

DVN 3-JAN-73 8:49 13666

All the King's Horses and All the King's Men:reply to 13615 and
13605

In Jim Norton's initial file is a programs that puts lines
together after they have been shattered into statements by insert
sequential. (norton,jcn,app).

1

DVN 3-JAN-73 8:49 13666

All the King's Horses and All the King's Men:reply to 13615 and
13605

(J13666) 3-JAN-73 8:49; Title: Author(s): Van Nouhuys, Dirk H./DVN;
Distribution: Crocker, David H., Auerbach, Marilyn F., Norton, James C.,
Forman, Ernest H., Neigus, Nancy J./dhc mfa jcn ehf njn (I am
thumbing thru DHL looking for a suitable quote about union of souls) ;
Sub-Collections: SRI-ARC; Clerk: DVN;

Request for Extension of Editing of Identfile

In your final work on the Identfile, I wish you would implement two features:

1

1. Change the term "affiliation" to "organization" to conform to the usage in the functional documents.

1a

2. Design so that all changes made to the file will appear in a special file, perhaps CHANGEIDS, as all new idents appear in NEWIDS.

1b

It is obviously desirable from an open dialogue point of view to allow complete freedom to the individual in the choice of form for his network name and address. However, experience with the Identfile has shown that people cannot be depended on to give their correct group name (e.g. BBN-TENEX), much less a consistent form of organization name.

2

if such an Identfile were to be used as the basis for computer-produced directories, this complete freedom would produce garbage.

3

The variations possible in the form of organization names would cause the directory programs to indicate a few people at USC, another some at University of Southern California, some more at Information Sciences Institute, plus some more at ISI, and scattered others at misspelled versions of the foregoing.

4

The same variation occurs in individual input of street addresses, and a wide variation of format is evidenced in individual input of phone numbers.

5

I do not feel that freedom of dialogue is hampered by building a human editing function into some of the tools. If we were augmented to the degree that an individual, upon entering his version of his phone number or address, could receive as feedback the apparent choices already in the data base, the system would be ideal. Barring that, the intervention of an Identfile editor is essential to a clean, usable data base. Creating a file or files of all unverified input for the editor, BER, to clean up before it pollutes the system seems important.

6

Request for Extension of Editing of Identfile

(J13668) 3-JAN-73 9:59; Title: Author(s): North, Jeanne B./JBN;
Distribution: Agent, Station, Hoffman, Carol B., Lee, Susan R., Michael,
Elizabeth K., Dornbush, Charles F., ARC, Guest O., Feinler, Elizabeth J.
(Jake), Handbook, Augmentation Research, Kelley, Kirk E., Meyer, N.
Dean, Byrd, Kay F., Prather, Ralph, White, James E. (Jim), Vallee,
Jacques F., Kaye, Diane S., Rech, Paul, Kudlick, Michael D., Ferguson,
Ferg R., Lane, Linda L., Auerbach, Marilyn F., Bass, Walt, Engelbart,
Douglas C., Hardeman, Beauregard A., Hardy, Martin E., Hopper, J. D.,
Irby, Charles H., Jernigan, Mil E., Lehtman, Harvey G., North, Jeanne
B., Norton, James C., Page, Cindy, Paxton, William H., Peters, Jeffrey
C., Ratliff, Jake, Row, Barbara E., Van De Riet, Edwin K. (Ed), Van
Nouhuys, Dirk H., Victor, Kenneth E. (Ken), Wallace, Donald C. (Smokey),
Watson, Richard W., Andrews, Don I., North, Jeanne B./sri-arc nicsta ;
Sub-Collections: SRI-ARC NICSTA; Clerk: JBN;
Origin: <NORTH>IDENTCOMMENTS.NLS;1, 3-JAN-73 8:52 JBN ;

IMLAC vs. UCSB

Thaanks for your message. I disn't count on so much computer down time during the Christmas Season so I haven't gotten much done. I'll comment on the Imlac erase. Control N / is supposed to draw the x and y axis on the Imlac. At least that's what our documenation says. So we defined control-N) to do the erase. The whole sequence then is "control-n" ")" "control-r" . OK? Hope that helps. Did you have a good Christmas and New Year? Mine was busy. I'm still intending to get to your other questions some time. Til Later...John

1

JRP 3-JAN-73 11:57 13669

IMLAC vs. UCSB

(J13669) 3-JAN-73 11:57; Title: Author(s): Pickens, John R./JRP;
Distribution: Neigus, Nancy J./NJN; Sub-Collections: NIC; Clerk: JRP;

(DCE) 21 October, [1971]. Jim Norton (JCN), Dick Watson (RWW), Bill Paxton (WHP), and Doug Engelbart (DCE). We're having a meeting and we just turned to the topic of trying to develop planning pictures that are in the form of expected states different times in the future. What would be expected of us to look out and be doing. This is obviously something that is my responsibility to get done, and I'm not doing it and I need help maybe just to make me work at it. I'd like to just kick something off here while people say, "What is it they'd like to see in there. I'll go back and read these notes and I'm sure that will help us some. So, am I just repeating what you said for the last three minutes? (laughter).

1

(RWW) Well I think that one of the first steps that we ought to take is look at where we would like to be at some point three to five years from now and take a very gross cut as to what parts of our philosophical goals will be, you know will we be 100% service, 100% research or some combination in between as to what we think. We should feel like we should know where we want our funding to come from. Right? that's as important as everything else. So do we feel that in four years we still expect to get 90% of our funding from ARPA with little 10-20,000 dollar things coming from 5-10 people. Or do we expect to have funding coming in from 10 or 20 people sort of equally split among these organizations with not having ARPA involved at all? I think that some very gross feelings like that could then help us to begin to figure out how to bend our programs to meet those kinds of objectives.

2

(DCE) Lets just toss in there and say, "If I had to pick a number for the gross dollars worth of resources that essentially available to manage and pay for the activity in the boot-strap community, in three to five years aim for 10,000,000 dollars a year. I'll toss that on there to just sort of add to the kind of questions you might want to follow through on that.

3

(RWW) The next question that would hit me, is when you say, "Manage the boot-strap community, now what does that entail" Does that entail a little organization that sits at SRI and is doing just managing, and where all the real work is going on in other places. Possibly one of them being some other organization at SRI. Or what does that tentavely mean? Does that include the work that an organization at SRI might be doing, or just the work of that group of people who are managing the total boot-strap community.

4

(JCN) That has a lot to do with the perspective of your whole framework structure. One set of goals in that are what may turn

out to be ARC goals. It seems to me we can't understand what we ought to be doing, ... unless we understand to some degree, what are you're goals.

5

(DCE) I argue not at all with that.

6

(JCN) It starts somewhere.

7

(DCE) My image of the way this goes is that one of these days there will be a nicely coherent and balanced description that should be what, you know, as a starting point, that's what my head says this should or could be. And from there we get going a nice dialogue because I, how can this be modified to take care of the possibilities needs of other people. Of the dynamics of potential sponsorship, other potential participants, and we continuously shape the thing, but we, there will be a nice coherent evolving picture with a plan.

8

(RWW) Because the thing is about a plan, a longer, five-year, evolving plan, is it can be totally wrong, so...

9

(someone knocks on door, DCE say's, "Come in.")

10

(RWW) This plan can be totally wrong, but it can set some directions for six months that create enough internal information to feed back and a new plan for the next five years comes out six months from now. So There is nothing that says that once we fix it it's frozen, so you don't have to be afraid to just charge on and ...

11

(DCE) That's not my problem.

12

(RWW) ... say, and pick like the kind of ideal figure like you just mentioned.

13

(DCE) That's not my problem. there is a mixture of constipation and diarrhea that I don't understand.

14

(RWW) Let me just ask a question. You come in here and maybe you're sitting down and ready to put some of this stuff out. A visitor comes in and he's got all kinds of exciting different things that he's doing that are relevant to us, but they may lead you off someplace else, is there any way we could set up a more controlled situation with visitors to possibly create a more stable environment for you to create some of these things?

15

(DCE) Yes. And other sorts of distractions too that might occur. So one of the problems is trying to help me get the necessary

time, continuous time. That's a part of the problem. The other part of the problem is to help me get a starting place. I've got thousands, I've got notes over the years in sections in here that go on page after page that there's so many trails, so many facets, xxx but that I, that's when the constipation comes in. And the attempt to break that is trying to store some of this recorded dialogue on tapes and transcribing. Just hoping that the kind of interaction and the ways I start trying to say things, I go back and start gently modifying and developing from there. I've trouble just getting a foothold over that big smooth rock. The diarrhea part of it is when the visitors come in, such as the four or five I've showed you I've made (allowance?) of. They ask a kind of question too that's a dialogue that goes on that's very good perspective in a way. But boosts some kind of blood pressure, nervous pressure, or something that hits the end of some days that I have a hard time drawing a breath

16

because of some kind of elevated pressure so that when I'm in that state, and I then have time to work, I'm hyperventilated, and I almost get nauseous when I try to turn to express the problem because it's too much. I'm spinning wheels too fast, and I've got to go read a science fiction novel or something. So it's been a hard Fall upon me in that respect. And I really could get help from you guys in some way to try to hold me down, calm me down, keep me directed. Risk getting me angry by kind of channeling somethings help me. Once we start getting some drafts moving with the structure, I think ...

16a

(RWW) What if we tried to set up a thing where the Institute could find a little cubby-hole, on the other side of the world over there some place where there it is known that what ever you consider to be your prime hours like from 9-12 whatever, that's where you are. Doesn't have a phone, we can't call you up. And we really try to keep out of that period, and you do sort of deferred execution sort of input to the system. And that periodically we take the stuff and we go over it, feedback that kind of a mode ...

17

(DCE) I've considered beyond that even. Big parks where I'll move off and I'll only communicate over the telephone and I record everything that gets transcribed. And then the service to the written kind of dialogue really starts to formulate. Because so much gets passed out in exciting talks. So I've been going around there but something I'm off balance enough so I don't have the strength to set myself up like that so I'm sort of like that. Ok, I'm game to try it. and I think it would probably be the best way to do it.

18

(RWW) How would we go about getting an office? Is there funding
get the right kind of terminal, to get you to work with 19

(WHP) Can we get the IMLAC for that? 20

(RWW) That tangles up the service that sort of comes and goes and
screws... 21

(RWW) Yeah, I think we want to DEX. 22

(JCN) I think the biggest threat to it isn't whether we can get
an office or even whether we can get a terminal. It's this other
thing that your callendar for pretty near every day is filled up.
Visitors trips, conferences, incidental drop-ins that we think is
good. And I've never been able to see a two week period free
except when you left for Mexico. 23

(DCE) Yeah. 24

(RWW) Yeah, but I think if we set it up on a morning kind of a
basis, if we keep trying to keep moving all day, it would be very
hard probably, but if just a half a day, guarantees the visitors
that come, who really want to talk to Doug or visa-versa, or
something. Then it guarantees... 25

(WHP) You can't work on that stuff for more than half a day... 26

(JCN) I think it won't work though without another ingrediant
which is some kind of built in barrier to self protecting that
time because we can't keep you from giving it away. 27

(DCE) Yeah, it's, some psychological things I just know that it's
my own problem, though I hope I can solve it myself, bird-dogging
me and so on. 28

(JCN) Cancel appointments you set up. Telling people, "he isn't
here this morning regardless of what he says. 29

(DCE) For instance, this fellow Clark who wants to come and see
us. And you say, alright you'll do it, and handle it just the
way it ought to be handled. And if I go hide and he comes and
you talk to him. 30

(RWW) I think visitors ought to be handled in a much more formal
kind of way where a guy whose job it is to do, instruction in the
system and a lot of the things. He has a set of slides. 31

(WHP) We've done this before. 32

(RWW) We've never tried it before since I've been here. We've talked about it, but we never tried it. 33

(JCN) Well we'll set one up with Dirk VanNouhuys Dave Casseres... 34

(RWW) ...and we send him off to this guy, and then when the guy is done, he comes and talks to somebody else for a while and turns on it and answers any level of questions that guy isn't set up to handle. But by the time we get him, he's already like, you know, had text deleted and jumped on links and the kind of stuff that is just a waste of his time to keep going through all the time... 35

(WHP) What if it's a vice president or something... 36

(RWW) Well, I'm not saying it has to be that ridgid, but I think it we can set it up so that it saves a lot of people's time, it gives them what they need and still gives them access to somebody else other than that guy so it's not like he only ever talked to the receptionist. We've just never tried hard enough to really make that work. Because visitors take up an enourmous amount of time of this project. They probably take up almost a man-week over a lot of good time that we could come back to a few hours of somebody's time so we'll really have that some day. 37

(JCN) I know we really have done some of that. Yesturday afternoon, this guy from Naval Warfare Research Center, the day before?... Dirk spent an hour, half an hour with him. And there have been many many people we have treated that way. 38

(RWW) But I think we could really set up a show. Maybe you've already done it, but I feel I haven't. Or you really come in and you have five or six files that link to each other in all kinds of really the right way, and it's a really professionalized thought out kind of show that really shows them in a precise quick way what our system can do. 39

(JCN) I accept that, we should do more 40

(DCE) ... there are some marvoulous devices the audio visual people have for schools. There are film strips, movies, and we get a nice little audio cassette, you can drive the audio cassette with a description for film strip, and a little tone comes out and press the button xxxx there is an ultrasonic note, supersonic tone... 70 dollars. Last night at the highscool at the open house here's a beautiful little one with a little screen like this the film strip is projected on, a little cassette player that runs. You push a little button, it advances. You

get a whole little lecture with a simple little film strip. And the film strips are something that are very easy for us to make. The process of taking pictures off the CRT and inverting. 41

(RWW) It's part of our marketing development to get something like this because if we are going to buy something, they don't take it to the president of the company everytime they show you the product. 42

(DCE) Yeah,.... I, allright, I'll, we've done a lot of, compared with other situations I know of we've done pretty well with this. And in the last six months I have sensed some kind of need to assess these types as to what they represent as to possible participants. We're going to get more participants going, where does that. But we can get really valid consideration with other alternatives. I can just sit back and write. Keep a log of who comes in. Formulations about, and say, "Look, why don't others of you accept the possibilities and get the feedback from them. And if you don't know what percent, then that's what the measure should provide in writing. Feedback you put in writing. You make a little log or when people come through that represent potentials like that. So this is a way to do it and I wouldn't mind at all. 43

(WHP) I think the idea of splitting the load is more, instead of trying to go all the way. 44

(DCE) Yeah. 45

(JCN) That's good. 46

(WHP) There is obviously going to be a lot of people with important views of contacts who were just not welcome around here before one o'clock everyday. 47

(JCN) There is a sort of "medium" effect for anyone who does have to do live demonstrations for people and answer their questions, and there is a lot of education in that process, because if you have to explain that to some body, it makes you want to go learn more about it. 48

(DCE) Same thing goes if you produce a film strip. I'd say, hey, produce a film strip on the way this augments software process. Produce a film strip on the way our languages are set up. Or produce a film strip on the way we do base-line-management problems. And you know, it would be in there about three weeks and we'd decide to make a better one. Well maybe it would be better to use film strips than.... 49

(RWW) Well that's another thing you can do with a combination of media. If I walk in and sit down with that thing, I can jump around in a few files that I'm familiar with that we are using in NIC that make some sense. But I can't show very well what that means to guys like Paxton who are programming using that, and I'm not sure it makes a lot of sense in another area. And if we had a few of these canned things that a guy could run through. And then sit down with a real short one really on line to show him, make him feel alive, and then talk to him. And the other guy at another level could answer any other questions that got left out, I think we could really handle it ...

50

(DCE) Steve Miller is out talking to some other fellows I think but the first technical thing he's going to do for us is DEX terminals. Probably cassettes. He says that he knows that there are some for about \$200 a month that are very reliable, very accurate. It's probably worth reviewing here what's shaping any way in this regard. I told you some thing about yesterday afternoon. I essentially told NASA I'd have some proposal for them as soon as we could. And the proposal may be that we can't help them out, that it will be sometime next spring that we will come forth with a proposal approximately... There is a certain real value in getting going with them soon, so I put the conditions on the way we could participate with them and it didn't mean. It would be an asset to us within a month or so. Or you know, fairly soon in there, an asset to us from participating rather than an extra drain on our energy.

51

and very early means that we don't minimize or extinguish any dependance in a support system they have of people there on line. But the support system is essentially an automated clerical draft development thing and where it's using DEX to do the development. And the image of that sort of thing. And we turn around and say, "How do we provide them with that when we are having trouble with our own clerical work?" Ok, the advantages we might attain is if we could break from the deadlock we have in our clerical transcription production, what ever you want to call it. Some say, what would we like to do there, in that center here that we centralize the service we get for transcription. That's the term that seems to sort of express the term we're most talking about I think.

51a

If we could get help in managing, pulling together getting the DEX equipment, getting the procedures established well so that we can train clerical support to follow them, learn how that our own specifications for different kinds of work support from these people are doing, and shake it down as an operating support here. It would be a lot of help to us. So in a

sense, we're hiring Steve Miller to help set it up as sort of technical support. The kind of terminal configuration.

51b

He's also participating in quite a few studies of production documentation systems on the outside. He's involved in a type of Britannica study. He's involved in quite a few other of these kinds of problems for industrial places that have to do a lot of production work. And since there's a telephone company in Brazil for whom he now is a consultant. So he's had quite a bit of experience to bear on techniques, hardware. And we're looking for someone we can buy around the Institute some place who's got some management experience. Enough to come and really put some muscle into helping get that group organized. So if these two things can happen, we get that much help, I can go ahead and picture seeing that group could serve lots of couriers running over there and getting drafts and bringing them back.

51c

(RWW) OK, what does NASA get out of it besides drafts that they could get from their typists?

52

(DCE) Well, for a while they get that. One assumption is that we'll turn soon to the business of an output processor path that could go out so that they could get prototype quality versions. And the early stages for the next three or four months, that's all they get. NASA. And so there is benefit for that sort of service over and above typists doing it. That they can get much quicker total draft provision.

53

(JCN) At least have the stuff in the machine. And we can't, NIC is . Having this facility going changes a lot how NIC publishes it's things.

54

(DCE) We assume our system learns how to run catalogs and things.

55

(RWW) Yeah but can we manage the whole clerical thing. I am sort of concerned about our load on the clerical part.

56

(laughter)

57

(DCE) Well, we might turn this off...

58

(End of tape)

59

KIRK 3-JAN-73 19:09 13670
KIRK 4 JAN 73 6:07AM

(J13670) 3-JAN-73 19:09; Title: Author(s): Kelley, Kirk E./KIRK;
Distribution: Norton, James C., Watson, Richard W., Paxton, William H.,
Engelbart, Douglas C./jcn rww whp dce ; Sub-Collections: SRI-ARC;
Clerk: KIRK;
Origin: <KELLEY>DCE.NLS;12, 20-DEC-72 14:10 KIRK ;

MAP 3-JAN-73 8:59 13671

You haven't been practicing. cheers, map

1

MAP 3-JAN-73 8:59 13671

(J13671) 3-JAN-73 8:59; Title: Author(s): Padlipsky, Michael
A./MAP; Distribution: Lang, Bryna M./BML; Sub-Collections: NIC; Clerk:
MAP;

ADDENDUM TO NLS NEWS (13575,)

The following features were omitted from and in the case of Control Character Invisibles misleadingly described in the most recent version of "NLS NEWS" (see -- 13575,)

1

CONTROL CHARACTER INVISIBLES NOW SHOW IN TNLS

1a

Special representation of non-printing control characters in literal strings will be printed out in TNLS. Control characters will appear as whatever character specified preceded by an up-arrow (↑) and enclosed in anglebrackets, e.g., <↑D>.

1a1

YOU HAVE JOURNAL MAIL MESSAGE

1b

The message "You Have Journal Mail" will appear as you enter NLS whenever you have any substatements in the Journal branch of your initial file. It is a recommended practice to create yet another branch in your initial file named, for example, "read" to which you move journal items as you have read them. Then the message "You Have Journal Mail" will serve to alert you to new entries only.

1b1

AUTOMATICALLY APPENDING QUICKPRINT COPIES

1c

The Output Quickprint command has been modified to include a feature which allows the user to successively output quickprint files to a non-default file name causing all files output to the same filename AND EXTENSION NAME to be appended so that the entire quickprint set may be output at the same time through use of one "Rename" command to the Printer directory at the EXEC level.

1c1

Using the Rename command instead of the Copy command causes your copy of the quickprint file to disappear.

1c1a

Note that specifying the same Extension name is critical to the success of this feature. If only the filename is specified the system will create successive copies of successive files.

1c2

ADDENDUM TO NLS NEWS (13575,)

(J13672) 3-JAN-73 10:48; Title: Author(s): Auerbach, Marilyn F./MFA
; Distribution: Agent, Station, Hoffman, Carol B., Lee, Susan R.,
Michael, Elizabeth K., Dornbush, Charles F., ARC, Guest O., Feinler,
Elizabeth J. (Jake), Handbook, Augmentation Research, Kelley, Kirk E.,
Meyer, N. Dean, Byrd, Kay F., Prather, Ralph, White, James E. (Jim),
Vallee, Jacques F., Kaye, Diane S., Rech, Paul, Kudlick, Michael D.,
Ferguson, Ferg R., Lane, Linda L., Auerbach, Marilyn F., Bass, Walt,
Engelbart, Douglas C., Hardeman, Beauregard A., Hardy, Martin E.,
Hopper, J. D., Irby, Charles H., Jernigan, Mil E., Lehtman, Harvey G.,
North, Jeanne B., Norton, James C., Page, Cindy, Paxton, William H.,
Peters, Jeffrey C., Ratliff, Jake, Row, Barbara E., Van De Riet, Edwin
K. (Ed), Van Nouhuys, Dirk H., Victor, Kenneth E. (Ken), Wallace, Donald
C. (Smokey), Watson, Richard W., Andrews, Don I./sri-arc ;
Sub-Collections: SRI-ARC; Clerk: MFA ;

RWW 3-JAN-73 15:03 13673

Harvey's Seminar Postponed One Day to Thurs the 11th

Because Doug Jim and I will be away early next week, I have asked Harvey to postpone his seminar one day from Wed to Thurs so we can attend. He has agreed so it will be on Thurs the 11th at 3:00. Thanks

1

Harvey's Seminar Postponed One Day to Thurs the 11th

(J13673) 3-JAN-73 15:03; Title: Author(s): Watson, Richard W./RWW;
Distribution: Agent, Station, Hoffman, Carol B., Lee, Susan R., Michael,
Elizabeth K., Dornbush, Charles F., ARC, Guest O., Feinler, Elizabeth J.
(Jake), Handbook, Augmentation Research, Kelley, Kirk E., Meyer, N.
Dean, Byrd, Kay F., Prather, Ralph, White, James E. (Jim), Vallee,
Jacques F., Kaye, Diane S., Rech, Paul, Kudlick, Michael D., Ferguson,
Ferg R., Lane, Linda L., Auerbach, Marilyn F., Bass, Walt, Engelbart,
Douglas C., Hardeman, Beauregard A., Hardy, Martin E., Hopper, J. D.,
Irby, Charles H., Jernigan, Mil E., Lehtman, Harvey G., North, Jeanne
B., Norton, James C., Page, Cindy, Paxton, William H., Peters, Jeffrey
C., Ratliff, Jake, Row, Barbara E., Van De Riet, Edwin K. (Ed), Van
Nouhuys, Dirk H., Victor, Kenneth E. (Ken), Wallace, Donald C. (Smokey),
Watson, Richard W., Andrews, Don I./sri-arc ; Sub-Collections: SRI-ARC
SRI-ARC; Clerk: RWW;

ST 3-JAN-73 13:06 13674

REQUEST FOR PLANNED COLLABORATION

SOMEBODY AT NBS PLEASE COLLABORATE WITH ME SOON.....SIG

1

ST 3-JAN-73 13:06 13674

REQUEST FOR PLANNED COLLABORATION

(J13674) 3-JAN-73 13:06; Title: Author(s): Treu, Siegfried/ST;
Distribution: Pyke, Thomas N./TNP; Sub-Collections: NIC; Clerk: ST;

Visitors Expected

Charlie Rosen has received a call from John Joyce at General Motors. Joyce and Dr. George Dodd and perhaps several others are coming to SRI, February 6, and they'd like to see ARC, perhaps Doug himself, in addition to other groups like Charlie Rosen's and Jack Goldberg's. Charlie will take charge of setting up some kind of agenda. They are interested in many subjects; one of which is computer networking.

1

JCN 4-JAN-73 15:23 13676

Visitors Expected

(J13676) 4-JAN-73 15:23; Title: Author(s): Norton, James C./JCN;
Distribution: Engelbart, Douglas C./DCE; Sub-Collections: SRI-ARC;
Clerk: DCE;

Talk with DDSI -- Jan 4, 1973

I spoke to John Kroemer (sp?), Paul Johnson's boss at DDSI, this morning.

1

I told him that we were interested in getting local proofs, at low speed and resolution if necessary, that would closely resemble Comp80 output.

1a

I asked him about Doug's idea of leasing a III-15 and their software, and using the software which simulates the fonts (that they used in their development work) to generate strokes, then adding a small post-processor to convert the strokes to a series of dots, printable on any number of dot-matrix printers.

1a1

He said that such a system was feasible, and suggested that, because of some special arrangement with III, DDSI might offer us such a package at a price less than that which III would charge us.

1b

He will think about the problem, and make us some rough offers and estimates.

1c

He said that III-15s rent at approximately the same price as a PDP-15 (which rents, in its simplest form, at just over \$620/month).

1c1

I spoke to Mark Brown, of DDSI, today at 3:30PM.

2

I complained that all the characters in the painted fonts look to dark, especially when compared to magazines and books.

2a

He attributed this to the CopyFlo, and said that printed matter should look better. I reminded him that we have yet to see good printed matter.

2a1

Dick Watson asked to see high quality copy as a point of discussion. I will ask Mark to bring us some.

2a2

He said that proportional spacing and full justification were up. They will test them on the tape we have down there now (parts of the Output Processor Users' Guide).

2b

He said that he would like to visit us next week, and suggested Thursday afternoon between 2 and 3.

2c

There is a seminar at three, so the meeting will have to be earlier.

2c1

NDM 4-JAN-73 16:33 13677

Talk with DDSI -- Jan 4, 1973

Walt will have to do the arranging, since I will be in Berkeley.

2c2

NDM 4-JAN-73 16:33 13677

Talk with DDSI -- Jan 4, 1973

(J13677) 4-JAN-73 16:33; Title: Author(s): Meyer, N. Dean/NDM;
Distribution: Bass, Walt, Meyer, N. Dean, Van Nouhuys, Dirk H.,
Auerbach, Marilyn F., Kaye, Diane S., Engelbart, Douglas C., Norton,
James C., Watson, Richard W., Irby, Charles H., Watson, Richard W.,
Engelbart, Douglas C./DPCS RWW DCE; Sub-Collections: SRI-ARC DPCS;
Clerk: NDM;
Origin: <MEYER>DDSIMET.NLS;1, 4-JAN-73 16:30 NDM ;

document request

Please send me copies of NIC documents 5830, 5831 and 5832 (RFC's 118, 119 and 120 respectively) and copies of 10704, 10705, 10706, 10707, 10708 and 10713. The latter are the various chapters of the DNLS users guide, except for the first which I obtained from you a while ago, thinking that 10703 was the entire thing. I would also like to lodge a mild complaint about the Journal command "Distribute Document": it rejected my request for the first 3 documents which I'm requesting, I suppose because they are not on line (but one would think it could easily enough add an entry to a file somewhere and accept the request), and it accepted requests for the others and put entries in my initial file, but I haven't seen any hard copy, and it has been a while.

1

ADO 3-JAN-73 21:33 13678

document request

(J13678) 3-JAN-73 21:33; Title: Author(s): Owen, A. D. (Buz)/ADO;
Distribution: Lee, Susan R./SRL; Sub-Collections: NIC; Clerk: ADO;

imnls use -- loading the imlacs

Dick, this is probably already on somebody's list, how-some-ever:

IMNLS should query the user whether he want to have his imlac reloaded, prior to initiating imnls use. He would then be asked who he is (so imnls can tell which copy to ship out). This would automate the currently bothersome necessity of reloading imlacs thru a wheel account.

1

DHC 4-JAN-73 13:33 13679

imnls use -- loading the imlacs

(J13679) 4-JAN-73 13:33; Title: Author(s): Crocker, David H./DHC;
Distribution: Watson, Richard W./RWW; Sub-Collections: NIC; Clerk: DHC;

DHC 4-JAN-73 13:42 13680

NBS analysis of Users' use of the Network

Ari has just returned from visiting your ANTS and told me that you are going to do monitoring of Network use at the console level. (with 'T' connections, I believe).

I am personally very interesting in man-system interface issues and would like to know more about your plans for analysis, if I might.

Mnay thanks, before the fact.

-- Dave Crocker

1

DHC 4-JAN-73 13:42 13680

NBS analysis of Users' use of the Network

(J13680) 4-JAN-73 13:42; Title: Author(s): Crocker, David H./DHC;
Distribution: Rosenthal, Robert/RR; Sub-Collections: NIC; Clerk: DHC;

Recovering from individual nls-command errors

I can imagine many problems in implementing this suggestion, and I remember talking with y'all about it once before but:

It sure would be nice to be able to back-up from nls commands; to recover from errors. Execute Unlock is too hairy and tends to involve too many 'modifications' to the file (even if Update is done fairly frequently.

A command like 'Backup' would be very, very helpful.

1

DHC 4-JAN-73 14:20 13681

Recovering from individual nls-command errors

(J13681) 4-JAN-73 14:20; Title: Author(s): Crocker, David H./DHC;
Distribution: Watson, Richard W./RWW; Sub-Collections: NIC; Clerk: DHC;

JIM

I JUST TRIED THE UCSB SMFS FROM NIC AND GO 'UNSUPPORTED
FILENAME' WHEN TRYING TO COPY A FILE TO UCSB. I SPECIFIED 'TO'
AND 'CREATE'. ANY IDEA OF THE TROUBLE?

ERNIE

1

EHF 4-JAN-73 11:23 13682

(J13682) 4-JAN-73 11:23; Author(s): Forman, Ernest H./EHF;
Distribution: White, James E. (Jim)/JEW; Sub-Collections: NIC; Clerk:
EHF;

Missing Links to NIC Functional Documents

In the NIC effort, we have failed to tie together two features of our retrieval system: LOCATOR and Functional Documents. 1

The stated purpose of the concept of Functional Documents was to allow each to be referred to henceforth by a link which would stay useful even as the contents of a Document changed completely. In other words, 5145 would stay a constant link to the Current Catalog of NIC Publications while the catalog content changed from 5800, 5801 etc. to 11602, 11603, etc. 2

Somehow, in design of NIC Locator, we ignored this concept, with the result that a link to 5145 goes nowhere. Same situation with the other Functional Documents. 3

DVN and I will get together to put these missing links into Locator. 4

Missing Links to NIC Functional Documents

(J13683) 4-JAN-73 8:25; Title: Author(s): North, Jeanne B./JBN;
Distribution: Agent, Station, Hoffman, Carol B., Lee, Susan R., Michael,
Elizabeth K., Dornbush, Charles F., ARC, Guest O., Feinler, Elizabeth J.
(Jake), Handbook, Augmentation Research, Kelley, Kirk E., Meyer, N.
Dean, Byrd, Kay F., Prather, Ralph, White, James E. (Jim), Vallee,
Jacques F., Kaye, Diane S., Rech, Paul, Kudlick, Michael D., Ferguson,
Ferg R., Lane, Linda L., Auerbach, Marilyn F., Bass, Walt, Engelbart,
Douglas C., Hardeman, Beauregard A., Hardy, Martin E., Hopper, J. D.,
Irby, Charles H., Jernigan, Mil E., Lehtman, Harvey G., North, Jeanne
B., Norton, James C., Page, Cindy, Paxton, William H., Peters, Jeffrey
C., Ratliff, Jake, Row, Barbara E., Van De Riet, Edwin K. (Ed), Van
Nouhuys, Dirk H., Victor, Kenneth E. (Ken), Wallace, Donald C. (Smokey),
Watson, Richard W., Andrews, Don I., North, Jeanne B./sri-arc nicsta ;
Sub-Collections: SRI-ARC NICSTA; Clerk: JBN;
Origin: <NORTH>LINKSFUNC.NLS;1, 4-JAN-73 7:56 JBN ;

Question about Insert Number - a Bug?

Hey: Paul Rech and I noticed that insert number doesn't seem to work right. It returns "illegal number" message when you type in a simple number. Please check this out and fix . If we are missing something, please let us know.

1

JCN 4-JAN-73 11:44 13684

Question about Insert Number - a Bug?

(J13684) 4-JAN-73 11:44; Title: Author(s): Norton, James C./JCN;
Distribution: Irby, Charles H., Watson, Richard W., Kaye, Diane S./chi
(for action?) rww (for info) dsk (for info) ; Sub-Collections: SRI-ARC;
Clerk: JCN;

Note re SUR Progress Report to ARPA-IPT Principal InvestigatorA

Please look at file <mit-dmcc>surprogress.nls. I'll phone you to get your comments. To look at it, do the following:
lf<mit-dmcc>surprogress CA, where the 'CA' means 'command accept'. Then do: pb.0 CA. NLS will do some spacing for you, but otherwise spacing is not important.

1

JCRL 4-JAN-73 12:50 13685

Note re SUR Progress Report to ARPA-IPT Principal InvestigatorA

(J13685) 4-JAN-73 12:50; Title: Author(s): Licklider, J. C.
R./JCRL; Distribution: Turn, Rein, Stollo, Ted R., Wolf, J. J., Sisko,
Mildred A., White, George M., Jelinek, Fred, Bhushan, Abhay K., Barnett,
Jeff A., Shoup, June E., Reddy, D. Raj, O'Malley, Michael, Neuberg,
Edward P., Klatt, Dennis H., Samuel, Arthur, Woods, W. A., Newell,
Allen, Forgie, James W., Green, C. Cordell, Licklider, J. C. R., North,
Jeanne B., Crocker, Steve D., Medress, Mark, Makhoul, John, McCracken,
Donald, Ritea, Barry, Stowe, Arthur N., Walker, Don E./SURG;
Sub-Collections: NIC SURG; Clerk: JCRL;

Junk SMFS files to be scratched

Mark, These are the junk SMFS files I managed to create and either forget or make impervious to deletion during checkout of my TENEX interface. You can scratch all of these and thereby recover about 80 tracks.

1

ACWHITE TEST TXT 1 (I zapped this one already)

1a

ACWHITE DIRNO SAV 1

1b

ACWHITE MESSAGE TXT 1

1c

WHITE KILJOB NLS 2

1d

WHITE MGBUG2 NLS 3

1e

AC NET NETSER NLS 54

1f

WHITE SMFSWORK SAV 18 (Note the

1g

WHITE SMFSWORK SAV 20 leading

1h

WHITE SMFSWORK SAV 21 blank on

1i

WHITE SMFSWORK SAV 1 these

1j

WHITE SMFSWORK SAV 2 o five)

1k

ACWHITE RENAME TXT 1

1l

AC WHITE CREDIT NLS 3

1m

ACSUBSYS TRASHHG SAV 1 (I zapped this one too)

1n

EH JWHITE RJS SAV 1

1o

AC NLS IOCTL NLS 124

1p

AC WHITE JEWSAV NLS 1

1q

AC WHITE JEW NLS 110

1r

AC10918630755 (I'm not sure about this one; I think I created it.)

1s

In case you were wondering, I encode the user's host address in the first two digits of the SMFS filename:

2

<m-th letter of the alphabet> <n-th letter>

2a

Junk SMFS files to be scratched

(starting with zero for 'a')

2a1

where:

2a1a

$\text{host addr} = 16 * m + n$

2a1a1

Example: 'AC'

2b

$m = 0$ and $n = 2$

2b1

therefore, $\text{host addr} = 16 * 0 + 2$ (SRI-ARC)

2b1a

By the way, I think your SMFS mapdisk program is cool. Why don't you print out the read/write passwords as well? (I'm always anxious to make suggestions that involve somebody else having to write code.) Just out of curiosity, do you save userid, account, and site in the file like the passwords?

3

JEW 4-JAN-73 12:57 13686

Junk SMFS files to be scratched

(J13686) 4-JAN-73 12:57; Title: Author(s): White, James E.
(Jim)/JEW; Distribution: Krilanovich, Mark C./mck ; Sub-Collections:
SRI-ARC; Clerk: JEW;
Origin: <WHITE>JUNKSMFS.NLS;2, 4-JAN-73 12:54 JEW ;

Help Imlac

response to (MJOURNAL, 13524, 1:w)

Re our imlac configuration:

we have 4k of core, no hardware options, connected to

a dataphone. (Our imlac is serial number 1). We are considering

getting a higher speed interface directly to the tip, but

at present we have only the acoustic coupler. We have

no PTP or cassette. The model we have is an alpha model.

I would like to find out how to load the TSE from some site on

on the network (thru the tip) as the software we have for

it now was designed for the Stanford computation center (not on

the net) and has no graphics mode at all. What i am interested in

is a higher level language for a remote host which can

do graphics on the Imlac using either the TSE or someother package

for the imlac. I'm not interested in games.

I hope that's specific enough .

Thanks, Larry

LMM 4-JAN-73 12:16 13687

Help Imlac

(J13687) 4-JAN-73 12:16; Title: Author(s): Masinter, Larry M./LMM;
Distribution: Neigus, Nancy J./NJN; Sub-Collections: NIC; Clerk: LMM;
Origin: <SU-HP>X.NLS;1, 4-JAN-73 12:01 LMM ;

LPD 4-JAN-73 15:04 13688

Reply to RS2's request

replies to 13617

Reply to RS2's request

The last time MITRE made a request of this sort -- for technical assistance from the network community with no hint of the intended use of this assistance -- it turned out to be a request on NCP implementors to provide the information to aid DCA in setting up a purely military network. If MITRE doesn't wish to participate in the network community on the same open terms as the rest of us, I see no reason to encourage them. I therefore do not intend to reply to the present request.

1

Reply to RS2's request

(J13688) 4-JAN-73 15:04; Title: Author(s): Deutsch, L. Peter/LPD;
 Distribution: North, Jeanne B., Newell, Allen, McCarthy, John, Dines,
 Thomas R., Roberts, Lawrence G., Bobrow, Daniel G., Heart, Frank E.,
 Glaser, Edward L., Marill, Thomas M., Cheatham, T. E., Stone, Duane L.,
 Forgie, James W., Vorhaus, Alfred H., Pyke, Thomas N., Uncapher, Keith
 W., Weissman, Clark, Feigenbaum, Edward A., Kleinrock, Leonard, Harris,
 David O., Pratt, William K., Evans, David C., Engelbart, Douglas C.,
 Raphael, Bertram, Slotnik, Daniel L., Iseli, John, Poh, Susan S.,
 Silberski, Robert, Irby, Charles H./PI JI SSP RS2 CHI; Sub-Collections:
 NIC PI; Clerk: LPD;

MCK 4-JAN-73 12:14 13689

Jon--

I got your message about lack of links, and I agree with your proposed solution. I can see no serious disadvantage to having only 14 links in reserve; after all, they are there to use. I certainly agree that we need more, and am prepared to institute this change in our NCP anytime.

-- Mark Krilanovich (UCSB)

1

MCK 4-JAN-73 12:14 13689

(J13689) 4-JAN-73 12:14; Author(s): Krilanovich, Mark C./MCK;
Distribution: Postel, Jonathan B./JBP; Sub-Collections: NIC; Clerk: MCK;
Origin: <UCSB>LINKMSG.NLS;1, 4-JAN-73 12:12 MCK ;

Allocation of Disk Space

This is a request from the NIC to the Analysis team to study the problem of disk allocation on the ARC system. From the NIC standpoint, this is one of the most urgent problems we have with respect to our computer system.

1

The purpose of the study should be to determine how to resolve the following major existing problems:

2

- 1) The present scheme of allocation is clearly not working as a control mechanism.

2a

Allocation amounts are meaningless numbers for control purposes, since the sum of allocation amounts exceeds the total available disk space.

2a1

Relatively large users of disk space, such as the NIC is, usually are the first to have their files deleted or archived by the operations staff when the disk space shortage becomes acute.

2a2

The solution of buying more disk packs to accommodate users demands for more space is not realistic. Parkinson's Law operates with consummate ease in such an environment.

2a3

- 2) The present method of archiving files that haven't been referenced for some number of consecutive days is unsatisfactory.

2b

A better method would provide an incentive to a user or group of users to manage their own disk space, with constraints that prevent one user group from infringing on other groups' needs.

2b1

Such a method should give the users both the responsibility and an appropriate mechanism to archive and recover files in accordance with their needs.

2b2

In my opinion, the problem of disk allocation is very much like the problem of allocation of other computer system resources. Your excellent scheme for granting access to the system through "Allocation by Group Accounts" should provide a good starting model for the disk allocation problem.

3

Allocation of Disk Space

(J13690) 4-JAN-73 8:47; Title: Author(s): Kudlick, Michael D./MDK;
Distribution: Agent, Station, Hoffman, Carol B., Lee, Susan R., Michael,
Elizabeth K., Dornbush, Charles F., ARC, Guest O., Feinler, Elizabeth J.
(Jake), Handbook, Augmentation Research, Kelley, Kirk E., Meyer, N.
Dean, Byrd, Kay F., Prather, Ralph, White, James E. (Jim), Vallee,
Jacques F., Kaye, Diane S., Rech, Paul, Kudlick, Michael D., Ferguson,
Ferg R., Lane, Linda L., Auerbach, Marilyn F., Bass, Walt, Engelbart,
Douglas C., Hardeman, Beauregard A., Hardy, Martin E., Hopper, J. D.,
Irby, Charles H., Jernigan, Mil E., Lehtman, Harvey G., North, Jeanne
B., Norton, James C., Page, Cindy, Paxton, William H., Peters, Jeffrey
C., Ratliff, Jake, Row, Barbara E., Van De Riet, Edwin K. (Ed), Van
Nouhuys, Dirk H., Victor, Kenneth E. (Ken), Wallace, Donald C. (Smokey),
Watson, Richard W., Andrews, Don I./sri-arc ; Sub-Collections: SRI-ARC;
Clerk: MDK;
Origin: <KUDLICK>DISKSPACE.NLS;4, 4-JAN-73 8:45 MDK ;

PROJECTION TV FILMING

[DCE]: I talked to Harold Puthoff referencing your discussion about film making using the G.E. TV projector.

1

- He would have been ready to try something by now except he's been out sick. Now that he's back he expects to have it together in about 1 week (1/8). Estimates show he will have approximately 3 hours of video tapes to translate.

1a

- He will use me as contact.

1b

- I will recommend to him he first shoot 5 minutes each (or so) of black/white and color. Then process and view before proceeding.

1c

2

MEH 4-JAN-73 8:28 13691

PROJECTION TV FILMING

(J13691) 4-JAN-73 8:28; Title: Author(s): Hardy, Martin E./MEH ;
Distribution: Engelbart, Douglas C., Norton, James C./dce jcn ;
Sub-Collections: SRI-ARC; Clerk: MEH;

OUTPUT PROCESSOR QUICKIE FOR PSO

You are invited to attend a brief (one hour or so) seminar for PSO in the use of Output Processor directives and Output Processor documentation on Monday, January 8, at 3:00 in the conference room.

Please rustle up your own copies of the Output Processor Section of the TNLS manual and the (fairly) new Output Processor Guide if you plan to attend. -- Marilyn

MFA 4-JAN-73 16:07 13692

OUTPUT PROCESSOR QUICKIE FOR PSO

(J13692) 4-JAN-73 16:07; Title: Author(s): Auerbach, Marilyn F./MFA
; Distribution: Van Nouhuys, Dirk H., Byrd, Kay F., Row, Barbara E.,
Kelley, Kirk E., Hoffman, Carol B., Lee, Susan R., Jernigan, Mil E.,
Lane, Linda L./ps0 ; Sub-Collections: SRI-ARC PSO; Clerk: MFA ;

making life easier

Thanks for your information about Jim Norton's programs; all I need to know now is how to use them. I guess I should start reading the L10 Manual. I already knew about sendprint and have been using that for a while too. (I have my spies.) It works pretty well except that the R CLOSED comes in the middle of the last page of print out; problem with big buffers on the new TIPS. I got DNLS working out of here yesterday. Will practice with the Imlac some more today.

Don't worry so much about the letter. What is DHL?

1

NJN 4-JAN-73 7:56 13693

making life easier

(J13693) 4-JAN-73 7:56; Title: Author(s): Neigus, Nancy J./NJN;
Distribution: Van Nouhuys, Dirk H./DVN; Sub-Collections: NIC; Clerk:
NJN;

Proposal for Research No. ISU-73-5

DCE RWW JCN 22-JAN-73 16:38 13694

WORKSHOP UTILITY SERVICE
for
ARPA IPT CONTRACTOR USE
of
AUGMENTATION TECHNOLOGY

Proposal for Research No. ISU-73-5

Draft copy delivered to LGR 1/8/73 at IPT San Diego Meeting by
DCE/RWW

Proposal for Research No. ISU-73-5

I INTRODUCTION

1

A. Brief scope statement

1a

The purpose of this proposal is to request support for extending the utilization of the knowledge workshop technology developed at the Augmentation Research Center (ARC) of Stanford Research Institute (SRI). The extension will be to those ARPA offices and contractors who would be willing to undertake further exploratory use of augmentation techniques.

1a1

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

1a2

The computer services will be supplied through the ARPANET to geographically distributed user groups from a computer facility maintained and operated by a commercial timesharing company. This new "workshop utility" will be run under a sub-contract with ARC. As prime contractor, ARC will handle all service sub-contracts.

1a2a

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

1a2b

maintain and update the "utility" version of our application software;

1a2b1

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

1a2b2

A description of the applications being suggested for exploratory use is given in a paper by Engelbart (see NIC -- 12445,). A copy of this paper is included with this proposal as Attachment A.

1a3

B. ARC's "Community Plan" for promoting development of augmented knowledge workshops.

1b

Introduction

1b1

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

Proposal for Research No. ISU-73-5

augmenting individuals and groups in the performance of knowledge work with the help of computer aids. These computer aids range from offline batch to online real-time. Exploratory development and operation of augmentation systems have been our substantive work.

1b1a

ARC's Research and Development Strategy

1b2

The researchers within ARC do as much of their work as possible using the range of capabilities offered. Thus they have served not only as researchers, but also as the subjects for the analysis and evaluation of the augmentation systems that they have been developing.

1b2a

Consequently, an important aspect of the augmentation work done within ARC is that the techniques being explored are implemented, studied, and evaluated with the advantage of intensive everyday usage. We call this research and development strategy "bootstrapping".

1b2b

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

1b2c

The Next Stage in ARC's Research and Development Strategy

1b3

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

1b3a

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

1b3a1

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

1b3a2

3) can accept our assurance that reliability, system

Proposal for Research No. ISU-73-5

stability, and technical/application help will be available to meet their conditions for risk and cost. 1b3a3

ARC's establishing a Workshop Utility, and promoting the type of service work proposed herein are part of its long-term commitment to pursue the continued development of augmented knowledge workshops in a pragmatic, evolutionary manner. It is important to note that our last few years of work have concentrated upon the means for delivering support to a distributed community, for providing tele-conferencing and other basic processes of collaborative dialogue, etc. -- consciously aiming toward having experience and capabilities especially applicable to support remote and distributed groups of exploratory users for this next stage of wider-application bootstrapping. 1b4

C. Organization of this Proposal 1c

This proposal is divided into two parts, each of which is broken down into several sections. 1c1

Part One is the Technical Proposal, covering the proposed work and its background and context. 1c2

Section I is the introduction. 1c2a

Section II is a summary outline of proposed project activity. 1c2b

Section III is an extended discussion of proposed project activity. 1c2c

Section IV is a list of selected references. 1c2d

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. 1c3

The Attachments contain additional supporting material. 1c4

Proposal for Research No. ISU-73-5

II SUMMARY OF PROPOSED PROJECT ACTIVITY

2

The proposed project work will include:

2a

Availability 16 hours a day, 6 days a week of Workshop Utility service to the ARPANET from a PDP 10 TENEX system operated by a commercial supplier. We call our basic software system "Online System" (NLS).

2a1

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

2a2

Providing technical assistance to an IPT office "workshop architect" in the formulation, development, and implementation of augmented knowledge-work procedures within selected offices at ARPA.

2a3

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

2a3a

Provide "workshop architect" assistance to help set up and assist selected ARPA contractor groups, who share a special discipline or mission orientation, to utilize the workshop utility services and to develop procedures, documentation, and methodology for their purposes.

2a4

III EXTENDED DISCUSSION OF PROPOSED PROJECT ACTIVITY

3

A. Objective

3a

The objective of this effort is to work with ARPA and ARPA Contractor technical and other personnel: in the mutual development and use of procedures, methodology, software features, and other computer tools; and in the training of users that will allow their exploratory use of Augmented Workshop systems.

3a1

We expect that this proposed service will be used within the ARPA community both by distributed special-interest communities of people and by individual coherent organizations.

3a1a

In the following discussion, we refer to this collection of clientele as "ARPA users", and to either type of client group as "group".

3a1b

This objective has three key components:

3a2

1) Establishing a Workshop Utility Service, to provide straightforward means for arranging that a client group can get necessary services both of NLS support and of technical assistance;

3a2a

2) Building a user clientele who will find real value in applying the Service, and whose participation contributes 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;

3a2b

3) Developing know-how and capability for integrating innovation with new-development transfer -- i.e., while stimulating and collaborating in innovative Workshop system development, arrange also for stable, coordinated service support to help new groups get going with augmenting their knowledge work, to help established groups evolve new tools and work methods more effectively, and to facilitate active collaboration among us all on the continuing evolution of improved Workshop systems.

3a2c

B. Background

3b

Proposal for Research No. ISU-73-5

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 improve significantly 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.

3b1

For further background discussion, see Attachment A, a copy of NIC(12445,), and the references of Section IV, see Branch (4).

3b2

While the discussion in Attachment A 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.

3b3

C. Scope of Proposed Work

3c

Introduction

3c1

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

3c1a

The types of workshop services which we can begin to support at varying levels of capability are described in Attachment A under the headings:

3c1b

COLLABORATIVE DIALOGUE:

3c1b1

DOCUMENT DEVELOPMENT PRODUCTION, AND CONTROL:

3c1b2

RESEARCH INTELLIGENCE:

3c1b3

COMMUNITY HANDBOOK DEVELOPMENT:

3c1b4

COMPUTER-BASED INSTRUCTION:

3c1b5

MEETINGS AND CONFERENCES:

3c1b6

COMMUNITY MANAGEMENT AND ORGANIZATION:

3c1b7

Proposal for Research No. ISU-73-5

SPECIAL KNOWLEDGE WORK BY INDIVIDUALS AND TEAMS:

3c1b8

Our present capabilities in the above areas are briefly indicated in Attachment A. For each area, there is an immediate applicability of the basic NLS provisions for composing, modifying, studying, publishing, collaborating, etc, and we have additional, special provisions specifically supporting almost every area (the one exception now being the "computer-based instruction" area). We are dedicated to continuing the evolution of each area in a persistent, year-after-year strategy where the profile of evolutionary effort expended at any given time over the array of application specialties is to be responsive to the profile of application needs and values of the user communities.

3c1c

Our Approach to the Problem of Technology Transfer

3c2

What we propose is to begin to transfer technology from our local group of experienced users to a wider group of inexperienced, geographically separate users within the ARPA community. This technology consists of: computer software capabilities; a coordinated repertoire of computer-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 intra-group 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.

3c2a

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

3c2b

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

3c2b1

2) The end user groups must have at least one,

Proposal for Research No. ISU-73-5

properly placed, active supporter of the transfer process. We have been using the term "local workshop architect" for this role.

3c2b2

This seems similar to what Thomas Allen of MIT, who has studied the technology transfer process in some detail (see Branch -- 4A), calls a "gate keeper". His "gate keeper" is a person oriented both toward the problems of his organization and toward capabilities developing outside his organization. He functions as the gate through which new ideas and technology enter his organization.

3c2b2a

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

3c2b2b

We would like to give particular emphasis to this second requirement -- that each coherent group planning to integrate the proposed services into its working life should have at least one member serving as a "workshop architect" or "group coordinator."

3c2c

The function of this person is to be familiar in detail with both the needs of his organization and the capabilities we are proposing. This person, knowing his group's needs and our capabilities, would design and introduce a system meeting these needs into his organization in the appropriate evolutionary stages.

3c2c1

ARC personnel would work closely with the workshop architect, in training him, in initially giving him significant help in his role, and in a continuing exchange of technical information.

3c2c2

The labor-funding levels in this proposal are based on the assumption that when a client group is allocated a portion of the Utility Computer Services, the corresponding allocation of direct technical support will primarily go to their workshop architect. We assume that much of the responsibility for integrating the Workshop service into his organization or community will be handled by this person.

3c2c3

Proposal for Research No. ISU-73-5

If a workshop architect is not available within a client group, or if extra people need our direct technical support, then additional funding will have to be provided.

3c2c4

Careful selection of the initial communities and organizations to support in the use of a new type of service is another important part of the "transfer" strategy.

3c2d

For use of the Workshop Utility services, selection criteria would be jointly determined with ARPA, and would probably include factors such as: interest in participation; willingness to make the risks and investments in training and other changes necessary to make successful use of the system; and expectation of longer term payoff in using such a service within the larger organizations of which they are a part.

3c2d1

Clientele for the Workshop Utility Service

3c3

We distinguish four main groups who would use the proposed service.

3c3a

1) Mission or discipline oriented groups within the ARPA community who want to experiment with a greater variety of augmentation workshop services and in greater depth than would be available with normal Network Information Center (NIC) service.

3c3a1

Examples of such groups within the IPT area might be those involved in: TENEX system programming, Illiac use or system development, Automatic Programming, Satellite and Radio Packet Communications, Speech Understanding, and AI subgroups. Other examples could come from research programs supported by other ARPA offices.

3c3a1a

2) Local organizations who want to use Workshop services in an integrated way within their organization. (For instance, selected ARPA offices.)

3c3a2

3) Local organizations that are not trying to make integrated, internal use of Workshop services, but that have individuals who want to use some of the services in more depth than can be justified as "experimental usage" of the NIC.

3c3a3

Proposal for Research No. ISU-73-5

Examples here would be individuals doing system documentation, writing a PhD thesis, or doing other serious applications to office or information handling work.

3c3a3a

4) The Network Information Center, in the online services provided to its network clientele.

3c3a4

NLS support for NIC staff at ARC, doing its NIC-support work, would still come from the ARC machine.

3c3a4a

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

3c3b

Need for Extra Peak Computer Capacity before Official Workshop Utility Service Start Date

3c4

Before the official start date of the Workshop Utility Service, ARC will have two important tasks:

3c4a

1) Hire and train the ARC personnel needed to support the service.

3c4a1

2) Begin promotion, training and other preliminary services aimed at having trained ARPA users ready to go on the start date of the Utility Computer service.

3c4a2

Both of these tasks will require computer support. The present situation with respect to computer capacity at ARC is that ARC research, development and administration, ARC support of the Network Information Center (NIC), and usage by NIC clientele have created a generally saturated system during the normal SRI working hours of 8 am to 5 pm.

3c4b

We expect some period of time (unknown) between the official start date of the Utility computer service and

Proposal for Research No. ISU-73-5

the time when it becomes fully utilized, as is normal with the introduction of any new service; but any extra computer capacity that can be made available to us ahead of time would help speed this buildup by allowing more training, special document development, preliminary (potential-) client experiments, and other efforts.

3c4c

Important among the factors affecting usage buildup for the Workshop Utility is the rate at which client groups can go through preliminary stages that involve:

3c4d

understanding what the service can do for them,

3c4d1

availing themselves of software and hardware to support appropriate terminals for use with NLS over the ARPANET,

3c4d2

arriving at possible changes in their methodology and working procedures needed to effectively utilize the service, and

3c4d3

training of users.

3c4d4

We cannot deal effectively with these factors ahead of time without some extra computer capacity.

3c4e

We are working to improve system efficiency of both TENEX and NLS, and to encourage our people to work outside of normal hours, but we do not see these steps creating enough capacity to meet ARC needs and the needs described above.

3c4f

Therefore, we request permission from ARPA for us to transfer some of the local ARC load to the USC-ISI PDP 10 during the Spring and Summer of 1973 so that we can have more effective peak capacity on the ARC machine. We will use the "extra local capacity" thus gained in ARC's machine to train the new ARC people required for the Workshop Utility service, and to provide ARPA users planning to use this service with opportunity to checkout software or hardware they may need to utilize the service and to get in some initial practice.

3c4g

Services to be Offered

3c5

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

3c5a

Proposal for Research No. ISU-73-5

Computer Services

3c5b

The underlying computer-service support

3c5b1

We plan to offer a Workshop-utility version of ARC's online system (NLS), serviced over the ARPANET, at least 16 hours a day, six days a week. NLS features are described in the documents listed in Section IV, see -- 4,).

3c5b1a

There are two prime reasons for supporting Workshop services from a system operated and managed by a commercial timesharing utility company, rather than from a system directly operated by ARC.

3c5b1b

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.

3c5b1b1

2) It should be possible to expand the service in a more flexible manner in increments of whole or partial machines as usage grows.

3c5b1b2

Service Partitioning

3c5b2

We are presently designing a scheme for partitioning computer access and service between groups of users so as to guarantee each group its fair share of system resources while preserving both adequate responsiveness and an independence for each group to plan its own usage loading.

3c5b2a

We plan to implement and experiment with this scheme on the ARC machine before using it on the Utility system.

3c5b2b

Availability of the Workshop Service from a Variety of Terminal Classes

3c5b3

The display version of NLS (DNLS) can presently be supported over the ARPANET on appropriately configured IMLAC display terminals, of which there are a number on the network. Beyond this, we are planning to extend ARPANET DNLS support to a wider variety of display systems in three ways:

3c5b3a

Proposal for Research No. ISU-73-5

1) Through extension of the IMLAC protocol to other display systems which can be provided with local-processor support, and using TELNET-protocol communication to the NLS Utility.

3c5b3a1

2) Through developing special versions of DNLS that work with cheap, text-only display terminals, using no local-processor support and communicating with the NLS Utility via the TELNET protocol.

3c5b3a2

3) Through a general network-wide graphics protocol, serving display terminals with full DNLS service via the graphic protocol communication to the NLS Utility. (We are currently working with members of the Network Graphics Group on the design of such a protocol which could also support DNLS.)

3c5b3a3

Note that much of the development work mentioned in this proposal will be going on independent of the proposed work, but is mentioned here because of its supportive nature to the proposed Utility.

3c5b3b

The typewriter version of NLS (TNLS) utilizes the Network TELNET Protocol and is therefore available to a wide variety of CRT and hardcopy "typewriter" terminals.

3c5b3c

We support a powerful "deferred execution" version of NLS (DEX) from offline typewriters using spooling stackup on magnetic tape cassettes, paper tape systems, or in local computers.

3c5b3d

DEX allows offline batch usage of a full range of NLS capabilities for document creation, editing, file manipulation -- providing for almost any of the NLS operations for creating new files or working upon existing files.

3c5b3d1

Other remote-service features:

3c5b4

NLS's Output Processor, a powerful subsystem for formatting and printing documents, can presently be used from typewriter and other printers on network hosts and TIPS.

3c5b4a

Proposal for Research No. ISU-73-5

Using the Network File Transfer Protocol, we are developing flexible capabilities which will allow transfer and conversion of text files back and forth between other text-manipulation systems and NLS.

3c5b4b

We are also developing the capability to enter documents and messages into the ARC Journal system from files created in other hosts, and to deliver documents submitted to the Journal to users at remote hosts through the network.

3c5b4c

We are planning to have cooperating distributed Journal systems running on several hosts in the network, and to use bulk storage in systems such as the Data Computer for archiving Journal and other files.

3c5b4d

Our goal, as it was with the TELNET and File Transfer Protocols, is to work for general network protocols to provide needed capabilities and thus minimize or eliminate any special Network provisions to support NLS over the network.

3c5b4e

More flexible delivery

3c5b5

We are planning to begin during the coming year to rewrite NLS in the Modular Programming System (MPS), a new modular, run-time linkable, machine-independent programming system being jointly developed with Xerox PARC. We plan for continued evolution of the modularized NLS -- MPS will allow NLS to be easily reconfigured for different user groups, allow "interactive frontend" or other modules to run on other hosts in the network, and allow collaborating groups to experiment with special features in the system which we or they create.

3c5b5a

We have been and are studying various configurations of hardware so as to be able to recommend to isolated individuals or coherent groups display, typewriter, and offline systems possibly supported by a mini-computer in a range of prices and capabilities for their use with NLS.

3c5b5b

File privacy:

3c5b6

Proposal for Research No. ISU-73-5

The Workshop utility will provide (via the ARPANET) the necessary standard TENEX software and/or procedures to ensure some privacy of file access. It should be noted on the other hand, that the visibility and availability of planning information and other recorded dialog in ARC's presently open Journal system provides some of the more significant effectiveness-augmenting potential of our Workshop system.

3c5b6a

We assume that ARC computer-service personnel may occasionally have to access clients' user files as required from an operational standpoint; however, other individuals accessing Workshop utility service via the ARPA Network will be denied read, write and list access to a client's files, unless he specifically release files for general use.

3c5b6b

People support services

3c5c

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

3c5c1

Overhead services

3c5c2

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

3c5c2a

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

3c5c2b

The version of NLS which runs on the Utility will need maintenance and quality assurance. And a systematic means must be provided for features found useful in the development version of the system to be integrated into the version running on the Utility.

3c5c2c

Clerical support of various types will be needed.

3c5c2d

Direct, client support services

3c5c3

Proposal for Research No. ISU-73-5

The people who would use the system must be trained to varying levels of competence, depending upon the nature of their jobs and the tasks they perform.

3c5c3a

New procedures and methods may have to be developed or learned to allow effective use of the system in their working environments. Specifying these procedures may require help in analysing the group's needs and present operations.

3c5c3b

Therefore the following types of services will be required.

3c5c3c

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

3c5c3c1

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

3c5c3c2

Help in creating discipline or mission oriented workshop-user groups of ARPA Contractors, and assistance in their using the capabilities of the Workshop Utility to facilitate internal collaboration, etc. (see Attachment A).

3c5c3c3

Help for the above areas would come in several forms:

3c5c3d

Sessions at SRI for training and application-system design.

3c5c3d1

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

3c5c3d2

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

3c5c3d3

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Proposal for Research No. ISU-73-5

WORKSHOP UTILITY SERVICE FOR ARPA IPT CONTRACTOR USE OF
AUGMENTATION TECHNOLOGY

Part Two--Contractual Provisions

5

I ESTIMATED TIME AND CHARGES

6

It is proposed that the work outlined herein be performed during a period of 14 months commencing 1 July 1973.

6a

The Institute must enter into an agreement with the organization that will provide Utility Computer support several months in advance of the date when Workshop Utility service is first delivered to users. It is requested that notification of any contract to be awarded as a result of the ARPA technical evaluation this proposal be transmitted to us by 1 April 1973, followed by a funded contract to begin on 1 July 1973.

6a1

We are planning for the first year of Workshop Utility service to begin about 1 September 1973.

6a1a

The proposed project will result in Workshop Utility service being made available to ARPA-chosen ARPA offices and IPT contractors.

6b

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 cost of the Workshop Utility operation based on its availability for ARPA-directed use. Costs will include Utility Computer support subcontract costs and Utility People support costs associated with Utility management and coordination, system software efforts, documentation, user interface and training as needed.

6b1

It is anticipated that approximately two-thirds of the initial Utility Computer support and associated People support will be available for ARPA-directed use. This proportion may change during the course of the contract as determined jointly by ARPA and ARC personnel.

6b2

We are currently seeking additional funding from other potential user organizations for use of the remaining portions of the service.

6b3

Pursuant to the provisions of ASPR 16-206.2, attached is a

Proposal for Research No. ISU-73-5

cost estimate and support schedules in lieu of the DD Form 633-4.

6c

The estimated costs shown in the cost attachment are for the total Workshop Utility service operation. Costs expected to be borne by ARPA are estimated to be about 67% of the total or \$ 481,419 as shown.

6c1

A contract resulting from this proposal should be for that amount. It is requested that initial ARPA fiscal 1974 funding be for approximately \$ 300,000.

6c2

A detailed review of the Workshop Utility operation, its services and their use, is planned after the sixth month of operation.

6c2a

Additional funding up to the total amount of the contract should then be forthcoming as determined to be needed jointly by ARPA and the Institute.

6c2b

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

6c2c

II UTILITY COMPUTER SUPPORT SUBCONTRACT

7

During the past several months, the Institute has conducted a bidding competition among several commercial computer utility organizations for the purpose of selecting a qualified supplier of the Utility Computer support offered in the technical proposal.

7a

On the basis of our evaluation of the competitive bids, Tymshare, Inc., Cupertino, California has been selected as the potential subcontractor by the Institute. A formal subcontract will be negotiated when the Institute has assurance of adequate funding support to begin the service.

7b

A copy of the Tymshare, Inc. bid is attached solely for the purpose of evaluating this proposal.

7c

III REPORTS

8

Because of the support nature of the efforts proposed herein, there will be no technical reports produced under this

Proposal for Research No. ISU-73-5

contract. Rather, documentation will be provided along the lines outlined below.

8a

The technical documentation will include:

8a1

TNLS and Deferred Execution Users Guides and updates

8a1a

DNLS User Guide and updates

8a1b

ARPA quarterly management reports will be issued as required.

8a2

IV CONTRACT FORM

9

Due to 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.

9a

V ACCEPTANCE PERIOD

10

This proposal will remain in effect until 1 April 1973. If consideration of the proposal requires a longer period, the Institute will be glad to consider a request for an extension of time.

10a

Proposal for Research No. ISU-73-5

Cost Estimate:

Proposal for Research No. ISU-73-5

COST ESTIMATE FOR FIRST YEAR WORKSHOP UTILITY SERVICE
(total facility)

Personnel Costs

Senior Prof	3200	hrs.	
Prof	3200	hrs.	
Clerical	1600	hrs.	
Total Direct Labor			\$ 69,376
Payroll Burden @ 28%			19,425
Total Labor and Burden			88,801
Overhead @ 105%			93,241
Total Personnel Costs			182,042

Direct Costs

Travel		14,160
30 trips East @ \$318 =	\$ 9,540	
120 Days Subsistence @ \$31 =	3,720	
Auto Rental 60 days @ \$15 =	900	
Communications		3,000
Utility Computer Support Subcontract		486,336
Documentation Costs		5,000
Total Direct Costs		508,496
Total Estimated Cost		690,538
Fixed Fee		27,998
Total Estimated Cost Plus Fixed Fee	\$ 718,536	
ARPA CONTRACT SHARE: 67% =	\$ 481,419	

These costs are further explained in the Schedules that follow

Proposal for Research No. ISU-73-5

Cost Schedules:

Proposal for Research No. ISU-73-5

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 Overhead and Payroll Burden rates are based upon the Institute's best prediction as to financial performance for calendar year 1973. Rather than setting forth these specific rates, it is requested that contracts provide for reimbursement at billing rates acceptable to the Contracting Officer, subject to retroactive adjustment to fixed rates negotiated on the basis of historical cost data. Included in payroll burden are such costs as vacation, holiday, and sick leave pay, social security taxes, and contributions to employee benefit plans.

SCHEDULE C

TRAVEL COSTS

Air fare is based on prices for travel to Washington, D.C., at \$318 round-trip tourist established in the Official Airline Guide dated 1 January 1973.

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

SCHEDULE D

DOCUMENTATION COSTS

Documentation costs are estimated on the basis of the number of pages of text and illustrations and the number of copies to be produced:

The following is a breakdown of the estimated cost of reproduction:

TNLS Guide @ 120 pages, 200 copies @ .10/page=	\$ 2,400
DEX Guide @ 60 pages, 200 copies @ .10/page=	\$ 1,200
DNLS Guide @ 200 pages, 100 copies @ .10/page=	\$ 2,000
Mailing costs:	\$ 400

Total:	\$ 5,000
--------	----------

SCHEDULE E

UTILITY COMPUTER SUPPORT SUBCONTRACT COSTS

See Attachment B, the subcontract bid by Tymshare, Inc., Cupertino, California, dated 12 October 1972.

We have selected configuration B, at a monthly cost of \$ 36,028 or a total of \$ 432,336 per year.

The Utility Computer support costs shown in our cost estimate include an amount of \$ 54,000 to cover the estimated cost of a BBN Pager to be acquired by the Utility Company. This amount is in addition to the

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Proposal for Research No. ISU-73-5

costs shown for configuration B of the above subcontract
bid.

Proposal for Research No. ISU-73-5

(J13694) 22-JAN-73 16:38; Title: Author(s): Engelbart, Douglas C.,
Watson, Richard W., Norton, James C./DCE RWW JCN ; Distribution:
Engelbart, Douglas C., Watson, Richard W., Norton, James C., Stone,
Duane L./EMC DLS (for info only - RADDC version is in preparation) ;
Sub-Collections: SRI-ARC EMC; Clerk: JCN ;
Origin: <NORTON>ARPAPROPOSAL.NLS;1, 19-JAN-73 18:30 JCN ;
<ENGELBART>APROP.NLS;22, 6-JAN-73 14:00 RWW ;
.DIR=1;
HJOURNAL="*** DRAFT *** SRI-ARC 5 JAN 73 13694";
.HED= "Proposal for Research No. ISU-73-5 ";
.F="Part One--Technical Proposal .Split;.GPN=Dec+Brackets;";
.LBS=1; .HRM=72; .FRM=72; .MCH=65; .SNF=72; .DLS=1; .LBS=1;
.HRM=72; .PN=0;
.PEL; .GCR=2;

EDUCOM National Science Computer Network Seminar 3

WORKSHOP 3 TEAM 2

Edward L. Brady
Sylvia Charp
James C. Norton

Our team's first question was:

How do we find out which resources are available and should be included or should be developed?

1

There are at least three different needs for resource identification.

1a

1. There is a need for this as part of a careful assessment of the overall feasibility and timing of the startup of any Network.

1a1

We assume that a substantial amount of resources must be shared in a Network to make the undertaking worthwhile.

1a1a

2. If the Network becomes operational, there will be a continuing need for effective methodology for the addition (and removal) of resources from the Network, influenced by funding dynamics (a free market's effects, perhaps?), future user needs, user experience, and other factors.

1a2

3. There will also be a continuing need for resource information to be provided to Network users. This is an essential function of a Network operation. It is a part of the role of the ARPANET Network Information Center, for example.

1a3

Further discussion of Network user information needs is contained in a paper by Douglas C. Engelbart of Stanford Research Institute entitled, "Coordinated Information Services for a Discipline- or Mission-Oriented Community" (12445,), dated 12 December 1972. Copies may be obtained from the ARPANET Network Information Center at Stanford Research Institute.

1a3a

For purposes of this discussion, we have assumed heavy involvement in initial funding and in the startup decision process by the National Science Foundation or some other appropriate government agency.

1b

WORKSHOP 3 TEAM 2

We also assume that as part of this process, a Network Planning Team would be established.

1b1

These assumptions lead to the conclusion that many of the resources initially incorporated into the Network will be university-based and that the initial operational emphasis will be on research and education.

1c

When considering potential resources, several categories appear to be relevant. They are:

1d

Hardware, Software, Courseware and other higher-level service capabilities, Data Bases, and People.

1d1

Steps a Network Planning Team might take for investigating initial resources and using their findings are:

1e

1. Make a broad (nationwide?) inventory of the most obvious potentially available resources as a start. Include any existing partial studies where appropriate.

1e1

We assume that there will be time and funding constraints that will limit the depth of this inventory.

1e1a

2. Evaluate the findings from such standpoints as scarcity and duplication, real availability as limited by projected commitments and possible legal constraints that may restrict or prevent their shared use, and their potential for meeting tentative standards for reliability, compatability, and documentation.

1e2

Since there may be a significantly long lead time between the initial inventory and actual Network operation, the identification of resources to be shared will rely heavily on the projected further development of the current inventory and on forecasts of presently non-existent resources that may be available at that later date.

1e2a

3. Solicit statements of needs from potential Network users using the evaluated description of resources to stimulate user perception of possibilities.

1e3

We expect that the survey of needs will show many areas that cannot be satisfied by immediately available

EDUCOM National Science Computer Network Seminar 3

WORKSHOP 3 TEAM 2

resources. Such needs must be considered in the initial decision process.

1e3a

Effective need collection techniques are essential to make this step work. In fact, the nature of these techniques may stimulate the development of a significant portion of the initial market.

1e3b

4. Evaluate the matches between needs and resources and between needs and funding sources to support them.

1e4

EDUCOM National Science Computer Network Seminar 3

WORKSHOP 3 TEAM 2

Our team's second question was:

What standards should be set for compatability and what measures should be taken to ensure a high level of performance and quality of products and services? Can refereeing and other evaluative techniques be used as an alternative or supplement to fixed standards and quality control measures?

2

Standards of various types will be necessary; some must be set from the beginning. If we assume that many initial resources will come from existing computer hardware, software, courseware and data base configurations (as further developed during the period before initial Network operation), some standards, perhaps desirable in the future, may not be practical as requirements in the initial startup phase.

2a

At the outset, rigidly adhered-to standards can inhibit resource use and further development.

2a1

In designing performance standards, ANSI and ISO standards should be used as guidelines unless there are good reasons otherwise. These should be re-examined as future changes are contemplated.

2b

To protect initial and subsequent Network and user investments, some assurance of continuing high performance in delivery of Network resources is necessary. Standards focussed on what high performance IS need to be developed with a continuing effort. Both qualitative and quantitative measures of performance must be developed and continually reviewed. Some factors to be considered in developing such measures are:

2c

1. Economy - cost benefit and trends in costs
2. Reliability of service, both dynamic or short-term reliability and projected longer-term stability and availability.
3. Comprehensibility, completeness, accuracy, and currentness of documentation.
4. Adequacy of user training where needed.
5. Match of service or program claims to results delivered.

2c1

2c2

2c3

2c4

2c5

EDUCOM National Science Computer Network Seminar 3

WORKSHOP 3 TEAM 2

Refereeing and quality assurance techniques should be used to continually assess actual performance as related to standards set.

2d

This may be a function of Network Management body.

2d1

In addition, a forum for users to communicate about successes and problems of resource use among themselves and to Network Management and resource providers should be established.

2e

Validation processes should be used where practical. The current status of such validations (or their absence) should be made available to users on a continuing basis.

2f

These should be developed as a necessary part of a well-run service operation, but should not be used to discourage offerings of difficult-to-validate services.

2f1

JCN 17-JAN-73 12:50 13695

EDUCOM National Science Computer Network Seminar 3

WORKSHOP 3 TEAM 2

Edward L. Brady
Sylvia Charp
James C. Norton

(J13695) 17-JAN-73 12:50; Title: Author(s): Norton, James C./JCN ;
Distribution: Watson, Richard W., Engelbart, Douglas C./RWW (for your
info) DCE (for your info) ; Sub-Collections: EDUCOM ; Clerk: JCN ;
Origin: <NORTON>EDUCOM.NLS;3, 17-JAN-73 7:27 JCN ;HJOURNAL="JCN 9
JAN 73 13695
";

Final Version: EDUCOM National Science Computer Network Seminar 3
Workshop 3, Team 2 Question Responses

Stanford Research Institute
Augmentation Research Center
333 Ravenswood Avenue
Menlo Park, California 94025

Martin Greenberger
Professor of Computing Science
The Johns Hopkins University
Box 329, Padonia Road
Cockeysville, Maryland 21030

Dear Martin:

I have enclosed two copies of a cleaned-up version of the Team 2 responses to our two questions.

1

You will note that one copy has what we at ARC call "statement numbers" printed in the right-hand margin for easier reference to particular portions of the document.

1a

The only additions of any significance that I have made to the text of the document are in statements (1e2a) and (2a). I discussed these ideas with my team members before doing so.

1b

I enjoyed meeting and working with you and feel that I personally benefited greatly from exposure to the many different viewpoints expressed at the Seminar.

2

If there is anything I can do to be of further assistance, please let me know.

3

Sincerely,

James C. Norton
Assistant Director
Augmentation Research Center

JCN 17-JAN-73 12:54 13696

Final Version: EDUCOM National Science Computer Network Seminar 3
Workshop 3, Team 2 Question Responses

(J13696) 17-JAN-73 12:54; Title: Author(s): Norton, James C./JCN ;
Sub-Collections: EDUCOM ; Clerk: JCN ;
Origin: <NORTON>LETTER.NLS;1, 15-JAN-73 13:02 JCN ;

HJournal="JCN 19 JAN 73 7:00PM 13696";

Barbara: Here are some questions that may be of help in transferring your ongoing tasks to Kay Byrd. I know that the identfile work is being transferred to Susan Lee and consider it separate. If you have trouble with any of these things, let Dirk or me know by Tuesday.

HERE'S A PROCEDURE THAT MAY HELP:

Make a copy of this file,

Add your comments as substatements as best you can.

Then discuss it with Kay with a hardcopy of your notes. That ought to do it.

What is the filing system you use for requisitions and PO's.. in process and permanent filing?

Where are they located?

What is the process of ordering stuff for people, particularly Hardware?

What approval steps do you use?

Telephone bills and ordering approvals.. when, what, who do they go to?

ARC approval process... what gets approved.. by whom?

Property stuff for hardware people.. what do you do.. what needs to be transferred to Kay?

What other ordering tasks do you do.. when, how (briefly). What can you tell Kay that will permit the process to continue smoothly?

What about old files.. where are they by project or separately filed by PO or requisition?

Are there any other things that you do routinely that need to be transferred?

What about citation work? any current tasks or other business to give to others?

I have talked with DVN and KFB and they agree that you should transfer your knowledge on these items to KFB right away. I sure

JCN 22-JAN-73 16:03 13697
Transfer of BER tasks to Kay Byrd and Others

hope you can do it in the next three days so you can get away
after Wednesday. I'll leave it up to you.

12

JCN 22-JAN-73 16:03 13697
Transfer of BER tasks to Kay Byrd and Others

(J13697) 22-JAN-73 16:03; Title: Author(s): Norton, James C./JCN ;
Distribution: Van Nouhuys, Dirk H., Byrd, Kay F., Row, Barbara E./DVN
KFB BER ; Sub-Collections: SRI-ARC; Clerk: JCN ;
Origin: <NORTON>BERTASKS.NLS;1, 22-JAN-73 14:59 JCN ;
HJOURNAL="JCN 23 JAN 73 4:03PM 13697";

Stanford Research Institute
Augmentation Research Center
333 Ravenswood Avenue
Menlo Park, California 94025

John Newbauer
Editor-in-Chief,
Astronautics & Aeronautics
1290 Avenue of the Americas
New York, New York 10019

Dear John:

Thank you very much for the information you have been sending me recently.

1

In regard to your question about my writing about the Journal system we are developing for use over the ARPANET (and are currently using extensively at ARC), I find that I still have many other demanding tasks that make it difficult for me to fit in such an effort. On the other hand, I do think that such an article should be written as soon as we can work it in.

2

We are in the process of setting up a new service that we are calling a Workshop Utility Service for the purpose of supporting an expanded community of Augmentation technology users, at first mainly within the ARPA contractor community and selected government offices.

2a

We plan to subcontract with a commercial computer utility organization to provide the basic computer service running our programs, while we at ARC supply the technical knowhow, documentation of system features and the methodology of their use, and user interface. Users of the service will access the Utility computer through the ARPANET.

2b

Funding support for most of the service is shaping up. We expect to have sufficient funding to initiate the program in late Spring. We expect support from about four or five major sponsors, each buying a percentage of the available service.

2c

We already have indications of support for the major portion of the service although contractual details still need to be worked out.

2c1

Our current plans are to start providing operational service beginning about 1 September 1973.

2c2

Our purpose in offering the Workshop Utility service is centered about our desire to get augmentation technology used by an expanded set of system developers and additional knowledge workers in general. The feedback we expect and the possible help in further developing the system will greatly aid us in continuing the evolution of the overall system.

2d

I am enclosing a recent paper by Douglas Engelbart entitled, "Coordinated Information Services for a Discipline- or Mission-Oriented Community" (12445,), dated 12 December 1972.

2e

We made time for this writing effort mainly because it appeared to fit into our need to describe the material it contains for use in our search for support for the Workshop Utility. A piece on the Journal such as you suggest might also be helpful, but doesn't appear critical at this point.

2e1

I certainly don't want to keep you up in the air for too many months. However, I can't really commit to writing at this time. I have discussed this with Doug Engelbart and he agrees. He has the same type of time constraints. I'd be willing to reconsider in May if you've got the patience. Thanks again for your interest.

3

Sincerely,

James C. Norton
Assistant Director
Augmentation Research Center

JCN 2-FEB-73 21:00 13698

Response to Newbauer Letter of 2 Jan 73

(J13698) 2-FEB-73 21:00; Title: Author(s): Norton, James C./JCN;
Distribution: /; Sub-Collections: SRI-ARC; Clerk: JCN;
Origin: <NORTON>NEWBAUER.NLS;1, 31-JAN-73 11:25 JCN ;

HJournal="JCN 6 FEB 73 9:30AM 13698";

RFC #436
NIC #13700

Mark Krilanovich
UCSB
Jan. 10, 1973

Announcement of RJS at UCSB

1

There now is resident under socket 5 at UCSB a server program which supports a subset of the Remote Job Entry Protocol of RFC #407. This document includes enough information to allow the user to gain access to, and use the more basic functions of, UCSB's RJS. An RFC containing more detailed documentation will be forthcoming shortly.

2

The accounting parameters needed to login to RJS are a userid and a password, each consisting of one to eight alphameric characters, the first of which must be alphabetic. The userid is, at present, completely arbitrary. The password is arbitrary the first time it is used with a particular userid; in subsequent logins with that userid, the same password must appear. Eventually, users will be assigned userid-password pairs by the UCSB Computer Center.

3

The only transmission mode supported currently is T (TELNET-like carriage control); any other is treated as T. The other modes will soon be added. The only disposition supported is the default transmit-and-discard; any other is treated as transmit-and-discard. The other dispositions may or may not be added later.

4

For consistency and user convenience, the command 'INUSER' may be substituted for 'INID', and 'OUTPATH' for 'OUT'. The following commands are not as yet implemented: ABORT, ALTER, BACK, HOLD, OP, RECOVER, RESTART, and SKIP. At least some of these will be implemented relatively soon.

5

In order to accomodate users of TENEX FTP servers, the commands 'INACCT' and 'OUTACCT' have been added. These are used to set the account number used in the file retrieval and storage operations, respectively. The command 'ACCT' may be used to set both account numbers. If one of these account numbers has not been specified, the FTP 'ACCT' command will be omitted from the appropriate file operation. These commands have the familiar

Announcement of EJS at UCSB

syntax of <command verb> followed by <space> or optionally '=', followed by <parameter> and <CR><LF>. The <operand> is an account number consisting of one to six alphanumeric characters.

6

NWG/RFC# 436

MCK 10-JAN-73 12:53 13700

Announcement of RJS at UCSB

(J13700) 10-JAN-73 12:53; Title: Author(s): Krilanovich, Mark C./MCK; Distribution: Agent, Station, Martin, Reg E., Leichner, Gene, Falk, Gil, Iseli, John, Donnelley, Jed E., Kantrowitz, William, Wolfberg, Michael S., Feinroth, Yeshiah S., Hurt, James, Hearn, Anthony C., Stein, James H., Shoshani, Arie, Harslem, Eric F., Metcalfe, Robert M. (Bob), Reussow, Bradley A., Reins, E. R. (Dick), Kadunce, Daniel L., McCutchen, Samuel P., Petregal, George N., Madden, James M., Young, Michael B., Padlipsky, Michael A., Stevenson, Schuyler, Deutsch, L. Peter, Davidson, John, O'Sullivan, Thomas, Seroussi, Sol F., Bradner, Scott, Thomas, Robert H., Thomas, John C., Romanelli, Michael J., Stoughton, Ronald M., Owen, A. D. (Buz), Fink, Robert L., Meir, Jaacov, North, Jeanne B., Crocker, Steve D., Lawrence, Thomas F., McConnell, John W., Ollikainen, Ari A. J., White, James E. (Jim), Hathaway, A. Wayne, Foulk, Patrick W., Winter, Richard A., Van Zoeren, Harold R., McKenzie, Alex A., Winett, Joel M., Bhushan, Abhay K., Pyke, Thomas N., Wilber, B. Michael, Feigenbaum, Edward A., Braden, Robert T., Pepin, James M., Wessler, Barry D., Melvin, John T./SA NLG; Sub-Collections: NIC NLG; RFC# 436; Clerk: MCK;
Origin: <UCSB>RJSANN.NLS;10, 10-JAN-73 11:17 MCK ;

MFA 5-JAN-73 16:37 13702

test for cbh

this is a message to see if you get things delivered to your
initial file...M.

1

MFA 5-JAN-73 16:37 13702

test for cbh

(J13702) 5-JAN-73 16:37; Title: Author(s): Auerbach, Marilyn
F./MFA; Distribution: Hoffman, Carol E., Lee, Susan R./cbh srl ;
Sub-Collections: SRI-ARC; Clerk: MFA;

HELP

Dear Jeanne,

Two days ago I got a preassigned journal number (13658) and a preassigned RFC number (434). Yesterday morning I told the journal system to use those numbers for an on-line RFC which I had written (distribution to nlg,nsag,nag). Today the RFC in question doesn't seem to be delivered, and the journal system tells me that the number 13658 is "not preassigned". Please call me and tell me what to do now

Alex McKenzie

1

AAM 5-JAN-73 7:17 13703

HELP

(J13703) 5-JAN-73 7:17; Title: Author(s): McKenzie, Alex A./AAM;
Distribution: North, Jeanne B., Watson, Richard W./JBN RWW;
Sub-Collections: NIC; Clerk: AAM;

CHI 5-JAN-73 11:24 13704

Reply to (Journal, 13617,)

I completely agree with the sentiments expressed in LPD's message
(Journal, 13688,).

1

Reply to (Journal, 13617,)

(J13704) 5-JAN-73 11:24; Title: Author(s): Irby, Charles H./CHI;
Distribution: Mitchell, James G., North, Jeanne B., Newell, Allen,
McCarthy, John, Dines, Thomas R., Roberts, Lawrence G., Heart, Frank E.,
Glaser, Edward L., Marill, Thomas M., Cheatham, T. E., Stone, Duane L.,
Forgie, James W., Vorhaus, Alfred H., Pyke, Thomas N., Uncapher, Keith
W., Weissman, Clark, Feigenbaum, Edward A., Kleinrock, Leonard, Harris,
David O., Pratt, William K., Evans, David C., Engelbart, Douglas C.,
Raphael, Bertram, Slotnik, Daniel L., Iseli, John, Poh, Susan S.,
Silberski, Robert, Deutsch, L. Peter/pi ji ssp rs2 lpd ;
Sub-Collections: SRI-ARC PI; Clerk: CHI;

DHC 5-JAN-73 12:25 13705

Dirk, what does the Output Quick do?

1

DHC 5-JAN-73 12:25 13705

(J13705) 5-JAN-73 12:25; Author(s): Crocker, David H./DHC;
Distribution: Van Nouhuys, Dirk H./DVN; Sub-Collections: NIC; Clerk:
DHC;

Saving Disc Space, Training in User Programs, Display at
BBEN, Obscure Idents, & Mail Problems

I'm glad you like our user programs. It would probably be more economical of disc space if you kept a wrack of links to JCN's file rather than duplicating it. He does not change it around much and you could make the links go to the names.

1

If you are getting display up (congratulations, by the way, we have to hold the hands of most people who do that, at length) the augmented thing to do is set up a shared screen session wherein I would walk you through running some of the user programs. Let me know a god time. We could at the same time make a control file so you could keep it.

2

David Herbert Lawrence, know to his friends as Herby, shame on you.

3

This morning I sent you the message about Mike Kudlik that you have no doubt read. Immediately afterwards I logged into NLS, read your journal message, and went back to exec and wrote a reply.

4

Tenex responded "Neigus...bbn-tenex---ca'T" or some such poetic phrase. Can you suggest why it worked one time and not another? It's happened to me before.

4a

Speaking of mail, have you confronted the question of what to call the young woman who puts letters in your box? Is she a mailperson or possibly a pairsonperson?

5

DVN 5-JAN-73 11:02 13706

Saving Disc Space, Training in User Programs, Display at
EBEN, Obscure Idents, & Mail Problems

(J13706) 5-JAN-73 11:02; Title: Author(s): Van Nouhuys, Dirk H./DVN;
Distribution: Neigus, Nancy J., Norton, James C./njn jcn ;
Sub-Collections: SRI-ARC; Clerk: DVN;

Encouragement to Writing Form Generator Specs

I was talking today with Dick Watson who is making plans with regard to programmer's work load for the next six months or so. 1

The forms generator has gotten to the point where it has been ticketed for some one's future, 1a

namely Elizabeth Micheal when she finishes the calculator. 1a1

I discovered that Dick had a fairly inaccurate notion of what you people wanted. 2

I briefly set Dick straight with what I thought you thought, but the moral is: 3

The sooner your specs are available around here, the better. 3a

DVN 5-JAN-73 14:04 13707

Encouragement to Writing Form Generator Specs

(J13707) 5-JAN-73 14:04; Title: Author(s): Van Nouhuys, Dirk H./DVN;
Distribution: Stone, Duane L., Norton, James C., Watson, Richard W./dls
jcn rww ; Sub-Collections: DPCS SRIARC RADC ; Clerk: DVN;