Norton, R. W. Watson, WORKSHOP UTILITY SERVICE FOR THE USE OF KNOWLEDGE WORKSHOP TECHNOLOGY, Technical Proposal to Bell Canada, SRI No. ISC 73=147, October 8, 1973 (Journal == 19250,)

Augmentation Research Center, "Output Processor Users' Guide," 23 Aug 73, (Journal == 12209,)



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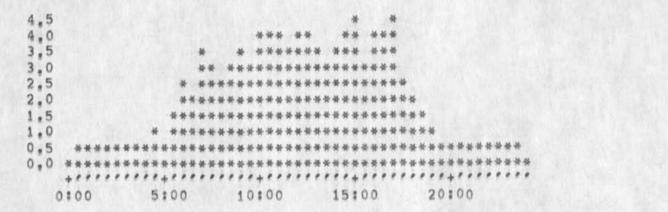
DCE 10=JUN=74 11:05 23314 Visit, 10 Jun 74: Professor William Horne, Boston College, and Leo Moll, SRI

(J23314) 10=JUN=74 11:05; Title: Author(s): Douglas C. Engelbart/DCE; Distribution: /JCN([INFO=ONLY]) MDK([INFO=ONLY]) BC([INFO=ONLY]) SWM([INFO=ONLY]); Sub=Collections: SRI=ARC; Clerk: DCE; Superwatch Average Graphs for Week of 6/2/74

TIME PLOT OF AVERAGE IDLE TIME FOR WEEK OF 6/2/74 x axis labeled in units of hr:min, xunit = 30 minutes

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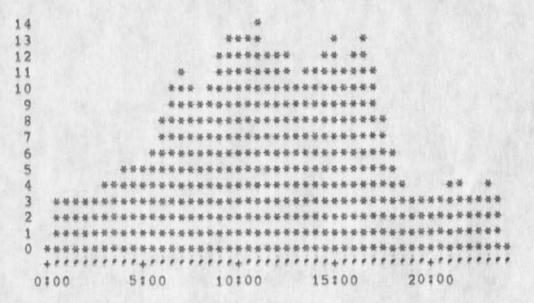
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Superwatch Average Graphs for Week of 6/2/74

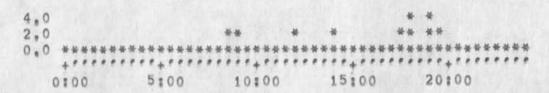
TIME PLOT OF AVERAGE NUMBER OF NETWORK USERS FOR WEEK OF 6/2/74 x axis labeled in units of hr:min, xunit = 30 minutes

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TIME PLOT OF AVERAGE NUMBER OF USERS FOR WEEK OF 6/2/74 x axis labeled in units of hrimin, xunit = 30 minutes



TIME PLOT OF AVERAGE PER CENT OF SYSTEM USED IN DNLS FOR WEEK OF 6/2/74 x axis labeled in units of hr:min, xunit = 30 minutes



Superwatch Average Graphs for Week of 6/2/74

(J23315) 10=JUN=74 13:25; Title: Author(s): Susan R. Lee/SRL; Distribution: /JCN([INFO=ONLY]) RWW([INFO=ONLY]]) DCE([INFO=ONLY]) PR([INFO=ONLY]) JCP([INFO=ONLY]]) DVN([INFO=ONLY]]) DVN([INFO=ONLY]]) DVN([INFO=ONLY]]) WRF(]) JAKE([INFO=ONLY]]) DLS([INFO=ONLY]]) BAH([INFO=ONLY]]) WRF([INFO=ONLY]]) DSM([INFO=ONLY]]); Sub=Collections: SRI=ARC; Clerk: SRL; Origin: (LEE, WEEK6/2GRAPHS.NLS;1,), 10=JUN=74 13:22 SRL ;####; Superwatch Average Graphs for Week of 6/2/74

TIME PLOT OF AVERAGE IDLE TIME FOR WEEK OF 6/2/74 x axis labeled in units of hrimin, xunit = 30 minutes

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TIME PLOT OF AVERAGE NUMBER OF GO JOBS FOR WEEK OF 6/2/74 x axis labeled in units of hrimin, xunit = 30 minutes

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TIME PLOT OF AVERAGE PER CENT OF CPU TIME CHARGED TO USER ACCOUNTS FOR WEEK OF 6/2/74 x axis labeled in units of hr:min, xunit = 30 minutes

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16.2			****	
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Superwatch Average Graphs for Week of 6/2/74

TIME PLOT OF AVERAGE NUMBER OF NETWORK USERS FOR WEEK OF 6/2/74 x axis labeled in units of hrimin, xunit = 30 minutes

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6		***	
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TIME PLOT OF AVERAGE NUMBER OF USERS FOR WEEK OF 6/2/74 x axis labeled in units of hr:min, xunit = 30 minutes

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12	张林林林林林林 林林 林林
	* *****
10	教育教 学校会会部校会会会会会会会会会会
9	***
8	***
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6	***
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4	教教教教教教教教教教教教教教教教教教教教教教教教教教教教教教教教教
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(:00 5:00 10:00 15:00 20:00

TIME PLOT OF AVERAGE PER CENT OF SYSTEM USED IN DNLS FOR WEEK OF 6/2/74 x axis labeled in units of hr:min, xunit = 30 minutes



Superwatch Average Graphs for Week of 6/2/74

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(J23316) 10=JUN=74 13:40; Title: Author(s); Susan R, Lee/SRL; Distribution: /JCN([INFO=ONLY]) RWW([INFO=ONLY]]) DCE([INFO=ONLY]) PR([INFO=ONLY]) JCP([INFO=ONLY]]) DVN([INFO=ONLY]]) VN([INFO=ONLY]]) VN([INFO=ONLY]]) WRF(]) JAKE([INFO=ONLY]]) DLS([INFO=ONLY]]) BAH([INFO=ONLY]]) WRF([INFO=ONLY]]) DSM([INFO=ONLY]]); Sub=Collections: SRI=ARC; Clerk: SRL; Origin: (LEE, WEEK6/2GRAPHS,NLS;1,), 10=JUN=74 13:22 SRL ;####;

1

Bug in sort process for executable text

Sort Plex process didn't use instituted SORTMERGE program (I was using SORTREV) when executed as a command statement via Process Command Statement (i.e it sorted in normal ordering), yet the proper use of SORTEV ocurred if I executed the Sort Plex operation by hand == no change in the status of the program buffers or program=institution assignments between these trial. Repeatable inconsistency. Bug in sort process for executable text

(J23317) 10=JUN=74 15:44; Title: Author(s): Douglas C. Engelbart/DCE; Distribution: /FDBK([ACTION]); Sub=Collections: SRI=ARC; Clerk: DCE; DCE 10=JUN=74 15:57 23318 Pushdown overflow bug, apparently when using several windows

"Pushdown Overflow at 25301" == got this message as as bombed out of NLS doing a jump in one window to a new file (for that window). Actually it was a Jump Item, with different VSPECS, from directly=bugged statement in one of the other windows. I think that this has happened to me severa times before. DCE 10=JUN=74 15:57 23318 Pushdown overflow bug, apparently when using several windows

(J23318) 10=JUN=74 15:57; Title: Author(s): Douglas C. Engelbart/DCE; Distribution: /FDBK([ACTION]); Sub=Collections: SRI=ARC; Clerk: DCE; JCN 10-JUN=74 17128 23319 Request for Terminal Equipment Data for Hudson Institute

Martin:	1
We are about to add another organization, the Hudson Institute, to the Utility user group, I got a call from Rudy Ruggles our contact there, They are in New York, Rudy needs to know a few things about terminals and the best configurations of them,	1a
Hazeltine 2000	1a1
What are the 2000 characteristics?? model numbers?	1a1a
What about the new 3000 characteristics?? differences?	1a1b
New lighter smaller T=I portable terminals	1a2
What are the model numbers? and are they workable? much easier to take onto the plane,	1a2a
If the above are not suitable or available, what is the model number and cost of the portable we now get?	1a2b
Medium speed printer	1a3
Rudy has seen an AB Dick Videojet printerpretty fast (baud?) but doesnt like the font, What alternatives are there?	1a3a
Assume they will have a 4800 baud line plus regular dialup lines to the Rutgers=tip	1a3b
Sowill they be able to run the printer at 4800 baud off the line processor and what is the operational arangement?	1a3c
Line processor	1a4
When can they get one? the earliest datechecked out,	1a4a
Cost is still \$2500?	1a4b
Connection to the Rutgers=tip about 70 miles away in New York	1a5
What modems, cost etc do they need and what are the arrangements with the Rutgers and ARPA people?	1a5a
	146
	1a7

JCN 10=JUN=74 17:28 23319

Request for Terminal Equipment Data for Hudson Institute

w - - .

Can you get a good picture on each of these and call Rudy? His number is (914) RO 2=0700

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JCN 10=JUN=74 17:28 23319 Request for Terminal Equipment Data for Hudson Institute

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(J23319) 10=JUN=74 17:28; Title: Author(S): James C. Norton/JCN; Distribution: /MEH([ACTION]) JHB([INFO=ONLY]) MDK([INFO=ONLY])) JCN([INFO=ONLY]); Sub=Collections: SRI=ARC; Clerk: JCN;

1

First Draft of DSS Contribution to Final Report

The first draft of the DSS section of the final report is available as (white,dsspaper,:xb). Have at it!

First Draft of DSS Contribution to Final Report

(J23320) 10-JUN=74 17:31; Title: Author(s): James E. (Jim) White/JEW; Distribution: /DVN([ACTION]) JCN([ACTION]) JDH([INFO-ONLY]); Sub=Collections: SRI=ARC; Clerk: JEW; ARC seminar on the whole Universe Catalog

This was previously sent in the experimental system and probably didn't arrive. If it does arrive, this supersedes,

KIRK 10=JUN=74 18:38 23321

ARC seminar on the Whole Universe Catalog

Dick, Jim, and Doug, I would like to video tape a seminar for the members of ARC on the Whole Universe Catalog this Thursday afternoon at 4:00, Peter Deutsch would also like to announce the ARC Demo at PARC for those interested there. In addition, he wants to arrange a PARC seminar (see below), I have ok'd with Robert Lieberman 4:00 Thursday for the ARC seminar and if this is acceptable with you, I will send out an announcement Tuesday night. Subsequent to talking with Dick, I have decided not to set a date with anyone from the Point foundation for demonstration until a later time. I would like to discuss the possibilities in the way of a proposal on Wednesday if this is convenient, == Kirk

6=JUN=74 10:31:48,551 LPD Net mail from site PARC=MAXC rcvd at 6=JUN=74 10:31:45 Date: 6 JUN 1974 1032=PDT From: DEUTSCH at PARC=MAXC Subject: WUC To: KELLEY at ARC

I'd like to arrange a seminar at PARC for you to demonstrate and discuss your ideas of the whole Universe Catalog. I think a lot of people here would be turned on. We have an IMLAC with an 1800 baud direct wire to ARC == would that be enough bandwidth for a good demo? Let me know if you're interested.

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ARC seminar on the whole Universe Catalog

(J23321) 10-JUN=74 18:38; Title: Author(s): Kirk E. Kelley/KIRK; Distribution: /RWW([ACTION]) JCN([ACTION]) DCE([ACTION]) DVN([INFD=ONLY]) MEH([INFO=ONLY]) RLL([INFO=ONLY]); Sub=Collections: SRI=ARC; Clerk: KIRK;

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Bug: run away system on cross file edits.

apparently got into a loop after a cross file edit between windows, Happened twice tonight (11jun). Once with a replace word, once with a replace text command, did a reset after some 50 cpu seconds elasped, reetered nls and loaded file that was to be edited. Surprise, the replace text and the replace word seemed to anave worked, My guess is that the system ran away after doing the edit but while it was trying to recreate the display screen.





Bug: run away system on cross file edits.

(J23322) 11=JUN=74 00:03; Title: Author(s): Robert N. Lieberman/RLL; Distribution: /FDBK([ACTION]); Sub=Collections: SRI=ARC; Clerk: RLL;

1

bug in address and file return stacks.

Often the file retun ring (stack) and address return ring seem to give back "undefined delimitor.." or some such message, this should not happen. This happened several time tonight (10ZJune). bug in address and file return stacks,

(J23323) 11=JUN=74 02:43; Title: Author(s): Robert N. Lieberman/RLL; Distribution: /FDBK([ACTION]) ; Sub=Collections: SRI=ARC; Clerk: RLL;

RLL 11=JUN=74 02:55 23324

1

Chinese banquet.

Anyone interested in going to a Chinese resturant for a banquet dinner either Tuesday, Wednesday, or Thursday night? We need at least 5 brave souls for enjoying Nortern style cooking. Send preferred day, place, and other culinary nonsense to RLL, thanks.

RLL 11=JUN=74 02:55 23324

Chinese banquet.

(J23324) 11=JUN=74 02:55; Title: Author(s): Robert N. Lieberman/RLL; Distribution: /SRI=ARC([ACTION]); Sub=Collections: SRI=ARC; Clerk: RLL; MDK 11=JUN=74 08:10 23325

DRAFT: Proposed Phraseology and Subsystems for NLS Command Language

Proposed New NLS Command Phraseology [organized according to command subdivisions proposed in (hjournal, 23116,nls,1:why). This list is intended to supersede the list presented there.]

REVISED EDITOR SUBSYSTEM

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1a3a

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A

ppend	Branch	1	Plex	
	Character	1	Statement	
	Group	1	Text	
	Invisible	1	Visible	
	Link	1	Word	
	Number			

B

Break Statement

C

D

Copy	Branch	1	Plex	
	Character	1	Statement	
	Group	1	Text	
	Invisible	1	Visible	
	Link		Word	
	Number			

Delete	Allemarkers	1	Number
	Branch	1	Plex
	Character	1	Statement
	Group	1	Text
	Invisible	1	Visible
	Link	1	Word
	Marker		

E

Execute

145a 146

1a4a

1a5

F

Freeze	Branch
	Group
	Statement
	Plex

1a6a

G				1a7
	Goto			1a7a
I				1a8
	Insert	Branch / Character / Date / Group / Invisible / Link / Number /	Plex <>SEndmail=form Statement Text Time=and=date Visible Word	1a8a
J				1a9
	Jump	Address Back Content Down End File File Return Head	<pre>/ Name / <>NExt / Origin / Predecessor / Return / Successor / Tail / Up</pre>	
		Item Link	/ Word / <bug></bug>	1a9a
к				1a10
				1a10a
L				1a11
	Load	Busy=file File		1a11a
	<>LOGout			1a11b
м				1a12
	<>MArk	Character		1a12a
	<>MErge	Branch Group Plex		1a12b
	Move	Branch / Character / Group /	Plex Statement Text	

	Invisible / Visible	
	Link / Word Number	1a12c
N		1413
		1a13a
0		1414
	Output Quickprint	1a14a
P		1415
		1a15a
Q		1a16
	Quit	1a16a
R		1817
	<>RENumber SID's	1a17a
	Replace Branch / Plex Character / Statement Group / Text Invisible / Visible Link / Word Number	1a17b 1a17c
s		1a18
	<>SEt Case Case Mode Display=character=size Filter Link=default Prompt Statement=name=delimiters	

	Temp=modifications Viewspecs	1a18a
	<>SHow Filter Link=default prompt Statement=name=delimiters Viewspecs	1a18b
	<>SOrt Branch Group Plex	iai8c
	Substitute Character Invisible Link Number Text Visible Word	1a18d
т		1a19
	Transpose Branch / Plex Character / Statement Group / Text Invisible / Visible Link / Word Number	1a19a
U		1a20
	Update File	1a20a
v		1a21
		1a21a
W		1a22
		1a22a
х		1a23
		1a23a
Y		1a24
	-	1a24a

Z		1a25
		1a25a
FILE	HANDLER	15
A		151
	Archive File	1b1a
В		162
		1b2a
с		1b3
	<>CONnect=to Directory	1b3a
	Copy Archive-directory	
	Directory File	
	Sequential=file	1636
	<>CReate File	1630
D		164
	Delete Archive=file	
	File Modifications	1b4a
E		165
	Execute	1b5a
	<>EXPunge Archive=directory	1555
F	Directory	1555
F		100
	Freeze Branch Group	
	Plex	1b6a
	Statement	
G		167
	Goto	1b7a

DRAFT; P	roposed Pl	raseology an	MDK 11=JUN=74 08:10 nd Subsystems for NLS Command Language	23325
Н				158
				168a
I				169
				169a
J				1610
	Jump	Address Back Content Down End File File Return Head	<pre>/ Name / <>NExt / Origin / Predecessor / Return / Successor / Tail / Up / Up</pre>	
		Item Link	/ Word / <bug></bug>	1610a
к				1011
	-			1b11a
L				1012
	Load	Busy=File File		1b12a
	<>LOGout			16126
М				1b13
	Merge	Branch Plex Statement		1b13a
	<>MOve	File		10130
N				1014
				1514a
ò				1615
	Output (Quickprint		1b15a
P				1016

	Protect	File	1b16a
Q			1017
	Quit		1b17a
R		N	1618
~			
	<>RELease		
		Branch	
		Group	
		Plex Statement	1b18a
		Statement	10104
	<>RENumber	r SID's	1b18b
	<>RESet	Archive=request	
		Link=default	
		Statement=name=delimiters	
		Temp=modifications	1110-
		Viewspecs	1b18c
	<>RETriev	e Archived=file	1b18d
s			1019
		Archive=request Link=default	
		Private	
		PUblic	
		Statement=name=delimiters	
	De la la la	Temp=modifications	
		Viewspecs	1b19a
	<>SHow	Archive=directory	
		Directory	
	<>	DIsk-space-status	
		File=status	
		Statement=name=delimiters	
		Viewspecs	16196
		Branch	
		Group	41.40-
		Plex	1b19c
т			1620
	Trim	Directory	1b20a

U			1021
	<>UNdelete	Archive=file	
		File Modifications	1b21a
	Update	File	16216
v			1b22
	Verify	File	1b22a
W			1623
			1b23a
x			1624
			1b24a
Ŷ			1b25
S In Call			1b25a
Z			1626
			1626a
TERMIN	AL HANDLER		10
A			101
	Accept D	isplay=connection	icia
с			1c2
	Clear Wir	ndow	1c2a
	<>COnnect=t	o Display	1025
		Terminal	1020
D			103
	Disconnec	rt Terminal	1c3a
Е			104
	Execute		1c4a

DRAFT: Propose	ed Phraseolo	gy and Subsystem	s for NLS Comman	d Language
G				105
Got	to			1c5a
Н				106
He	1p			106a
L				1c7
Loc	gout			ic7a
М				108
Mot	ve Window=	boundary		1c8a
Q				109
QU	it			1¢9a
R				1010
Rei		-character-size		
	Viewspe			1c10a
S				1011
Set	t Display Tty=sim	-character=size		
	Viewspe	cs		1c11a
<>SH0	ow Viewspe			1c11b
<>sp.	lit Window	Horizontally		1c11c
<>SP.	lit Window	Vertically		1c11d
HARDCOPY O				1d
Output	COM	vickprint		
	Remote-pr Sequentia	inter		
	Terminal			1d1

MDK 11=JUN=74 08:10 23325

TELECONFERENCE HANDLER	1e
Accept Display=connection	1e1
Break Terminal-link (Tenex "link")	1e2
Connect=to Display Terminal	103
Disconnect Terminal	104
Goto	1e5
Execute	1e6
Help	1e7
Link Terminal (Tenex "link")	1e8
<>LOgout	1e9
Playback Recording=session	. iei0
Quit	1011
<>STArt Recording=session	1e12
<>STOp Recording=session	1013

(J23325) 11=JUN=74 08:10; Title: Author(s): Michael D. Kudlick/MDK; Distribution: /MDK([ACTION]); Sub=Collections: SRI=ARC; Clerk: MDK;

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Making movie films via video recording and editing

Here are some issues about the process of making films at ARC: Main concern lies in promotion and training activities for our Application department; but communications (publication support) from Development and Analysis have related needs also. Jim Norton and I should produce a plan; then EMC review.

Note: Other groups in SRI may well profit from our shaking down these techniques.

Sound films, that can be sent to an interested party as a stand-alone communication means, will have an important place in the future of the AKW=applications domain == for promotion of interest and understanding regarding AKW and its exploratory application, and also potentially for training and "technical communication" within the community of Utility users.

It is expensive business, however it may be done, to produce good-quality films. For a thoroughly professional job, we had a rough quote some months ago of \$40 to 50 K for a half-hour film. It seems, though, that on our forseeable-future budgets, our films will have to be made by ARC teams composed of (amateur) producer, director, script writer, and actors, probably backed up by professional film-cameramen and video-film processing services.

One of the problems here is that we amateurs consume huge amounts of time in getting the effects and the quality we want on the end film; and the turn=around time for seeing the results is so long and the complication of setting up and keeping tuned up our display, video controls, cameras, etc., and scheduling the successive shooting sessions is so high, as to be very expensive and exhausting in terms of staff time and energy.

This memo outlines an approach toward getting good quality films from video tapes; I think that even though some of the cost figures seem a bit high, that potentially we would come out far ahead by taking this video approach.

To get best quality this way, use rented, studio=quality equipment and a professional video man, for shooting and editing the final "draft". This would yield color video with about 500=line resolution (not to be confused with the number of scanning lines used in the television set). The tape can be converted to movie film (color, or black and white) in a professional studio. The results could well provide us with all of the visual resolution we'd need for 'good' movies (16 mm, or Super=8). Note that from the final, edited, 2" video tape can also be made copies on 1/2" video tapes that provide the very highest quality that that medium can achieve (something that

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4C

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4e

Making movie films via video recording and editing

couldn't at all be done by doing the initial recording and subsequent editing on 1/2" equipment).

For something like \$1,000 a day, we can rent a setup consisting of a van carrying very=high=quality recording=editing equipment for 2=inch color (or black and white) tape, a video "engineer" to run the recording and editing stuff, and lines to be run from the van into our lab for intercom, control, and video. We can rent special camera equipment or use our own (would do well, I think, to rent a good zooming=lense camera at least for room shots).

A critically important part of the cost is the time involved by our staff in the production process. The use of video recording, with instant review of scene shots, provides such exceptional reinforcement for the amateur team that it can save a great deal of their time, lead to a much faster rate of technique learning, and produce results in much shorter elapsed time,

Last Friday (7 Jun), I contacted Dick Foster, at the W. A. Palmer Films Inc. in SF == 968=5961. That company specializes in converting video to film, and Dick is the man that did all of our video=to=film processing in our #68 and £69 ventures. He remembers us well, and was very helpful. In giving counsel about the video=to=film process, he offered to process 50 to 100 feet of our 1/2" video tape for us as a free trial.

He supported the notion that video recording and editing is very much more efficient in time over film camera=work and editing, He said that 3/4" or 1" video tape would provide some improvement in quality, but that 2" studio=grade stuff was very much better, He recommended that we contact the following outfit to discuss rental.

I then talked with Ed Carlstone, Television Associates, in Mountain View (967=6040), He is very knowledgeable technically,

Ed said that his company could arrange for the remote-site van service (quoting the "roughly \$1,000 per day), and could also offer taping and editing services in their own studio (with non-portable equipment). For instance, we can bring our own 2" tapes into their studio, rent the reviewing-editing equipment, plus video-engineer support, for \$100/hour. (They plan to have their own van by late summer; meanwhile, he could arrange the service for us.)

They also can rent out i" recording=editing equipment (not including video=engineer service) for about s200/day. He said that this equipment could yield about 300 lines resolution.

4e1

Making movie films via video recording and editing

He mentioned rough estimates of purchase costs for these pieces of equipment: The one=inch, recording=editing setup is of the order of \$8K, the two=inch about \$75K == being what he called "best=quality, Broadcast Quadruplex (4 heads).

The editing in both cases is provided by electronic transfer of selected portions of the camera=recorded master tape(s) over onto the finished master (I would assume that, during that process, mixing, fading, frame=splitting, etc. can be done, as well as adjustments to different components of the video signal). A certain degradation of the signal (picture resolution and clarity) is suffered with each such transfer; the effects are subjectively more noticeable when done between the smaller tapes.

Recommendations for the immediate=future development of a film for the ONR project:

Robert push ahead with our own 1/2" equipment for working out the basic scenes that he wants. We should see if we can borrow or rent additional equipment to edit his shots into coherent draft form.

We send a sample of 1/2" tape to Foster for conversion to 16=mm film, just to get calibrated on the visual quality and clarity. If the results are at all reasonable, we have an option then of buying an editing setup for the 1/2" system, and could shoot and edit our own tapes == even if only for "check drafts" that can be reviewed by us and by sponsos for content, sequencing, timing, etc.

When the scenario is shaken down well enough by Robert (perhaps including the reviewing by ONR), rent a 1" video recorder and editor for a day and shoot a "Final draft, 1=inch version". Have the edited result converted to film by Palmer.

When the resulting film is reviewed, if there is reasonable rooom for improvement in resolution and clarity, it would be worth seriously considering investing in a Final Draft, 2=inch version. That would be about the third serious attempt to make a whole show, and a next pass improvement in details of content, timing, camera action, etc. would improve the result and help us learn in that department, too.

Other considerations:

Other groups in SRI would likely be interested in how these video=to=film predures turn out,

3



5b

5c

4e3

4e4

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5a

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6a

65

Making movie films via video recording and editing

We should bear the exploratory costs on overhead; the actual production costs for the ONR film charged to project (including the time working up the scenario; shooting "draft" scenarios that are part of th process of getting the desired content (as contrasted with learning about higher=quality media and processing techniques). Making movie films via video recording and editing

(J23326) 11=JUN=74 09:24; Title: Author(s): Douglas C. Engelbart/DCE; Distribution: /JCN([ACTION]) RLL([INFO=ONLY]) MEH([INFO=ONLY]) MDK([INFO=ONLY]) JHB([INFO=ONLY]) DVN([INFO=ONLY]) KWAC([INFO=ONLY]) BC([INFO=ONLY]); Sub=Collections: SRI=ARC KWAC; Clerk: DCE;

1

If you want to use both the leval adjustment andthe filter in a command such as copy, you have to specify the filter first. The prompt woul be a little nicer if it said [**]/L: rather than what it now says, L:/[**].

(J23332) 11=JUN=74 16:05; Title: Author(s): Dirk H, Van Nouhuys/DVN; Distribution: /NEWNLS([ACTION]) ; Sub=Collections: SRI=ARC NEWNLS; Clerk: DVN; A Coordinated Communication=Calendar System

This is a rough draft, submitted for the record, in case this subject is of interest again at some point in the future.

A Coordinated Communication=Calendar System

A Coordinated Communication=Calendar System	1
INTRODUCTION	2
The need for a calendar system has been clearly demonstrated by the fact that calendars are an integral part of any efficiently functioning office,	2a
With the MST design underway, consideration must be given to the possible advantages of an automated calendar system. Among these advantages are:	25
1. Automatic online reminders of upcoming meetings, deadlines, etc.	261
2. Easier coordination of meetings between several people.	262
A calendar-scheduling system for the MST program must have several general characteristics. One of the most important and visible is simplicity.	2c
Simplicity is a key element in almost any successful transfer of technology. Furthermore, for the specific military application addressed by this design, simplicity is imperative to allow for frequent turnover and to make it feasible for a large number of people to learn and use,	201
For this reason the calendar system should be as automatic and necessitate as few commands as possible,	202
PREMISES	3
This design was conceived with the following considerations in mind,	3 a
First, that people would of necessity use non-display terminals for some or all of their work. The system is therefore designed to be used with or without a CRT,	3a1
Second, users will not keep their calendars up=to=date if they don't find the system beneficial and simple from the outset. If the calendar is not widely used such features as scheduling meetings will be useless. Simplicity is therefore once again emphasized.	3a2
Third, the calendar must have advantages over the traditional pencil and paper calendar, or the added expenditure of time and resources will not be justified,	3a3



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A Coordinated Communication=Calendar System

DESCRIPTION	4
ITEMS LISTED ON AN ONLINE CALENDAR	4a
Information that a person might want to keep track of can be divided into items which have a deadline (are associated with a specific date and time) and those items which do not have a specific deadline. Some examples follow:	4a1
1) A meeting = 3:00 on April 24	4a1a
2) A report to be completed by the end of the month	4a1b
3) An ongoing study (no deadline given)	4a1c
IN order to organize such information in a meaningful way, the following information is needed .	4a2
1) A brief description of task or meeting,	4a2a
 A specific date and time if one can be associated with an event 	4a2b
3) Time interval(s) prior to the event when reminder(s) is desired and number of reminders,	4a2c
The specific items to be included on a calendar will vary among individuals. However, in order to coordinate scheduling, all important meetings, etc. should be included to reduce instances of suggesting a meeting time based on the word of the calendar when in fact that time is not free.	4a3
RELATION TO OTHER COMMANDS	40
Since an increasing number of the items to be handled by a calendar or scheduling subsystem will enter a person's workspace via some mail delivery subsystem (such as sndmsg or the Journal), the commands for handling this information should probably be a part of the subsystem used for reading mail (but easily accessible from any state). To be a truly integrated system, mail should be delivered (or at least appear to be delivered) via one mechanism. Then, as a person reads an item he should have options: the ability to enter the item into his schedule or read the next item.	461
A possible additional step would be to allow a person to enter an item delivered by the mail system not requiring action into an index for future reference. (A coordinated communication=calendar=personal information management	

A Coordinated Communication=Calendar System

system.) This step would entail considerably more development than the proposed coordinated communication=calendar system.	4b1a
INTAX	4c
A command syntax similar to the current calendar subsystem available on Tenex would I think be appropriate. For example, after reading an item, you opt to enter the calendar system:	4c1
*(c)alendar	4c1a
%(e)nter task description:	4c1a1
(If title of item is sufficient allow that to be the default or entered easily, I'm not sure this is possible,)	4ciala
The system could then interrogate for:	4c1a2
Date:	4c1a2a
Time: to:	4c1a2b
Reminder(s) = Number of reminders: Time interval = # of days: = # of hours:	4c1a2c
(If a date and/or time is specified before the system queries for reminders the reminders would occur preceding that date and/or time. If no date or time is specified, the reminder(s) would occur at the time interval specified following the current date. For example, this will allow a person to be reminded of something every 20 days.)	4c1a2c1
The period of the later of a system message at	

The reminders should appear as a system message at the time specified providing the user is logged in as well as being available via hardcopy (see additional commands listed below). 4c1a2c2

The user should be allowed to respond with a carriage return (or other appropriate character) at any point where it is inappropriate or undesirable to enter information. Also, the calendar could be set up to work on a 5 or 7 day basis, depending on an individual's wisnes, resulting in reminders occurring only on weekdays if desired. 4c1a2d

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S

A Coordinated Communication=Calendar System

If a time slot is already allocated, and a user attempts to reallocate it, the system should notify the user: "That time slot is currently allocated to TEXT OF ITEM" and interrogate the user for rescheduling or deleting the current item or inserting 4cla2e the new item elsewhere. There should also be a number of commands to further 4c1b maintain the file such as: 4c1b1 %(1)ist tasks for date: on: (with current date and device being used the default) 4c1b1a 4c1b2 %(d)elete task 4c1b3 %(r)eschedule task 40164 %(f)inished task (Would cancel all future reminders) 4c1b4a To indicate a specific task in the above three commands there are a couple of alternatives: 1) Specify date and time, or 2) Specify number associated with task. I think date and time might be easiest. 4c1b4b 4c1b5 S(q)uit 4c1b6 %(c)heck the following people's calendars: 4c1b6a (could accept a list of idents) 4c1b6b Date: Time: to: 4c1b6c The response would indicate whether the list of people had the specified time free, Another alternative would be to specify a date only and the response would list free time the list of people have in common that 4c1b6d day. Updating the file should happen automatically upon leaving the readmail subsystem eliminating the need for an update 4010 command.

APPEARANCE

4d

A Coordinated Communication=Calendar System

The basic element in the structure of this file would be the day. Under each day would be two sections. One would be divided into half hour segments with tasks and reminders associated with various segments. The other would be a section listing general tasks and reminders for the day which are not associated with a particular time. 4d1

If a listing was requested for a particular day, both sections would be printed out. A possible format follows: 4d2

4d2a

4d2b Monday, April 29, 1974 4d2c

4d2c1

Call LMN before 12:00 4d2c3

Finalize annual proposal

Meeting with XYZ

8:30

4d2c5

4d2c6

4d2c8

4d2c4

8:00 *Reminder* Meeting with XYZ at 8:30 4d2c7

9:00 4d2c9 9:30 4d2c10 10:00 4d2c11

10:30*Reminder* Meeting with OPQ (new employee) at
4d2c1211:00Meeting with OPQ (new employee)
Reminder Lunch with ABC and DEF at 12:004d2c13

11:30Meeting with OPQ (new employee)4d2c1412:00Lunch with ABC and DEF4d2c1512:30Lunch with ABC and DEF4d2c16

5

SRL 11=JUN=74 16:37 23333

A Coordinated Communication=Calendar System

13:00	4d2c17
13:30	4d2c18
14:00	4d2c19
14:30 *Reminder* Staff meeting at 15:00	4d2c20
15:00 Staff meeting	4d2c21
15:30 Staff meeting	4d2c22
16:00	4d2c23
16:30	4d2c24
17:00	4d2c25
Another alternative format Would be to eliminate reminders from a list, To list reminders only for days other than the current one would be the best case,	
PRIVACY	4e
Normal file privacy would be in effect with controlled read and write access. If a user so desires, an alternate person (secretary or coworker) could be given access to the file to enter items and to receive notification of an upcoming event if the primary user is not on-line.	4e1
FUTURE POSSIBILITIES	5
I believe the design described above would be fairly reasonable to implement given the current state=of=the=art. There are other features that would help to further augment professionals, however, and they are listed below.	5 a
1, Notify the user when his work load is getting too large,	5a1
2, Allow items to be related hierarchically, i.e. A and B must be done before C, and when A and B are completed begin sending reminders about C.	5a2
3. Allow user to assign varying priorities to calendar items with low priority items ignored when attempts are made to schedule meetings.	5a3

A Coordinated Communication=Calendar System

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(J23333) 11=JUN=74 16:37; Title: Author(s): Susan R. Lee/SRL; Distribution: /SRL([INFO=ONLY]); Sub=Collections: SRI=ARC; Clerk: SRL; Origin: <LEE>CAL.NLS;9, 30=APR=74 10:17 SRL;####;

1

Seminar on the Whole Universe Catalog

A seminar on what I have been doing nights and weekends in NLS over the last two years entitled: "The Whole Universe Catalog: a practical application of Capability Theory" will be held in the conference room this thursday June 13 at 4:00, You are invited, Seminar on the Whole Universe Catalog

(J23334) 11=JUN=74 22:58; Title: Author(s): Kirk E. Kelley/KIRK; Distribution: /SRI=ARC([INFD=ONLY]); Sub=Collections: SRI=ARC; Clerk: KIRK;

<nicguest> directory

Ferg ... Jake's rquest for the <nicquest> directory should be fulfilled

as soon as possible, no later than Monday 17=Jun=74. The urgency is because the new issue oof the Arpanet Directory will be distributed early next week, and it it tells NIC users to use <NICGUEST>. We'd like them to be able to do that as soon as they receive the Directory. ... Mike



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<nicguest> directory

(J23335) 12=JUN=74 08:37; Title: Author(s): Michael D. Kudlick/MDK; Distribution: /WRF([ACTION]) JAKE([INFO=ONLY]) JCN([INFO=ONLY]); Sub=Collections: SRI=ARC; Clerk: MDK; DVN 12=JUN=74 08:54 23336 Set Case Mode First and Markers in Links: Two steps back toward Entropy.

1

Markers wrked in links in the recent past but see to have stopt. Yesterday Harvey apparently went into a loop trying to jump on an existing link to a filename and marker, and just now when I typed in a link to a file name and marker (whic I have used before) I got puped into exec at "pushdown oveflow 25301. Set Case Mode Fisrt still says it is not implimeted.



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DVN 12=JUN=74 08:54 23336 Set Case Mode First and Markers in Links: Two steps back toward Entropy.

(J23336) 12=JUN=74 08:54; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /NEWNLS([ACTION]); Sub=Collections: SRI=ARC NEWNLS; Clerk: DVN;



applicant visit

Michael Feldman will visit us Monday June 17 interviewing for NSW project. He will give a seminar on his recent work at 9:30 in the conf rm. His resume has been distributed.

applicant visit

(J23337) 12=JUN=74 08:59; Title: Author(s): Michael D, Kudlick/MDK; Distribution: /DCE([ACTION]) RWW([ACTION]) JCN([ACTION]) CHI([ACTION]) JEW([ACTION]) HGL([ACTION]]) JHB([ACTION]]) KEV([ACTION]) EKM([ACTION]) JDH([ACTION]]) DSM([ACTION]]); Sub=Collections: SRI=ARC; Clerk: MDK;

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RFC 636

Tried to send you a message, but it wouldn't go through. The RFc was sent yesterday (Tuesday), I received it Monday, but due to a xerox paper crisis I couldn't xerox and send it till Tuesday, Sorry! Marcia RFC 636

(J23338) 12-JUN=74 09:18; Title: Author(s): Marcia Lynn Keeney/MLK; Distribution: /AAM; Sub=Collections: SRI=ARC; Clerk: MLK;

1

Interesting parlor game

Craig Fields tells me that ARPA is planning to write a summary of experiences encountered during the years they have managed the ARPAnet. He has asked me to take the responsibility for writing a chapter about the Network Information Center. He also asked for the following by FRIDAY and I would like to solicit your help since I do not have the background: Assume you are writing a book on the ARPAnet (all aspects). Pick 10 or 12 chapters you think it should contain and match the chapter with the person you think should write it. (How about that!! Gets to be more fun picking ones that will never be written.) Any contributions will be gratefully accepted. Thanks, JAKE



1

Interesting parlor game

(J23339) 12=JUN=74 09:32; Title: Author(s): Elizabeth J. (Jake) Feinler/JAKE; Distribution: /DCE([ACTION]) CHI([ACTION]) JEW([ACTION]) MDK([ACTION]); Sub=Collections: SRI=ARC; Clerk: JAKE;