PCB 1-MAY-75 12:00 32402

fix daves user codee

hi frnk
how bout fixin david browns ident to jdb, also, we need a code for anna watson , she is on the standards sgrp and would like access to info grp files, and another thing,... fix ncsl phone number from virgini to fla,jdb is 23(904)234-4132,...mine is -4112, really appreciate your help and the fine help from the dg's .....hope to hear f you soon,
.....paul

1

fix daves user codee

(J32402) 1-MAY-75 12:00;;;; Title: Author(s): Paul C. Bishop/PCB;
Distribution: /FGB([ACTION]) DB4([INFO-ONLY]) ; Sub-Collections:
NIC; Clerk: PCB;

PCB 1-MAY-75 12:54 32403

John's new journal entry,

Dear John, 1

Have you got the new elf stuff? We still prefer to have it on a 7 track 556 bpi tape. However, 800 bpi 9 track is also acceptable. We now have a very limited 9 track conversion facility. 2

I talked to Larry the other day, and he indicated the possibility of having a meeting before the end of the year. I presume we're still shooting for the next meeting at NCSL. 3

Let us hear from you. PAUL..... 4

john's new journal entry.

(J32403) 1-MAY-75 12:54;;;; Title: Author(s): Paul C. Bishop/PCB;
Distribution: /JJ2([ACTION]) DB4([INFO-ONLY]) ; Sub-Collections:
NIC; Clerk: PCB; Origin: < NAVIMP, THISISFORDEARJOHN,NLS;2, >,
1-MAY-75 12:49 PCB ;;;;####;

DCE 9-MAY-75 19:45 32404

Draft description of a Special Interest Community, as for DDPCS

To record a document handed out on May 2 at a meeting held to make a next step at organizing the 'nucleators' of a DDPCS Special Interest Community. Present were DCE, Dave Brown, Norm Nielsen, Jack Bialik, Shirley Hentzel, Glenn Sherwood, Dirk Van Nouhuys, and Elizabeth Michael

Draft description of a Special Interest Community, as for DDPCS

A next step in ARC's long-range strategy is the development of a multi-participant community of organizations involved in developing and applying augmented DDPC Systems -- i.e. a DDPCS Community (for Document Development, Production, and Control System). 1

There are planned to be a number of similar, special-interest communities, DDPCS being the first. They will all be based upon a common approach. E.g.: 2

Each participating organization will buy at least a minimal module of service from the AKW Utility; 2a

Each will have a Workshop Architect; 2b

Each will receive standard basic services from the Utility -- basic NLS training, general documentation, etc; 2c

Each can in addition belong to any number of special-interest communities. 2d

Each architect will: 2e

learn NLS thoroughly; 2e1

at least use NLS for doing his own work; 2e2

consider that part of his role is to keep in close touch with Utility staff, with other architects, and with relevant special-interest participants, using the Utility services to support these "community activities." 2e3

NOTE: It is definitely assumed that the application-support systems to be used by a participant, in pursuit of "augmenting his knowledge workers," may be of any mix of different equipment and softwre systems, as deemed best by the participant, without being in conflict with the AKW community participation scheme being pusued by ARC. His commitment to using the ARC-Utility AKW System (i.e. NLS currently) is only as stated above. Furthermore, he doesn't have to buy his AKW computer service from the Utility, as long as he uses the "certified" current version, and stays in computer-dialogue contact. The ARC Utility is already negotiating contracts with two different clients to install and maintain NLS in their TENEX systems. 2f

The general plan for each Special-Interest Community is as follows: 3

The energy to set up a SIC, to coordinate the interests and resources in formulating mutually advantageous plans, and in coordinating their assessment and exectution, will not in general

come from ARC staff. The initial "nucleation" efforts must come from some individual or group (termed the "nucleator" here) that wants to see the SIC established and that intends to participate actively. ARC will provide a certain amount of help. 3a

It is expected that after it is well established, a SIC would be self governed with respect to arranging for continuing organizational and coordinating functions. 3a1

The special expenses associated with operating a SIC would come from two sources: 3a1a

A general item of expense in the AKW Utility budget will be to provide basic elements of support to the SICs -- it being assumed that the SIC activities will return considerable value to all Utility clients in terms of special developments and knowledge. We can only be tentative about this now, but in this spirit ARC is commiting definite resources toward launching the DDPCS Comunity. 3a1a1

The members of a SIC are expected to bear the major share of these expenses --just how is an open issue still. 3a1a2

A percentage addition to their Utility-buy charge is one possibility; this may be tapped by either (or both) a fixed charge, or a special, direct charge for expenses mutually agreed upon between a member and the SIC coordinator. 3a1a2a

It is assumed to be counter-productive to have un-coordinated overlap in SIC domains; it is also expected that the SICs are active and cooperative members of the super-community (of all Utility subscribers). It is therefore necessary to have central control over the growth and activities of the SICs. Initially therefore, ARC reserves as its prerogative the right to give out, review, control, and if necessary rescind each SIC "franchise." 3b

It is expected to be frequently the case that one or more SIC members will agree to contribute resources for a special development effort that they particularly want. 3c

An important type of activity within a SIC will be special studies and developments aimed at improving the AKW features that represent the special interest of the SIC. It is assumed that it is the nucleator's function at the outset to organize the parties that are interested in contributing, and putting

together special joint-project ventures to support the study or development. 3c1

When the business operations become more mature, it may be possible for a future charge to be levied upon the users of the system to repay the investors of special developments. For the time being, however, these developments will be useable at service-costs-only by the whole community of Utility clientele. 3c2

NOTE: About who may do the special studies and developments in a SIC's AKW domain -- ARC's position is as follows. 3d

A major point of all of this community development is to support the steady evolution of a COHERENT AKW system -- coherent in its physical implementation at any given time, and coherent in the sense of its concepts, principles, terminology, and practices. 3d1

Another major point is to develop an advanced mode of collaborating, among the many stakeholders, in the evolution of a complex system. The core, coherent AKW system is the one that supports the community activities that comprise this collaboration. 3d2

ARC expects that if the whole community scheme becomes successful, there will be much more study and development work than any one group such as ARC can cope with. In fact, to be serious about the second of the foregoing points will require distributing these activities both geographically and organizationally. 3d3

Accordingly, ARC is committed to the following stand: 3d4

All necessary coordination, principles, standards, etc. deemed by ARC to be necessary to achieve the desired degree of coherence, will be controlled by ARC. 3d4a

As rapidly as ARC can learn to provide workable conditions under which other groups can do specified system-building tasks (using "system" in its most general sense relative to Augmented Knowledge Workshop SYSTEMS), we intend to foster this distributed system development work. 3d4b

DCE 9-MAY-75 19:45 32404

Draft description of a Special Interest Community, as for DDPCS

(J32404) 9-MAY-75 19:45;;;; Title: Author(s): Douglas C. Engelbart/DCE; Distribution: /DRB([INFO-ONLY]) NRN([INFO-ONLY]) DVN([INFO-ONLY]) PWO([INFO-ONLY]) GAS2([INFO-ONLY]) RWW([INFO-ONLY]) JCN([INFO-ONLY]) RLL([INFO-ONLY]) JHB([INFO-ONLY]) SGR([INFO-ONLY]) RA3Y([INFO-ONLY]) EKM([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: DCE;

SAI/UPDATE

The attached task statements are provided to support the SAI work under AO 2886 and amendment 1 to AO 2886. While each is under $20k, they provided to insure that your records are complete. 1

TASK 75-11 2

STATEMENT OF WORK
TECHNICAL ASSISTANCE TO ARPA/DCA IN PLANNING
FOR TRANSITION OF ARPANET TO DCA 3

1. OBJECTIVE:
To define the scope of the ARPA/DCA plan for transition of the ARPA/NET and the data collection effort required to support preparation of the plan. 4

2. BACKGROUND:
By Memorandum of Agreement of 3 March 1975, Director ARPA and Director DCA agreed to transfer responsibility for operational management of the ARPANET to DCA effective 1 July 1975. The Memorandum of Agreement further specifies that DCA and ARPA will jointly prepare a detailed Transition Plan to include, inter alia, details for the transfer of government property, contracts, agreements, and leases; a charter for a Sponsor's Group; and management procedures to be followed in implementing significant technical or management changes. The Memorandum of Agreement further specifies that data on the users of the ARPANET and a breakdown of all annual costs associated with operational management of the network will be provided, 5

Current ARPA/DCA plans are to prepare the Transition Plan for approval by the Director, ARPA and Director DCA prior to 1 July 1975. To support the planning effort and to provide DCA with a basis for defining the management and operating procedures to be adopted by DCA, data must be collected on the current management procedures; government owned property in the network; revelent contracts, agreements, and leases pertinent to the transfer; network configuration (hardware, software, network control); and network operating procedures, 6

3. TASKS:
Science Applications, Inc., will assist ARPA/DCA in defining the scope of the proposed transition plan and the data collection effort necessary to support the plan and provide for the orderly transition of the network to DCA. This effort will include: 7

* Visit to Range Measurement Lab (RML) Patrick AFB, Fl. to discuss the management procedures used by RML and to determine the availability and status of inventory data on hardware, software etc., comprising the network to be transferred. 7a

* Visit to Bolt, Berank and Newman, Inc., Cambridge, Mass, to discusss network control procedures and the availability and status of available documentation, 7b

* Discussions with representatives of ARPA (Walker and Kahn) regaarding the functions and data available on the Network Information Center (NIC) and the functions and data available on the role currently performed by the Network Analysis Corporation (NAC) and the National Measurements Center (NMC). 7c

* Analysis of information obtained from the above and other sources and the preparation of a report to ARPA/DCA on the results of the visits and discussions, 7d

4. DELIVERABLES:
A report which: 8

* Identifies the data to be collected, its source(s), and defines how it can be collected, 8a

* Provides a proposed scope for the transition plan and defines the "ingredients" which should be included to meet the terms of the Memorandum of Agreement of 3 March 1975, 8b

5. RESOURCES:
It is proposed that 6 man weeks of professional effort, 3 manweeks of technical typst effort, and travel funds in the amount of $800 be allocated for the effort at a total proposed cost of $11,000.

--- 9

10

TASK 75-12 11

STATEMENT OF WORK
for
PACKET SATELLITE TECHNOLOGY TEST PROGRAM PLANNING 11a

OBJECTIVE: Assist ARPA/IPTO in planning for packet satellite technology tests to be conducted in FY 76, 12

BACKGROUND: The technology developed under the ARPA/IPTO Packet Satellite Technology Program will be demonstrated in FY 76 by a series of experiments involving packet switched communications via satellites.The test program is scheduled to start on 1 July 1975 or as soon thereafter as the Atlantic Satellite

channel is available for use in the program. Planning for management of the experiments is needed to insure the sucess of the experiments.

TASK: Assist the ARPA/IPTO in planning for the FY 76 packet satellite technology experiments by scheduling tests, and identifying required coordination.

DELIVERABLES:
1. Milestone charts showing the timing of major test events. 2. A description of major coordination efforts required, and the means for facilitating the required coordination.

RESOURCES: It is estimated that this effort will require 18 mandays of consultant effort, $1500 of travel, 5 mandays of SAI professional staff effort, and 5 mandays of technical typst effort. It is estimated that the total cost of these services will be $11,775.

TASK 75-13
Statement of Work
Secure Program Working Group Support (Second Meeting)

OBJECTIVE: Support the ARPA IPT office by providing a referencable record that adequately expresses the technical content of the 24 and 25 April 1975 meeting of the ARPA Secure Program Working Group.

BACKGROUND: The second meeting of the ARPA Secure Program Working Group will be held at the Information Science Institute (ISI) on 24 and 25 April 1975. The purpose of the meeting is to investigate progress in Operating System Security and Operating System security auditing techniques. A technically accurate record of the presentations at the meeting is required for later reference.

TASK: Record the proceedings of the 24 and 25 April 1975 Secure Program Working Group. Produce a technically accurate written record of the proceedings and coordinate it with the attendees to the meeting to insure its accuracy. Produce a final, acceptable version for distribution.

RESOURCES: It is estimated that 2 man weeks of professional staff effort, and $530 of travel expenses will be required. The estimated cost of these services is $4300.

TASK 75-14
Statement of Work

Image Understanding Workshop Support (Second Meeting)

OBJECTIVE: Support the ARPA IPT Office by producing a referenceable record that adaquately expresses the technical content of the 5 and 6 May 1975 meeting of the Image Understanding Workshop.

BACKGROUND: The ARPA IPT Office is convening the second meeting of the workshop on 5 and 6 May 1975. The purpose of the meeting is to refine possible future avenues of basic and applied research for the automation of photographic interpretation, Cartography, and remotely piloted vehicle imagery functions. A technically accurate record of the presentation at the meeting is required for later reference.

TASK: Record the proceedings of the 5 and 6 May 1975 Image Understanding Workshop. Produce a technically accurate written record of the proceedings and coordinate it with the attendees to the meeting to insure its accuracy. Produce a final, acceptable version for distribution.

RESOURCES: It is estimated that this effort will require 2 manweeks of SAI professional staff effort, 2 manweeks of technical typist effort, and $100 of travel expenses for meeting attendees. It is estimated that these services will cost $3900.ps16

Total estimated costs of Tasks 75-1 thru 75-10 149,956

Estimated cost of tasks 75-11 thru 75-14 30,975

Total 180,931

DAVID C. RUSSELL
Colonel US Army
Deputy Director
ARPA/IPTO

SAI/UPDATE

(J32406) 1-MAY-75 17:21;;;; Title: Author(s): David C. Russell/DCR2;
Distribution: /DCR2([ACTION]) ; Sub-Collections: NIC; Clerk: DCR2;
Origin: < RUSSELL, SAI/TASK/13-15,NLS;4, >, 29-APR-75 17:42 DCR2
;;;;####;

SAI/TASK/UPDATE

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TASK 75-11 2

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TASK 75-12 11

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channel is available for use in the program, Planning for management of the experiments is needed to insure the sucess of the experiments, 13

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Total 180,931

DAVID C. RUSSELL
Colonel US Army
Deputy Director
ARPA/IPTO

SAI/TASK/UPDATE

(J32407) 1-MAY-75 17:29;;;; Title: Author(s): David C. Russell/DCR2;
Distribution: /EJK([ACTION]) DCR2([INFO-ONLY]) CF([INFO-ONLY]
) STW([INFO-ONLY]) DLC2([INFO-ONLY]) ; Sub-Collections: NIC;
Clerk: DCR2; Origin: < RUSSELL, SAI/TASK/13-15,NLS;4, >,
29-APR-75 17:42 DCR2 ;;;;####;

Paper presented at AERA, 1975

This is a paper to be presented at the annual meeting of the American Educational Research Association, Washington, D. C., March 31, 1975. (origin) 1

METHODOLOGICAL PROBLEMS AND ISSUES

Precise figures on the number of teacher education programs currently attempting the transition to a competency-based approach are not available. Some idea of their number may be gained from the fact that approximately thirty states had by the time of this writing mandated such a change, either through legislative action or through the certifying power of the state education agency.

This symposium, like most such symposia, has more in common with a proposal than with the kind of reports found in textbooks -- that is, it asks more questions than it answers. In it we present what we have learned in a two-year collaborative research effort between the Teacher Behavior Research Group and the Intern Teaching Program at Temple University and attempt to point some directions for the future.

Two years ago, in an AERA symposium which I also organized, I outlined a design for a research and development approach to managing the transition to a competency-based teacher education program. This transition has at its foundation the idea that teachers should be trained to do those things that cause or facilitate educational growth in their students. No one, however, really knows as yet what these teacher behaviors (or performances, skills, or competencies) are. This lack of a firm knowledge base has been recognized and lamented by virtually everyone involved in or affected by the movement, for it represents a dilemma that must be resolved if competency-based teacher education is ever to become anything more than another educational fad.

There is a real need for a systematic, large-scale research effort aimed at discovering the linkage between patterns of teacher behavior and student change. Without such research, CBTE cannot hope to answer those critics who claim it is a mechanistic, simplistic approach that cannot hope to comprehend the essence of real teaching (cf. Broudy, 1972).

The other side of the dilemma is the real and immediate need of teacher educators for ways to improve the teacher education process today. Many teacher educators, recognizing the problems inherent in traditional approaches to teacher education, have already begun to move their programs and courses toward a competency base. These educators, while they need data-based knowledge about the linkages between teacher behavior and student behavior, have a more real and immediate need for techniques to permit them to assess the skills their trainees possess and provide training in those skill areas where the trainees' performance is inadequate. 7

The resolution of this dilemma lies in a comprehensive research and development effort aimed at the production and validation of competency-based training and assessment modules. With such an approach, the development of assessment strategies and procedures so urgently needed by teacher educators becomes an integral part of a basic research program for specifying and validating teacher skills. 8

The addition of a research component to the development activities already taking place was not proposed on purely pragmatic grounds. In fact, the opposite is more the case; the two are so intimately related as to be virtually inseparable. The process of defining in behavioral terms the precise nature of teaching performance is part and parcel of the process of developing assessment procedures. An assessment procedure cannot be developed without a clear description of a skill, nor can testing the relationship of the skill to student outcomes be done unless one has first developed procedures for assessing both teacher performance and student achievement. Furthermore, the relationship between teacher behavior and student outcomes cannot ultimately be tested without simultaneous development of training modules for each teaching skill to be studied. 9

Competency-based teacher education rests on the assumption that a causal relationship exists between teacher behavior and student growth. This relationship cannot be examined at all without first defining and describing in behavioral terms the nature of the teaching performance to be studied, so that we can at least tell when the behavior has occurred -- in other words, we must at least be able to measure teacher behavior at a nominal or categorical level. In addition, we must be able to measure student outcomes in a reliable, objective manner. These measures could include not only lower level cognitive objectives but also measures of higher level cognitive functioning, as well as affective or attitudinal measures. 10

These two steps -- the development of reliable and objective measures of teacher behavior and of student outcomes -- will allow us to examine the relationship between what the teacher does and what happens to the students. However, we will not know whether this relationship is a causal one until we have conducted experimental studies in which teacher behavior is manipulated and consequent changes in student growth are measured. But what the experimental psychologist calls an experimental manipulation is closely related to what the educator calls training. In both cases, the goal is the same: shaping teacher behavior in a specific way. Thus, procedures which the educational researcher uses to test hypotheses about the relationship between teacher behavior and student outcomes are tools that can readily be adopted by the teacher educator to help teachers acquire specific teaching skills. Teacher educators can, without disrupting their role as educators, make substantial contributions to educational research. 11

What I was suggesting two years ago was that the needs of the CBTE movement could best be met by a programmatic research and development effort aimed at the production of competency-based training and assessment techniques. Such a research and development program would provide a solid empirical base on which to rest the growth of the movement. On the one hand, it would provide empirical evidence on the linkage between patterns of teacher behavior and student growth; on the other, it would provide teacher educators with the training and assessment techniques they so urgently need. 12

Nor are these aspects independent, for the training and assessment techniques developed would meet with an unprecedented level of acceptance. They would be accepted not because of a publisher's promotional efforts or because of the developer's reputation; rather, they would be accepted because they work -- because they had demonstrated their effectiveness in training teachers in skills whose validity had been established in sound research. Such techniques would be accepted as the means through which competency-based education can fulfill its promise of improving education by improving the quality of the training received by prospective teachers, and by providing mechanisms for carrying out the formative evaluation and training of inservice teachers. 13

The research program which is the focus of this symposium was designed to implement the ideas outlined above. The faculty and staff of the Intern Teaching Program was beginning the process of transition to competency-based teacher education. In so doing, they sought an alternative to the developmental models which were being implemented in other teacher education programs across the country. Specifically, they wanted to proceed slowly and surely to develope both a firm knowledge base and training and assessment techniques based on them. 14

At that time (early in 1973), the Teacher Behavior Research Group was refining the research methodology that would be needed in the programmatic effort described above. In a series of studies directed by F. J. McDonald, microteaching had been adapted from its original training function to serve as a research and development assessment device. Operating procedures, including lesson topics and content suitable for the 20-minute microteaching format, student outcome measures, teacher and student rating forms, and videotape technology had been developed and refined in field research. We was ready to move on to apply these procedures in a full research program. 15

The collaboration of the two groups was a result of the meshing of their respective needs, skills, and interests. Both groups wanted to build a programmatic research and development effort aimed at the production and validation of competency-based teacher training and assessment techniques. The Intern Teaching Program had a faculty, staff, and students; the Teacher Behavior Research Group had a research staff and support. This project was the outcome of their collaboration. 16

The basic design of the research is quite simple (pre-post, control-experimental): 17

(1) All interns were pre-tested in a microteaching situation, which was videotaped or audiotaped for subsequent coding; 17a
(2) The intern population was divided into experimental and control groups; 17b
(3) Experimental group(s) receives and works through the experimental module, while the control group receives and works through an alternate, unrelated module; 17c
(4) All interns take a performance posttest in a microteaching format like the one used for the pre-test; 17d
(5) Student achievement is measured in all microteaching sessions, and other student measures (student rating forms) are also used; 17e
(6) Intern teaching performance on criterion behaviors in the microteaching sessions is coded from the tapes, and performance is then compared across experimental and control groups; 17f
(7) Differences in teacher behavior are correlated with differences in student achievement. 17g

This paradigm should allow causal inferences to be drawn about the effectiveness of the training procedures (was the teacher behavior actually shaped as the trainer-experimenter intended?). In addition, and even more important, it also permits causal inferences to be drawn regarding any observed relationships between criterion teacher behaviors and student achievement. 18

I should like to be able to report that we have solved all the problems which have bedeviled teacher educators since the serpent taught Eve how to handle Adam. Unfortunately (as you may have guessed), such is not the case. As a matter of fact, I must admit to having felt some initial discouragement as I dug through much of our data. This is of course not the proper forum for any extensive discussion of research results; let it suffice, then, to say that not only have we had little luck in demonstrating any significant relationship between teacher behavior and student achievement, but we've also had difficulty finding any meaningful effects of training on teacher behavior. 19

Confronted with such depressingly uninformative findings, we did what any researcher would have done: we figured out why this was exactly what should have happened, and decided that more research was clearly needed. And it is. If we had it all to do over again, I personally have no doubt that we would once more dig in and work much as we have for the past two years. Our procedures might be different, for I think we've earned quite a bit -- but try again we would. 20

Just what, then, have we learned? 21

Basically, I think we've learned not to expec our methods to surpass their own limitations. We rem in convinced of the value of the microteaching metho as an essential part of a research and developmen appr ach to managing the changeover to a performance-based te cher education program. In this context, it is invalu ble as a training technique and as a tool for gathering me ningful data on teacher behavior. But I think that to as it to provide useful information on teacher behavior-st dent achievement linkages is to stretch the method per lously close to the breaking point. 22

There are several problems inherent in experi ental microteaching studies of teacher behavior when st dent achievement is the dependent variable. 23

1. Lesson content: A microteaching lesson is a pretty unusual piece of educational business. If it s to be useful as a research device, its content must eet several qualifications: 23a

a. It must be at least moderately interest ng to the students. There is no use making teach r and student alike merely plod through an exerci e in boredom and futility. Microteaching studen s typically know that their destiny is not li ely to be heavily influenced by their performance n one twenty-minute microteaching session; if the topic is tedious, they will at best sit there lookin politely attentive while silently counting way their twenty-minute sentences. (Any resemb ance to students in "real" classrooms is purely coi cidental and irrelevant, and no one with any finesse would mention it anyway). 23a1

b. It must be a topic with which the vast ajority of the students are unfamiliar. If student achievement is to be the dependent variable either we must have both a pre-test and a post-tes to demonstrate growth, or else we must be able to defend the assumption that all the students started from zero, and any achievement above that l vel constitutes growth. Pre-tests are hard to andle in the context of a twenty-minute microteachin session, and anyway bring their own problem (e.g., sensitization of teachers and students to c iterion items or knowledge); that leaves us trying o come up with lessons which deal with content to hich students have not been exposed. This is ha der than cynics might think, especially if the lesso s are also supposed to be interesting. 23a2

c. It must be a topic which allows objecti es toward which the teacher behaviors under st dy might logically be directed. Kids may not know m ch about the art of folding paper, and they may be f scinated by it (well, they might be); but if our tea hers are supposed to be demonstrating their ability o lead group discussions...something else is clear y needed. 23a3

2. Selection of objectives/measurement of stu ent achievement: To be useful in a microteaching ession, objectives must perforce be limited in scope, nd they must be clearly and precisely defined. It is ifficult (though probably not impossible) to reach a higher-order, relatively abstract objective wi hin the context of a twenty-minute microteaching sessi n; the job gets easier as the level of the objective rops. The measurement of student growth is subject t the same problem -- the more basic the objective, he easier it is to measure its attainment. 23b

If the microteaching format limits the teache 's ability to reach higher-order objectives, it p ts even more severe constraints on those who would mea ure student growth. It is not easy to build an ac ievement test which: (1) is short enough to be adminis ered as a part of our research design; (2) taps the ob ectives of the lesson, and only those objectives; (3) easures higher-order objectives (e.g., appreciation, inferential reasoning); (4) is reliable. 23c

3. Variations in teaching style: A true expe imental study of relationships between specific teache behaviors and specific kinds of student growth requires that we systematically manipulate the occurren e of teacher behavior X across randomly selected experimental and control groups. What we mani ulated, however, was not the occurrence or non-occurre ce of specific teacher behaviors, but rather the int rns' ability to use these behaviors. We could mani ulate the behaviors themselves by telling teachers t behave in specific ways, but this is inconsistent wit both good training and good teaching. We believe t at to constrain a teacher's behavior so much, for ex mple, as to tell him to "ask 12 questions of type X dur ng the lesson" is likely to cramp his style so much t at the entire lesson may become strained and artifici l. This would not only be bad as a training technique; it would also be bad research, simply because our exper mental manipulations would have affected not only the independent variable (questionning behavior), ut also an unspecifiable number of unknown variables hich might also be expected to have a significant i pact on the dependent variable. 23d

All of these problems are related to the use f the microteaching method in experimental studies in w ich student achievement is the dependent variable. Educationally, of course, this is ultimately ines apable. For us teacher educators, however, the dependent ariable of immediate interest is teacher behavior. True, all the changes which we seek in the classroom behavior o student teachers have the growth of their students as the ultimate goal. But the question facing us is not the grow h of our students' students; rather, it is the teaching be avior of those whom we train. What do they look like as t achers? Most important, can they do the things we said we d train them to do? If they can, if they do, then we can proceed to study the relationship between their classroom behavior and the educational growth of their students. Bu if they cannot, our efforts have been wasted. 24

What it all boils down to -- what we're tryin to tell you today -- is that we think it's worth the effo t. The addition of a research component to the Intern Te ching Program's efforts to change over to a perfomance ase has not been without problems, but we believe that th results justify the effort. The techniques which we have been using may not answer all the questions which we h ped they would; but they enable us to evaluate objectively the change in classroom behavior which our training t chniques bring about in Temple's interns. Without these techniques, we could ask for testimonials from sa isfied users, or we could argue our expert opinions agai st anyone else's; with them we have data, data which can be used to sharpen and refine both the performance o the interns and that of the program as a whole. 25

DAP 2-MAY-75 07:05 32408

Paper presented at AERA, 1975

(J32408) 2-MAY-75 07:05;;;; Title: Author(s): David A. Potter/DAP;
Distribution: /DAP([ACTION]) ; Sub-Collections: NIC; Clerk: DAP;
Origin: < POTTER, AERA.NLS;3, >, 28-MAR-75 05:20 DAP ;;;;####;

DAP 2-MA -75 08:06 32409

ETSMEMO

changes needed

DAP 2-MA -75 08:06 32409

ETSMEMO

Dean,

It gets better. Sorry for the ambiguity in my instru tions. The date and from blocks should be in block format li e this:

Date: 2 MAY 75
From: David A. Potter

Note that the 2 is directly over the D.

In addition, both blocks should be indented more, so hat "date" and "From" both start around column 40 or so -- wher ver they are in the samples I sent you. Also, the "Date" should be on the same line as the "Subject" block. Finally, there should nn t be a blank line between date and from. It should look like this

Subject: Memo formatter Date: 2 MAY 75
From: David A. Pot er

I think that'll do it. One question about LETTER; ave the changes you mentioned been made in the on-line version? I ried it this morning and it still looked the same to me. Let me kn w where the new version is and I'll give it a try and send comments

Just as a suggestion -- you might consider providing ptions in both MEMO and LETTER that would let the user tailor the for att to his own idiosyncratic needs. For example, other users migh prefer a full block format for memos -- i.e., all blocks including distribution list, date, etc., flush left.

Once again, thanks...I trust the next version will be the final one. Then I can start sqqualking about the CALCULATOR agai ...

--Dave--

1

ETSMEMO

(J32409) 2-MAY-75 08:06;;;; Title: Author(s): David A. Potter/DAP;
Distribution: /NDM([ACTION]) JCN([INFO-ONLY]) JHB(INFO-ONLY]
) ; Sub-Collections: NIC; Clerk: DAP;

reply to teleconferencing questionnaire

REPLY TO QUESTIONNAIRE 1

1-2-3, Use: I've used FORUM once 1a

4, Yes, I think teleconferencing is essential, if just to make NLS a full collaborative dialogue system, 1b

5, I would like to see it used by KWAC, so they can set priorities to build other tools, 1c

6, There would be many differences. For one thing, there would be voting, delphi conferencing, demonstration of programs, computer-assisted instruction and other "focusing" tools.. For another, a miniconference could be set up to discuss a specific statement, branch or other structure in an NLS file. In general, a teleconferencing system is highly interactive, with many short messages being sent and received, directed to a single topic. 1d

7, I like FORUM the best of any, primarily because it has an "analysis space" for the retrospective study of conferences. However FORUM lacks many features of interest. 1e

8, I think an NLS system should have all features possible. Otherwise, the basic design may be compromised, and later improvements might be difficult or kludgy.. 1f

9, I think teleconferencing is an essential feature of greatest urgency. I think it is badly needed to complete NLS's communication environment. Also, it would serve as a tool for deciding what features to add next. 1g

RA3Y 2-MAY-75 17:31 32410

reply to teleconferencing questionnaire

(J32410) 2-MAY-75 17:31;;;; Title: Author(s): Raymond R. Panko/RA3Y; Distribution: /GAS2([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: RA3Y;

ANNEX XXXVII

DATA PROJECT PLAN

BASE AUTOMATED SYSTEMS

FOR

TOTAL OPERATIONS

(BASE-TOP)

BASE-TOP DATA BASE ADMINISTRATION

1 SEP 1974 1

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ROLE OF THE DATA BASE ADMINISTRATOR

I, GENERAL

There is general agreement that a Data Base Administrator (DBA) or the equivalent is needed for most large, complex systems with multiple users. However, such specific issues as a charter of appropriate activities, when the DBA should be established, his placement in the organization, and the size and skill requirements

for his staff are still evolving. In research of the literature, we have found no consensus on the subject of a charter, or role, for a Data Base Administrator. Indeed, substantial variation is found in the activities of existing DBAs. This results from such factors as personnel capabilities, pre-existing organizational responsibilities and the relative maturity of a system. 16

A. Data integrity in a BASE-TOP type system is complex in terms of the problems encountered, the procedures and resources required, and the skills needed. A BASE-TOP type system imposes broad accountability for data integrity in both development andoperation of the system. These two factors--increased complexity and broad accountability--have resulted in the evolution of a new organizational element: the Data Base Administrator. This term, as used in this report, refers to both the individual involved and to the office. 16a

B. B. Because the term Data Base Administrator must be clearly understood, this annex will provide an initial definition (subject to later refinement) and an expanded explanation of the activities for which the DBA is responsible. The definition will first apply to the development center, then to the major command and finally to the base level. This will be followed by a related discussion dealing with the need for and duties of a Functional Data Administrator to represent the interests of discrete functional systems at the MAJCOM and development center levels. 16b

1. Development Center Data Base Administrator. The Development Center DBA is responsible for the data structure and information content of data bases for Air Force standard systems developed at his center. He is in charge of the data base (scheme) and its use. He is concerned with the integrating of files in a data base used by many processing applications in contrast to individual files for each separate functional system. He must possess a working knowledge of all aspects of the Data Management System itself and is responsible for the physical data base structure and integrity of standard systems released from the development center. He reviews all current applications to eliminate redundancy of data, applications and services. He assists in the analysis of current management needs and analyzes approaches to satisfy these needs. He may be assisted by a committee (discussed below) where processing loads warrant. Working with this committee he resolves conflicts on physical and logical characteristics of data elements or routines that cross functional lines. He controls the capabilities of the DMS itself and arbitrates DMS changes to satisfy functional requirements. Table 1 amplifies this definition showing the

major activities and the nature of the responsibilities for the development center MAJCOM and base level DBAs function. 16b1

2. Major Command Data Base Administrator. The MAJCOM DBA controls the interface of standard systems data bases and MAJCOM unique data bases, and is responsible for the data structure and content of the latter. The duties of the MAJCOM DBA are approximately the same as those at development center level except that these responsibilities relate to MAJCOM unique requirements rather than Air Force standard systems. The MAJCOM DBA responsibilities are also shown in Table 1. These duties may include any or all activities listed depending on the level of MAJCOM systems development activity. 16b2

3. Base Level Data Base Administrator. The Base Level DBA is responsible for monitoring the data base aspects of the implementation and operation of Air Force standard systems. The name does not change but the specific responsibilities (as shown in Table 1) are somewhat different. Whereas the development center and MAJCOM DBAs have responsibilities relating to development and maintenance of a standard data base, the base level DBA is interested only in operation of standard systems which use the data base. The Base Level DBA monitors data base maintenance and validity as well as other activities related to use of the data base. Working directly under the DPI chief, he is the focal point for insuring data base integrity and making sure it serves all users in an effective and timely manner. 16b3

4. Data Element Custodian (DEC). The DEC is responsible for data element definition and use. He will insure the use of standard data elements, codes and related features as required by AFR 300-5 and published in AFM 300-4, Vols I thru XII. If a suitable standard has not been published, necessary action will be initiated to establish one (e.g., AF Form 247) following the review by the DBA. 16b4

5. Functional Data Administrator. This is a specialist representing a particular functional area (e.g., supply, manpower, personnel, etc.) who is responsible for describing and maintaining the functional area subschema to the standard data base. Collectively the Functional Data Administrators, the Data Element Custodians and the DBA will constitute the Data Base Committee at the MAJCOMs and the Development Center. In this context the role of the FDAs will be similar but subordinate to that of the DBA (see Table 2). Their involvement will relate to activities of only the functional areas they represent. BASE-TOP systems developers at both AFDSDC and the MAJCOMs will initiate proposals through their

FDA to the DBA for new elements, system revisions, changes to the data base, new DMS capabilities, and such other actions as may impact the total integrated BASE-TOP data base. Proposals will be accompanied by a narrative justification, including rationale for the change and impact on the total data base. 16b5

C. The BASE-TOP development organizations (functional areas) are responsible for initiating action to establish and change the data base. These organizations must also establish internal control procedures for data submittals, quality review, reject correction, and product utilization. It will be the responsibility of any activity initiating a change to contribute in a positive manner to the elimination of duplicative or contradictory data. When the request for change has been approved by the FDA he will: 16c

1. Request the DBA to convene the the Data Base Committee. 16c1

2. Obtain a consensus from the Committee leading to the assignment of appropriate codes and the identification of structure levels, data elements and element-to-element relationships within the data base. The changes will be documented at this point. 16c2

3. Assure that the proper transactions to effect the change are prepared and submitted to the DBA for review, processing, and subsequent entry into the data base. 16c3

D. The BASE-TOP development organizations will participate in establishment and maintenance of the standard data base. Changes to the data base will usually be user initiated to correct some deficiency or effect some improvement in their systems. The function of DBAs at all levels, whether in a decision making capacity or in purely an administrative role, will be to insure that an effective interface exists and that the data base is structured in a manner conducive to efficient and responsive information processing. 16d

E. Data Base Administrator and Functional Data Administrator Responsibilities. Tables 1 and 2 list DBA and FDA activities and responsibilities for the Development Center, MAJCOM and Base Level DBAs. Though not exhaustive, the lists cover activities that usually concern each function and embrace a spectrum of potential responsibility with decision-making power at one extreme and administrative/clerical functions at the other. The roles of the DBA and FDA therefore can be outlined in terms of (1) the activities for which each is responsible and (2) the nature of that responsibility. 16e

NOTE Insert Table 1 and Table 2 17

II. EXAMINATION OF TABLE 1 AND TABLE 2 ACTIVITIES AND RESPONSIBILITIES 18

A. Data-Element Definition. Data-element definition is the process of identifying the attributes of a data element such as "grade" or "SSAN". Some of these attributes are size, recording mode, format and relationships to other data elements. In simple systems data-element definition is usually the responsibility of a programmer/analyst working in conjunction with the user. Both the initial definition and subsequent changes are coordinated and implemented by these parties. Under an integrated data base the DBA must coordinate to insure standardization, eliminate redundancies and make certain that one function does not impact another as a result of a data base change, and if it does that no adverse effect results. 18a

B. Data-Base Structure Definition. Data-base structure definition is the process of selecting a method or methods for organizing data elements such that they satisfy both the user's requirements for logical relationships among the data elements and the computing system's requirements regarding physical organization. The structure may be affected by storage-device characteristics, access methods, data-management system capabilities and response-time requirements just to mention a few. Coordination is required to insure effective structure definition, both initially and as the system changes. The final decision on the data-base structure must rest with the DBA. 18b

C. Data-Base Creation and Initial Certification. Data-base creation and certification involves the construction of a data base to design specifications. This task is often a difficult and perilous part of implementation since it usually involves a combination of manual and automated sources. A particularly critical task, when preparing to create an integrated data base, is to coordinate the process of selecting from among multiple sources of data. This involves the analysis of source data to determine its suitability and implies the complex task of validation of specific data values and questions of time phasing, intra-record consistency and verification of the source selection. Due to user special interests the DBA must perform any arbitration necessary and make the final decision. 18c

D. Data-Base Maintenance. Maintenance is the process of applying current information in the form of transactions to a data base thus causing the creation of new records or the modification/deletion of existing records. In the BASE-TOP system, maintenance is discussed in detail in the DMS annex of this DPP. The DBA must validate all procedures to insure data base accuracy and integrity. 18d

E. Data-Base Activity Monitoring. Activity monitoring is the on-going recording and analysis of data-base maintenance and usage. Typical of the many parameters involved are the number of transactions processed per unit of time and the activity ratio (the ratio of records accessed to all records). The establishment and coordination of this activity in a BASE-TOP type system is essential for many reasons. Among these are: continuing validation application system and/or data base design, capture of input required for hardware configuration review and allocation of data bases to the most appropriate storage medium. 18e

F. Data-Base Quality Analysis. Quality analysis involves continuing and/or periodic analysis of the data base to insure that it satisfies the requirements of the system specifications with respect to both structure and data values. Because the potential for problems is great in a truly integrated data base, a coordinated approach is requested. Some key considerations are: 18f

1. What is the value of an error-free data base? Can some level of data-base degradation be tolerated? If so, how should it be measured? Two powwible ways are incorrect data values and flaws in the data-base structure. 18f1

2. What kind of auditing techniques should be used in the analysis process? 18f2

3. What are the various functional area responsibilities for: 18f3

a. Specifying evaluation criteria? 18f3a

b. Selecting tools and techniques and developing procedures to be used in the data-base quality analysis? 18f3b

c. Specifying, designing and developing software required to support the analysis? 18f3c

d. Training and supervising those responsible for the analysis? 18f3d

e. Conducting the analysis and coordinating corrective actions? 18f3e

This activity clearly involves a variety of users and the effectiveness of the analysis will have far reaching effects. The DBA is in the best position for administration of this analysis and working with affected users. 18f4

G. Data-Base Access Control. Access control implies protection against unauthorized access, whether deliberate or inadvertent.

Significant new problems of access control are introduced when dealing with an integrated data base. Online operations compound the problem by making the data base potentially accessible by any system user, subject only to the effectiveness of protective features built into the hardware and software. Although the Security Annex of the BASE-TOP DPP covers such problems in detail, the development and operation of an access-control plan remains a subject of vital interest to the DBA. 18g

H. Checkpoint, Restart and Data-Base Recovery. The three closely-related activities of checkpointing, restart and data-base recovery are among the most critical elements of data base integrity. Online operations utilizing direct access storage devices create many new sources of potential trouble. For instance, online supporting operating systems are typically more complex than those used for simple batch systems thus increasing the probability of hardware/software-related failures. Because of the DMS's common handling of these activities, control must be exercised by the DBA regarding their sufficiency. 18h

I. Maintenance of Control Tables. Most DMS's make extensive use of control tables. Some of these tables are used to control system functions and operations. Examples are tables containing the characteristics of communication lines and input/output devices. Other tables are application-oriented and contain information on transaction identification and validation, data-base characteristics, and update authorizations for data-base maintenance. Maintenance of these tables must be under the control of the DBA to insure standardization, effective utilization, elimination of redundancies, etc. 18i

J. Transaction Editing. Transaction editing may be broadly defined as the process of examining input transactions and accepting or rejecting them based on previously established criteria. Editing is often done through a combination of manual and automated procedures. When a DMS is used the automated system must support compatibility, validity and type and class checks. To the extent that the data base serves multiple users, the definition of these capabilities and their use must be coordinated. In addition, continuous monitoring of the editing process will help to identify problems in input procedures, edit logic, and/or system operation before they can seriously degrade the data base. All automated procedures are functions of the DMS and as such of interest to the DBA. 18j

K. Application Program Testing, Certification, and Control. Application programs must be tested for (1) concurrence with design specification, (2) successful integration with other programs, (3) conformance to constraints imposed by the operating

system, and (4) such other considerations as programming standards and impact on overall system performance. This testing is required in both initial program development and subsequent modifications. Successful testing should be followed by a formal process of third-party quality assurance after which the program becomes part of a certified program library. The establishment and control of such a library substantially increases the quality of system performance. Within the development center a special Quality Control Activity should have full responsibility for insuring that computer programs and documentation produced within the Center conform to USAF standards and systems requirements and meet the applications programs testing requirements mentioned above. This effort should be supplemented by each user developing and following formalized and agressive product review. 18k

L. System Utilities. The design and development of program tools to support many of the activities described above will be a major requirement in the BASE-TOP system. Although various utilities (e.g., sort, merge, dump, etc.) are normally available from the vendor, it is often necessary to modify them to meet special needs. In addition, it is usually necessary to develop unique utilities for particular purposes. Examples of the latter are special-purpose date-base display and modification programs. Coordinated design and development of these programs by the DBA are highly desirable since they will be available for use by all functional activities. 18l

M. Training, Standards, and Documentation. Each of the activities discussed above requires, in varying degrees, consideration of training, standards, and documentation. They are mentioned separately to emphasize that any system is particularly sensitive to careful training, the creation of positive and practical standards, and the establishment and maintenance of appropriate and usable documentation. 18m

III. ORGANIZATIONAL PLACEMENT OF THE DBA 19

Different approaches have been followed in industry for organizational placement of the DBA. Figures 1, 2, and 3 show three such approaches. They are offered for comparison purposes with the organizational placement in AFDSDC. 20

Two main factors have combined to account for the different approaches taken: 21

A. The considerable variance in the total set of responsibilities from one system to another affects where the DBA should be located organizationally. For example, if the thrust of responsibility is

toward user service, the DBA tends to be associated with the group that has the most user-orientation. 21a

B. The pre-existing structure of the organization and management's willingness to change also affect the DBA's location. 21b

Despite the differing approaches to organizational placement, it is important to remember that in industry the need for a DBA has been empirically recognized and, within the constraints and considerations described above, a new organizational element has been created. It isalso important to remember that the nature of DBA's role requires (1) that the lines of communication and authority be sharply drawn, regardless of the position in the organization and (2) that there be close, firm, consistent management support. These factors undoubtedly contributed to the variance reflected in the three alternatives shown in Figures 1, 2, and 3. There is reason to reject all three alternatives as unsatisfactory because the DBA function is located too low on the chain of command. As a consequence, they do not satisfy the two criteria of sharply drawn lines of communication and authority, and close, firm, consistent management support. The DBA is an evolving group whose location within an organization may change as the systems' development activity matures. The organizational placement recommended for AFDSDC is reflected at the end of this annex in Figure 4. Section VI provides additional rationale for this organizational placement. 22

NOTE Insert Figures 1, 2 & 3 23

IV. PLANNING FOR THE DATA BASE ADMINISTRATOR 24

A. Experience and research indicates that most companies in industry had no DBA function or its equivalent when their systems began operations, yet each soon found such a function necessary. Typically an organization that develops a large integrated system finds that several groups either disappear or take on somewhat different roles after the system is implemented. These groups include system testing and integration, data conversion and initial data-base design and structuring. Their work is the logical antecedent of many activities normally assigned to a DBA. Most DBA activities listed in Table 1 begin, in one form or another, during the early stages of system development. Thus, it is logical to plan for the establishment of a DBA early in the development process. This planning should cover people, procedures, and special programming. 24a

1. People and Procedures. The gradual transition of people from the groups mentioned above into the DBA function is a natural process. For example, after the integrated data base has been successfully loaded, a data-conversion group is no

longer needed. However, there is a need for people with data conversion experience to effectively deal with such requirements as restart and recovery. Data-conversion people are normally concerned with these subjects during the conversion planning and implementation. By the same token, many of the procedures developed for use in system implementation can, with proper planning, have a high degree of usefulness after the system becomes operational. 24a1

2. Special Programming. In the DMS approach much of the special programming done to support system implementation will have been developed in the DMS selected for the system. The functional systems tested during system development can become standards for use in the functional areas after the system becomes operational. Other examples of special programming are the data-conversion programs written to load the different data bases and to deal with exceptions occurring during the loading. These programs can be designed for direct use, or easy modification and use, by the DBA, in data base recovery. 24a2

B. In summary, the foundation for the DBA can and should be laid during development and implementation so that its formal establishment is essentially an acknowledgment of an accomplished fact. 24b

V. STAFFING CONSIDERATIONS 25

A. Organizations with Data Base Administrators generally agree on the following characteristics as being necessary to a successful DBA staff: 25a

1. Experience. Typically, members have several years experience in data processing. These data processing personnel normally come from either applications programming or computer operations groups. However, people from user organizations have also been successfully integrated into DBA staffs. 25a1

2. Communication Skills. The heavy responsibilities of interfacing at many levels and among diverse groups place a premium on communication skills for the DBA staff. It is essential that they be able to convey accurately their ideas both orally and in writing. These communication skills also imply tactfulness in dealing with high-stress situations. 25a2

3. User Sensitivity. The DBA staff must also have had at least an exposure to user operations. One of the keys to success is the DBA's ability to understand user problems and needs in user's vocabulary. 25a3

4. Stability. The DBA staff should be relatively stable. High turn-over is potentially a major problem since much of the work done by the DBA is viewed by the data-processing staff as system-maintenance work and, as such, not particularly attractive or stimulating. Data Base Administrators have therefore found it necessary to develop ways of continuously motivating people. One way has been to assign more responsibility than is normal at the DBA staff rank or grade level. This tactic requires extreme care in selecting only the best people and usually results in DBA staffs being a very high quality and long tenure. 25a4

B. Most DBA staffs number from five to ten people, including the supervisor. The number appears to be somewhat independent of the size and complexity of the system, the number of programmers involved, and to a large degree the number of applications supported. Rather, staff size appears to be a function of range of responsibility and involvement. 25b

C. Two totally different approaches have been followed in organizing the work of the DBA staff. One involves the development of a team of specialists, each one responsible for an activity such as data-base design, data description language, data communications, system definitions, procedures, training and forms, and standards development. The other approach has been to develop a staff consisting of broadly trained members, each of whom, while tending to work in one or two areas, is capable of working at an acceptable level in all the areas of responsibility. Both approaches appear successful. The key seems to be the supervisor's ability to motivate the staff rather than the manner in which responsibilities are assigned. 25c

VI. RECOMMENDED AIR FORCE ORGANIZATIONAL PLACEMENT FOR THE DBA 26

The DBA must provide a focal point for the coordination and control of data base functions. As systems become larger and more complex they are increasingly sensitive to the ways in which their data bases are created, maintained, used, and protected. Inasmuch as these functions involve people throughout the entire organization, there must be a degree of centralized coordination and control over them. The DBA function can best be performed in an environment where there are no functional systems or particular vested interests in any specific portion of the integrated data base. Also, the DBA can best function from a location which deals regularly and directly with the users as a normal course of events. In addition, the DBA should have ready access to a broad spectrum of disciplines such as those listed in Table 1. These are some of the major considerations which lead to the recommendations which follow. 27

A. The directorate within AFDSDC that most closely meets the above criteria is the Directorate of ADPS Management. This directorate's primary concern is configuration management, with attendant responsibilities for providing capabilities to store and process the data base. It also is responsible for data elements and related features, the basis upon which the data base is structured. Further, system development standards responsibility falls within this directorate. Such standards are a basic ingredient of an efficient integrated data base. Within this organization control, coordination, and administration of the data base can best be effected while working with functional users, the Directorate of Systems Development for DMS related matters, and the Directorate of Systems Control for matters related to data processing operations. 27a

B. The organizational placement of the MAJCOM DBA is more difficult to specify because of the diversity of organizational structues at the MAJCOMs. However, the criteria which dictated the placement of the DBA in the Directorate of ADPS Management at AFDSDC apply at the MAJCOM as well. The DBA should be placed with the agency responsible for standardization and sufficiently close to the single manager that its lines of authority are unassailable. (See Figure 5) 27b

C. The Base Level DBA should function directly under the DPI chief. He could even be the DPI chief depending upon circumstances at the local level. It is recommended, however, that some such separate function be established as is depicted in Figure 6. If not initially, then certainly shortly after implementation. 27c

VII. THE FUTURE OF THE DATA BASE ADMINISTRATOR 28

As more experience is gained with large, integrated systems it is reasonable to expect increasing agreement on the role of the DBA. The nature of such systems, the complex data integrity requirement and the associated broad accountability will lead to increased responsibilities for DBAs. This growth in responsibility will in turn affect the organization, size, and type of staff. 29

NOTE - Insert Figures 4, 5 & 6 (one page each) 30

(J32411) 3-MAY-75 17:17;;;; Title: Author(s): Frederick P. Ariell/FPA; Distribution: /FPA([ACTION]) ; Sub-Collections: NIC; Clerk: FPA; Origin: < DSDC-XF, ANNEX-XXXVII,NLS;5, >, 2-MAY-75 05:40 JMZ ;;;;####;

ANNEX XXXVII

DATA PROJECT PLAN

BASE AUTOMATED SYSTEMS

FOR

TOTAL OPERATIONS

(BASE-TOP)

BASE-TOP DATA BASE ADMINISTRATION

1 SEP 1974 1

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There is general agreement that a Data Base Administrator (BA) or the equivalent is needed for most large, complex systems wi h multiple users. However, such specific issues as a charter of appropriate activities, when the DBA should be established, his placement in the organization, and the size and skill requi ements

for his staff are still evolving. In research of the liter ture, we have found no consensus on the subject of a charter, or rol , for a Data Base Administrator. Indeed, substantial variation is ound in the activities of existing DBAs. This results from such fa tors as personnel capabilities, pre-existing organizational respons bilities and the relative maturity of a system. 16

A. Data integrity in a BASE-TOP type system is complex n terms of the problems encountered, the procedures and resource required, and the skills needed. A BASE-TOP type system mposes broad accountability for data integrity in both developm nt andoperation of the system. These two factors--increase complexity and broad accountability--have resulted in th evolution of a new organizational element: the Data Bas Administrator. This term, as used in this report, refer to both the individual involved and to the office. 16a

B. B. Because the term Data Base Administrator must be clearly understood, this annex will provide an initial definitio (subject to later refinement) and an expanded explanation of the ctivities for which the DBA is responsible. The definition will f rst apply to the development center, then to the major command and finally to the base level. This will be followed by a related d scussion dealing with the need for and duties of a Functional Dat Administrator to represent the interests of discrete fun tional systems at the MAJCOM and development center levels. 16b

1. Development Center Data Base Administrator. The Development Center DBA is responsible for the data st ucture and information content of data bases for Air Force s andard systems developed at his center. He is in charge of he data base (schema) and its use. He is concerned with the integrating of files in a data base used by many proc ssing applications in contrast to individual files for each separate functional system. He must possess a working knowled e of all aspects of the Data Management System itself and is r sponsible for the physical data base structure and integrity of standard systems released from the development center. He rev ews all current applications to eliminate redundancy of data, applications and services. He assists in the analysi of current management needs and analyzes approaches to s tisfy these needs. He may be assisted by a committee (disc ssed below) where processing loads warrant. Working with his committee he resolves conflicts on physical and logic l characteristics of data elements or routines that cro s functional lines. He controls the capabilities of th DMS itself and arbitrates DMS changes to satisfy function l requirements. Table 1 amplifies this definition show ng the

major activities and the nature of the responsibiliti s for the development center MAJCOM and base level DBAs functio , 16b1

2, Major Command Data Base Administrator. The MAJCO DBA controls the interface of standard systems data bases and MAJCOM unique data bases, and is responsible for the ata structure and content of the latter. The duties of t e MAJCOM DBA are approximately the same as those at developmen center level except that these responsibilities relate to MA COM unique requirements rather than Air Force standard sy tems. The MAJCOM DBA responsibilities are also shown in Tab e 1. These duties may include any or all activities listed depending on the level of MAJCOM systems development activity, 16b2

3, Base Level Data Base Administrator. The Base Lev l DBA is responsible for monitoring the data base aspects of t e implementation and operation of Air Force standard sy tems. The name does not change but the specific responsibil ties (as shown in Table 1) are somewhat different. Whereas th development center and MAJCOM DBAs have responsibilit es relating to development and maintenance of a standard data base, the base level DBA is interested only in operat on of standard systems which use the data base. The Base L vel DBA monitors data base maintenance and validity as well a other activities related to use of the data base. Working irectly under the DPI chief, he is the focal point for insuri g data base integrity and making sure it serves all users in an effective and timely manner. 16b3

4, Data Element Custodian (DEC). The DEC is respons ble for data element definition and use. He will insure the se of standard data elements, codes and related features as required by AFR 300-5 and published in AFM 300-4, Vols I thru II. If a suitable standard has not been published, necessary a tion will be initiated to establish one (e,g,, AF Form 247) fol owing the review by the DBA. 16b4

5, Functional Data Administrator. This is a special st representing a particular functional area (e,g,, supp y, manpower, personnel, etc,) who is responsible for des ribing and maintaining the functional area subschema to the tandard data base. Collectively the Functional Data Administ ators, the Data Element Custodians and the DBA will constitu e the Data Base Committee at the MAJCOMs and the Developmen Center. In this context the role of the FDAs will be similar ut subordinate to that of the DBA (see Table 2). Their involvement will relate to activities of only the fun tional areas they represent. BASE-TOP systems developers at both AFDSDC and the MAJCOMs will initiate proposals throug their

FDA to the DBA for new elements, system revisions, ch nges to the data base, new DMS capabilities, and such other a tions as may impact the total integrated BASE-TOP data base, roposals will be accompanied by a narrative justification, inc uding rationale for the change and impact on the total data base. 16b5

C. The BASE-TOP development organizations (functional a eas) are responsible for initiating action to establish and chang the data base. These organizations must also establish internal ontrol procedures for data submittals, quality review, reject c rrection, and product utilization. It will be the responsibility f any activity initiating a change to contribute in a positive manner to the elimination of duplicative or contradictory data. W en the request for change has been approved by the FDA he will: 16c

1. Request the DBA to convene the the Data Base Comm ttee. 16c1

2. Obtain a consensus from the Committee leading to he assignment of appropriate codes and the identificatio of structure levels, data elements and element-to-elemen relationships within the data base. The changes will be documented at this point. 16c2

3. Assure that the proper transactions to effect the change are prepared and submitted to the DBA for review, pro essing, and subsequent entry into the data base. 16c3

D. The BASE-TOP development organizations will particip te in establishment and maintenance of the standard data base. Changes to the data base will usually be user initiated to corre t some deficiency or effect some improvement in their systems. The function of DBAs at all levels, whether in a decision ma ing capacity or in purely an administrative role, will be to insure that an effective interface exists and that the data bas is structured in a manner conducive to efficient and respon ive information processing. 16d

E. Data Base Administrator and Functional Data Administ ator Responsibilities. Tables 1 and 2 list DBA and FDA activ ties and responsibilities for the Development Center, MAJCOM and ase Level DBAs. Though not exhaustive, the lists cover activities that usually concern each function and embrace a spectrum of otential responsibility with decision-making power at one extreme and administrative/clerical functions at the other. The rol s of the DBA and FDA therefore can be outlined in terms of (1) th activities for which each is responsible and (2) the nat re of that responsibility. 16e

NOTE insert Table 1 and Table 2 17

II. EXAMINATION OF TABLE 1 AND TABLE 2 ACTIVITIES AND RESPONSIBILITIES 18

A. Data-Element Definition. Data-element definition is the process of identifying the attributes of a data element uch as "grade" or "SSAN". Some of these attributes are size, r cording mode, format and relationships to other data elements. n simple systems data-element definition is usually the responsib lity of a programmer/analyst working in conjunction with the user. Both the initial definition and subsequent changes are coordinate and implemented by these parties. Under an integrated data ase the DBA must coordinate to insure standardization, eliminate redundancies and make certain that one function does not impact another as a result of a data base change, and if it doe that no adverse effect results. 18a

B. Data-Base Structure Definition. Data-base structure definition is the process of selecting a method or metho s for organizing data elements such that they satisfy both the user's requirements for logical relationships among the data el ments and the computing system's requirements regarding physical organization. The structure may be affected by storage- evice characteristics, access methods, data-management system capabilities and response-time requirements just to ment on a few. Coordination is required to insure effective structure d finition, both initially and as the system changes. The final dec sion on the data-base structure must rest with the DBA. 18b

C. Data-Base Creation and Initial Certification. Data- ase creation and certification involves the construction of data base to design specifications. This task is often a dif icult and perilous part of implementation since it usually involve a combination of manual and automated sources. A particul rly critical task, when preparing to create an integrated da a base, is to coordinate the process of selecting from among mul iple sources of data. This involves the analysis of source d ta to determine its suitability and implies the complex task o validation of specific data values and questions of time phasing, intra-record consistency and verification of the source election. Due to user special interests the DBA must perform any a bitration necessary and make the final decision. 18c

D. Data-Base Maintenance. Maintenance is the process o applying current information in the form of transactions to a dat base thus causing the creation of new records or the modification/deletion of existing records. In the BASE- OP system, maintenance is discussed in detail in the DMS an ex of this DPP. The DBA must validate all procedures to insur data base accuracy and integrity. 18d

E. Data-Base Activity Monitoring. Activity monitoring s the on-going recording and analysis of data-base maintenance and usage. Typical of the many parameters involved are the umber of transactions processed per unit of time and the activity ratio (the ratio of records accessed to all records). The est blishment and coordination of this activity in a BASE-TOP type sys em is essential for many reasons. Among these are: continuin validation application system and/or data base design, c pture of input required for hardware configuration review and all cation of data bases to the most appropriate storage medium. 18e

F. Data-Base Quality Analysis. Quality analysis involv s continuing and/or periodic analysis of the data base to nsure that it satisfies the requirements of the system specifi ations with respect to both structure and data values. Because the potential for problems is great in a truly integrated da a base, a coordinated approach is requested. Some key considerati ns are: 18f

1. What is the value of an error-free data base? Ca some level of data-base degradation be tolerated? If so, ow should it be measured? Two powwible ways are incorrect data values and flaws in the data-base structure. 18f1

2. What kind of auditing techniques should be used i the analysis process? 18f2

3. What are the various functional area responsibili ies for: 18f3

a. Specifying evaluation criteria? 18f3a

b. Selecting tools and techniques and developing rocedures to be used in the data-base quality analysis? 18f3b

c. Specifying, designing and developing software equired to support the analysis? 18f3c

d. Training and supervising those responsible for the analysis? 18f3d

e. Conducting the analysis and coordinating corre tive actions? 18f3e

This activity clearly involves a variety of users and the effectiveness of the analysis will have far reaching ffects. The DBA is in the best position for administration of this analysis and working with affected users. 18f4

G. Data-Base Access Control. Access control implies pr tection against unauthorized access, whether deliberate or inadv rtent.

Significant new problems of access control are introduce when dealing with an integrated data base. Online operations compound the problem by making the data base potentially accessib e by any system user, subject only to the effectiveness of protec ive features built into the hardware and software. Although the Security Annex of the BASE-TOP DPP covers such problems n detail, the development and operation of an access-control plan emains a subject of vital interest to the DBA. 18g

H. Checkpoint, Restart and Data-Base Recovery. The thr e closely-related activities of checkpointing, restart and data-base recovery are among the most critical elements of data ba e integrity. Online operations utilizing direct access st rage devices create many new sources of potential trouble. F r instance, online supporting operating systems are typica ly more complex than those used for simple batch systems thus in reasing the probability of hardware/software-related failures. ecause of the DMS's common handling of these activities, control m st be exercised by the DBA regarding their sufficiency. 18h

I. Maintenance of Control Tables. Most DMS's make exte sive use of control tables. Some of these tables are used to con rol system functions and operations. Examples are tables co taining the characteristics of communication lines and input/out ut devices. Other tables are application-oriented and cont in information on transaction identification and validation data-base characteristics, and update authorizations for data-base maintenance. Maintenance of these tables must be under he control of the DBA to insure standardization, effective utilization, elimination of redundancies, etc. 18i

J. Transaction Editing. Transaction editing may be bro dly defined as the process of examining input transactions a d accepting or rejecting them based on previously establis ed criteria. Editing is often done through a combination o manual and automated procedures. When a DMS is used the automa ed system must support compatibility, validity and type and class hecks. To the extent that the data base serves multiple users, he definition of these capabilities and their use must be coordinated. In addition, continuous monitoring of the diting process will help to identify problems in input procedur s, edit logic, and/or system operation before they can seriously degrade the data base. All automated procedures are functions o the DMS and as such of interest to the DBA. 18j

K. Application Program Testing, Certification, and Cont ol. Application programs must be tested for (1) concurrence ith design specification, (2) successful integration with ot er programs, (3) conformance to constraints imposed by the perating

system, and (4) such other considerations as programming standards and impact on overall system performance. This testing s required in both initial program development and subsequ nt modifications. Successful testing should be followed by a formal process of third-party quality assurance after which the program becomes part of a certified program library. The establ shment and control of such a library substantially increases th quality of system performance. Within the development center a pecial Quality Control Activity should have full responsibility for insuring that computer programs and documentation produc d within the Center conform to USAF standards and systems require ents and meet the applications programs testing requirements ment oned above. This effort should be supplemented by each user eveloping and following formalized and aggressive product review. 18k

L. System Utilities. The design and development of pro ram tools to support many of the activities described above will b a major requirement in the BASE-TOP system. Although various ut lities (e.g., sort, merge, dump, etc.) are normally available f om the vendor, it is often necessary to modify them to meet spe ial needs. In addition, it is usually necessary to develop nique utilities for particular purposes. Examples of the latt r are special-purpose date-base display and modification progr ms. Coordinated design and development of these programs by he DBA are highly desirable since they will be available for us by all functional activities. 18l

M. Training, Standards, and Documentation. Each of the activities discussed above requires, in varying degrees, consideration of training, standards, and documentation. They are mentioned separately to emphasize that any system is par icularly sensitive to careful training, the creation of positive nd practical standards, and the establishment and maintenan e of appropriate and usable documentation. 18m

III. ORGANIZATIONAL PLACEMENT OF THE DBA 19

Different approaches have been followed in industry for organizational placement of the DBA. Figures 1, 2, and 3 s ow three such approaches. They are offered for comparison purposes ith the organizational placement in AFDSDC. 20

Two main factors have combined to account for the different approaches taken: 21

A. The considerable variance in the total set of respon ibilities from one system to another affects where the DBA should e located organizationally. For example, if the thrust of respons bility is

toward user service, the DBA tends to be associated with the group that has the most user-orientation, 21a

B. The pre-existing structure of the organization and management's willingness to change also affect the DBA's location, 21b

Despite the differing approaches to organizational placemen , it is important to remember that in industry the need for a DBA h s been empirically recognized and, within the constraints and cons derations described above, a new organizational element has been crea ed. It isalso important to remember that the nature of DBA's role equires (1) that the lines of communication and authority be sharpl drawn, regardless of the position in the organization and (2) that there be close, firm, consistent management support. These factors undoubtedly contributed to the variance reflected in the th ee alternatives shown in Figures 1, 2, and 3. There is reason to reject all three alternatives as unsatisfactory because the DBA fu ction is located too low on the chain of command. As a consequence, they do not satisfy the two criteria of sharply drawn lines of comm nication and authority, and close, firm, consistent management suppo t. The DBA is an evolving group whose location within an organizat on may change as the systems' development activity matures. The organizational placement recommended for AFDSDC is reflecte at the end of this annex in Figure 4. Section VI provides additio al rationale for this organizational placement. 22

NOTE Insert Figures 1, 2 & 3 23

IV. PLANNING FOR THE DATA BASE ADMINISTRATOR 24

A. Experience and research indicates that most companie in industry had no DBA function or its equivalent when thei systems began operations, yet each soon found such a function ne essary. Typically an organization that develops a large integrat d system finds that several groups either disappear or take on so ewhat different roles after the system is implemented. These roups include system testing and integration, data conversion nd initial data-base design and structuring. Their work is the logical antecedent of many activities normally assigned o a DBA. Most DBA activities listed in Table 1 begin, in one form or another, during the early stages of system development. Thus, it is logical to plan for the establishment of a DBA early n the development process. This planning should cover people, procedures, and special programming, 24a

1. People and Procedures. The gradual transition of people from the groups mentioned above into the DBA function is a natural process. For example, after the integrated d ta base has been successfully loaded, a data-conversion group is no

longer needed. However, there is a need for people w th data conversion experience to effectively deal with such requirements as restart and recovery. Data-conversio people are normally concerned with these subjects during the conversion planning and implementation. By the same oken, many of the procedures developed for use in system implementation can, with proper planning, have a high degree of usefulness after the system becomes operational. 24a1

2. Special Programming. In the DMS approach much of the special programming done to support system implementa ion will have been developed in the DMS selected for the syste . The functional systems tested during system development c n become standards for use in the functional areas after the s stem becomes operational. Other examples of special progr mming are the data-conversion programs written to load the diff rent data bases and to deal with exceptions occurring during th loading. These programs can be designed for direct use, or eas modification and use, by the DBA, in data base recove y. 24a2

B. In summary, the foundation for the DBA can and shoul be laid during development and implementation so that its formal establishment is essentially an acknowledgment of an acc mplished fact. 24b

V. STAFFING CONSIDERATIONS 25

A. Organizations with Data Base Administrators generall agree on the following characteristics as being necessary to a su cessful DBA staff: 25a

1. Experience. Typically, members have several year experience in data processing. These data processing personnel normally come from either applications programming or computer operations groups. However, people from user organiz tions have also been successfully integrated into DBA staff . 25a1

2. Communication Skills. The heavy responsibilities of interfacing at many levels and among diverse groups p ace a premium on communication skills for the DBA staff. I is essential that they be able to convey accurately thei ideas both orally and in writing. These communication skil s also imply tactfulness in dealing with high-stress situati ns. 25a2

3. User Sensitivity. The DBA staff must also have h d at least an exposure to user operations. One of the key to success is the DBA's ability to understand user probl ms and needs in user's vocabulary. 25a3

4. Stability. The DBA staff should be relatively st ble. High turn-over is potentially a major problem since m ch of the work done by the DBA is viewed by the data-processing staff as system-maintenance work and, as such, not particularl attractive or stimulating. Data Base Administrators ave therefore found it necessary to develop ways of conti uously motivating people. One way has been to assign more responsibility than is normal at the DBA staff rank o grade level. This tactic requires extreme care in selectin only the best people and usually results in DBA staffs being a very high quality and long tenure. 25a4

B. Most DBA staffs number from five to ten people, incl ding the supervisor. The number appears to be somewhat independe t of the size and complexity of the system, the number of program ers involved, and to a large degree the number of applicatio s supported. Rather, staff size appears to be a function f range of responsibility and involvement. 25b

C. Two totally different approaches have been followed n organizing the work of the DBA staff. One involves the development of a team of specialists, each one responsib e for an activity such as data-base design, data description lang age, data communications, system definitions, procedures, training and forms, and standards development. The other approach ha been to develop a staff consisting of broadly trained members, e ch of whom, while tending to work in one or two areas, is capa le of working at an acceptable level in all the areas of respo sibility. Both approaches appear successful. The key seems to be he supervisor's ability to motivate the staff rather than t e manner in which responsibilities are assigned. 25c

VI. RECOMMENDED AIR FORCE ORGANIZATIONAL PLACEMENT FOR THE DBA 26

The DBA must provide a focal point for the coordination and control of data base functions. As systems become larger and more omplex they are increasingly sensitive to the ways in which their ata bases are created, maintained, used, and protected. Inasmuch as hese functions involve people throughout the entire organization there must be a degree of centralized coordination and control ov r them. The DBA function can best be performed in an environment wh re there are no functional systems or particular vested interests in any specific portion of the integrated data base. Also, the DB can best function froma location which deals regularly and directly ith the users as a normal course of events. In addition, the DBA s ould have ready access to a broad spectrum of disciplines such as tho e listed in Table 1. These are some of the major considerations whi h lead to the recommendations which follow. 27

A. The directorate within AFDSDC that most closely meet the above criteria is the Directorate of ADPS Management. T is directorate's primary concern is configuration managemen , with attendant responsibilities for providing capabilities to store and process the data base. It also is responsible for data lements and related features, the basis upon which the data base is structured. Further, system development standards respo sibility falls within this directorate. Such standards are a bas c ingredient of an efficient integrated data base. Within this organization control, coordination, and administration o the data base can best be effected while working with functional sers, the Directorate of Systems Development for DMS related matte s, and the Directorate of Systems Control for matters related t data processing operations. 27a

B. The organizational placement of the MAJCOM DBA is mo e difficult to specify because of the diversity of organiz tional structues at the MAJCOMs. However, the criteria which d ctated the placement of the DBA in the Directorate of ADPS Mana ement at AFDSDC apply at the MAJCOM as well. The DBA should be p aced with the agency responsible for standardization and sufficien ly close to the single manager that its lines of authority are unassailable. (See Figure 5) 27b

C. The Base Level DBA should function directly under th DPI chief. He could even be the DPI chief depending upon circumstances at the local level. It is recommended, ho ever, that some such separate function be established as is de icted in Figure 6. If not initially, then certainly shortly afte implementation. 27c

VII. THE FUTURE OF THE DATA BASE ADMINISTRATOR 28

As more experience is gained with large, integrated systems it is reasonable to expect increasing agreement on the role of th DBA. The nature of such systems, the complex data integrity requ rement and the associated broad accountability will lead to increa ed responsibilities for DBAs. This growth in responsibility w ll in turn affect the organization, size, and type of staff. 29

NOTE - Insert Figures 4, 5 & 6 (one page each) 30

(J32412) 3-MAY-75 17:22;;;; Title: Author(s): Frederick P.
Ariail/FPA; Distribution: /LAC([ACTION]) FPA([INFO-ON Y]) ;
Sub-Collections: NIC; Clerk: FPA; Origin: < DSDC-X ,
ANNEX-XXXVII.NLS;5, >, 2-MAY-75 05:40 JMZ ;;;;####;

idea for a paper re SPRITE: how the panelists reacted to the comments in Round 1; 1

(J32413) 4-MAY-75 14:40;;;; Title: Author(s): Michael T. Bedford/MIKE; Distribution: /MIKE([INFO-ONLY]) ; Sub-Collections: NIC; Clerk: MIKE;

columnar format desirable but not necessary

ETSMEMO

DAP 5-MAY-75 05:35 32414

Dean --

I understand that getting the subject block set up so that the subject can overflow like this:

Subject: This memo has a
very long subject

would take a significant amount of extra work. It is not necessary. It would be nice, but on the other hand its absence would tend to reduce our penchant for ridiculously wordy subject blocks. If the subject MUST take up more space, either the directives can be hand-edited a bit aftter MEMO has formatted the thing, or (if you implement my suggestion of offering the user a choice of ETS or block format) a block format, which allows titles of virtually unlimited length, can be used. In any event, don't spend a lot of time on this...if experience with the current version (current after minor changes in my last message) shows the limitation on subject length to be a real problem, we can worry about it then.

--Dave-- 1

ETSMEMO

(J32414) 5-MAY-75 05:35;;;; Title: Author(s): David A. Potter/DAP;
Distribution: /NDM([ACTION]) JCN([INFO-ONLY]) FEEDBACK([
INFO-ONLY]) ; Sub-Collections: NIC FEEDBACK; Clerk: DAP;

'MSG' mail reading and processing program

?????

with regard to 25806, where is it? Only at BBN? If so, why tell us? When will it get to OFFICE-1? I feel like a contestant on one of the TV game shows...you know, the kind where they wavwe all those prizes at you and then give you a turkey. 1

'MSG' mail reading and processing program

(J32415) 5-MAY-75 05:47;;;; Title: Author(s): David A. Potter/DAP;
Distribution: /FEEDBACK([ACTION]) JBP([ACTION]) ;
Sub-Collections: NIC FEEDBACK; Clerk: DAP;

DAP 5-MAY-75 05:49 32416

Request for stuff

Please send me a few (n~5) NLS Basic Courses and a few more (10?) cue cards. 1

DAP 5-MAY-75 05:49 32416

Request for stuff

(J32416) 5-MAY-75 05:49;;;; Title: Author(s): David A. Potter/DAP;
Distribution: /FEEDBACK([ACTION]) ; Sub-Collections: NIC FEEDBACK;
Clerk: DAP;

Sandy--- 1

Please arrange to have the two BRL directories shown below changed from their curent "OLD DIRECTORY NAME" to their "NEW DIRECTORY NAME" 1a

Mr. Leisher has been replaced by Mr. Gunn as director of the AMC installation at Letterkenney. 1a1

Mr. Bryant has a more pressing need, and problems, and requires a directory now, while Mrs. Roberts will not be able to use hers for some time --- we can set up another directory for her, in the future, when she or her staff will have more time to use the system. 1a2

NOTE! Since this change involves current "working" directories [both Mr. Gunn and Mr. Bryant have active files in these directories] PLEASE arrange for the following: 2

(1) Keep their files 'intact'! 2a

(2) Place a phone call to me, when they have been, or will be changed, so that I can let them know about how to Login, etc. 2b

My phone number is 301-278-3389, or -2131, or -2236 3

THANKS, ...Stan Taylor. 4

"OLD DIRECTORY NAME" 5

Directory name:	LEISHER	5a
Ident:	AEL	5b
Account:	Same as Architect	5c
Password:	AEL	5d
Disk pages:	100	5e
Allocation group:	BRL	5f
Sub-Group Designation:	AMC-MIS	5g
Default protection:	770000	5h
Person's name:	Arnold E Leisher	5i

"NEW DIRECTORY NAME"		6
Directory name:	GUNN	6a
Ident:	RLG	6b
Account:	Same as Architect	6c
Password:	RLG	6d
Disk Pages:	100	6e
Allocation group:	BRL	6f
Sub-Group Designation:	AMC-MIS	6g
Default protection:	770000	6h
Person's name:	Ralph L Gunn	6i
Ident Info:		7
Address:	AMC Logistics Systems Support Agency	7a
	ATTN: AMXLS-L	7a1
	Letterkenny Army Depot	7a2
	Chambersburg, Pa. 17201	7a3
Phone:	717-263-7405	7b
"OLD DIRECTORY NAME"		8
Directory name:	PROBERTS	8a
Ident:	PCR	8b
Account:	Same as Architect	8c
Password:	PCR	8d
Disk Pages:	200	8e
Allocation group:	BRL	8f
Sub-Group Designation:	None	8g
Default protection:	770000	8h

Person's name:	Pat C Roberts	8i
"NEW DIRECTORY NAME"		9
Directory name:	BRYANT	9a
Ident:	EJB	9b
Account:	Same as Architect	9c
Password:	EJB	9d
Disk Pages:	200	9e
Allocation group:	BRL	9f
Sub-Group Designation:	None	9g
Default protection:	770000	9h
Person's name:	Edward J. Bryant	9i
Ident Info:		10
Address:	US Army Ballistic Research Laboratories	10a
	ATTN: AMXBR-X	10a1
	Aberdeen Proving Ground, Md. 21005	10a2
Phone:	310-278-2236	10b

(J32417) 5-MAY-75 05:51;;;; Title: Author(s): Stan M. Taylor/SMT;
Distribution: /FEEDBACK([ACTION]) SGR([INFO-ONLY]) JHB([
INFO-ONLY]) JCN([INFO-ONLY]) ; Sub-Collections: NIC FEEDBACK;
Clerk: SMT; Origin: < TAYLOR, NEW-DIR.NLS;2, >, 5-MAY-75 05:38
SMT ;;;;####;

DAP 5-MAY-75 09:43 32418

Unfulfilled directory request

This is a copy of 32381.

DAP 5-MAY-75 09:43 32418

Unfulfilled directory request

DAP 25-APR-75 05:42 32381
Directory Request
Message: Please set up a new directory as follows:
DIRECTORY NAME: Walton
PASSWORD: JMW
USER NAMES AND IDENTS: Walton, Wesley W.....WWW
West, Jane M....JMW
PHONE NUMBERS: Basic number same as ETS; Extensions are
Walton...6438
West.....6439
PROTECTION: 770000
DISK ALLOCATION: 300 pages
Any other information (e.g., hardcopy address) should be the same as for other ETS directories. I should note that this will be a true multi-user directory (I think); more idents will be added in the near future.
*****Note: Author Copy*****

1

DAP 5-MAY-75 09:43 32418

Unfulfilled directory request

(J32418) 5-MAY-75 09:43;;;; Title: Author(s): David A. Potter/DAP;
Distribution: /FEEDBACK([ACTION]) ; Sub-Collections: NIC FEEDBACK;
Clerk: DAP;

DAP 5-MAY-75 11:30 32419

etsmemo

take a look at this memo and see what you think -- I'm afraid the columnar format may be necessary after all. That's not a very long subject block, but it doesn't look like it would willingly share a line with the date line.

DAP 5-MAY-75 11:30 32419

etsmemo

Memorandum for: MR. ELFORD
MR. FOREHAND
MR. MAJETIC
MR. MANNING
MR. MASLOW
MR. MESSICK

Subject: External Advisory Committee

Date: 5 MAY 75

From: David A. Potter

The best available dates for the first meeting of the External Advisory Committee are May 14-15. Bernie Watson has as yet been unreachable, so it's not definite, but it seemed advisable to ask you to put a hold on whatever time you have available on those days. I don't think it's necessary -- and I wouldn't ask any of you -- to spend your full time with the Committee; but you would be welcome whenever you can make it. 1

I'll let you all know as soon as things firm up. 2

etsmemo

(J32419) 5-MAY-75 11:30;;;; Title: Author(s): David A. Potter/DAP;
Distribution: /NDM([ACTION]) JCN([INFO-ONLY]) ; Sub-Collections:
NIC; Clerk: DAP; Origin: < POTTER, TEMPO.NLS;1, >, 5-MAY-75
10:55 DAP ;;;; ####;

my message to Bev and pka is i needlots of help. 1

(J32421) 5-MAY-75 15:13;;;; Title: Author(s): Pamela K. Allen/PKA;
Distribution: /BEV([INFO-ONLY]) PKA([INFO-ONLY]) ;
Sub-Collections: SRI-ARC; Clerk: PKA;

DCE 5-MAY-75 16:22 32431

Contact log: Sanford Heckinger of Scientific American, 16 Apr 75

I met Heckinger on a flight from Seattle to San Francisco on 16 Apr 75. 1

L. H. Sanford Heckinger
Manager, Pacific Northwest
Scientific American
235 Montgomery Street
San Francisco, Ca 94194
(415) 788-6888 1a

When I learned that he was responsible for selling advertisements for Scientific American (over Western U.S. and the Pacific), it occurred to me to discuss with him the costs and approach that our Utility might consider in advertising for new clients in his magazine. Learned that it costs about $1,080 for a one-time, half-column, black-and-white ad, covering their continental-USA distribution (of the order of 200,000). 2

He got interested enough in our activities to suggest someday bringing one of their editors by for a visit to ARC. I gave him copies of 12445 and 14727. He later sent me a note (XDOC -- 25352,) acknowledging our visit, and re-asserting that he'd send along the documents to Gerard Piel, SA publisher, and that he would like to arrange for Piel to visit us when next Piel comes through SF. 3

In discussing the advertising possibilities for our Utility, he mentioned that he was acquainted with several ad agencies in SF that had very creative approaches, saying that one of them could provide a better illustration for us about the possibile advertising approaches we could consider. In his note he mentioned two, and said that he had given my name to both: 4

Jerry Gibbons, of Pritikin & Gibbons 4a

Ted Thompson, of Ted Thompson & Partners 4b

Heckinger seemed to be a very knowledgeable and interesting guy; very personable, too. If he doesn't get a chance bring Piel by within a resonable time, I'd like to invite him alone. 5

DCE 5-MAY-75 16:22 32431

Contact log: Sanford Heckinger of Scientific American, 16 Apr 75

(J32431) 5-MAY-75 16:22;;;; Title: Author(s): Douglas C. Engelbart/DCE; Distribution: /JML([ACTION] Jeanne: for the contact record) SRI-ARC([INFO-ONLY]) ; Keywords: 01860; Sub-Collections: SRI-ARC; Clerk: DCE;

DCE 5-MAY-75 16:34 32433

To FEED re reserve number problem

Problem in using numbers for Journal submission that I reserved via the DNLS SENDMAIL RESERVE JOURNAL Number command. Last week I reserved two (32404 and 32405). Today I tried submitting an item, using a Process Form with "NUMBER: 32404", and it didn't take -- I got message "number reserved by someone else!". 1

So, I reserved two others (32425 and 32426), using 32425 in a submission form. Same thing. 2

So I'm submitting without reserved numbers. Hope Dave Hopper can make use of the four perfectly good numbers that I am returning. 3

32425 32426 4

DCE 5-MAY-75 16:34 32433

To FEED re reserve number problem

(J32433) 5-MAY-75 16:34;;;; Title: Author(s): Douglas C. Engelbart/DCE; Distribution: /FEED([ACTION]) JDH([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: DCE;

DCE 5-MAY-75 16:46 32434

To ARCers -- please us recognizeable name to login on ELF

I have twice needed to find out who was using a given port on ELF, and both times the person was using an unrecognizeable login name, which caused a lot of bother for me. Please use a name that is easily recognizeable as belonging to you. 1

DCE 5-MAY-75 16:46 32434

To ARCers -- please us recognizeable name to login on ELF

(J32434) 5-MAY-75 16:46;;;; Title: Author(s): Douglas C. Engelbart/DCE; Distribution: /SRI-ARC([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: DCE;

elephant meetinng

contradictions have been alleged in our description of the elephant 1

the review meeting will be at 3:00 in the project room. 2

a recursive redefinition plan should emerge. 3

elephant meetinng

(J32435) 5-MAY-75 17:00;;;; Title: Author(s): Pamela K. Allen/PKA; Distribution: /JHB([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: PKA; Origin: < ALLEN, MEMO.NLS;2, >, 5-MAY-75 16:43 PKA
;;;;####;

DCE 5-MAY-75 17:01 32436

Pending visit to ARC by Jack Wilson of Business Week magazine

Jack Wilson, SF Bureau Chief, Business Week (part of McGraw Hill), 362-4600, will come by at 1400 Wed 7 May 75. He reached us through Ron Deutsch, manager of SRI public Relations Dept. B-W apparently considering a writeup on automation for managers, and Wilson is doing exploration work. Robert Lieberman will give him intro to our world for 30 to 50 minutes, then I'll talk to him. Depending on what he wants to see and learn, how much time, etc., others may be rung in. I mentioned Dean Meyer's Bus School involvement. Regards, Doug 1

DCE 5-MAY-75 17:01 32436

Pending visit to ARC by Jack Wilson of Business Week magazine

(J32436) 5-MAY-75 17:01;;;; Title: Author(s): Douglas C. Engelbart/DCE; Distribution: /RLL([ACTION]) SRI-ARC([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: DCE;

MIKE response to GAS2 questionnaire on computer conferencing ptot'l, at ARC

Q1. Research to date indicates that there have been at least 8-10 separate attempts around the country to develop and implement computer conferencing packages. These include FORUM, PLANET, CONFER (PLATO IV) PARTY LINE, CONFERENCE/RIMS (Turoff), EMISSARY, ORACLE, TCTALK (Calvin) and General Conferencing System (GCS). (See attachment for background and details). Have you ever used any of these systems or any other teleconferencing system? 1

YES 1a

Q2. If yes, which one or ones? 2

I and other members of the Business Planning Group here at Bell Canada have participated in or chaired a number of confe ences on FORUM. For a period of about one year, we and other mem ers of the Trans-Canada Telephone System used Party-Line, which we got from the U.S. Gov't. and loaded on one of our UNIVAC's. In retrospect, this was called CMI-1; CMI = Computer Mediated Interaction, intended as a broad descriptor of a numer of computer-mediated activites, with computer conferencing as one of the components. 2a

Q3. How much experience have you had with such systems, i.e., number of times used, duration of use, etc.? Approximately when (i.e., calendar dates)? How many others participated? 3

Our use of FORUM was in its RELEASE-4 version, which would make it about 16 months ago. Our use extended over a period of about 6 months, I think, culminating in an "International Computer- Based Conference on Travel/Communications Relationships", which used the medium itself to explore its potential. 3a

Our experience with CMI-1 lasted about one year; this was all conducted in sort of an experimental fashion; we wanted to see what was involved in maintaining a conferencing system for use by groups outside our immediate offices; but at the same time, we didn't want anyone to think we were seriously thinking of offering CMI-1 as service offering in the future, so we restricted the availability of it to other Canadian phone co's. This experiment continued throughout the summer and fall of 1973, and into the spring of '74, if my memory serves correctly. The experience we gained from our use prompted us to make several changes to Turoff's basic package, improving the editting capability, modifying the command structure to make it easier for the novice user, and yet providing the experienced user with greater retrieval capabilities (still not nearly sophisticated as NLS editting our filtering, but not as expnsive either.) We named this revised version of Turoff's package CMI-2, thus hoping to get

around a lot of questions that might result if we skipped "2" and went directly to CMI-3 (a fortuitous step for a second reason as it turns out: our further work since then led us to even more modifications, prompting us to call the newest version CMI-3; the confusion that might have resulted had we called the first revision CMI-3 as well need not be dwelled upon here. 3b

Q4. Are you convinced that teleconferencing should be available to NLS users on Office-1, -2, etc.? If so, could you tell us briefly why, or why not? 4

I'm not "convinced", since I don't know the costs involved, or the manpower hassels that seem to surround a lot of the stuff that gets developed out there, but I definitely think it should be looked into. With one-quarter of the text-manipulating capability of NLS, we've been able to put together what we believe to be a very useful managerial tool in its own right. Coupling such a tool (coumputer-conferencing) with the other capabilities available trough OFFICE-* would be very efficient in terms of the costs as I perceive them and the additonal power that would be available to the OFFICE-*'ers. (don't ask me how to pronounce that) 4a

Q5. What do you think you would use it for? 5

I think this group interested in computer conferencing would be an excellent test case for the medium itself. Whenever a group of people get to the point where they can identify a common interest that they would like to explore or develop, they could benefit from a conferencing capability. This may be hard for some of the ARC'ers to differentiate, given what appears to be a belief that the Sendmail system and a bunch of group idents can solve most conferencing needs, but without more work on their part, we can't really develop a conferencing capability as I've come to know and appreciate it. 5a

Q6. How would this use be different from mailbox capabilities such as message transfer in TENEX and the NLS journal system that are already implemented? 6

Messages on a particular subject would be stored in a file by that name. The conference subsystem would keep track of who was allowed to interact with that file, nd to what extent (not allowed in, observe but not particpate, participte but not vote , etc. Also, the conference subsystem would put messages into the Tenexx system, indicating to the OFFICE-*'er where there had been activity since he had last signed on (ie. "There are -3- new messages in Conference Zebra. There is -1- Private mssage in

Cnference Yellow", etc. Most of this could be done by individual users in NLS right now; they could get their journal mail@sorted out by subject (according to group-ident, I guess), split it up into relevant files or branches, and thus have a chronological list of lnks to the confernce proceedings. This would be slow, dull, awkward, and not used. User programs and Playback could be used to automate the process to some extent, perhaps to a grat extent, but this leaves a lot of the imagination, perseverance, and willingness to contribute in the hands of the user, where you don't want it. I think you want to put it on a platter, so to speak. 6a

Anyone should have the ability to set up a conference whenever they want, without having to wait for group-idents to be set up. 6b

Q7. Based on your experience, if any, with computer conferencing, which system(s) that you know of best represent what you think a teleconferencing system should be. 7

FORUM is nice, to the extent that just about anyone can sign on and, with no previous experience, join in a conference. It's complicated, however, for this novice user to move around in FORUM, retrieving messages through "filters", etc. The TENEX editting features are much appreciated, as is the TENEX file manoeuvering capability. A combination of NLS and FORUM would be extremely powerful. If NLS were not available, I woud prefer something closer to CMI-2 (which I realize you haven't seen), in which it's eaier to move around in the conference, retrieve messages according to different keys, etc. Also, it has a voting capability, but not as sohpisticated as FORUM's. 7a

Q8. From the brief review of teleconferencing attached to this document, can you identify features that you think would be especially useful in an ARC teleconferencing package? Any specific features not especially useful? 8

You'd want to include the cability to retrieve all the messages that fell into a set defined by the User, Time and Date, "text string", message number in that particular conference. You'd want the ability to go into the conference mode without going into NLS per se, I think, so that conferences would'n't necessarily be restricted to members of groups with slots. (Ie., I'd like to be able to tell some friends of mine to phone OFFICE-*, type in some prearranged log name, and enter a conference. Their use of the system would be "charged" to me, in the sense that they would be using my slot, or part of my slice of the cpu pie. The interaction with the conference itself should be less complicated (at the novice level) than is NLS. It should be possible to enter

a conference by typing a conference name, and from then on be guided through the messages entered since you last signed on and asked for your input, all automatically. More experienced users should be able to go to something like a Useroptions subsystem that would let them customize the interaction to their liking. This list of features is not very detailed, is it. It's off the top of my head, but I think it's valid as far as it goes. 8a

Q9. Considering other possible improvements, embellishments, etc., that ARC development could be spending its time on over the next 12 months, how would you rank the addition of teleconferencing? 9

Urgent---High---Medium---Low.....Hmmmmm, answering this question assumes some knowlege about what (is there a "d" in knowledge ?) ARC would be doing instead.....if I indicate high priority, doesn't it imply a higher priority than some of the other stuff going on out there ? As an example, what about the retrieve subsystem....for a long time I thought NLS needed something like this, and I tried to get one built here, but was stymied by lack of manpower here and loack of support (moral and technical) at ARC. How would I have rated the priority for the conference package against the priority of the retrieve package ? Hmmmm...Considering that they would be of equal value to me personally, and that the conferencing capability would make OFFICE-* a more powerful tool for most of the other users in this group while retrieve would not, and that our group is probably similar (for purposes of this discussion) to other OFFICE-* users, I would have to go with the conferencing package as rating a "high" priority. What else is going on at ARC ? NSW ? No comparison in the importance, nor in the magnitude of resources required to bring it off. What else at ARC ? I don't know....training maybe, which I would rate as a high priority, but I don't see much of it. 9a

Q10. Would you favor getting an existing teleconferencing package onto Office-1, -2, etc. as soon as possible (if possible), or the development of a package specifically written for KWAC, by ARC research and development programmers and staff? 10

If left up to ARC, it would take too long, probablyupwards of 10-12 man-months, and no telling how many calendar months.....better to bring something in from outside. 10a

Q11. If the latter (Q10), would your organization be willing and in a position to contribute financially toward the development of an ARC-based (or NLS-based) package? 11

As above, I've got reservations about it .....but let's see the offer first...how much, how long, etc. 11a

Q12. Do you have any other comments, questions, gentle cajolings or whatever to add to the discussion? 12

Thanks very much! 13

MIKE 6-MAY-75 08:38 32437

MIKE response to GAS2 questionnaire on computer conferencing ptot'l. at ARC

(J32437) 6-MAY-75 08:38;;;; Title: Author(s): Michael T. Bedford/MIKE; Distribution: /GAS2([INFO-ONLY]) LHD([INFO-ONLY]) IMM([INFO-ONLY]) GCE([INFO-ONLY]) ; Sub-Collections: NIC; Clerk: MIKE;

DRAFT

Summation of 2 May 1975 Meeting for Development of a DDPCS Community 1

This memo is intended to summarize the discussion of the 2 May 1975 meeting concerned with the possibility of ISL taking on a "franchise" for developing a Document Development Production and Control system. This involves selling slots on the Utility or a copy of the current NLS to organizations having their own Tenex system. 2

Why do we think we can sell? 3

1. Development of a DDPCS is an expensive investment. 3a

2. NLS offers tools that are useful in the design of a DDPCS without a large initial investment. 3b

3. A community of users could share development costs and experiences, benefiting all concerned. 3c

4. There appear to be many potential users of DDCPS that can benefit from the "shared knowledge" approach. 3d

What would we sell? 4

1. Slot(s) on the Utility service, using the current version, and any later updates, of NLS. 4a

2. A copy of the version of NLS in use to those organizations having their own Tenex system. 4b

3. Expert training by SRI in the use of NLS as a design tool. 4c

4. SRI assistance in the design and specification of a complete DDPCD which may or may not use NLS as the basic foundation. 4d

Potential Advantages to SRI 5

1. Income. 5a

2. Enhancement of the SRI name in the document handling field. 5b

3. Increased expertise. 5c

4. Possible sharing of development costs of an SRI DDPCS with other participants with similar needs. 5d

Potential Disadvantages to SRI 6

1. Investment, if business does not materialize. 6a

Next Steps 7

The next step appears to be evaluate a list of potential participants in the DDPCS Community. My own personal observation is that perhaps the way to begin is to carefully look at all the current Utility users of NLS and determine the possibility of approaching one or several of them to form a part of a "Special Interest" Community, with SRI assisting them with translating the tools of NLS into an integrated DDPCS. This approach offers three benefits. 7a

1. It approaches users of NLS that are already knowledgeable, requiring a minimum of wheel spinning. 7b

2. It requires a minimum investment by SRI to find out if the market is there. 7c

3. If successful, it would allow SRI to buildup staff at a reasonable rate. 7d

DRAFT

(J32444) 6-MAY-75 11:01;;;; Title: Author(s): Kathey L. Mabrey/KLM;
Distribution: /GAS2([INFO-ONLY]) ; Sub-Collections: NIC; Clerk:
KLM; Origin: <'MABREY, DDPCS-MEETING.NLS;2, >, 6-MAY-75 10:43
KLM ;;;;####;

elephant meeting

contradictions have been alleged in our description of the elephant 1

the review meeting will be at 3:00 in the project room. 2

a recursive redefinition plan should emerge. 3

PKA 6-MAY-75 11:33 32445

elephant meeting

(J32445) 6-MAY-75 11:33;;;; Title: Author(s): Pamela K. Allen/PKA;
Distribution: /JHB([ACTION]) DVN([INFO-ONLY]) ; Sub-Collections:
SRI-ARC; Clerk: PKA; Origin: < ALLEN, MEMO.NLS;2, >, 5-MAY-75
16:43 PKA ;;;;####;

elephant meeting

contradictions have been alleged in our description of the elephant. 1

the review meeting will be at 3:00 a.m. in the project room. 2

recursive redefinition plan should emerge. 3

elephant meeting

(J32446) 6-MAY-75 15:02;;;; Title: Author(s): Pamela K. Allen/PKA;
Distribution: /JHB([ACTION]) DVN([INFO-ONLY]) ; Sub-Collections:
SRI-ARC; Clerk: PKA; Origin: < ALLEN, MEMO.NLS;2, >, 6-MAY-75
14:53 PKA ;;;;####;

Draft statement of Organization and Functions provided to Ed Brennan on Scientific Applications Branch

SCIENTIFIC APPLICATIONS BRANCH 1

Organization and Functions 2

ORGANIZATION. Straightline (No subdivision) 3

STAFFING. 10 civilians 4

MAJOR FUNCTIONS 5

PLANNING 5a

Project total requirement for computer support to the AMC scientific and engineering community, integrated across all activities of the command. 5a1

Obtain estimated requirements from bench level scientists and engineers throughout the command. 5a1a

Compare estimated requirements obtained above with past history. 5a1b

Compare estimated requirements with available dollars in RDT&E appropriation to pay for the estimated computer time. (requires detailed coordination with Directorate of RD&E, HQ AMC). 5a1c

Apply experience and judgement to generate final 5 year requirement estimate. 5a1d

Assess whether current equipment and planned acquisitions will meet the projected requirements, over a five year period. 5a2

Initiate action to correct any out-of-balance situation. 5a3

Develop and maintain the AMC 5 year Scientific and Engineering Computing plan showing how much of each requirement for each laboratory is to be satisfied by each of the scientific and engineering computing resources in AMC. 5a4

Identify requirements which cannot be satisfied on a laboratory or test activity local computer. 5a4a

Identify installations having excess time available for use by other laboratories. 5a4b

Develop program for matching excess requirements identified in 5a4a with available capacities identified in 5a4b taking

into account the specialized nature of the computing requirements of each of the laboratories and test activities within AMC. 5a4c

Aggregate requirements for specialized and state-of-the-art computers where no individual laboratory or test activity within AMC has sufficient requirement to justify obtaining the computer, but where the aggregate requirement justifies the requirement for one to serve all of the AMC Scientific and Engineering Community, and initiate action to obtain such a computer or such computer services, to be made available remotely to the entire S&E community. 5a5

MANAGEMENT 5b

Manage the sharing of AMC S&E computing resources across major subordinate command, independent laboratory, and test activity organizational boundaries via the AMC Scientific and Engineering Computer Network (SENET). 5b1

Develop and implement policies governing the utilization of computers operated by laboratories and test activities within the AMC SENET to support other AMC S&E activities. 5b2

Approve or disapprove General Functional System Requirements for special laboratory and test equipment where estimated costs will exceed thresholds above those which Army Regulations allow AMC to delegate to field activities. 5b3

TECHNOLOGY TRANSFER 5c

Determine which capabilites of which new technologies should be introduced AMC-wide to support the AMC-wide S&E community by comparing new technology with the way computing is currently done within AMC laboratories and test activities and staff supervise the introduction of these new technologies into appropriate activities within the command. 5c1

RPU 6-MAY-75 20:05 32447

Draft statement of Organization and Functions provided to Ed Brennan on Scientific Applications Branch

(J32447) 6-MAY-75 20:05;;;; Title: Author(s): Ronald P. Uhlig/RPU; Distribution: /JCG([ACTION]) JAA([ACTION]) ; Sub-Collections: NIC; Clerk: RPU;

very interesting - your answers rather than the kid's questions. 1

Rivendell

(J32448) 7-MAY-75 07:32;;;; Title: Author(s): Edmund J. Kennedy/EJK; Distribution: /DVN([ACTION]) ; Sub-Collections: RADC; Clerk: EJK;

Missing Questions

Two questions seemed to be conspicuously absent from the students list. To wit:

Do you like your job?

Does your company profit from the things you do in your job?

Naturally I would not profer a response to such unseemly questions - maybe the kids are smarter than we think. 1

Missing Questions

(J32449) 7-MAY-75 09:10;;;; Title: Author(s): Pat Whiting O'Keefe/PWO; Distribution: /DVN([INFO-ONLY]) ; Sub-Collections: NIC; Clerk: PWO;

KLM 7-MAY-75 09:13 32450

MEMO TO SRI UTILITY SLOT USERS

If anyone is interested in the following, then send a note through Send Mail to KLM or send message to Mabrey:

- further training courses
- some particular aspect of NLS you would like help with (e.g., tabs, journalizing, output processor commands)
- copies of documents (e.g., content analyzer).

1

KLM 7-MAY-75 09:13 32450

MEMO TO SRI UTILITY SLOT USERS

(J32450) 7-MAY-75 09:13;;;; Title: Author(s): Kathey L. Mabrey/KLM; Distribution: /SRIUU([ACTION]) ; Sub-Collections: NIC SRIUU; Clerk: KLM;

In general, it is better NOT to use tabs (spaces are much better to use although editing would require the use of a display terminal). 1

If you have only three columns, then you can left justify, right justify, etc. 2

If you have the patience, you can use the directives (Tabto=3, etc.). You would have to use this directive EVERY TIME you wanted to insert a tab. 3

If you have more than three columns then try using the output processor command (TabStops). It is important to note, however: 4

The statement with the columns cannot contain ANY directives. 4a

The statement must be flush left (at the highest level). 4b

The Tab directive itself must be inserted in a previous statement. 4c

This is an example:

$10.00	$40.00	$100.50	$50.00
11.00	50.00	200.00	75.00
2.00	70.00	350.00	15.00

5

Use the command O(utput) to T(erminal), while being located at statement 0, to see see how the taps actually work. 5a

Note here that tabs were inserted as they normally would have been (invisible) by typing Control I. Also note that the directive for setting these tabs exists in statement 0 of this file. 5b

TABS DRAFT

(J32451) 7-MAY-75 09:31;;;; Title: Author(s): Kathey L. Mabrey/KLM;
Distribution: /GAS2([INFO-ONLY]) ; Sub-Collections: NIC; Clerk:
KLM; Origin: < MABREY, TABS.NLS;2, >, 7-MAY-75 09:28 KLM
;;;;####;

LAC 7-MAY-75 12:33 32452

first pass-joint schedule

Betty, as promised, heres an NLS cpy of the schedule to mangle and reture/larry

first pass-joint schedule

Schedule for usage of the NSW group at OFFICE-1
Effective 14 May 75 1

The following schedule is an attempt to reduce the level of interference among AFDSDC, AFDSC, and other Pentagon users of the three Jobslots at Office-1 currently owned by AFDAA for the NSW project. By implementing such a fixed schedule of usage, it is recognized that there is some reduction in your flexibility, but it is felt that this is necessary to maximize the level of service to the entire user community. 1a

AFDSDC users will note a number in parenthesis after their scheduled period. This refers to the Telephone circuit which should be used. 1a1

Also, the times are stated in the local standard for where each user is located. Times such a 0700-0900 refer to Central time, (0800-1000) is Eastern time and [0500-0700] is Pacific. The absolute time for all three the previous listed periods is the same. There is no 'slop' in thisS Schedule; any which you think you might see is caused by timezone differences, and isn't really there. 1a2

SCHEDULE 1b

USER	Time Period	OPR	Comments	
DSDC-XF	0700-1100	Capt Ariail/4916	(3108)	1b1
DSDC-XF	1200-1600	"	(3108)	1b2
STALOG	0700-1000	Sgt.Lejeune/4575	(3207)	1b3
"	1200-1400	"	(3207)	1b4
(DSDC-SD		Ms. Boatner/4912		
DSDC-SC	1400-1600	Sgt Uhler/4878	(3207)	
DSDC-SG		Ms. Roten/4705		
DSDC-PR)		Ms. Wagner/4311		1b5
1???????	(0800-1700)	Betty.. your option		1b6
2???????	(1100-1300)	ditto		1b7
3???????	(1200-1300)	Ditto,again		1b8
PRSTED	[1400-1800]	(SRI//Packet radio)		1b9

(1600-EOD

first pass-joint schedule

Free (1700-EOD) (after normal hours of work)
[1400-EOD] } 1b10

AFDSDC [1400-EOD] (SRI NSW protocols-Jim White) 1b11

{ 2000-EOD
Free (2100-EOD) (after normal hours of work)
[1800-EOD] } 1b12

GENERAL COMMENTS 1c

1. In addition to these time periods, you may ELOG anytime the system will let you. This will allow you to accomplish a small amount of work before the system AUTOLOGOUTs your job. 1c1

2. You may also use, for 30 minute MAXIMUM periods, anyone else's slot, provided that you are RECEIVEing LINKS, and that you surrender the slot immediately upon request. Note that you may link to someone in your slot without first logging in. 1c2

3. You may LOGIN offquota if the system will allow you to. This is the step the 'bumpee' should attempt after the assigned user has logged in after an exchange mentioned in the previous comment. Users who enter Offquota should abide by the ground rules of item 2 also. 1c3

4. The following schedule pertains to ARPANET use by DSDC users. This use is outside of the previous schedule, and does not authorize use of a Jobslot at Office-1, except as described in notes 1,2, or 3: 1c4

USER	TIME PERIOD	OPR	COMMENTS	
CRAIN	0700-0900	Lt. Crain/4224	(4928)	1c4a
SGmumps	0900-1100	Amn.Lowe/4341	(4928)	1c4b
Air Univ	1100-1300	Capt. Montgomery/293-7926	(4928)	1c4c
SY/CRAIN	1300-1600	Lt. Crain/422	(4928)	1c4d
LGvimcos	1000-1200	Capt.Cockburn/4437	(3207)	1c4e
Free	1100-1200	anyone...	(3108)	1c4f

LAC 7-MAY-75 12:33 32452

first pass-joint schedule

(J32452) 7-MAY-75 12:33;;;; Title: Author(s): Lawrence A. Crain/LAC;
Distribution: /EFF([ACTION]) ; Sub-Collections: NIC; Clerk: LAC;
Origin: < CRAIN, JOINT-SCHED.NLS;3, >, 7-MAY-75 12:27 LAC ;;;;####;

PWO 7-MAY-75 15:16 32453

information

Kathy, Could you send Maria that information on tabs that you dug up yesterday? Thanks. Pat

1

information

(J32453) 7-MAY-75 15:16;;;; Title: Author(s): Pat Whiting O'Keefe/PWO; Distribution: /KLM([ACTION]) ; Sub-Collections: NIC; Clerk: PWO;

A Procedure I Often Use in m* User Programs

sets string whose address is passed to length pass to desired lengthed by truncating to last full visible; then optionally adding spaces; (just=0) no spaces added, (just=1) left justify, or (just=2) right justify

A Procedure I Often Use in my User Programs

```
(strlen) PROCEDURE (astr, length, just); %sets string whose address
is passed to length pass to desired lengthed by truncating to last
full visible; then optionally adding spaces; (just=0) no spaces
added, (just=1) left justify, or (just=2) right justify%                1

   LOCAL TEXT POINTER lptr ;                                            1a

   REF astr ;                                                           1b

   length _ MIN (length, astr.M) ;                                      1c

   IF astr.L > length THEN                                              1d

      BEGIN                                                             1d1

      astr.L _ length + 1 ;                                             1d2

      FIND SE(*astr*) [NP] SNP ^lptr > ;                                1d3

      astr.L _ lptr[1] - 1 ;                                            1d4

      END;                                                              1d5

   FOR lptr _ astr.L + 1 UP UNTIL > length DO                           1e

      CASE just OF                                                      1e1

         =1: *astr*[lptr] _ SP;                                         1e1a

         =2: *astr* _ SP, *astr* ;                                      1e1b

         ENDCASE EXIT LOOP ;                                            1e1c

   RETURN;                                                              1f

   END.                                                                 1g
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A Procedure I Often Use in m^ User Programs

(J32454) 7-MAY-75 15:49;;;; Title: Author(s): N. Dean Meyer/NDM;
Distribution: /SRI-ARC([INFO-ONLY]) ; Sub-Collections: SRI-ARC;
Clerk: NDM;

DCE 7-MAY-75 18:03 32455

Visit log: Ted Thompson, of Thompson and Partners, 1 May 75

Ted called me as a follow-up to Sanford Heckinger's communique to him about us, see Journal item (32431,) and Heckinger's letter to me (XDOC -- 25352,). His agency, Ted Thompson & Partners, is located in San Francisco. 1

To pursue more education, I invited Ted to visit. He was here for about 1 hr 45 min -- initial half hour in my office, the rest at lunch (with Robert Lieberman). He listened well, had some interesting formulations to offer, and in general gave me a feeling that an experienced ad man such as this could indeed provide important service. 2

He gave me an informal (typescript) brochure on his outfit (see XDOC -- nnn). 3

"An Introduction To Ted Thompson & Partners: A New Full Service Agency Concept." 3a

No action expected: I told him that I appreciated the discussion, but that I didn't want him to incur any further investment toward our prospects as a client of his until after we had worked over our advertising needs and possibilities with our local experts, SRI's PR staff. 4

DCE 7-MAY-75 18:03 32455

Visit log: Ted Thompson, of Thompson and Partners, 1 May 75

(J32455) 7-MAY-75 18:03;;;; Title: Author(s): Douglas C. Engelbart/DCE; Distribution: /JML([ACTION] Jeanne: for the contact record) SRI-ARC([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: DCE;

MIKE 8-MAY-75 04:54 32456

text of a message from Hardy to Bedford re lineprocessor probs.

Note the last part of this; he's indicating, I think, that the lineprocessor is a lousy conduit for local printing, but that even HE (working at ARC) can't get anyone to write a program that would chage the lp logic to speed up the printing.

MIKE 8-MAY-75 04:54 32456

text of a message from Hardy to Bedford re lineprocessor probs.

MIKE:
SOUNDS LIKE YOU GOT THE PRINTER TO COME ON?? WHAT WAS WRONG?? 1

RESPONSE TO YOUR COMMENT ABOUT SLOW PRINTING 2

THE DESIGN INTENT OF THE LINEPROCESSOR CP PORT WAS TO PROVIDE A WAY FOR LINEPROCESSOR USERS TO OBTAIN HARDCOPY WITHOUT HAVING TO DIAL A SECOND CONNECTION.
FORTUNATELY FOR YOU THIS IS EASY, HOWEVER, FOR MOST USERS IT IS NOT AND COULD BE EXPENSIVE IF TIP THEY WOULD HAVE TO DIAL WAS FAR AWAY.... HENCE, PROVIDING THE CP PORT, AND A WAY TO USE IT, OR SHARE IT, WITH THE DISPLAY MADE GOOD SENCE IN THEIR CASE. 3

THE DESIGN WAS SUCH THAT THE SOFTWARE WOULD SEND CHARACTERS TO THE PRINTER ONLY WHEN IT HAD NO CHARACTERS FOR THE DISPLAY; THE LOGIC HERE WAS THAT IF THE USER WANTED HARDCOPY FAST HE WOULD NOT DOING ANY DISPLAY WORK.
IF HE JUST WANTED HARDCOPY, AND WAS NOT IN A HURRY FOR IT, HE COULD PROMT LPPRINT AND START IT UP THEN GO BACK TO DOING DISPLAY WORK. THE PRINTING WOULD BE SLOW. 4

WHAT I WOULD LIKE TO SEE IS A IMPROVED LPPRINT PROGRAM; ONE THAT ASKED THE USER WHO TO GIVE PRIORITY TO. THIS WAY THE USER COULD SELECT, AND THEN WALK AWAY FROM HIS DISPLAY AND NOT HAVE TO MAKE SURE SOMEONE ELSE DIDN'T START USING IT. THIS WOULD ALSO ALLOW THE SOFTWARE TO BE SMARTER AND DO A BETTER JOB AT MAINTAINING FULL BAUD RATE FOR THE PRINTER.. WHICH IT DOES NOT DO NOW, ONE EXPLAINING PART OF THE REASON IT IS SLOWER THAN A DIRECT CONNECTION. 5

/MARTIN 6

MIKE 8-MAY-75 04:54 32456

text of a message from Hardy to Bedford re lineprocessor probs.

(J32456) 8-MAY-75 04:54;;;; Title: Author(s): Michael T. Bedford/MIKE; Distribution: /LHD([INFO-ONLY]) ; Sub-Collections: NIC; Clerk: MIKE;

USER SERVICES REPORT: COURSE AT Pentagon for ARPA-NSW slot - 11-APR-75

USER SERVICES REPORT: COURSE AT Pentagon for ARPA-NSW slot - 11-APR-75 1

1. Basic course given by JMB [1 person-day] 1a

2. Persons contacted: 1b

Main Contact - Bob MORTENSON
(he did not attend course) 1b1

Users in class: 1b2

1. Linda Kankey 1b2a

She is the MTST typist, transcribing AF documents onto tape. My understanding is that she will be making corrections to those documents afer they are moved to NLS.
(used NORRIS directory) 1b2a1

2. Ray HERZOG 1b2b

He will be editing the manuals that are moved to NLS files before Kankey makes the corrections. 1b2b1

3. COURSE: 1c

Basic course outline covered through Section 5, except Linking. Thus, Sections 6 & 7 (Addressing & Trouble Shooting) were not covered. We included all items marked "(2)" in those sections covered. 1c1

4. DISCUSSION: 1d

This was the second time through the Basic Course for these people (see--32106,). They said they didn't remember much from the first time because they hadn't an opportunity to practice since the course, and didn't get much practice time during the course either. So they asked me to begin the Basic Course again. We were able to cover much more material, more thoroughly, this time, since there were only two people in the class and they had more hands-on time. At 3:30 p.m., they were tired and felt they had absorbed as much as possible for one day, and recommended that we call it a day. 1d1

JMB 8-MAY-75 06:43 32457

USER SERVICES REPORT: COURSE AT Pentagon for ARPA-NSW slot - 11-APR-75

(J32457) 8-MAY-75 06:43;;;; Title: Author(s): Jeanne M. Beck/JMB; Distribution: /JMB([INFO-ONLY]) RH([INFO-ONLY]) SGR([INFO-ONLY]) SLJ([INFO-ONLY]) PKA([INFO-ONLY]) JCN([INFO-ONLY]) RLL([INFO-ONLY]) DCE([INFO-ONLY]) JHB([INFO-ONLY]) EFF([INFO-ONLY]) RBTM([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: JMB;

Listing Files at the AI Printer 1

1. Convert the file 1a

Output Quickprint File <ESC> (New file name)
or
Output Printer File <ESC> (new file name) 1a1

Both of these commands will create a "printer" file from the file you are currently viewing, and both expect a new file name to follow the command. (With the new file name you should also add ".txt" to differentiate it from an NLS file--thus it could have the same file name with a different extension.) OQF will create a print file as shown with the current viewspecs. OPF will allow you to create a file with Output Processor Directives as well. (Note that the file will be created from the place where the "invisible marker" is pointing. In a file just loaded the marker will be pointing at statement 0. If you have been working somewhere else in the file, then "Jump to Address 0 or 1 before outputting the file.) 1a2

2. FTP (File Transfer Protocol) 1b

Go to (Subsystem) Tenex 1b1

(at-sign)ftp<ESC> ... (CR) 1b2

*Conn<ESC> ... SRI-AI (CR) 1b3

*login utility sri NETUSER (CR) 1b4

*send ... (converted file name) <ESC> (CR) 1b5

*disConnect(CR) 1b6

*quit (CR) 1b7

(at-sign) 1b8

Locating a User (in order to send a message or link) 2

1. Check to see if user has an IDENT established (this would give a location, etc.) 2a

From BASE C: go to subsystem SEND MAIL 2a1

Enter Command: Show Record (for) then type in a period (.)followed by the person's last name (or as many characters

of the last name that you know), followed by another period (.) 2a1a

This will list all persons with that name showing their IDENT and other information--if this person is not listed here than try next step. 2a1b

2. Check the ARPANET DIRECTORY listings (there is a copy in J1068) Workstation, or check with ARC. 2b

3. If you know the approximate location of this person, try connecting to different machines and check to see if the person is logged in. 2c

From Tenex type in RSEXEC 2c1

Conn(ect) to HOST NAME 2c2

wh(ere) John Doe (etc.) 2c3

Disconnect 2c4

(Repeat the process by connecting to another host) 2c5

quit 2c6

Fixing Bad Files 3

1. In NLS (with file loaded) enter command: V(erify) F(file) (CA) (CA) 3a

If system responds with "bad file" then try loading previous version of file and checking it the same way. If the previous version is alright consider using it (unless the newer version has too many editing changes and it is worth your time to try and fix it). 3a1

2. If both versions are bad try notifying the operator and asking for other versions (e.g., 3, 2, 1) to be reloaded, then check these copies. 3b

3. If you are now at the point where you must fix a bad file first try the command: U(pdate) F(file) C(ompact), then verify file (it may have fixed itself at this point). 3c

4. Try printing the file out on a terminal, it may stop at the bad point in the file. You could then try printing from points further on in the file (making sure this is the only bad spot and

that the rest is alright) and, finally, replace the statements in the bad spot. 3d

5. If all else has failed, then try copying branches of the file out to a new file (a few at a time). 3e

First, create new file 3e1

With this new file loaded, copy branches from old file into this version 3e2

C(opy) B(ranch) Oldfilename, 1
To follow (CA) (CA) 3e2a

This would be followed with
C(opy) B(ranch) Oldfilename, 2
To follow 1 3e2b

This also could be done in larger segments as:
C(opy) G(roup) Oldfilename, 1
Through Oldfilename, 5
To follow 0 3e2c

This would be followed with:
C(opy) G(roup) Oldfilename, 6
Through Oldfilename, 10
To follow 5 (CA) 3e2d

It is important to verify the file after each of these copy commands, also it would be worth while to update the file at this time (if it verifies alright). 3e2e

When this process has been completed, and the file verifies successfully, then output the file to a printer file and check the contents. In some cases bad sections will appear, in which case you can replace them. 3e2f

KLM 8-MAY-75 13:40 32458

SOME HELPFUL NOTES

(J32458) 8-MAY-75 13:40;;;; Title: Author(s): Kathey L. Mabrey/KLM;
Distribution: /SRIUU([INFO-ONLY]) ; Sub-Collections: NIC SRIUU;
Clerk: KLM; Origin: < MABREY, AIDS.NLS;2, >, 8-MAY-75 13:37 KLM
;;;;####;