

Dr. LEDERBERG

January 11, 1974

TO : SUMEX Executive Committee File
FROM : T. Rindfleisch *JCR*
SUBJECT: Action Items and Notes From the Afternoon Session of the
Second SUMEX Executive Committee
Meeting - January 9, 1974

1. Attendees: (See attached agenda A)

Morning : J. Lederberg, S. Amarel, W. Baker and C. Brewer

Afternoon: As above plus T. Rindfleisch and E. Levinthal

2. We discussed the machine configuration and current delivery schedule (see attachments B and C). A change in the configuration was proposed as in diagram "B" to ensure that the machine be made operational as early as possible. This consists of hooking the system to ARPANET through the standard BB&N TIP/PDP-10 interface initially and interposing the PDP-11 at a later time. The long term attractiveness of the PDP-11 remains in the ability to off load the TELNET protocol from the PDP-10 and perhaps to provide alternative file system access when the SUMEX machine is down. No objections to this approach were raised.

The hardware delivery schedule was presented identifying the two current problem areas: 1) The proposed slip in line printer delivery until March 31 by Data Products and 2) The as yet tentative TIP delivery schedule. Dr. Baker offered to assist in accelerating delivery. This was deferred pending the outcome of on-going vendor negotiations to solve the problems.

3. Dr. Amarel described the PDP-10 facility they plan to implement at Rutgers saying they were having problems locating the necessary expertise to mount the TENEX software system. We have the same problem and are trying to solve it through collaboration with local TENEX groups (IMSSS, SRI, AI Lab., etc.). We offered to assist Rutgers as best we can (e.g. having one of their people come to Stanford to learn the system) to develop the necessary capabilities.

4. We discussed the general question of file security provisions in TENEX (see pp 30 - 45 of the "TENEX EXECUTIVE MANUAL"). There was some concern over the conflicting needs of confidentiality for some administrative and patient medical data as opposed to the general desire for an open environment conducive to sharing both internally and externally. We agreed to make a presentation at the next meeting of the available file security system to further evaluate the need for selective encrypting of data.
5. We discussed the preliminary announcement of the SUMEX resource and approved the news release in attachment D. There was general agreement on a two-phased announcement process; an initial general release (press, ARPANET News, etc.) and a more detailed solicitation of participants after the system is established and the Advisory Committee set up.

The immediate need for a more detailed write-up of SUMEX objectives and capabilities was emphasized to be available to BRB, Stanford, Rutgers, etc. to support informal discussions with interested people about the project. We said we would generate such a document in several weeks.

6. Dr. Baker requested a "Mission Statement" for the Stanford half of the project (SUMEX) describing its research objectives, organization, and capabilities. This is needed by BRB for administrative reasons. Dr. Lederberg pointed to some general guidelines he was formulating to screen potential SUMS users such as inability to obtain necessary computing support from other Stanford sources (SCIP), and relevance of the research to AI. These will evolve as potential users become more aware of the facility and its goals. Dr. Lederberg agreed to formulate an initial SUMEX mission statement.
7. The problem of terminology was discussed from the viewpoints of overall organization and operational access through the ARPANET. There was general agreement that Dr. Lederberg's descriptors, while long, were appropriate:

Overall Facility = National Shared Computer Resource for
Health Research at Stanford (NSCRHR-SU)

Half of the facility is allocated to "SUMEX" (Stanford
Medical School users)

Half of the facility is allocated to the "National Program
for Artificial Intelligence in Medicine" (NPAIM)

The ARPANET designation for the NSCRHR-SU will be something like "SU-MED" or "SU-MEDAI" or "SU-AIM".

8. The status of interactions with ARPA relative to NIH use of the network was discussed. In general, no problem is apparent - all contacts have indicated strong interest on ARPA's part to have NIH as a user. Details are not well documented however in terms policies or verbal agreements. We pointed to two areas where problems may arise, particularly within NIH's relatively rigid grant budget constraints: 1) ARPANET usage costs and 2) ARPA cooperation in helping NIH users gain access to the network through ARPA-sponsored nodes (perhaps with NIH-borne costs for additional modems, etc.). Dr. Baker said the latest word he had was that ARPA's divestment of the network to BB&N management would be delayed up to three years by FCC approvals. Meetings between BRB and ARPA are planned for the near future during which these concerns will be discussed.

9. The general organizational problems of shared resources within NIH was discussed revolving about the issues of whether advisory committees should be formally set up by NIH or not and how to coordinate the charters of the Study Sections and operational resource advisory committees (the Computer and Biomathematical Sciences Study Section declined to accept the SUMEX advisory role at the site visit in March of 1973). Carl Brewer said these matters were sensitive and would evolve with time. The first step would be to informally set up an advisory committee for AIM under the AIM Executive Committee. As the general concept of resource sharing is worked out at NIH, this advisory committee may move to become a part of a more formal "Shared Resource Advisory Group" (SRAG) encompassing all types of shared resources and set up by NIH. In either case, the AIM Executive Committee is responsible for receiving and implementing within its policies the advice from the AIM advisory group.

A list of names was discussed for potential members of the AIM Advisory Committee. The establishment of the advisory committee will be pursued by Dr. Lederberg and BRB.

10. No date was set for the next Executive Committee meeting pending administrative review by BRB of overall committee structure plans and setting up the NSCRHR facility.

Memo to SUMEX Executive Committee File
January 11, 1974
ATTACHMENT A
(Prepared by Carl Brewer of HIH)

SUMEX-AIM Executive Committee
STANFORD UNIVERSITY MEDICAL CENTER
Stanford, California 94305

Room S047

JANUARY 9, 1974
9:00 A.M.

AGENDA

STATUS OF PROGRAM

BRB Activities ----- Dr. Baker

Participants, funding, ARPA, etc.

SUMEX Activities ----- Mr. Rindfleisch

Hardware acquisition and acceptance

Information Publication with dates and plans for
responses to inquiries

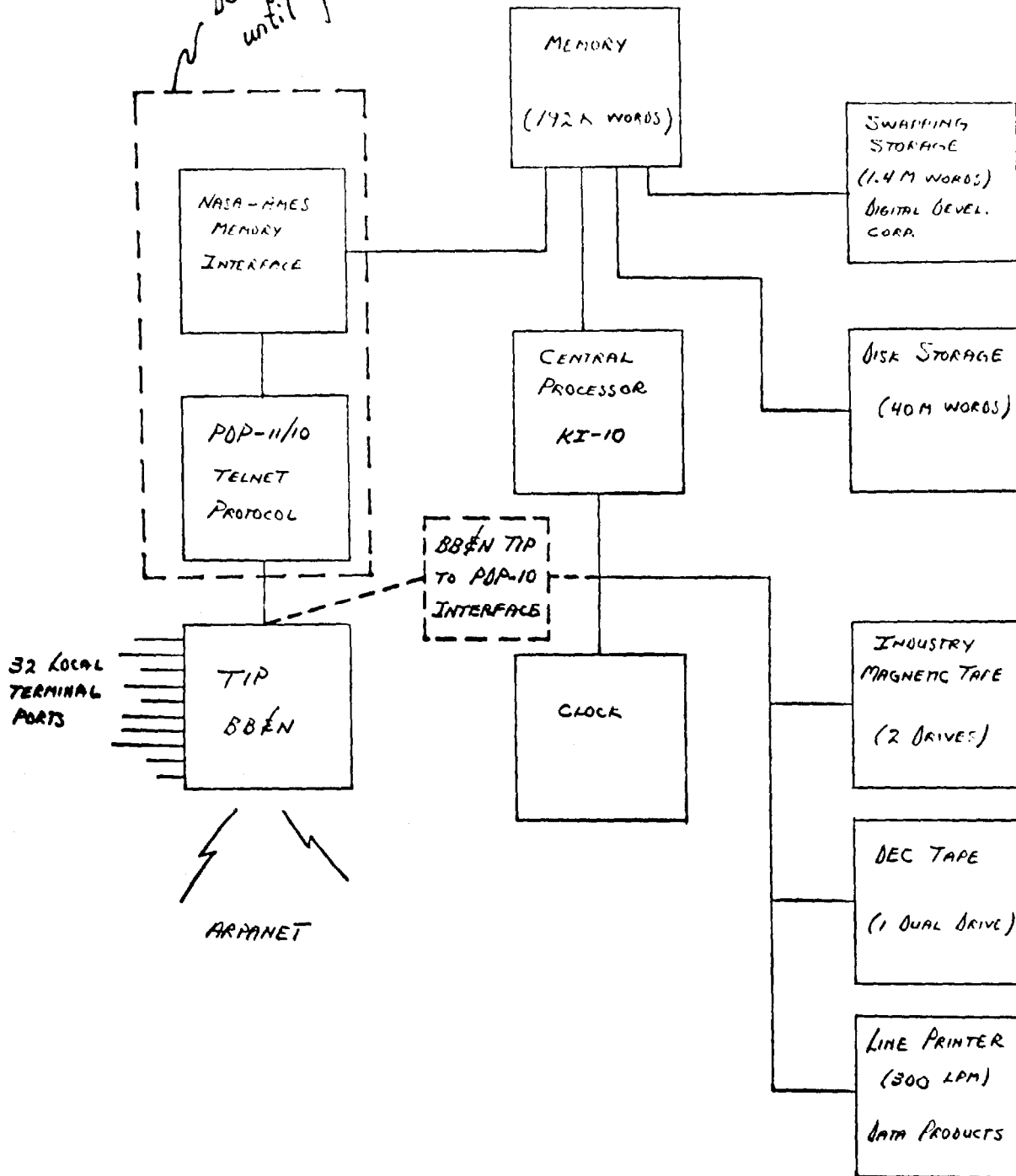
POLICIES ON ADDITIONAL AIM PARTICIPANTS

ADDITIONAL MEMBERS OF SUMEX-AIM EXECUTIVE COMMITTEE

Proposed configuration change
12/21/73

Memo to SUMEX Executive Committee File
January 11, 1974
ATTACHMENT B

*Delay implementation
until year 02*



REVISED SUMEX COMPUTER
CONFIGURATION

FIGURE 1

SUMEX SYSTEM SCHEDULE

1974	January	February	March	April	May	June	July	August	September
Board of Trustees Approval & Firm Orders (PDP-10, Data Prod. Printer, DDC Disk, TIP)	◇								Memo to SUMEX Executive Committee File January 11, 1974 ATTACHMENT C
Drop Ship. Data Prod. Printer to DEC (Maynard)		◇	-----?						
Ship PDP-10 w/o DDC Disk to Stanford			◇						
Ship TIP			◇?						
Install, Checkout & Accept PDP-10				[]					
Install, Checkout & Accept TIP				[]					
Preliminary System Available with RP-03 Paging					[] →				
Drop Ship DDC Disk to DEC (Santa Ana)				◇					
Ship DDC disk and Controller to Stanford						◇			
Install & Checkout DDC Disk						[]			
Incorporate Disk into System						[]			
Final System Available with Full Equipment							[] →		

Memo to SUMEX Executive Committee File
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ATTACHMENT D

DRAFT - ANNOUNCEMENT OF SUMEX GRANT
NATIONAL COMPUTER RESOURCE AT STANFORD UNIVERSITY

Stanford University Medical School has been awarded a five year grant of \$2.75 million from the Division of Research Resources of the National Institutes of Health to establish a "national shared computer resource." Under the direction of Professor Joshua Lederberg of the Genetics Department, the SUMEX (Stanford University Medical Experimental Computer) facility will be dedicated to applications of Artificial Intelligence in Medicine (AIM). Its main objectives are: 2) further exploration of computer science applications in medicine and 1) the development, in partnership with the Biotechnology Resources Branch of NIH, of the relatively new concept of national shared resources.

The SUMEX resource will initially comprise a powerful PDP-10 computer facility to be staffed by a group of scientists experienced in artificial intelligence techniques. The computer is expected to be delivered and installed this coming April, and will be available to approved users of the national community through a computer-communication network. An AIM national coordination group is being organized to advise on the management of the facility and to review applications for eligibility to use this resource.

Core research efforts at Stanford will include on-going interdisciplinary projects involving the collaboration of Professors Lederberg, Edward Feigenbaum (Computer Science) and Carl Djerassi (Chemistry). The heuristic DENDRAL project seeks to apply artificial intelligence techniques to the interpretation of mass spectra. A new project, in collaboration with Professor Stephen Freer U. C. San Diego, will seek to infer protein structure from x-ray crystallographic data. Other projects that have been identified as initial users of the resource include an NIH-funded program of AI research in biomedicine at Rutgers University under Professor Saul Amarel. Two additional projects at Stanford are

"Computer-based Consultations in Clinical Therapeutics" under Professors Stanley Cohen and Stanton Axline of the Medical School and "Higher Mental Functions Modelling" under Dr. Kenneth Colby of the Computer Science Department.