I INTRODUCTION

A. Brief scope statement

The purpose of this proposal is to request support for continued use of knowledge workshop technology developed at the Augmentation Research Center (ARC) of SRI by the Advanced Research Projects Agency (ARPA). The service would be used by those ARPA-selected people who are willing to undertake exploratory use of knowledge workshop techniques through continued use of the on-line system (NLS) at Office-1.

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 the computer facility maintained and operated by Tymshare, Inc 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 (NLS).

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 [3] and in an earlier paper by Engelbart [2]. 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.

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 off-line batch to on-line real-time. Exploratory development and operation of augmentation systems have been our substantive work.

ARC's Research and Development Strategy

A new stage of application has now been established with the first year of Workshop Utility service almost completed. We are involving a wider group of system users so that we can begin to transfer the results 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 have been providing 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 users," 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.

II SUMMARY OF PROPOSED PROJECT ACTIVITY

The proposed project work will include:

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

Providing technical assistance to ARPA-selected "workshop architects" in the formulation, development, and implementation of augmented knowledge work procedures within user groups.

Providing appropriate terminal equipment for ARPA use as mutually found to be necessary.

The technical assistance will include help in the development of NLS use strategies suitable to the client's environment and procedures within its organization for implementing these strategies.

The service will also include the availability 20 hours a day, 7 days a week of Workshop Utility service via the ARPANET from a PDP 10 TENEX system operated by commercial facility management. This expanded schedule is offered in response to requests from users.

III EXTENDED DISCUSSION OF PROPOSED PROJECT ACTIVITY

A. Objective

The objective of this effort is to continue work with ARPA and ARPA-contractor personnel in the mutual development and use of procedures, methodology, software features, and other on-line tools; and in the training of users in NLS that will allow their exploratory use of our Workshop system. This objective has the following key components:

1) Building an ARPA user group whose members will find real value in applying the service, and whose participation will contribute to ARPA research goals both directly (by making the users' ARPA-related activities more effective) and indirectly (by accelerating the maturation and acceptance of augmented knowledge workshop techniques).

2) 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 [2] and [3], 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.

C. Scope of Proposed Work

Introduction

The types of workshop services that we are beginning to support at varying levels of capability are described in [3] 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 [2] and [3]. For each area, there is an immediate applicability of the basic NLS provisions for composing, modifying, studying, publishing, and collaborating and we have additional special provisions specifically supporting almost every area.

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 on-line software capabilities; a coordinated repertoire of on-line-assistance tools; associated concept and language additions dealing with the tools and with the information organization and task processes associated with their use; and 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.

For any group of users we 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."

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

Starting the second year of service (January 18, 1975), we are offering a Workshop Utility version of ARC's on-line system (NLS), serviced over the ARPANET, at least 20 hours a day, seven 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 will be possible to expand the service in a more flexible manner in increments of whole or partial machines as usage grows.

Service Partitioning

We are now using a "group allocation" scheme for partitioning on-line access and service among 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. During this coming year, we plan to further develop the resource allocation system, working toward allocation of central processing unit (CPU) time, rather than login access.

File Privacy

The Workshop Utility provides the necessary standard TENEX software and facility operating procedures to ensure some privacy of file access. In addition, user-controlled NLS privacy features allow useful dialogue attended with flexible privacy restrictions. However, it is important to note that the visibility and availability of planning information and other recorded dialogue in ARC's currently open Journal System provide

some of the more significant potential of our Workshop system.

We assume that ARC on-line-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 are still learning about the amount and nature of people support services that a successful Workshop Utility needs, particularly in the direct client support category. The levels specified in this proposal seem to us to be minimal. Charges for such service will be made as delivered to each client.

Overhead Services

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

Documentation of the basic user features of the system and of their application techniques needs to be complete and will 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. This includes the handling of user feedback, a significant effort on the part of ARC Utility staff, providing service to users and important input to system builders.

Clerical support of various types is needed.

Direct Client Support Services

Our 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 will have to be developed and learned to allow effective use of the system in their working environments. Specifying

these procedures will require help in analyzing the group's needs and present operations.

Therefore the following types of necessary services will be provided.

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 will come in several forms:

Sessions at SRI for training and application-system design.

Temporary 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.

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 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.

3 ARC 14724, D. C. Engelbart, R. W. Watson, J. C. Norton, "The Augmented Knowledge Workshop," AFIPS Proceedings National Computer Conference, June 1973.

Proposal ISU 74-254 Continued NLS Workshop Support for ARPA

I ESTIMATED TIME AND CHARGES

It is proposed that the work outlined herein be performed during a period of twelve months commencing 18 January 1975.

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

The costs of the total Workshop Utility service will be accounted for separately by the Institute, with the amount charged to ARPA under this contract being determined as a proportion of the total common cost of the Workshop Utility operation based on its availability for ARPA-directed use together with direct charges for people services as incurred.

We propose to provide guaranteed access to twelve user access connections (jobslots) 20 hours per day, 7 days per week, from the start of the contract period until 17 January 1976.

Preliminary discussions with ARPA people indicate that the following distribution of user-slots is responsive to ARPA needs:

Activity:	User slots	
ARPA offices:	5	To continue NLS office use
NMRO Seismic (MIT)	2	Seismic Data Mgt System
NIC users:	1	Access on-line ARPANET data
HRRO CBI (ETS)	1	Educational Testing Service
ARPA/AF/NSW:	3	Nat'l Software Works NLS
Total:	12	

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 ARPA over twelve months are estimated to be about $480,000 as shown in the attached cost estimate. We anticipate partial funding by ARPA to cover FY'75 to be followed by funding of the remaining FY'76 period as was the case in the current contract.

II UTILITY COMPUTER SUPPORT SUBCONTRACT

Tymshare, Inc. in Cupertino, California was selected by the Institute as the Computer Support subcontractor for the first year of service.

A formal subcontract is being negotiated for continuation of the service through the second service year.

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 January 1975. 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 SECOND YEAR WORKSHOP UTILITY SERVICE
(total OFFICE-1 facility)

Personnel Costs

Supervision	1000	hrs.	
Prof	6867	hrs.	
Technical	2999	hrs.	
Clerical	1000	hrs.	
Total Direct Labor			$ 84,337
Payroll Burden @ 29.0 %			24,458
Total Labor and Burden			108,795
Overhead @ 107.0 %			116,411
Total Personnel Costs			225,206

Direct Costs

Travel		16,051
27 trips Wash @ $368 =	$ 9,936	
122 Days Subsistence @ $42.50=	5,185	
Auto Rental 62 days @ $15 =	930	
Communications		3,000
Materials and Supplies (tape, paper)		3,000
Utility Online Support Subcontract		710,280
[256k core, 3 drums, 20hrs/7days		
12 mo @ $ 59,190 = $ 710,280]		
Documentation Costs		3,997
Total Direct Costs		736,328
Total Estimated Cost		961,534
Fixed Fee		57,692
Total Estimated Cost Plus Fixed Fee		$1,019,226

ARPA CONTRACT SHARE: 12 slots = $ 480,000

See following Schedules.

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

The payroll burden rate is based on the Institute's best prediction as to financial performance for the calendar year 1975. The overhead rate has been found acceptable by the Department of Defense for billing and bidding purposes for the calendar year 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 fares and car rental rates are established in the current Official Airline Guide.

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

Editing	$ 2.53
Composition	2.66
Coordination	.72
Proofreading	.77
Illustration	21.92
Press and Bindery	.022 per impression

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

Text preparation, 439 pages at $ 6.68 per page (including editing, composition, report coordination and proofreading)	$ 2,933
Illustration, 40 pages at $ 21.92 per illustration	877
Press, binding, and photography for 8,500 printed pages at $ .022 per printed page	187
Total Estimated Documentation Costs	$ 3,997

SCHEDULE E

UTILITY COMPUTER SUPPORT SUBCONTRACT COSTS

As per SRI/Tymshare quotation dated 11 December 1974.

Basic system:	$ 54,790 per month
RM-10B's x 2	$ 4,400 per month
Total	$ 59,190 per month

Proposal ISU 74-254 Continued NLS Workshop Support for ARPA

17-DEC-74
SRI-ARC 24725

SRI Proposal No. ISU 74-254

Continued NLS Workshop Support for ARPA

Part One---Technical Proposal

Prepared for:

Advanced Research Projects Agency
1400 Wilson Blvd
Arlington, Virginia

Attn: E. W. Stubbs
C. K. McLindon

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

Attn: D. 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

17-DEC-74
SRI-ARC 24725

SRI Proposal No. ISU 74-254

Continued NLS Workshop Support for ARPA

Part Two---Contractual Provisions

Prepared for:

Advanced Research Projects Agency
1400 Wilson Blvd
Arlington, Virginia

Attn: E. W. Stubbs
C. K. McLindon

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

Attn: D. L. Stone

Proposal ISU 74-254 Continued NLS Workshop Support for ARPA

(J24725) 23-DEC-74 21:02;;;; Title: Author(s): James C. Norton/JCN;
Distribution: /CKM([ACTION]) DCR2([ACTION]) DLS([ACTION])
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]) DCE([INFO-ONLY]) RWW([INFO-ONLY]) ; Sub-Collections:
SRI-ARC; Clerk: JCN; Origin: < NORTON, ARPAPROP.NLS;1, >,
23-DEC-74 12:08 JCN ;;;;

####;

Proposal ISC 74-255 Continued NLS Workshop Support for Bell

Hardcopy signed and printed today, to be mailed tomorrow. Bell has an invoice for the first half year at $ 20,000 (jcn to lhd by hand)

I INTRODUCTION

A. Brief scope statement

The purpose of this proposal is to request support for continued use of knowledge workshop technology developed at the Augmentation Research Center (ARC) of SRI by Bell Canada (Bell). The service would be used by those Bell-selected people who are willing to undertake exploratory use of knowledge workshop techniques through continued use of the on-line system (NLS) at Office-1.

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

The computer services are being supplied through direct telephone lines to geographically distributed user groups from the computer facility maintained and operated by Tymshare, Inc 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 (NLS).

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

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A new stage of application has now been established with the first year of Workshop Utility service almost completed. We are involving a wider group of system users so that we can begin to transfer the results 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 have been providing Workshop support Service to selected groups who are willing to take extra trouble to be exploratory, but who:

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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

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II SUMMARY OF PROPOSED PROJECT ACTIVITY

The proposed project work will include:

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Providing technical assistance to a Bell-selected "workshop architect" in the formulation, development, and implementation of augmented knowledge work procedures within user groups.

Providing appropriate terminal equipment for Bell use as mutually found to be necessary.

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The service will also include the availability 20 hours a day, 7 days a week of Workshop Utility service via direct telephone lines (to be arranged for by Bell) from a PDP 10 TENEX system operated by commercial facility management. The expanded schedule is offered in response to requests from users.

III EXTENDED DISCUSSION OF PROPOSED PROJECT ACTIVITY

A. Objective

The objective of this effort is to continue work with Bell personnel in the mutual development and use of procedures, methodology, software features, and other on-line tools; and in the training of users in NLS that will allow their exploratory use of our Workshop system. This objective has the following key components:

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

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3 ARC 14724, D. C. Engelbart, R. W. Watson, J. C. Norton, "The Augmented Knowledge Workshop," AFIPS Proceedings National Computer Conference, June 1973.

V CONTRACTUAL PROVISIONS

A. Time and Charges

The charge to Bell for an additional twelve months (18 January 1975 through 17 January 1976) of workshop computer and personnel services will be U.S .$ 40,000, to be paid in two equal payments. The first payment will be due upon acceptance of this proposal, the second will be due upon Bell's receipt of SRI's invoice to be submitted after 1 June 1975.

This funding will provide training and consulting in NLS use, together with a minimum of one userjob login access for workshop computer services. It is planned that computer service will be available for users 20 hours a day, 7 days a week.

B. Project Authorization

This project extension may be accomplished by a letter accepting this proposal.

C. Acceptance Period

This proposal will remain in effect until 18 January 1975; however, the Institute would be pleased to consider an extension if requested.

22-DEC-74
SRI-ARC 24726

SRI Proposal No. ISC 74-255

Continued NLS Workshop Support for Bell

Prepared for:

Bell Canada
620 Belmont
Montreal, Quebec
Canada

Attn: L. H. Day

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

Proposal ISC 74-255 Continued NLS Workshop Support for Bell

(J24726) 23-DEC-74 21:15;;;; Title: Author(s): James C. Norton/JCN; Distribution: /LHD([ACTION]) DCE([INFO-ONLY]) RWW([INFO-ONLY]) JHB([INFO-ONLY]) RLL([INFO-ONLY]) SRL([INFO-ONLY]) JHB([INFO-ONLY]) MEH([INFO-ONLY]) JDH([INFO-ONLY]) IMM([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: JCN; Origin: < NORTON, BELLPROP.NLS;1, >, 22-DEC-74 13:46 JCN ;;;;

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Signed hardcopy printed today and to be mailed to BRL and RADC tomorrow.

I INTRODUCTION

A. Brief scope statement

The purpose of this proposal is to request support for continued use of knowledge workshop technology developed at the Augmentation Research Center (ARC) of SRI by the USA Ballistic Research Laboratories (BRL). The service would be used by those BRL-selected people who are willing to undertake exploratory use of knowledge workshop techniques through continued use of the on-line system (NLS) at Office-1.

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 the computer facility maintained and operated by Tymshare, Inc 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 (NLS).

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 [3] and in an earlier paper by Engelbart [2]. 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.

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 off-line batch to on-line real-time. Exploratory development and operation of augmentation systems have been our substantive work.

ARC's Research and Development Strategy

A new stage of application has now been established with the first year of Workshop Utility service almost completed. We are involving a wider group of system users so that we can begin to transfer the results 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 have been providing 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 users," 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.

II SUMMARY OF PROPOSED PROJECT ACTIVITY

The proposed project work will include:

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

Providing technical assistance to a BRL-selected "workshop architect" in the formulation, development, and implementation of augmented knowledge work procedures within user groups.

Providing appropriate terminal equipment for BRL use as mutually found to be necessary.

The technical assistance will include help in the development of NLS use strategies suitable to the client's environment and procedures within its organization for implementing these strategies.

The service will also include the availability 20 hours a day, 7 days a week of Workshop Utility service via the ARPANET from a PDP 10 TENEX system operated by commercial facility management. This expanded schedule is offered in response to requests from users.

III EXTENDED DISCUSSION OF PROPOSED PROJECT ACTIVITY

A. Objective

The objective of this effort is to continue work with BRL personnel in the mutual development and use of procedures, methodology, software features, and other on-line tools; and in the training of users in NLS that will allow their exploratory use of our Workshop system. This objective has the following key components:

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

2) 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 [2] and [3], 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.

C. Scope of Proposed Work

Introduction

The types of workshop services that we are beginning to support at varying levels of capability are described in [3] 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 [2] and [3]. For each area, there is an immediate applicability of the basic NLS provisions for composing, modifying, studying, publishing, and collaborating, and we have additional special provisions specifically supporting almost every area.

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 on-line software capabilities; a coordinated repertoire of on-line-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.

For any group of users we 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."

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

Starting the second year of service (January 18, 1975), we are offering a Workshop Utility version of ARC's on-line system (NLS), serviced over the ARPANET, at least 20 hours a day, seven 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 will be possible to expand the service in a more flexible manner in increments of whole or partial machines as usage grows.

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We are now using a "group allocation" scheme for partitioning on-line access and service among 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. During this coming year, we plan to further develop the resource allocation system, working toward allocation of central processing unit (CPU) time, rather than login access.

File Privacy

The Workshop Utility provides the necessary standard TENEX software and facility operating procedures to ensure some privacy of file access. In addition, user-controlled NLS privacy features allow useful dialogue attended with flexible privacy restrictions. However, it is important to note that the visibility and availability of planning information and other recorded dialogue in ARC's currently open Journal System provide

some of the more significant potential of our Workshop system.

We assume that ARC on-line-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 are still learning about the amount and nature of people support services that a successful Workshop Utility needs, particularly in the direct client support category. The levels specified in this proposal seem to us to be minimal. Charges for such service will be made as delivered to each client.

Overhead Services

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

Documentation of the basic user features of the system and of their application techniques needs to be complete and will 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. This includes the handling of user feedback, a significant effort on the part of ARC Utility staff, providing service to users and important input to system builders.

Clerical support of various types is needed.

Direct Client Support Services

Our 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 will have to be developed and learned to allow effective use of the system in their working environments. Specifying

these procedures will require help in analyzing the group's needs and present operations.

Therefore the following types of necessary services will be provided.

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 will come in several forms:

Sessions at SRI for training and application-system design.

Temporary 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.

IV SELECTED REFERENCES

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2 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.

3 ARC 14724, D. C. Engelbart, R. W. Watson, J. C. Norton, "The Augmented Knowledge Workshop," 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 twelve months commencing 18 January 1975.

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

The costs of the total Workshop Utility service will be accounted for separately by the Institute, with the amount charged to BRL under this contract being determined as a proportion of the total common cost of the Workshop Utility operation based on its availability for BRL-directed use together with direct charges for people services as incurred.

We propose to provide guaranteed access to one user "jobslot" 20 hours per day, 7 days per week, from the start of the contract period through 17 January 1976.

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 BRL over twelve months are estimated to be about $40,000 as shown in the attached cost estimate. We anticipate partial funding by BRL to cover FY'75 to be followed by funding of the remaining FY'76 period as was the case in the current contract.

II UTILITY COMPUTER SUPPORT SUBCONTRACT

Tymshare, Inc. in Cupertino, California was selected by the Institute as the Computer Support subcontractor for the first year of service. A formal subcontract is being negotiated for continuation of the service through the second service year.

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

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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 January 1975. 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 SECOND YEAR WORKSHOP UTILITY SERVICE
(total OFFICE-1 facility)

Personnel Costs

Supervision	1000	hrs.	
Prof	6867	hrs.	
Technical	2999	hrs.	
Clerical	1000	hrs.	
Total Direct Labor			$ 84,337
Payroll Burden @ 29.0 %			24,458
Total Labor and Burden			108,795
Overhead @ 107.0 %			116,411
Total Personnel Costs			225,206

Direct Costs

Travel		16,051
27 trips Wash @ $368 =	$ 9,936	
122 Days Subsistence @ $42.50=	5,185	
Auto Rental 62 days @ $15 =	930	
Communications		3,000
Materials and Supplies (tape, paper)		3,000
Utility Online Support Subcontract		710,280
[256K core, 3 drums, 20hrs/7days		
12 mo @ $ 59,190 = $ 710,280]		
Documentation Costs		3,997
Total Direct Costs		736,328

Total Estimated Cost	961,534
Fixed Fee	57,692
Total Estimated Cost Plus Fixed Fee	$1,019,226

BRL CONTRACT SHARE: 1 slot = $ 40,000

See following Schedules.

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

The payroll burden rate is based on the Institute's best prediction as to financial performance for the calendar year 1975. The overhead rate has been found acceptable by the Department of Defense for billing and bidding purposes for the calendar year 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 fares and car rental rates are established in the current Official Airline Guide.

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

Editing	$ 2.53
Composition	2.66
Coordination	.72
Proofreading	.77
Illustration	21.92
Press and Bindery	.022 per impression

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

Text preparation, 439 pages at $ 6,68 per page (including editing, composition, report coordination and proofreading)	$ 2,933
Illustration, 40 pages at $ 21,92 per illustration	877
Press, binding, and photography for 8,500 printed pages at $ .022 per printed page	187
Total Estimated Documentation Costs	$ 3,997

SCHEDULE E

UTILITY COMPUTER SUPPORT SUBCONTRACT COSTS

As per SRI/Tymshare quotaton dated 11 December 1974,

Basic system:	$ 54,790 per month
RM-10B's x 2	$ 4,400 per month
Total	$ 59,190 per month

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SRI-ARC 24727

SRI Proposal No. ISU 74-256

Continued NLS Workshop Support for BRL

Part One---Technical Proposal

Prepared for:

USA Ballistic Research Laboratories
Aberdeen Proving Grounds
Maryland 21005

Attn: AMXBR-XA S. M. Taylor

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

Attn: D. 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

22-DEC-74
SRI-ARC 24727

SRI Proposal No. ISU 74-256

Continued NLS Workshop Support for BRL

Part Two---Contractual Provisions

Prepared for:

USA Ballistic Research Laboratories
Aberdeen Proving Grounds
Maryland 21005

Attn: AMXBR-XA S. M. Taylor

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

Attn: D. L. Stone

JCN 23-DEC-74 21:25 24728

Proposal ISD 74-257 Continued NLS Workshop Support for the Hudson Institute

Signed hardcopy printed today to be mailed tomorrow

I INTRODUCTION

A. Brief scope statement

The purpose of this proposal is to request support for continued use of knowledge workshop technology developed at the Augmentation Research Center (ARC) of SRI by the Hudson Institute (Hudson). The service would be used by those Hudson-selected people who are willing to undertake exploratory use of knowledge workshop techniques through continued use of the on-line system (NLS) at Office-1.

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B. Organization of this Proposal

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Proposal ISD 74-257 Continued NLS Workshop Support for the Hudson Institute

I ESTIMATED TIME AND CHARGES

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DNLS User Guide and updates

Proposal ISD 74-257 Continued NLS Workshop Support for the Hudson Institute

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 January 1975. If consideration of the proposal requires a longer period, the Institute will be glad to consider a request for an extension of time.

Proposal ISD 74-257 Continued NLS Workshop Support for the Hudson Institute

COST ESTIMATE FOR SECOND YEAR WORKSHOP UTILITY SERVICE
(total OFFICE-1 facility)

Personnel Costs

Supervision	1000	hrs.	
Prof	6867	hrs.	
Technical	2999	hrs.	
Clerical	1000	hrs.	
Total Direct Labor			$ 84,337
Payroll Burden @ 29.0 %			24,458
Total Labor and Burden			108,795
Overhead @ 107.0 %			116,411
Total Personnel Costs			225,206

Direct Costs

Travel		16,051
27 trips Wash @ $368 =	$ 9,936	
122 Days Subsistence @ $42.50=	5,185	
Auto Rental 62 days @ $15 =	930	
Communications		3,000
Materials and Supplies (tape, paper)		3,000
Utility Online Support Subcontract		710,280
[256k core, 3 drums, 20hrs/7days 12 mo @ $ 59,190 = $ 710,280]		
Documentation Costs		3,997
Total Direct Costs		736,328
Total Estimated Cost		961,534
Fixed Fee		57,692
Total Estimated Cost Plus Fixed Fee		$1,019,226

HUDSON CONTRACT SHARE: 1 slot = $ 40,000

See following Schedules.

Proposal ISD 74-257 Continued NLS Workshop Support for the Hudson Institute

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

The payroll burden rate is based on the Institute's best prediction as to financial performance for the calendar year 1975. The overhead rate has been found acceptable by the Department of Defense for billing and bidding purposes for the calendar year 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 fares and car rental rates are established in the current Official Airline Guide.

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

Editing	$ 2,53
Composition	2,66
Coordination	,72
Proofreading	,77
Illustration	21,92
Press and Bindery	,022 per impression

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

Text preparation, 439 pages at $ 6,68 per page (including editing, composition, report coordination and proofreading)	$ 2,933
Illustration, 40 pages at $ 21,92 per illustration	877
Press, binding, and photography for 8,500 printed pages at $,022 per printed page	187
Total Estimated Documentation Costs	$ 3,997

SCHEDULE E

UTILITY COMPUTER SUPPORT SUBCONTRACT COSTS

As per SRI/Tymshare quotaton dated 11 December 1974.

Basic system:	$ 54,790 per month
RM-10B's x 2	$ 4,400 per month
Total	$ 59,190 per month

Proposal ISD 74-257 Continued NLS Workshop Support for the Hudson Institute

22-DEC-74
SRI-ARC 24728

SRI Proposal No. ISD 74-257

Continued NLS 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

Proposal ISD 74-257 Continued NLS Workshop Support for the Hudson Institute

22-DEC-74
SRI-ARC 24728

SRI Proposal No. ISD 74-257

Continued NLS 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.

Proposal ISD 74-257 Continued NLS Workshop Support for the Hudson Institute

(J24728) 23-DEC-74 21:25;;;; Title: Author(s): James C. Norton/JCN; Distribution: /RLR([ACTION]) DCE([INFO-ONLY]) RWW([INFO-ONLY]) JHB([INFO-ONLY]) JMB([INFO-ONLY]) SRL([INFO-ONLY]) JDH([INFO-ONLY]) MEH([INFO-ONLY]) RLL([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: JCN; Origin: < NORTON, HUDSONPROP.NLS;1, >, 23-DEC-74 13:24 JCN ;;;;

####;

Signed hardcopy printed today, to be mailed tomorrow 12/24

I INTRODUCTION

A. Brief scope statement

The purpose of this proposal is to request support for continued use of knowledge workshop technology developed at the Augmentation Research Center (ARC) of SRI by the Naval Ship Research and Development Center (NSRDC). The service would be used by those NSRDC-selected people who are willing to undertake exploratory use of knowledge workshop techniques through continued use of the on-line system (NLS) at Office-1.

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 the computer facility maintained and operated by Tymshare, Inc 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 (NLS).

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 [3] and in an earlier paper by Engelbart [2]. 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.

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 Research and Development Strategy

A new stage of application has now been established with the first year of Workshop Utility service almost completed. We are involving a wider group of system users so that we can begin to transfer the results 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 have been providing 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 users," 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.

II SUMMARY OF PROPOSED PROJECT ACTIVITY

The proposed project work will include:

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

Providing technical assistance to an NSRDC-selected "workshop architect" in the formulation, development, and implementation of augmented knowledge work procedures within user groups.

Providing appropriate terminal equipment for NSRDC use as mutually found to be necessary.

The technical assistance will include help in the development of NLS use strategies suitable to the client's environment and procedures within its organization for implementing these strategies.

The service will also include the availability 20 hours a day, 7 days a week of Workshop Utility service via the ARPANET from a PDP 10 TENEX system operated by commercial facility management. This expanded schedule is offered in response to requests from users.

III EXTENDED DISCUSSION OF PROPOSED PROJECT ACTIVITY

A. Objective

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

1) Building an NSRDC user group whose members will find real value in applying the service, and whose participation will contribute to NSRDC research goals both directly (by making the users' NSRDC-related activities more effective) and indirectly (by accelerating the maturation and acceptance of augmented knowledge workshop techniques).

2) 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 [2] and [3], 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.

C. Scope of Proposed Work

Introduction

The types of workshop services that we are beginning to support at varying levels of capability are described in [3] 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 [2] and [3]. For each area, there is an immediate applicability of the basic NLS provisions for composing, modifying, studying, publishing, and collaborating, and we have additional special provisions specifically supporting almost every area.

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.

For any group of users we 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."

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

Starting the second year of service (January 18, 1975), we are offering a Workshop Utility version of ARC's online system (NLS), serviced over the ARPANET, at least 20 hours a day, seven 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 will be possible to expand the service in a more flexible manner in increments of whole or partial machines as usage grows.

Service Partitioning

We are now using a "group allocation" scheme for partitioning online access and service among 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. During this coming year, we plan to further develop the resource allocation system, working toward allocation of central processing unit (CPU) time, rather than login access.

File Privacy

The Workshop Utility provides the necessary standard TENEX software and facility operating procedures to ensure some privacy of file access. In addition, user-controlled NLS privacy features allow useful dialogue attended with flexible privacy restrictions. However, it is important to note that the visibility and availability of planning information and other recorded dialogue in ARC's currently open Journal System provide

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 are still learning about the amount and nature of people support services that a successful Workshop Utility needs, particularly in the direct client support category. The levels specified in this proposal seem to us to be minimal. Charges for such service will be made as delivered to each client.

Overhead Services

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

Documentation of the basic user features of the system and of their application techniques needs to be complete and will 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. This includes the handling of user feedback, a significant effort on the part of ARC Utility staff, providing service to users and important input to system builders.

Clerical support of various types is needed.

Direct Client Support Services

Our 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 will have to be developed and learned to allow effective use of the system in their working environments. Specifying

these procedures will require help in analyzing the group's needs and present operations.

Therefore the following types of necessary services will be provided.

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 will come in several forms:

Sessions at SRI for training and application-system design.

Temporary 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.

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 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.

3 ARC 14724, D. C. Engelbart, R. W. Watson, J. C. Norton, "The Augmented Knowledge Workshop," 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 twelve months commencing 18 January 1975.

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

The costs of the total Workshop Utility service will be accounted for separately by the Institute, with the amount charged to NSRDC under this contract being determined as a proportion of the total common cost of the Workshop Utility operation based on its availability for NSRDC-directed use together with direct charges for people services as incurred.

We propose to provide guaranteed access to two user "jobslots" 20 hours per day, 7 days per week, from the start of the contract period through 17 January 1976.

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 NSRDC over twelve months are estimated to be about $80,000 as shown in the attached cost estimate. We anticipate partial funding by NSRDC to cover FY'75 to be followed by funding of the remaining FY'76 period as was the case in the current contract.

II UTILITY COMPUTER SUPPORT SUBCONTRACT

Tymshare, Inc. in Cupertino, California was selected by the Institute as the Computer Support subcontractor for the first year of service. A formal subcontract is being negotiated for continuation of the service through the second service year.

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 January 1975. 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 SECOND YEAR WORKSHOP UTILITY SERVICE
(total OFFICE-1 facility)

Personnel Costs

Supervision	1000	hrs.	
Prof	6867	hrs.	
Technical	2999	hrs.	
Clerical	1000	hrs.	
Total Direct Labor			$ 84,337
Payroll Burden @ 29.0 %			24,458
Total Labor and Burden			108,795
Overhead @ 107.0 %			116,411
Total Personnel Costs			225,206

Direct Costs

Travel		16,051
27 trips Wash @ $368 =	$ 9,936	
122 Days Subsistence @ $42.50=	5,185	
Auto Rental 62 days @ $15 =	930	
Communications		3,000
Materials and Supplies (tape, paper)		3,000
Utility Online Support Subcontract		710,280
[256k core, 3 drums, 20hrs/7days		
12 mo @ $ 59,190 = $ 710,280]		
Documentation Costs		3,997
Total Direct Costs		736,328

Total Estimated Cost	961,534
Fixed Fee	57,692
Total Estimated Cost Plus Fixed Fee	$1,019,226

NSRDC CONTRACT SHARE: 2 slots = $ 80,000

See following Schedules.

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

The payroll burden rate is based on the Institute's best prediction as to financial performance for the calendar year 1975. The overhead rate has been found acceptable by the Department of Defense for billing and bidding purposes for the calendar year 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 fares and car rental rates are established in the current Official Airline Guide.

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

Editing	$ 2.53
Composition	2.66
Coordination	.72
Proofreading	.77
Illustration	21.92
Press and Bindery	.022 per impression

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

Text preparation, 439 pages at $ 6.68 per page (including editing, composition, report coordination and proofreading)	$ 2,933
Illustration, 40 pages at $ 21.92 per illustration	877
Press, binding, and photography for 8,500 printed pages at $ .022 per printed page	187
Total Estimated Documentation Costs	$ 3,997

SCHEDULE E

UTILITY COMPUTER SUPPORT SUBCONTRACT COSTS

As per SRI/Tymshare quotaton dated 11 December 1974,

Basic system:	$ 54,790 per month
RM-10B's x 2	$ 4,400 per month
Total	$ 59,190 per month

22-DEC-74
SRI-ARC 24729

SRI Proposal No. ISU 74-259

Continued NLS Workshop Support for NSRDC

Part One---Technical Proposal

Prepared for:

Naval Ship Research and Development Center
Bethesda, Maryland 20034

Attn: F. G. Brignoli

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

Attn: D. 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

22-DEC-74
SRI-ARC 24729

SRI Proposal No. ISU 74-259

Continued NLS Workshop Support for NSRDC

Part Two---Contractual Provisions

Prepared for:

Naval Ship Research and Development Center
Bethesda, Maryland 20034

Attn: F. G. Brignoli

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

Attn: D. L. Stone

Proposal ISU 74-259 Continued NLS Workshop Support for NSRDC

(J24729) 23-DEC-74 21:34;;;; Title: Author(s): James C. Norton/JCN;
Distribution: /FGB([ACTION]) DLS([ACTION]) DCE([INFO-ONLY])
RWW([INFO-ONLY]) JHB([INFO-ONLY]) JDH([INFO-ONLY]) JMB([
INFO-ONLY]) SRL([INFO-ONLY]) RLL([INFO-ONLY]) MEH([INFO-ONLY
]) ; Sub-Collections: SRI-ARC; Clerk: JCN; Origin: < NORTON,
NSRDCPROP,NLS;1, >, 22-DEC-74 14:43 JCN ;;;;

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Proposal ISU 74-258 Continued NLS Workshop Support for RADC

Signed hardcopy printed today, to be mailed to RADC tomorrow 12/24. In addition, an advance draft with complete cost estimate has been transferred to Stone's directory at office-1: radc.nls jcn

I INTRODUCTION

A. Brief scope statement

The purpose of this proposal is to request support for continued use of knowledge workshop technology developed at the Augmentation Research Center (ARC) of SRI by the Rome Air Development Center (RADC). The service would be used by those RADC-selected people who are willing to undertake exploratory use of knowledge workshop techniques through continued use of the on-line system (NLS) at Office-1.

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 the computer facility maintained and operated by Tymshare, Inc 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 (NLS).

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 [3] and in an earlier paper by Engelbart [2]. 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.

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 off-line batch to on-line real-time. Exploratory development and operation of augmentation systems have been our substantive work.

ARC's Research and Development Strategy

A new stage of application has now been established with the first year of Workshop Utility service almost completed. We are involving a wider group of system users so that we can begin to transfer the results 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 have been providing 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 users," 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.

II SUMMARY OF PROPOSED PROJECT ACTIVITY

The proposed project work will include:

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

Providing technical assistance to an RADC-selected "workshop architect" in the formulation, development, and implementation of augmented knowledge work procedures within user groups.

Providing appropriate terminal equipment for RADC use as mutually found to be necessary.

The technical assistance will include help in the development of NLS use strategies suitable to the client's environment and procedures within its organization for implementing these strategies.

The service will also include the availability 20 hours a day, 7 days a week of Workshop Utility service via the ARPANET from a PDP 10 TENEX system operated by commercial facility management. This expanded schedule is offered in response to requests from users.

III EXTENDED DISCUSSION OF PROPOSED PROJECT ACTIVITY

A. Objective

The objective of this effort is to continue work with RADC personnel in the mutual development and use of procedures, methodology, software features, and other on-line tools; and in the training of users in NLS that will allow their exploratory use of our Workshop system. This objective has the following key components:

1) Building an RADC user group whose members will find real value in applying the service, and whose participation will contribute to RADC research goals both directly (by making the users' RADC-related activities more effective) and indirectly (by accelerating the maturation and acceptance of augmented knowledge workshop techniques).

2) 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 [2] and [3], 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.

C. Scope of Proposed Work

Introduction

The types of workshop services that we are beginning to support at varying levels of capability are described in [3] 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 [2] and [3]. For each area, there is an immediate applicability of the basic NLS provisions for composing, modifying, studying, publishing, and collaborating, and we have additional special provisions specifically supporting almost every area.

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 on-line software capabilities; a coordinated repertoire of on-line-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.

For any group of users we 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."

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

Starting the second year of service (January 18, 1975), we are offering a Workshop Utility version of ARC's on-line system (NLS), serviced over the ARPANET, at least 20 hours a day, seven 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.

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We are now using a "group allocation" scheme for partitioning on-line access and service among 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. During this coming year, we plan to further develop the resource allocation system, working toward allocation of central processing unit (CPU) time, rather than login access.

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

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Clerical support of various types is needed.

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Our 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 will have to be developed and learned to allow effective use of the system in their working environments. Specifying

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Therefore the following types of necessary services will be provided.

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 will come in several forms:

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

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Proposal ISU 74-258 Continued NLS Workshop Support for RADC

I ESTIMATED TIME AND CHARGES

It is proposed that the work outlined herein be performed during a period of twelve months commencing 18 January 1975.

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

The costs of the total Workshop Utility service will be accounted for separately by the Institute, with the amount charged to RADC under this contract being determined as a proportion of the total common cost of the Workshop Utility operation based on its availability for RADC-directed use together with direct charges for people services as incurred.

We propose to provide guaranteed access to five user "jobslots" 20 hours per day, 7 days per week, from the start of the contract period through 17 January 1976.

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 RADC over twelve months are estimated to be about $200,000 as shown in the attached cost estimate. We anticipate partial funding by RADC to cover FY'75 to be followed by funding of the remaining FY'76 period as was the case in the current contract.

II UTILITY COMPUTER SUPPORT SUBCONTRACT

Tymshare, Inc. in Cupertino, California was selected by the Institute as the Computer Support subcontractor for the first year of service. A formal subcontract is being negotiated for continuation of the service through the second service year.

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DNLS User Guide and updates

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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 January 1975. 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 SECOND YEAR WORKSHOP UTILITY SERVICE
(total OFFICE-1 facility)

Personnel Costs

Supervision	1000	hrs.	
Prof	6867	hrs.	
Technical	2999	hrs.	
Clerical	1000	hrs.	
Total Direct Labor			$ 84,337
Payroll Burden @ 29.0 %			24,458
Total Labor and Burden			108,795
Overhead @ 107.0 %			116,411
Total Personnel Costs			225,206

Direct Costs

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27 trips Wash @ $368 =	$ 9,936	
122 Days Subsistence @ $42.50=	5,185	
Auto Rental 62 days @ $15 =	930	
Communications		3,000
Materials and Supplies (tape, paper)		3,000
Utility Online Support Subcontract		710,280
[256k core, 3 drums, 20hrs/7days		
12 mo @ $ 59,190 = $ 710,280]		
Documentation Costs		3,997
Total Direct Costs		736,328

Total Estimated Cost	961,534
Fixed Fee	57,692
Total Estimated Cost Plus Fixed Fee	$1,019,226

RADC CONTRACT SHARE: 5 slots = $ 200,000

See following Schedules.

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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.

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SCHEDULE C
TRAVEL COSTS

Air fares and car rental rates are established in the current Official Airline Guide.

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

Editing	$ 2.53
Composition	2.66
Coordination	.72
Proofreading	.77
Illustration	21.92
Press and Bindery	.022 per impression

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

Text preparation, 439 pages at $ 6.68 per page (including editing, composition, report coordination and proofreading)	$ 2,933
Illustration, 40 pages at $ 21.92 per illustration	877
Press, binding, and photography for 8,500 printed pages at $ .022 per printed page	187
Total Estimated Documentation Costs	$ 3,997

SCHEDULE E

UTILITY COMPUTER SUPPORT SUBCONTRACT COSTS

As per SRI/Tymshare quotaton dated 11 December 1974,

Basic system:	$ 54,790 per month
RM-10B's x 2	$ 4,400 per month
Total	$ 59,190 per month

22-DEC-74
SRI-ARC 24730

SRI Proposal No. ISU 74-258

Continued NLS Workshop Support for RADC

Part One---Technical Proposal

Prepared for:

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

Attn: D. 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

22-DEC-74
SRI-ARC 24730

SRI Proposal No, ISU 74-258

Continued NLS Workshop Support for RADC

Part Two---Contractual Provisions

Prepared for:

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

Attn: D. L. Stone

Proposal ISU 74-258 Continued NLS Workshop Support for RADC

(J24730) 23-DEC-74 21:40;;;; Title: Author(s): James C. Norton/JCN;
Distribution: /DLS([ACTION]) DCE([INFO-ONLY]) RWW([INFO-ONLY]
) JDH([INFO-ONLY]) JMB([INFO-ONLY]) JHB([INFO-ONLY]) RLL([
INFO-ONLY]) SRL([INFO-ONLY]) MEH([INFO-ONLY]) ;
Sub-Collections: SRI-ARC; Clerk: JCN; Origin: < NORTON,
RADCPROP,NLS;1, >, 22-DEC-74 14:47 JCN ;;;;

####;

RLL 10-DEC-74 21:28 24731

revision to Group message for OFFICE-1

My revision to latest group message. 1

#The word "offquota" appears too often and thus causes some confusion. unfortunately I have no better phasology.# 2

#I suggest that one carriage return be inserted between the new scheme explanation and the old one. Corrections are in ## and the text it replaces is in ().# 3

An important change is going to be made in the group allocation scheme at Office-1 on DATE at TIME. Currently the system will allow (offquote)#offquota# users to log in until the 5 minute load average has reached 6.0. This is the middle load number you get with a systat command, NOT what you get when you type CNTRL-T. At loads higher than this no new offquota users are allowed to log in, but old offquota users (are allowed to remain)# will remain# until the total number of users exceeds the total number of slots allocated. Only then are offquota users logged out by the group system. 4

In the new scheme, all offquota users will, one at a time, be logged off when the 5 minute load average exceeds 6.0. These logouts will occur five minutes apart, and as usual, the user will receive a warning five minutes ahead of time that he will be logged off. Any bugs in this system should be reported to (PETERS@SRI-ARC)# FEEDBACK #. - (Jeff) 5

RLL 10-DEC-74 21:28 24731

revision to Group message for OFFICE-1

(J24731) 10-DEC-74 21:28;;;; Title: Author(s): Robert N. Lieberman/RLL; Distribution: /JCP([ACTION]) JHB([INFO-ONLY]) JCN([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: RLL;

KIRK 11-DEC-74 00:07 24733

Status of LPPRINT

Jim, Jim, and Dick, there is a program in <PROGRAMS> directory called LPPRINT. It is used to print out of the line-printer port on a Line Processor. Do you wish to add it to the list of officially supported user-programs? If I don't hear from you, I must assume it is not to be added and I will move it to <XPROGRAMS>. 1

KIRK 11-DEC-74 00:07 24733

Status of LPPRINT

(J24733) 11-DEC-74 00:07;;;; Title: Author(s): Kirk E. Kelley/KIRK;
Distribution: /RWW([ACTION]) JCN([ACTION]) JHB([ACTION]) ;
Sub-Collections: SRI-ARC; Clerk: KIRK;

Bad Bugs I have found but don't have time to fix

The Programs command "Replace Parserule" doesn't work properly. It says "Invalid char in identifier" whenever you try to specify the new parserule. 1

Attempt at moving a horizontal boundary generates the message "invalid move request" and makes the screen go blank you bug the same edge of the screen as was bugged to insert the boundary. 2

The useroptions subsystem gets your automatically loaded programs from wrong directory. It should get them from your logged-in directory, not your connected directory. 3

Copy file doesn't work for journal items. It doesn't know about journal numbers. 4

<CTRL-S> for the Help command should be changed to: 5

Help OK. 5a

Help TYPEIN OK; 5b

the current garbage you get does more harm than good as it is misleading and inaccurate. 6

The order of alternatives listed via questionmark is not the same as the order of alternatives in prompts. For example, all LSEL's. This confuses new users and makes it hard to get what the prompts mean. 7

Questionmark gives you a list of <NULL> characters sometimes. 8

The "BAD FILE" error message causes an unrelated "display error" bug that forces the DNLS user to reset before he can do anything about his bad file. Waste of CPU time. 9

Viewspec Capital D "turns off" the beginnings of statements that are NOT valid statement names. For instance statements beginning with, numbers that are in name delimiters. 10

<CTRL-O> when compiling a file or doing an output printer sometimes leaves the file busy so that it can't be compiled or output again until the entire system is restarted. 11

KIRK 11-DEC-74 01:04 24734

Bad Bugs I have found but don't have time to fix

(J24734) 11-DEC-74 01:04;;;; Title: Author(s): Kirk E. Kelley/KIRK;
Distribution: /FEED([ACTION]) BUGS([INFO-ONLY]) JDH([INFO-ONLY
]) ; Sub-Collections: SRI-ARC BUGS; Clerk: KIRK;

KIRK 11-DEC-74 01:11 24735

Programs moved from <PROGRAMS> to <XPROGRAMS>

The following programs have been moved from directory <PROGRAMS> to directory <XPROGRAMS> as they have not been chosen to be officially supported by ARC staff.

JFORM2
MOUSE
NAMED.CA
NMDBRNCH.CA
UNNAMED.CA
SIMPLEKEY.REL
UNKEY.REL

1

KIRK 11-DEC-74 01:11 24735

Programs moved from <PROGRAMS> to <XPROGRAMS>

(J24735) 11-DEC-74 01:11;;;; Title: Author(s): Kirk E. Kelley/KIRK;
Distribution: /SRI-ARC([INFO-ONLY]) ; Sub-Collections: SRI-ARC;
Clerk: KIRK;

signed hardcopy printed today to be mailed tomorrow 12/24

I INTRODUCTION

A. Brief scope statement

The purpose of this proposal is to request support for continued use of knowledge workshop technology developed at the Augmentation Research Center (ARC) of SRI by the National Security Agency (NSA). The service would be used by those NSA-selected people who are willing to undertake exploratory use of knowledge workshop techniques through continued use of the on-line system (NLS) at Office-1.

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 the computer facility maintained and operated by Tymshare, Inc 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 (NLS).

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 [3] and in an earlier paper by Engelbart [2]. 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.

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 off-line batch to on-line real-time. Exploratory development and operation of augmentation systems have been our substantive work.

ARC's Research and Development Strategy

A new stage of application has now been established with the first year of Workshop Utility service almost completed. We are involving a wider group of system users so that we can begin to transfer the results 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 have been providing 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 users," 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.

II SUMMARY OF PROPOSED PROJECT ACTIVITY

The proposed project work will include:

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

Providing technical assistance to an NSA-selected "workshop architect" in the formulation, development, and implementation of augmented knowledge work procedures within user groups.

Providing appropriate terminal equipment for NSA use as mutually found to be necessary.

The technical assistance will include help in the development of NLS use strategies suitable to the client's environment and procedures within its organization for implementing these strategies.

The service will also include the availability 20 hours a day, 7 days a week of Workshop Utility service via the ARPANET from a PDP 10 TENEX system operated by commercial facility management. This expanded schedule is offered in response to requests from users.

III EXTENDED DISCUSSION OF PROPOSED PROJECT ACTIVITY

A. Objective

The objective of this effort is to continue work with NSA personnel in the mutual development and use of procedures, methodology, software features, and other on-line tools; and in the training of users in NLS that will allow their exploratory use of our Workshop system. This objective has the following key components:

1) Building an NSA user group whose members will find real value in applying the service, and whose participation will contribute to NSA research goals both directly (by making the users' NSA-related activities more effective) and indirectly (by accelerating the maturation and acceptance of augmented knowledge workshop techniques).

2) 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 [2] and [3], 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.

C. Scope of Proposed Work

Introduction

The types of workshop services that we are beginning to support at varying levels of capability are described in [3] 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 [2] and [3]. For each area, there is an immediate applicability of the basic NLS provisions for composing, modifying, studying, publishing, and collaborating, and we have additional special provisions specifically supporting almost every area.

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 on-line software capabilities; a coordinated repertoire of on-line-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.

For any group of users we 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."

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

Starting the second year of service (January 18, 1975), we are offering a Workshop Utility version of ARC's on-line system (NLS), serviced over the ARPANET, at least 20 hours a day, seven 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.

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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:

Editing	$ 2.53
Composition	2.66
Coordination	.72
Proofreading	.77
Illustration	21.92
Press and Bindery	.022 per impression

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

Text preparation, 439 pages at $ 6.68 per page (including editing, composition, report coordination and proofreading)	$ 2,933
Illustration, 40 pages at $ 21.92 per illustration	877
press, binding, and photography for 8,500 printed pages at $ .022 per printed page	187
Total Estimated Documentation Costs	$ 3,997

SCHEDULE E

UTILITY COMPUTER SUPPORT SUBCONTRACT COSTS

As per SRI/Tymshare quotaton dated 11 December 1974.

Basic system:	$ 54,790 per month
RM-10B's x 2	$ 4,400 per month
Total	$ 59,190 per month

22-DEC-74
SRI-ARC 24736

SRI Proposal No, ISU 74-260

Continued NLS Workshop Support for NSA

Part One---Technical Proposal

Prepared for:

National Security Agency
Fort George G, Meade
Maryland 20755

Attn: Jesse N, Hill (R25)

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

Attn: D, 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

22-DEC-74
SRI-ARC 24736

SRI Proposal No. ISU 74-260

Continued NLS Workshop Support for NSA

Part Two---Contractual Provisions

Prepared for:

National Security Agency
Fort George G. Meade
Maryland 20755

Attn: Jesse N. Hill (R25)

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

Attn: D. L. Stone

(J24736) 23-DEC-74 21:31;;;; Title: Author(s): James C. Norton/JCN;
Distribution: /JNH([ACTION]) DLS([ACTION]) DCE([INFO-ONLY])
RWW([INFO-ONLY]) JDH([INFO-ONLY]) JHB([INFO-ONLY]) JMB([
INFO-ONLY]) SRL([INFO-ONLY]) RLL([INFO-ONLY]) MEH([INFO-ONLY
]) ; Sub-Collections: SRI-ARC; Clerk: JCN; Origin: < NORTON,
NSAPROP.NLS;1, >, 22-DEC-74 14:32 JCN ;;;;

####;

CHI 11-DEC-74 10:04 24737

testing line-at-a-time terminal support suggestion

No, Jon, we have not as yet tested the line-at-a-time termina support suggested in 24693. The suggestion was based on thought and discussion with people who use (or used) that kind of terminal. We will test it at some point, but I dont know exactly when. -- Charles. 1

CHI 11-DEC-74 10:04 24737

testing line-at-a-time terminal support suggestion

(J24737) 11-DEC-74 10:04;;;; Title: Author(s): Charles H. Irby/CHI; Distribution: /JBP([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: CHI;

JAKE 11-DEC-74 11:11 24738

Journal subscription renewal list

Will the person who now has the journal subscription list on his desk please send it on around the loop and ultimately back to me. The library wants to know which journals to renew before the subscriptions run out at the end of December. Getting them restarted involves paper work hassles and missed issues so would appreciate getting the list back with everyone's recommendations. Thanks, Jake 1

JAKE 11-DEC-74 11:11 24738

Journal subscription renewal list

(J24738) 11-DEC-74 11:11;;;; Title: Author(s): Elizabeth J. (Jake) Feinler/JAKE; Distribution: /SRI-ARC([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: JAKE;

C

On Tuesday, December 17 from 10:30 till noon in the Parsley room I plan to offer instruction in the use of the Output Processor. Everyone is welcome. I will try to explain as much of the function of the Protrayal Generator and the way in which the Output Processor receives and buffers characters as is necessary to use it well, and then go on to directtives, their classes, and their effects on one another. 1

I hope too proceed slowy enough that everyone will understand what they need to go on. At the end of that session we will discuss whether further sessions are necessary. 2

The introduction to the Output Processor Users' Guide and branches 6a1 and 6a2 in <documentation, final,> are suggested reading before you come. 3

(J24739) 11-DEC-74 16:31;;;; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /JOAN([ACTION] dpcs notebook please) SRI-ARC([INFO-ONLY]) DPCS([INFO-ONLY]) MAP2([INFO-ONLY] feel free to bring guests) PWO([INFO-ONLY]) ; Sub-Collections: DPCS SRI-ARC; Clerk: DVN;

KIRK 11-DEC-74 16:31 24740

Bug in the user-options Include command

I sent this to BUGs, and JDH. If you do not want to recieve things sent to BUGS, let me know.

KIRK 11-DEC-74 16:31 24740

Bug in the user-options Include command

It does not remember the directory you specify. Makes it impossible to include programs that are not either in your connected directory or in directory <programs>. Results in wrong programs being loaded if you are connected to a different directory. The fix is to accept and store the directory name instead of just the filename. 1

KIRK 11-DEC-74 16:31 24740

Bug in the user-options Include command

(J24740) 11-DEC-74 16:31;;;; Title: Author(s): Kirk E. Kelley/KIRK;
Distribution: /BUGS([ACTION]) FEED([ACTION]) JDH([ACTION]) ;
Sub-Collections: SRI-ARC BUGS; Clerk: KIRK;

KIRK 11-DEC-74 16:54 24741

Bug in Sendmails 'Insert Sendmailform' command

When an inserted status form containing the specified source for the item is edited, If you Goto Sendmail and Process the form, the source is ignored because it is not in acceptable form for the Process command. This causes the message "Nothing to send!" to be printed and the user has to re-specify the source. 1

KIRK 11-DEC-74 16:54 24741

Bug in Sendmails 'Insert Sendmailform' command

(J24741) 11-DEC-74 16:54;;;; Title: Author(s): Kirk E. Kelley/KIRK; Distribution: /FEED([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: KIRK;

JBP 12-DEC-74 09:27 24743

Problem with Reserve RFC Number in SENDMAIL

I have determined the problem with reserve rfc number to be that the routine that takes the title from the user allows a long string (up to 200 characters) but the routine that stores the information in the RFCNUMBERS file concatenates several things together including the title into a string of only 50 characters.

please change the LOCAL STRING tempsr[50] to be LOCAL STRING tempsr[250] in routine rfcex in file CATNUM.

--jon.

1

JBP 12-DEC-74 09:27 24743

Problem with Reserve RFC Number in SENDMAIL

(J24743) 12-DEC-74 09:27;;;; Title: Author(s): Jonathan B. Postel/JBP; Distribution: /BUGS([ACTION]) FDBK([ACTION]) FEED([ACTION]) ; Sub-Collections: SRI-ARC BUGS FDBK; Clerk: JBP;

RWW 12-DEC-74 10:32 24744

How to Prepare Printer Material for Duplication

Material reproduced for outside distribution such as proposals, technical reports and even working documents, establishes an image in peoples mind of ARC. It is important that it be of good quality. One aspect of quality is how it looks. 1

To get acceptable print quality for masters to be used by SRI reports services one needs to take some special steps: 2

1) Output Process with appropriate directives for good formatting to a file. 2a

2) Get Jeff or an operator to put on a new ribbon, preferable mylar. 2b

3) copy two or three copies to printer. 2c

4) Go through the document and replace pages with printer glitches with good pages. 2d

5) Now you should have a good dark copy which will reproduce properly and be a good representative for ARC. 2e

RWW 12-DEC-74 10:32 24744

How to Prepare Printer Material for Duplication

(J24744) 12-DEC-74 10:32;;;; Title: Author(s): Richard W. Watson/RWW; Distribution: /SRI-ARC([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: RWW;

JAKE 12-DEC-74 12:22 24745

Phone contact - Craig Fields

(contact) 1

(WHO-WAS-CONTACTED) 1a

Jake Feinler (JAKE, ID 4641)
Network Information Center
Augmentation Research Center
Stanford Research Institute 1a1

(BY-WHOM) 1b

Craig Fields
Project Monitor, Proj 3803 1b1

ARPA IPTO 1b2

(DATE) 12-DEC-74 1c

(HOW-CONTACTED) 1d

PHONE 1d1

(WHERE) SRI 1e

(OTHER-ATTENDEES) None 1f

(DISTRIBUTION) DCE JCN MEH RWW RLL ACM NPG DVN 1g

(ACTION-ITEMS) 1h

- Wanted quick verbal summary of what the NIC has been doing and how various activities have progressed. This was given and is summarized below. 1h1

- Wants office copy of Protocol Notebook as soon as it is available 1h2

- Wants to see DRAFT of Resource Notebook before it goes to press 1h3

- Wants NIC to contact Tom Marill to get input from his collection of Arpanet databases for inclusion in the Resource Handbook. This has been done (12/12/74). 1h4

I told Craig that we would be unable to include this information in the current issue if there was a lot of it and still stick to any reasonable deadlines. He agreed we should include it if it was possible but leave it out if it would disrupt the present plans and format. 1h4a

Phone contact - Craig Fields

- wanted to know when we might make RFCs available as published documents (see below). Told him it couldn't even be considered until after first of year. Will get back in touch after first of year. 1h5

(INFORMATION-ITEMS) 1i

- Fields intends to fund NIC slot at Office-1 per his breakfast conversation with Norton. 1i1

- DCA will take over management of Arpanet - fairly firm at this time but not yet announced 1i2

- DCA will gather monies from funding agencies such as ARPA (largest contributor) and will give to DCA to use for managing net and for transferring to contractors such as SRI, etc. 1i3

- Fields sees NIC being funded at about same level, possibly more for next fiscal year. This of course is unofficial and no firm commitment. 1i4

- Fields would like to see NIC online activities distributed more widely, such as by way of NSW or RSEXEC, etc. I told him this was being considered by NSW group and myself but that work load and manpower shortage on both sides was prohibiting any immediate action. 1i5

- Liked idea of NIC selling documents and/or putting them with DDC or NTIS. 1i6

(SUMMARY) 1j

Craig Fields called and wanted a brief summary on the phone (informal) of what the NIC is currently doing and where some of the projects are at the moment. He has to justify ARPA IPTO projects soon before Congress and just needed highpoints. I provided the following: 1j1

Resource Handbook 1j1a

We have had more that twenty new hosts added to the network recently and others switched places and changed from users to servers and vice versa. Currently we have write-ups for all users and tips finished and ready to load at OFFICE-1 and to send out to Liaison before sending to Report Production. Server writeups are in various states of being done. Programs index partially done. I estimated that it would be January before all info is in and then we would need time for ARPA and host

Phone contact - Craig Fields

approval and report production - therefore late winter before Resource Handbook is in user's hands (I made no firm committment on this). We both agreed upon Dec. 74 as cut-off date. Any hosts added after that will have to wait until next printing. 1j1a1

Arpanet Directory 1j1b

Directory is slated to follow Resourse Handbook, but first database will need to be upgraded. Information being collected by BBN for TIP logins will be made available to NIC for inclusion in identfile or directory database (we need to discuss how all this happens soon). Estimated Directory would not come out until sometime in the Spring - again no committment on my part. 1j1b1

Protocol Notebook 1j1c

Protocol notebook is ready for report production and will be turned over to DDC who will also deposit it at NTIS. This should happen by late December or early January. Fields was very pleased about this and would like a copy for ARPA which I will send. 1j1c1

RFCs 1j1d

We discussed the concept of bunching the RFCs into units large enough to warrant their sale by NIC. He also thought this was a good idea. I mentioned that they would have to be carefully screened to avoid copyright problems etc, and no action would be taken immediately. We will consider after first of year. 1j1d1

Other 1j2

NIC Chapter 1j2a

Told him I would not meet deadline of Dec. 31 - would probably go into January a couple of weeks. He said this was no problem. 1j2a1

Hardcopy distribution 1j2b

Discussed possibilities of putting Resource Handbook at DDC and NTIS. I said I felt that was a large enough unit for NIC to consider handling but could also be at these agencies. This got us into a discussion of sale of the various documents - such as RFCs (see above) etc. Fields is generally in favor of this but I pointed out there are

Phone contact - Craig Fields

problems such as people and money and that it was only in the consideration stages. Will keep him informed. 1j2b1

Distributed NIC 1j2c

We discussed possibilities of making NIC stuff (Resource Handbook, Ident info, RFCs, etc) easily accessible from either NLS or the network. Told him I had discussed this briefly with our group with Bob Thomas of RSEXEC, and with Datacomputer personnel but that we and others have most of our/their staff totally committed to other activities. Again, he is very interested but I made no committments at all. 1j2c1

For background - Thomas is interested after first of year. Datacomputer people are vague but seem interested. Postel and White think NSW would be reasonable place to include NIC activities. I feel that any development particularly programming should be done as general case programs that specifically include NIC data bases rather than programs specific to NIC data bases (as the HELP/query language is specific to the HELP data base) That way any programs developed by the NIC will be a general case program available to other network communities at both OFFICE-1 and NSW. 1j2c1a

(DOCUMENTS) 1k

(GIVEN) 1k1

Will send protocol notebook when available (end of Dec.?) 1k1a

(RECEIVED) None 1k2

JAKE 12-DEC-74 12:22 24745

Phone contact - Craig Fields

(J24745) 12-DEC-74 12:22;;;; Title: Author(s): Elizabeth J. (Jake) Feinler/JAKE; Distribution: /DCE([INFO-ONLY]) JCN([INFO-ONLY]) MEH([INFO-ONLY]) RWW([INFO-ONLY]) RLL([INFO-ONLY]) ACM([INFO-ONLY]) NPG([INFO-ONLY]) DVN([INFO-ONLY]) ;
Sub-Collections: SRI-ARC NPG; Clerk: JAKE; Origin: < FEINLER, FIELDS-12/12,NLS;7, >, 12-DEC-74 12:20 JAKE ;;;;####;

Letter to MERIT Network

11 December 1974
Stanford Research Institute
Augmentation Research Center
Menlo Park, California 94025

MERIT Computer Network
108 Cooley Building, North Campus
2355 Bonisteel Boulevard
Ann Arbor, Michigan 48105

I am very much interested in receiving copies of MERIT Network reports. As you may recall i am involved in the ARPANET technical areas and find it very useful to be able to compare the solutions to technical problems taken by the two networks.

Sincerely,

Jonathan Postel

JBP 12-DEC-74 17:21 24746

Letter to MERIT Network

(J24746) 12-DEC-74 17:21;;;; Title: Author(s): Jonathan B. Postel/JBP; Distribution: /JBP([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: JBP; Origin: < POSTEL, LETTER.NLS;2, >, 11-DEC-74 10:07 JBP ;;;;####;

KIRK 12-DEC-74 20:13 24747

Inaccurate CML entity type for useroptions include command

If the useroptions Include Program command only remembers program names and not file links, the CML entity type should be "NAME" instead of "OLDFILELINK". This may not allow the use of altmode, but it won't mislead the user as to what the command will do when he types questionmark. Currently qustionmark says Specify an OLDFILELINK. This implies that this is what will be used when you enter NLS when in fact it is not. 1

KIRK 12-DEC-74 20:13 24747

Inaccurate CML entity type for useroptions include command

(J24747) 12-DEC-74 20:13;;;; Title: Author(s): Kirk E. Kelley/KIRK;
Distribution: /EKM([ACTION]) JDH([ACTION]) DSM([ACTION])
FEED([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: KIRK;