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ABSTRACT

This report covers Phase IIB (1 January 1971 to 30 June 1972) of the development of a campus-based Center for Information Services (CIS) at the University of California at Los Angeles (UCLA). Activities during this phase included completion of the design and programming details of the software system, development of a prototype of the software system, acquisition of selected data bases, development of operational procedures, operation of experimental current awareness search services with interim software, seminars for library personnel, and the establishment of procedures for the transfer of the operation to the library. Two highlights of the phase were the outstanding success of the experimental current awareness service and the establishment of a CIS unit in the library. (Author)

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CENTER FOR INFORMATION SERVICES

FINAL REPORT
PHASE IIB

DETAILED DESIGN AND PROTOTYPE DEVELOPMENT

1 JANUARY 1971 TO 30 JUNE 1972

to

The National Science Foundation
Office of Science Information Services

Grant No. GN-827

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ABSTRACT

This report covers Phase IIB (1 January 1971 to 30 June 1972) of the development of a campus-based Center for Information Services (CIS) at UCLA. Activities during this phase included completion of the design and programming details of the software system, development of a prototype of the software system, acquisition of selected data bases, development of operational procedures, operation of experimental current awareness search services with interim software, seminars for library personnel, and the establishment of procedures for the transfer of the operation to the Library. Two highlights of the Phase were the outstanding success of the experimental current awareness service and the establishment of a CIS unit in the Library.

1. INTRODUCTION

This is the final report for Phase IIB of the development of a campus-based Center for Information Services (CIS) at UCLA. The purpose of this Center is to function as an extension to the University Library to handle the acquisition, storage, processing, and dissemination of computer-readable data.

Phase IIB, Detailed Design and Prototype Development, covers the period 1 January 1971 to 30 June 1972. The activities planned for this phase included completion of the design and programming details for the software system, development of a prototype of the software system, acquisition of selected data bases, development of operational procedures, operation of experimental current awareness search services with interim software, seminars for library personnel, establishment of procedures for the transfer of the operation to the Library, and the development of test and evaluation studies. These activities were, for the most part, carried out as planned. Adjustments were made, as necessary, to handle contingencies not initially foreseen. For example, the test and evaluation studies to have been performed by the Institute of Library Research were deferred to reflect the lower funding level adopted for ILR in Phase IIB. On the other hand, more effort was put into numerical data base activities than was originally anticipated.

Two highlights of the Phase were the outstanding success of the experimental current awareness service and the establishment of a CIS unit in the Library. The experimental service grew from serving a handful of professors in the UCLA Chemistry Department to serving over 300 users scattered throughout California and the Southwest. The creation of the CIS unit in the Library allows for CIS services to be more clearly identified as a Library service, and paves the way for the transfer of project responsibility to the Library.

This report is divided into three sections, which represent the three major areas of activity. The first section, Service, reports on CIS services provided from bibliographic and numerical data bases. No work was done with textual data bases during this phase. The second section, Development, reports on progress in the development of the CIS software system, in the establishment of library procedures for the acquisition and cataloging of machine-readable data bases, and in the investigation of procedures for local data base development. The final section, Administration, reports on activities such as the establishment of the CIS unit in the Library, meetings, seminars, and visits.

2. SERVICE

2.1. BIBLIOGRAPHIC SERVICES

2.1.1. PURPOSE

In Phase IIB a series of experimental bibliographic services was developed by the project--first, for testing, upon selected UCLA groups, then for the campus community in general, and eventually to other UC campuses and certain outside agencies. There were several reasons for beginning such services in advance of the completion of the CIS software, the underlying consideration being the general state of project development. A stage had been reached in both the programming activities and the library-related activities where direct experience with the operation of a service from a data base was logical and desirable. In addition to testing specifically identified bibliographic aspects and programming developments, there was, as a small-scale experiment with ERIC tapes had shown, a range of service and logistical tasks of which nothing but actual experience would reveal the exact dimensions. Discussions with other NSF-OSIS funded centers reinforced this conclusion. The opportunity to gain regular feedback based upon the provision of real information of interest to users was a further consideration.

It was decided to begin this experimental service with current awareness searching. This was chosen because of the availability of interim software and of comparative data from other installations; in addition, there is a logical progression from current awareness searching to retrospective searching. As noted below (2.1.2) our subscription to CA-Condensates began with the January 1971 issue; there would have been little merit at that time in obtaining the whole back-file at considerable extra cost, because until some of the pragmatic problems of service operation had been tackled, and the necessary operational data gathered, no efficient use could have been made of the back-file. Other logistical aspects of which direct experience was needed were support programming, tape handling, output mailing, etc.

After the initial experience with CA-Condensates, further data bases were acquired (ERIC, CAIN, COMPENDEX) and the current awareness searching operation was extended to cover them. This was the project's first test of its ability to add new files with a minimum of programming effort, which has from the outset been a keystone of the CIS development plan. As an experiment, the addition of these files has proved very valuable, in that it has enabled project staff to identify and analyze several critical conceptual and operational problems which must be considered in the development of the CIS software system, the Information Processing System (IPS). As a real-life information service, which is of course primarily how the users view it, each of the experimental search services has been favorably received, and thus it has emerged that, in the process of essentially serving itself by conducting these trial services, the project has developed a user community of over 300 from different institutions in the Southwestern states. The project is thus satisfactorily positioned to handle, in Phases III and IV, the significant increase in both the data bases processed and the users served, which the transition from an experimental and developmental effort to an operational center will demand.

2.1.2. SUMMARY OF EVENTS

Plans and preparations for an experimental bibliographic service were begun toward the end of Phase IIA (December 1970). The CA-Condensates file of Chemical Abstracts Service was selected as the initial data base for the service; it was among the better developed files in terms of marketing and distribution, it was in use at other OSIS-funded centers, thereby enabling UCLA to benefit from the experience of these institutions, and Chemical Abstracts has long been the primary reference journal in the chemical sciences. Accordingly, the subscription was placed, effective January 1971. Concurrently, announcement of the service went to the UCLA Chemistry department, and the first searches for this group were performed in February 1971. As discussed elsewhere in this report, the service provided regular current awareness searches using each incoming tape.

In July 1971 the service was extended to the very large biomedical community at UCLA, and, although the project did not at this point solicit requests from outside the campus, any such requests which came in (chiefly through a UCLA agency) were not declined.

By the end of 1971 the CA-Condensates service had settled down sufficiently for the addition of more data bases to be considered. The interim software being used to perform these trial searches was IBM's TEXT-PAC, a generalized free-text retrieval package which could accommodate a wide range of bibliographic files. Effective January 1972, therefore, the service was expanded to include current awareness searches from CAIN (CAtaloging and INdexing data from the National Agricultural Library). In addition, the user group was gradually expanded to include academic and some non-academic organizations in the region.

The CAIN file was the subject of a study undertaken between UC Davis and NAL, and provided the first opportunity to assess the feasibility of the concept of single-point acquisition within the UC system. Prior discussions between UCLA and UC Davis had resulted in agreement upon a pilot scheme whereby NAL delivered the tapes to UCLA's CIS project; the project then performed the searches for UC Davis and mailed the results. This arrangement has in general worked smoothly, and should form a useful prototype for cooperation with other UC agencies.

Toward the close of the reporting period, (April 1972) the two ERIC files, Research in Education and Current Index to Journals in Education, and COMPENDEX, the computerized version of Engineering Index, were added to the list of data bases in the experimental bibliographic search service. By this stage, therefore, the project had gained much valuable experience first, in how to acquire, process, and provide reliable service from, a machine-readable data base, and second, in how to operate a multi-data base service. A substantial user community had been developed, and the project was looking with increasing confidence to further expansions of service in Phase III.

2.1.3. MODE OF OPERATION

2.1.3.1. INPUT

2.1.3.1.1. UCLA

In order to introduce CIS services to potential users on the UCLA campus, a variety of methods was adopted. The emphasis during this phase was on selective, rather than comprehensive, publicity; this usually took the form of a letter from the head librarians of the branches involved to appropriate department chairmen, or to individual faculty members whom they felt would be most interested in the service. Announcements by the branch library in its faculty newsletter, and visits to small groups of faculty, e.g., a departmental library committee, were also utilized. In one case (Chemistry Department) where the branch library comprised only one librarian, a member of the faculty library committee personally contacted a number of his colleagues and, as a result, was directly responsible for each of the initial users of the service. Whenever a faculty member became enthusiastic about a service and began informally to "spread the word" to his colleagues, there has been a positive effect. Word-of-mouth between peers is, here as elsewhere, probably the most cost-effective means of publicity there is. The Chemistry Department also made available a Research Assistant, to be funded jointly by the department and CIS, to assist with the preparation of profiles.

Larger branch libraries (Biomedical and Engineering-Math Sciences) have been able to accept almost the whole burden of communicating with users and constructing their profiles. In addition, CIS in-

Phase IIB appointed an Information Systems Librarian to coordinate the operational aspects of the bibliographic services, including writing of profiles where necessary.

2.1.3.1.2. OFF-CAMPUS

Announcement of CIS bibliographic services, both on other University of California campuses, and to non-UC groups, was in general done as a response to inquiries, rather than as an active marketing effort. However, representatives from the libraries of several interested institutions contacted the project and have subsequently begun to act as profile analysts and service coordinators for their own users. Typically, these institutions were other universities and colleges (Stanford, University of Southern California, Arizona State University, etc.). Service to other UC campuses began on a very small scale but was then placed under a moratorium until the UC Library Council could conduct a review and assessment of the University-wide situation concerning information retrieval activities. Toward the end of Phase IIB, the Library Council designated CIS the primary University of California resource in the provision of information retrieval services, and plans were being laid to implement this concept in Phases III and IV.

2.1.3.1.3. STATEMENTS OF INTEREST

The project developed a Statement of Interest Form (see Appendix B) as the basic tool for ascertaining in the users' own words, their area of interest. This form was enclosed with the announcement or made available at the Reference Desks of the branch library involved.

2.1.3.1.4. EFFECTIVENESS

The announcements by librarians were useful as a way of getting started, and, for CA-Condensates Service, resulted in the receipt of 16 profiles for CA-Condensates from the Chemistry faculty, and 21 from the Biomedical faculty. For ERIC the figure was 25 profiles for each file, and for COMPENDEX 15 profiles. At the time, this level of activity suited the project's purpose of carefully monitoring the response to the services and dealing with start-up problems. However, it is clear that a more active marketing posture will be called for in introducing new services when CIS is fully operational. After this initial announcement had brought the first small group of users, the total tended to increase steadily, due both to word-of-mouth publicity by users and to the efforts of reference librarians in informing individuals at the reference desk and persuading them to try the service.

2.1.3.1.5. TIMING

One of the most difficult problems in implementing service from a new data base has been coordinating the arrival, testing and preparation of the first tape with the announcement of service and the gathering and processing of the first batch of profiles. The availability of a test tape beforehand naturally smoothes the process somewhat, but it is nevertheless true that the sequence of events in the start-up period was complicated and unpredictable in Phase IIB, demanding a substantial commitment of time by several people. The experience gained, however, has proved invaluable, and more of the process became routinized each time a new data base was added. Generally, the time-lag between the call for profiles and the execution of the first search has been about six weeks.

2.1.3.1.6. PROFILE PREPARATION

Statements of Interest (see Appendix A) are filled-out as completely as possible by the user. Profile analysts have found that phone conversations and conferences with the user (if feasible) are usually necessary to gather all the pertinent information and gain the clear idea of subject needs necessary to code the computer-readable profile. Transforming the Statement of Interest into a profile is the responsibility of the Profile Analyst (or Information Specialist), usually a librarian with the appropriate subject competence. The Statement of Interest form was at first deliberately designed to elicit the maximum amount of information from the user. As experience revealed items which were not needed, and other which should have been included but were not, the details of the form were revised and rearranged. The version presented in Appendix A has proved to be relatively stable.

2.1.3.1.7. INTERFACING WITH THE USER

Broadly defined, the Profile Analyst is someone with some knowledge of the particular subject field who translates a Statement of Interest into a machine-readable search request. There has been increased emphasis in Phase IIB on the librarian as the information professional best qualified to perform this task. It should perhaps be recorded that, while the provision of services at UCLA has always been intended to occur in and through the library, service to non-UCLA patrons is not being made contingent upon their using their own library, although in most instances use of the library is emerging as the appropriate solution for outside agencies too. Within the UC system, recent action by the Library Council has recognized CIS as part of the University's library structure.

In Phase IIB, the amount of time and effort spent by UCLA branch library reference staff in providing user services for CIS data bases varied in each library. There are two parts to the task of interfacing with the user: actual communication between the user and the information expert, and the work which that information expert must then do in terms of writing, analyzing and revising the profile. Where it has not been possible for library staff to do both, CIS has preferred to assist with the latter, allowing the librarian to communicate with the user but, in a manner designed to be invisible to the user, relieving the librarian of some of the technical work. Alternatively, a special arrangement has been worked out, as in the case of the UCLA Chemistry Department which made available a graduate student to act as profile analyst. In general, the project has encouraged libraries to learn and undertake the work of profile writing, but when this has not been feasible for fiscal or logistical reasons, our concern has been to show as much flexibility as possible in providing liberal back-up support by project staff. A CIS workshop on profile-writing for the TEXT-PAC system in February 1972 was well-attended by UCLA Library Staff (15 people). This was given in two 2-hour sessions, and demonstrated again the competence and enthusiasm of librarians to take on this new task.

The UCLA Biomedical Library, and the Pacific Southwest Regional Medical Library Service located there, have for twelve months been providing a complete profile-writing service to both UCLA and non-UC researchers in biochemistry and related fields, using CA-Condensates.

The Engineering and Mathematical Sciences Library assumed the basic responsibilities for user contact and profile-writing at the start of the service from COMPENDEX in April 1972, although regular consultation with the CIS Information Systems Librarian was still an integral part of the process for the first few months.

Due to personnel shortages, the Education and Psychology Library has had to rely heavily on CIS staff for user consultation and profile creation. In Phase IIB, librarians in this library had responsibility only for: answering general questions about CIS services; actively soliciting use; and distributing and collecting the Statement of Interest forms. The Head of this Library is as committed as any librarian on campus to seeing the provision of computerized information become a part of regular library activities, and is hoping that in 1972-73 the effort can be increased.

Whatever level of service responsibility was assumed by library staff in Phase IIB was in fact a gain by the CIS project, and a direct contribution by the library, since none of the branches concerned had been funded to do this during 1971-72. (The Education and Psychology Library made a significant contribution of another kind in becoming the first branch library on campus to take over the purchasing of a computerized data base (ERIC) for CIS to process on its behalf.)

At other UC campuses and non-UC organizations the work of spreading information about CIS services, and in due course writing and submitting the profiles, has tended to be more focused upon one person, frequently a librarian. Where several people have been available to write profiles as at Stanford, the person who made the initial effort has generally coordinated the activities of the other staff members, and become the liaison between CIS and the local profile analysts. This arrangement appears to work well and will probably be expanded in Phase III.

The context in which these services have evolved has ranged from active institutional support, to the interest and enthusiasm of an individual. Most non-UC users have, at first encounter, expected that there would be a charge for service, and when told that the present experimental period would eventually give way to a charging system, have indicated that the adequacy of the service (its timeliness, flexibility, reliability, etc.) would be more important criteria than the financial aspect.

The amount of time needed to write a profile is naturally very variable, depending upon such factors as: a) the specificity and clarity of the user's Statement of Interest; b) the type of vocabulary in the data base (controlled or uncontrolled); and c) the subject competence and prior training of the profile analyst. Given normal bounds to these variables, the time to write a profile can be anything from thirty minutes to four hours. One hour is a reasonable average.

2.1.3.1.8 CIS PROCESSING OF PROFILES

Once the profiles are written they are sent to CIS and prepared for searching. At the beginning of the CA-Condensates Service (February 1971) this was done by CIS programming staff. Since January 1972 the CIS Section of the Library has had an Information Systems Librarian for Bibliographic Data Bases, who has assumed responsibility for this task.

Incoming new profiles are assigned a number and checked manually for obvious errors in spelling, syntax, and use of terms. They are then keyboarded on a video console on-line to the IBM 360/91, and subjected to a diagnostic routine which pinpoints syntactic errors. A count of terms and concepts (major groupings of terms) is also performed by the machine at this time. All new profiles are listed and proofread once more and are then ready to be run. Incoming revisions to profiles are checked and the master file of profiles is edited on the video console to reflect the necessary changes. They then join the new profiles in going through the diagnostic routine.

Concurrently with the entering of new or revised profiles, two types of records are updated, the profile log and the address file. A profile log is kept for each data base; this contains information on:

i. The total number of users and profiles.
ii. Modifications, terminations, and new profiles and users for the next scheduled run.
iii. Profile identification number, user's name, profile title, number of main concepts and of terms in each profile, date of entry into the system, and date of latest profile modification.

The address file contains current address information, arranged by profile identification number. In this way, the output for a particular profile can be matched with an address, and the address printed directly onto a blank page after the citations and a brief relevancy questionnaire. The address can be that of the profile analyst (in the early stages when a profile needs close monitoring) or the user (when the profile has stabilized).

The time involved in the processing of profiles can only be estimated in general terms, since it varies according to the length of the profile and the amount of scrutiny and correction needed before it can be entered. Taking into account both new profiles and revisions, the average time appears to be 20-30 minutes per profile.

2.1.3.2. PROCESSING

The processing procedures described here were developed for the interim software system used during Phase IIB. These procedures will be altered, as necessary, during Phase III to reflect changes brought about by the installation of the Information Processing System (IPS), the CIS software system presently under development.

2.1.3.2.1. SCHEDULE

The processing schedule varies with the frequency of issue of the updates for the different data bases; the format of each schedule is, however, essentially the same. Receipt, entry, and syntax checking of all new profiles and profile updates for a given data base is scheduled for completion by the expected arrival date of the next issue. Processing is normally begun the day the issue is received. Usually results are printed and ready for distribution within 2-3 days.

2.1.3.2.2. FILE MAINTENANCE

When an issue of a data base is received at CIS, the volume, issue, date shipped, and date received are entered into a log which is part of a complete tape inventory system. Recording both the date shipped and the date received provides very useful information in tracking down shipping delays.

An external label, which, among other things, identifies the tape as belonging to CIS, is affixed to the face of the tape. The tape is then submitted with a run which first adds this issue to a data set containing previous issues of the current volume. The cumulative data set is part of the back file which will be used for retrospective searches when the IPS is running.

The current issue is then converted to a TEXT-PAC searchable form, called a TEXT-PAC master (TPM). The current TPM is added to a data set containing previous issues, in TPM format, of the current volume. This cumulative TPM data set is part of the back file used for retrospective searches run using TEXT-PAC.

The original tape received from the supplier is saved for back-up. Thus, three versions of a data base are presently maintained: in individual issues in the supplier's format, in volumes (corresponding to the supplier's printed volumes) in the supplier's format, and in volumes in the TPM format. Once the IPS is running, the TPM format will no longer be needed and these tapes will be returned to the tape pool.

2.1.3.2.3. TAPE INVENTORY

The need for a good tape inventory system in an information center cannot be overemphasized. CIS developed its tape inventory system during Phase IIB, but not soon enough to avoid a considerable amount of work in identifying old tapes. The inventory system consists of the log mentioned in the preceding page and an interactive inventory program described in the CIS internal document, "CIS Tape Inventory Control System."

2.1.3.2.4. SEARCHES

Searches are initiated immediately following the creation of the TPM. Because both the input tape and the profiles have been previously scrutinized, there are normally no problems with the search.

2.1.3.3. OUTPUT

2.1.3.3.1. GENERAL

The output provided from CIS searches in Phase IIB consisted of four parts, printed consecutively on standard 11" X 14" paper:

i. the user's name and address in the middle of the first page, and the CIS return address in the upper left corner;
ii. two copies of the profile;
iii. the hits for the profile, or a "no-hit" message;
iv. a mail-back form requesting feedback on the relevancy of the hits.

In addition, occasional notes or letters to individuals or to the general user population were necessary, in order to improve the effectiveness of a profile, to indicate changes in procedure, and to notify users when a particular search was going to be delayed. Relevancy forms were incorporated into every set of output from every search during Phase IIB. The form asked the user for a threefold ranking of the hits into "Relevant," "Irrelevant," and those whose relevance the user was "Unsure" about.

The search results for each profile are separated and stapled with the first page (name and address) on the outside. For on-campus addresses, the search results are sent by campus mail. For off-campus addresses, the preferred scheme is to send all results for a given organization to one person in that organization, who then distributes the individual results through the organization's local mail service. Where this arrangement is not possible, search results are mailed out individually.

Since the number of profiles being processed went from 0 to 572 in the course of Phase IIB, the sheer volume of output presented several problems, in response to which CIS introduced procedural modifications as the service progressed, and will undoubtedly be making further changes in the coming year. It is felt that although the computer is now doing a major portion of the work (including all printing and addressing) there are still certain undesirable delays in the dispatching process. The time commitment by existing personnel (secretaries, research assistants, and ultimately also professional staff) was greater than could have been foreseen in Phase IIB; in Phase III, therefore, the possibility of defining a new clerical position to expedite the output process will be investigated.

2.1.3.3.2. DISTRIBUTION

When a new profile is initiated, the search results, together with the "hit summary" (a listing of the terms causing each hit) are sent to the profile analyst. This usually lasts through a few iterations until the analyst, in consultation with the user where appropriate, feels that the profile is "tuned," i.e., stabilized at its best efficiency. When CIS receives word that output can now be sent directly to the user, it does so; it is often requested that the hit summary continue to go to the profile analyst, but this too is sent to the user if desired. Any user questionnaires, notifications and letters go with each profile to the address listed for that profile.

The distribution procedures evolved in Phase IIB are as follows: The total output and hit summaries were first quickly checked by the Information Systems Librarian for completeness, printing quality, and obvious errors in profile strategy which may have slipped past earlier checks, but which become apparent when the first search results are available. The output stack then had to be bursted and mailed. Increasingly, this became a serious drain on personnel time, especially in the latter part of Phase IIB, by which time CIS was processing in excess of 3,000 searches per quarter. Although all addressing of campus output was done by the computer directly on the first page of the print-out, for off-campus output it was necessary to print the addresses onto adhesive labels. Together with return-address labels, these had to be affixed manually to the envelopes, and the output folded and inserted. Since timeliness is one of the primary assets of a computerized approach to current bibliographic services, CIS staff made every effort to get the output in the mail the same working day as it became available.

The search results for all new profiles are reviewed by the profile analyst and then passed on to the user, either by mail or during an interview between user and analyst. Analysts were encouraged to be as quick as possible in transmitting the results to the user. On occasion, it was realized with some surprise by project staff that this point was not always foremost in the profile analyst's mind, especially when the analyst had many other important duties, such as staffing a reference desk. Most librarians, however, fulfilled their responsibilities admirably.

2.1.4. OPERATIONAL DATA AND USER FEEDBACK

Prior to beginning the bibliographic search service, plans were made for monitoring and evaluating the operation of the service. These plans included gathering three types of data: profile characteristics, computer run data, and user feedback. A fourth type, data base characteristics, was added later. Desired analyses or summaries of this data were specified, which, in turn, specified the raw data that should be collected. The following summaries were specified:

For profiles:

- number of profiles vs. data base issue;
- number of profiles and users vs. user organization;
- number of terms per profile vs. data base issue;
- number of profiles using the various operators (e.g., AND, OR, NOT, WITH, ADJ, etc.) in the profiling language and the frequency of use of each;
- number and percentage of profiles using truncation and the frequency of use.

For computer runs:

- cost per profile vs. data base issue;
- cost per term vs. data base issue;
- cost per term per citation vs. data base issue;
- range, median, mean of the hits per profile vs. data base issue;
- normalized (by number of citations per issue) hits per profile vs. data base issue;
- cost per hit vs. data base issue;
- total cost vs. data base issue;
- percentage and range of computer time (or cost) per run step (e.g., conversion, search, sort, print);

- number and percentage of distinct hits per data base issue;
- frequency list of cited journals.

For user feedback:

- percentage of relevant, irrelevant, and unsure hits per profile vs. data base issue;
- percentage of relevant, irrelevant, and unsure hits across all profiles vs. data base issue;
- summaries of user questionnaires.

For data bases:

- number of citations vs. data base issue;
- range, median, mean of citation length vs. data base issue;
- range, median, mean of number of data fields per citation vs. data base issue;
- title and keyword term frequency.

It was recognized that some of the raw data would be difficult or inconvenient to collect while the service was operating on the interim software; furthermore, certain of the summaries would not be meaningful until the service was regularly searching several data bases. Thus, collection of some of the raw data and production of some of the summaries was deferred until Phase III when the main CIS software system would be operational.

Data on profiles, computer runs, and data bases was collected accurately and consistently throughout Phase IIB. A standard summary format was designed and used to report this data on a quarterly basis. Appendix B contains the summaries for the entire Phase IIB period. Note that only search services pertaining to CA-Condensates were available for the entire phase. CAIN search services began in January 1972, and COMPENDEX, RIE, and CIJE began in April 1972. Because of the relatively small amount of data available from the COMPENDEX, RIE, and CIJE search services, summary data for these data bases is not included.

Plans to gather user feedback data were not, unfortunately, fully realized. The original plan was to include a relevancy questionnaire with the results of each search, and to send out general questionnaires on a periodic basis. The general questionnaires were to have included a series of questions at the time a user subscribed to the service, and then several follow-up questionnaires at regular intervals. When the service began, this plan was followed for a brief time, and then abandoned primarily because of the sheer logistics of maintaining the effort. New plans were made to distribute questionnaires on an irregular basis, principally when it was deemed desirable to sample user reaction to the service. These plans will be followed in Phase III.

Valuable user feedback was obtained, however, via the relevancy forms. Space was allotted for user comments, and a number of patrons provided very useful suggestions. As may easily be understood, most negative feedback took the form of highly specific requests to change this or that (frequently these were comments about a particular set of hits, which should have gone to the analyst), whereas most positive feedback from users has been of a general nature, praising the utility of the service as a whole, etc. It would be true to say that most users appear to like the service. Other suggestions were received via the profile analysts, based on their own communication with the user. Because such comments were unsolicited, it was felt that they constituted a truer reflection of the user's response to the service than a formal, structured questionnaire, where the question asked may not correspond very closely to the user's real area of concern.

The relevancy form also invited the user to categorize the citations retrieved in a search into "Relevant," "Irrelevant," and "Unsure." The aim was to have the user put numbers in any or all of these categories, such that the total would equal the total number of citations delivered. While the majority of users complied accurately with this format, others gave only rough percentages, or numbers in only one or other of the categories, or simply check marks against one or the other of the terms. In addition, most CA-Condensates users, even those most favorably disposed toward CIS's experiments in new information service, found the burden of responding every week or two a little too much to cope with. In Phase III, therefore, the relevancy form will undergo some planned revisions and the entire question of gathering and assessing user feedback will be reexamined.

2.2. NUMERICAL SERVICES

2.2.1. PURPOSE

In December 1970, the UCLA Library became a member of the START-1 Census tape program operated by DUALabs (National Data Use and Access Laboratories) for the Center for Research Libraries. This provided an excellent opportunity for cooperation between the responsible library unit (the Public Affairs Service) and the CIS project in exploring the requirements for starting a service from a major numerical data base.

Creation of a processing capability and a public service structure for numerical data bases has been an aim of the CIS project since its inception. As with the bibliographic service, the main reasons for starting to offer a modest level of service in Phase IIB were to gain real-life experience in handling numerical data bases; to assess the type and extent of the information need in this area; to develop the requisite library procedures; and generally to gain a feeling for the likely problem areas in the provision of an operational service. In all these respects, the past 18 months have been extraordinarily fruitful.

2.2.2. SUMMARY OF EVENTS

The UCLA Library's initiation of 1970 Census tape activity occurred just a few days prior to the beginning of the reporting period (28 December 1970) with the signing of the START contract of DUALabs. Basically, this was an agreement allowing each participating institution to purchase 1970 Census tapes at a cost substantially below the Census Bureau's rate, and in addition providing a set of programs by means of which an institution could minimize the effort necessary to offer a processing capability from the tapes. Because of a grant from the Ford Foundation to the Center for Research Libraries, the entrance fee to the START program was brought down to $5,000 for CRL members.

In the early months of 1971 the Library's CIS Liaison Committee reviewed the implications of the START contract and appointed a working group to report on alternative courses of action to implement it, using the technical resource of CIS as the vehicle for doing so. In the view of this working group (chaired by Peter Watson of the CIS project and including also Ms. Mary Ryan, Head of the Public Affairs Service, Prof. Robert Collison, Head of the Reference Department, and Mr. Tony Hall, Head of the Systems Department) there were three major ways in which the CIS project could provide immediate assistance: a) by contributing "seed money" towards the purchase of the first files required (identified by the group as being 1st count, nationwide data); b) by providing technical back-up in assuring that DUALabs' programs, when obtained, would run on the UCLA campus computer; and c) by locating an information specialist in the Public Affairs Service to establish a pilot reference service.

The order for first count tapes, nationwide, and for DUALabs' programs, was accordingly placed in June 1971, and a Research Assistant was recruited from the Information Science program of the UCLA Graduate School of Library Service. The first shipment of tapes arrived shortly thereafter, and advantage was taken of the summer vacation period to copy, test and relabel them, to look at DUALabs' programs, and to finalize the procedures for providing service. In October 1971, the availability of the tapes and the programs was announced, with service offered through the Public Affairs Service. Concurrently, a part-time Assistant Programmer was hired to maintain the programs at CCN, and the 5th Revision of those programs became available and was ordered.

By November 1971 the order for 2nd and 3rd count data (California) could be placed, to be funded from internal library sources. These arrived in January 1972, and a Los Angeles county subset of the 3rd count data was made. The Master Enumeration District List, the basic key to the numbering of Census tracts, was bought in tape form in March (the library already possessed the microfilm version of the California MEDlist). In the early part of 1972 orders were also placed for the 1960 Public Use Sample file (1/1000) in the 1970 Census-compatible format, and in April the California files of 4th count data were ordered.

Thus by the end of this Phase, the cooperative efforts of CIS and PAS staff had brought into being a Census service which, while still relatively modest in scope and essentially experimental, appeared to be a unique library service in the state of California.

2.2.3. MODE OF OPERATION

The Library's initial conception of the Census tape service was that it would be a lending operation. The Library computer, an IBM 360/20, would be used to make copies of the data requested. Then the user could run the tape at CCN, with the DUALabs programs if desired, and afterwards return it to the Library. The next user requesting Census data, even if it were the same data, would have a new copy made for him. There was to be a cost for this service, which was basically the cost of the actual copy, plus a small fee for amortization of the tape. If, on the other hand, the user wished to purchase rather than borrow the data, he could do so for the additional cost of the physical reel, or he could supply his own reel and pay only the copy cost.

However, it was found that the block size of the 1st count files (and probably of subsequent counts) would be too large for the Model 20 to handle. The idea of performing the copies at CCN was explored, but by now the deficiencies in the whole lending concept were becoming more apparent. For example: the plan was to copy only in units of one reel; this meant that although the purchasing of Census data in "states merged" form had saved the Library money by greatly reducing the number of reels necessary, it would cost the patron more, since a request for one state's records would result in the forced purchase of all the other states on that reel, perhaps as many as twelve or fourteen. Secondly, the amount of bookkeeping and clerical work was foreseen to be very extensive.

In addition to handling the transaction with the user, which involved three different pricing schemes (tape supplied by user, tape loaned to user, tape sold to user) further multiplied by at least two categories of user (UC and other tax supported institutions in California, and all other organizations), there would be the internal record keeping of copies requested, copies received etc., as well as tape ordering, computer scheduling, and probably some mailing of tapes. A third factor, then, was the prospect of a heavy commitment of personnel time per transaction, which the various procedures and the record keeping would make inevitable.

A different arrangement was therefore proposed by CIS, namely that a working copy of the tapes should be permanently located at CCN, available to any CCN user. These would naturally be "read only" tapes and would be mounted on request by the machine operator. This approach, by offering guaranteed access in place of possession of copies, served essentially the same purpose at far less cost and effort. Anyone who did require his own copy could either obtain one directly, as a CCN user, or could have one made by the CIS project. Such copies could be by state rather than by physical reel (a decided improvement) since they would be derived from the basic working copy, which would be organized by state. A possible drawback to this mode of operation from the Library's viewpoint was a basic loss of control over the tapes and their usage; it was felt that a recurrence of a previous experience with Census tapes, whereby the Library had partly funded the purchase of some 1960 data, only to find the tapes appropriated and the data altered, and never made available as a library resource, should be avoided. Questions which needed resolving concerned a) ownership of the tapes and programs, e.g., in the event of the sudden demise of the CIS project; b) security of the tapes and the data: what were the safeguards against an operator inadvertently permitting a novitiate user to erase data, or a more sophisticated one to alter it? c) standards of service: if the Library attempted to give service jointly with the Campus Computing Network, there would undoubtedly be problems of articulation. Would the Library find itself in the position of announcing that the tapes were available in this or that fashion, only to find they were not? Would the user be told in the Library that he could use the tapes, only to find at CCN that he was for some reason ineligible? Did CCN serve all the different categories of patrons that the Library routinely dealt with (e.g., faculty from other colleges and universities in California)? What would happen at times such as weekends, when the Library's reference service might be operating as usual, but CCN might not?

As it transpired, this cooperative method of service was adopted, after the necessary clarifications and agreements had been reached, but a significant problem turned out to be something not uppermost in the early discussions. This was that the tasks of copying and renaming the successive files of data, and, to an even greater extent, of ensuring that DUALabs' programs were working reliably, took far more time than could be anticipated, at least for the first few months of service. This was a function of the different priorities assigned to Census tapes by each group, the Library (P.A.S.) and the CIS project, within its own frame of activity, and was occasionally exacerbated by inconsistent use of different (and sometimes quite separate) channels of communication between the Library, the Campus Computing Network, and DUALabs. DUALabs' fulfillment of orders was generally good, but the documentation poor, bearing out what had been found with the documentation of bibliographic files (see Phase IIA Final Report, Part 5, NSF GN-827, pp. 9-12. UCLA, Institute of Library Research, 1971). The programs were eventually made to operate satisfactorily, however, and were regarded by the project as "interim software."

As was true with the development of bibliographic services, an investigation of these pragmatic problems was one of the primary reasons for choosing an early opportunity to start a service. Fortunately, most users were patient, and after a few months the service settled down to operation along the following lines.

Library users enquiring at the reference desk of the Public Affairs Service would be channelled to the special Census tape service assistant, in a separate office, where they would be given a more thorough briefing on the nature and content of the computerized version of the Census than could be given at a busy conference desk staffed by three or four librarians all day. The user's particular requirements would be analyzed, and the appropriate strategy for meeting them suggested. Forms were created for signing-on users of the working copy of the tapes and for servicing users requesting their own copy. Brochures outlining the organization and content of the various counts and the capabilities of the programs were assembled, as well as a set of programming notes specifying the necessary job control language to gain access to the programs on the UCLA computer.

It was not part of the service during this early stage of development to meet requests for special tabulations, or indeed to do any of the processing work for the user. This service was concurrently being offered elsewhere in the University of California system, though not through a library (the Census Service Facility at Berkeley was operated jointly by the Survey Research Center and the Institute of Governmental Studies, and provided printouts for a fee. Its major user group appeared to be local government agencies in California). At UCLA, without any substantial special funding for Census tape activities, the intention during 1971-72 was to provide at least the basic availability of the data and of a set of programs which could be used to process it, together with an extensive initial orientation where appropriate. It became clear incidentally, that this mode of operation somewhat separated the UCLA Library from the other users of DUALabs' capabilities, and led to confusion at some points.

The initial contact point for either type of access, processing or purchasing a copy, was thus clearly identified in the mind of the prospective user, as a reference librarian in the Library's government publications section, the Public Affairs Service. Orientation would cover any or all of the following topics, as necessary:

a. contents of files: subjects and geographic areas.

b. applicability of service to user's needs (referring user back to the PAS reference desk, for example, if the question could best be answered by printed sources).

c. documentation: introduction of user to the Census file documentation and to DUALabs' program documentation, to ascertain whether the data and the program capability needed to meet the request were available.

d. signing-on: if the user decided to go ahead, the reference assistant would take him through the procedure for signing-on, and begin to give some specific guidance on the use of the programs at CCN.

e. tape copies: for the user requesting a tape copy, a separate set of documents and procedures were applicable. The user was given assistance in specifying the data to be copied, and then referred to the CIS project office at CCN, where the copy would be done.

The proportion of users who returned to the Census tape reference assistant for a second visit showed a steady increase. This is at once attributable to a high percentage of initial failures with the programs, and to the user's growing realization that the Library's representative was probably the most helpful and competent contact they had for dealing with such problems.

2.2.4. USAGE DATA AND USER FEEDBACK

Usage of the Census tapes and of the part-time reference service grew slowly but steadily during this phase. Many factors contributed to this: a prevailing unawareness by potential clients of what the machine-readable version of the 1970 Census comprised, and how it might be used; lack of large scale funding in the Library with which to mount a fully staffed, fully developed service; and delays in the Census Bureau's release of the successive sets of tapes. However, both the CIS project and the Library are satisfied that they did what was possible in the circumstances, and that the experience gained forms a good basis for expanded activities in the future. Appendix B gives a summary of the use of the service as of 30 June 1972, tabulating both actual users and those who enquired, but could not be served because they needed 4th count, or subsequent data, which had not been released at that time. No written evaluations of the service were solicited from users during this period.

3. DEVELOPMENT

3.1. THE INFORMATION PROCESSING SYSTEM

3.1.1. INTRODUCTION

The primary software development tasks during Phase IIB were the completion of the design and programming details of the CIS software system, the Information Processing System (IPS), and the implementation of a prototype of the IPS. These tasks are discussed in this section as follows: first, a brief summary is given of the Phase IIB software activities; next, the design of the IPS is presented; then, the implementation of the Prototype is explained.

3.1.2. SUMMARY OF EVENTS

The first part of Phase IIB was spent completing the design and programming details. Components of the IPS were documented as they were designed, resulting in a set of program logic manuals for essentially the entire system before a substantial amount of coding had begun. These manuals then served as programming guides for the coding effort.

Next, plans were made to implement the IPS in a number of stages, or versions, with each version building on the work completed in the preceding version. The initial version, targeted for completion by the end of Phase IIB, was the Prototype, which was to contain all of the basic components of the IPS: a Job Monitor, a simple Analyzer, basic components of a data access method, and a single service (bibliographic search). The primary purpose of the Prototype was to test the basic IPS design and to serve as the framework for later versions.

Version 1 of the IPS, targeted for completion midway in Phase III, was planned as the first operational version. This version would provide both current awareness and retrospective search services, the profiling language would be user-oriented, and interactive negotiation of profiles would be available. The installation of Version 1 would permit termination of the use of most of the interim software.

Version 2 was planned for completion by the end of Phase III. Essentially, it would be an enhanced edition of Version 1, containing additional user services, more interactive support, and new IPS features.

Other versions of the IPS were considered for Phase IV. Detailed plans were not made for these versions during Phase IIB.

3.1.3. THE IPS DESIGN

3.1.3.1. REVIEW

During Phase IIA a set of general requirements (see Phase IIA Final Report, Part 3, NSF GN-827, UCLA, Institute of Library Research, 1971) pp. 1-2 were specified for the IPS. Included were requirements that the IPS must consist of a variety of services capable of processing bibliographic, textual, and numerical data; it must be data base independent; it should be able to service users in both an interactive and batch mode; and, it should be exportable.

Following the specification of these requirements, a number of design decisions were made. Some of these design decisions are:

Host System: The IPS will be written to operate under the MVT level of OS/360 with the Time-Sharing Option (TSO).

Subsystem Residence and Access: The IPS will be useable in both an interactive and batch mode; however, in either case each user will be a "job" to the operating system, so the IPS will not require an operator-managed, application-dependent resident monitor.

Modularity: All programs written for the IPS will be designed modularly, such that changes in individual environmental parameters will effect a minimum number of modules.

Dynamic Generation: The binding of program modules into executable programs will be done individually for each execution, and will be governed by analysis of the environment at execution time.

File Independence: All routines handling data files will do so only through the use of IPS-provided subroutines. The interface to these routines is designed to make the processing routines independent of the details of file format. Actual format-dependent code will be selected, according to the file being processed, through the dynamic generation facilities.

With these requirements and design decisions guiding the effort, a basic design for the IPS was developed. The IPS would consist of four major divisions: the Job Monitor, whose purpose is to provide an interface between the host operating system and the IPS; the Analyzer, which is basically a user-command processor;

the data access method, which furnishes data management services to the IPS; and the service processors, which perform the appropriate user-oriented tasks. Each of these divisions are outlined in the following sections. Where additional detail is needed, the reader is referred to the appropriate design document, available from CIS on request.

3.1.3.2. THE JOB MONITOR

The Job Monitor is an interface between the host Operating System and the IPS. There is one Job Monitor function per IPS user, so that each user is a separate host-system "job" and no resident IPS monitor is required. Variants of the Job Monitor allow the IPS to function under the MVT or MFT options of OS/360, and in either background or foreground environments. In all cases, the monitor's interface with its subfunctions is through the TSO Command Processor protocol.

Elementary software services are provided by the Job Monitor for all its subfunctions through a universal "monitor request" protocol. Implementation is modularized and includes the following monitor service managers.

- Task Management provides concurrent and/or interrupt-mode execution of subfunctions.
- Job Workspace Management provides an easily-used secondary-storage core spill facility.
- User Communication Management absorbs the impact of the differences between an interactive user and batch system command and message data sets.
- Packet Management provides dynamic binding of elementary modules into functional programs.
- File Management coordinates all communication between IPS service processors and the format-independent file system.
- Dynamic Core Management provides compatible management of dynamic data areas for all IPS functions.
- Job Log Management provides a single cumulative output stream through which IPS functions can log out any desired data to the IPS programming and accounting staff.

- Installation Statistics Management isolates the collection of installation-dependent data to a single plug-in module, which can be replaced by any installation.
- Disk Space Management provides dynamic file allocation/deallocation.
- Library Management supports the use of "canned" descriptors for the analyzer functions of service monitors.

Further information on the Job Monitor is provided in the CIS internal documents "The IPS Job Monitor--Internal Specifications" and "Guide to Writing IPS Job Monitor Service Managers."

3.1.3.3. THE ANALYZER

An Analyzer is basically a user-command processor. There is one Analyzer for each IPS user service offered. The Analyzer normally consists of two sequentially-executed parts, called the Collector and the Executor, which are interfaced through a well-defined protocol.

The Collector processes a user command, and generates a service- and file-specific data flow plan. In doing this it uses monitor-provided components including:

- the File Descriptor Analyzer, which integrates a canned file data descriptor into the data flow plan;
- the Report Analyzer, which integrates "canned" report-writer specifications into the data flow plan;
- the File Data Graph processors, which perform standard associations among the components of the emerging data flow plan;
- the Autobatch facility, which optionally demotes a foreground IPS job into background execution, at the well-defined Collector-Executor interface.

The Executor allocates system resources to actually perform the requested work, and coordinates the execution of the various IPS service processors indicated. In addition, it can use monitor-provided components to support the service processors' use of:

- File Sharing of sequential files, both as parallel "multi-user" files and as tandem "virtual" files. These facilities will probably require the host operating system to support subtasking, now available in either the MVT or MFT versions of OS/360.
- Own Code modules written in the PL/I language, by providing an interface between the PL/I (Version F) running system and the IPS Monitor Request Managers.

Additional information on Analyzers is provided in the CIS internal documents "Basic Structure of CIS Analyzers" and SDI Analyzer Logic."

3.1.3.4. THE DATA ACCESS METHOD

The IPS Access Method (IPSAM) furnishes data access services to the IPS, and provides the IPS with one of its basic design goals, that of "data independence." IPSAM is a highly complex structure of control blocks and program modules that form an interface between the service processors and the external files. As shown in Figure 1, the interface consists of at least three levels; the fourth level, enclosed by broken lines in Figure 1, is included when necessary.

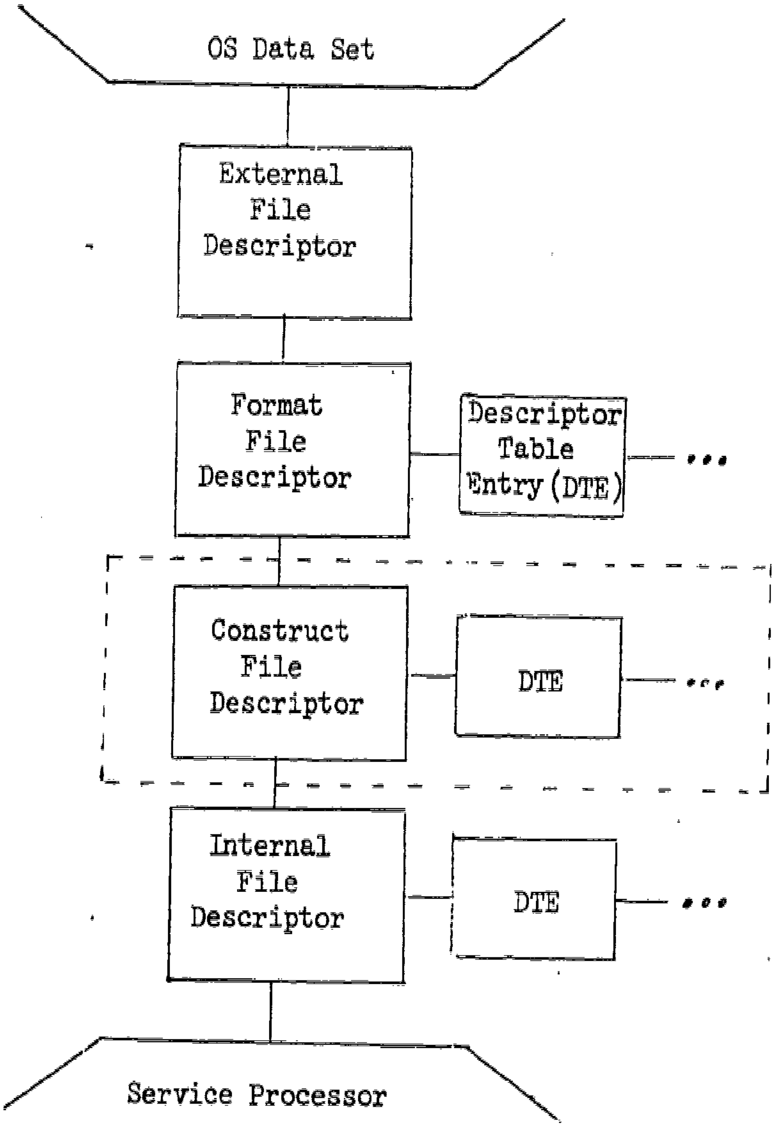
At the outermost level is the External File Descriptor which is concerned with the physical organization of the data (i.e., physical sequential, indexed sequential, direct, or partitioned) on the external device. The primary task at this level is to locate and transfer from the external device to core the desired physical record(s). This level is not concerned with the format or the content of the data within a physical record.

The next level, the Format File Descriptor, is concerned with the logical organization, or format, of the data. Operations at this level locate an entry within the physical record(s) brought into core by the External File Descriptor, and build internal table entries, called Descriptor Table Entries (DTE's), that describe the data items within the entry.

The Construct File level is optional and is included only if the file(s) involved are catenated, parallel, directed, or hierarchical.

The last level, the Internal File Descriptor, prepares the DTE's for use by the service processors by performing operations such as format conversions, copying, etc.

Figure 1. IPSAM Interface


OS Data Set
External File Descriptor
Format File Descriptor
Descriptor Table Entry (DTE)
...
Construct File Descriptor
DTE
...
Internal File Descriptor
DTE
...
Service Processor

The modules at each level operate independently and can be loaded dynamically. The required set of DTE's is generated by the Analyzer, i.e., DTE's are present only for those data items used and not necessarily for every data item present in an entry. Thus, the same service processor can handle, without change, an external file with any physical and logical organization.

Additional information on IPSAM is provided in the CIS internal document "IPS Data Management Services and Macro Instructions." DTE's are described in the document "IPS Control Blocks."

3.1.3.5. THE SERVICES

A service is a well-defined set of major operations to be performed for the user. Because a service is normally the entity which the user requests by name through the use of commands accepted by the Job Monitor, it is the component of the system which is most apparent to the user.

An executing service may invoke any other service as a subservice, which may then be allowed direct communication with the user and/or the Job Monitor, or the invoking service may supervise either or both of these interfaces. In this way information which is requested of the user by a service may actually be supplied internally by an invoking service if it already has the information, thus making the source of the information completely transparent to the service.

A service usually consists of a number of modules that are linked together dynamically to form the service. By allowing this dynamic construction of the service, various characteristics of the service can be altered to fit a user's need. A collection of services may be grouped together and executed sequentially as a complex service.

To be added to the IPS at a later time is a feature called Own Code. When the Own Code feature is available, a user will be able to write a PL/I program to be run as a service under the IPS. The user will, of course, be required to follow certain IPS conventions during the construction of the program.

3.1.4. THE PROTOTYPE

3.1.4.1. INTRODUCTION

The Prototype was planned as the first version of the IPS. It was not intended to be an operational version, but was planned as a vehicle for building and testing the basic components of the IPS.

The Prototype includes a Job Monitor, a simple Analyzer, basic components of the access method, and a single service (bibliographic search).

3.1.4.2 THE JOB MONITOR

The Job monitor is basically defined as for the operational version of the IPS, with some Analyzer-related services implemented. Both foreground and background operation are supported. The program service managers are included in essentially final form with the following limitations:

- File Management will support only a limited set of formats, although the facilities for adding others are included.
- Installation Statistics Management uses a temporary module relevant only to prototype performance evaluation.
- Disk Space Management is null. All data sets are allocated through OS/360 Job Control Language or TSO commands.
- Library Management is null, since the Analyzer functions which use it are simulated.

3.1.4.3. THE ANALYZER

A basic Analyzer is provided which will only handle the planned service. This version of the Analyzer bypasses most analysis functions and uses built-in defaults. The Collector is essentially a protocol converter, which produces a data flow plan based on a compiled-in skeleton; support for an alternate data base is provided only through a variant Collector. The Autobatch facility is not included, but Autobatch protocol is observed between the Collector and the Executor for future compatibility. The flow of control in the Executor is essentially that for the current awareness service in the operational version. The Prototype version of the Executor does not, however, support requests for automatic data set creation, and does not include the File Sharing Facility or the Own Code interface.

3.1.4.4. THE ACCESS METHOD

The access method for the Prototype contains only those components needed for the operation of the Prototype. These components are, however, in their final form.

At the External File Descriptor level, only one data set organization, physical sequential, can be read or written. At the Format File Descriptor level, the following formats can be handled: the temporary profile file format, the IPS Standard Internal File Format, and the Chemical Abstracts Service's Standard Distribution Format (SDF).

3.1.4.5. THE SERVICE

The service developed for the Prototype is a bibliographic search service which can perform either current awareness or retrospective searches of a bibliographic file. Search profiles are written in a language defined primarily for Prototype use; however, the basic structure of the language forms the core of the profiling language being designed for operational use. Searches are limited to SDF files.

The service consists of a complex of simple services: Profile Compile, Select, Sort, and Report. Profile Compile reads the set of profiles, checks their syntax, and prepares them for processing; Select reads entries from the bibliographic file, evaluates the profiles for each entry, and produces a file of hits; Sort puts the hits into a specified order; and Report formats the hits for printing.

3.2. LIBRARY TECHNICAL PROCESSING

3.2.1. GENERAL

Phase IIB saw the first implementation of library procedures for the acquisition and cataloging of machine-readable data bases. These were trial procedures, subject to modification as necessary. They had the purpose of establishing the routines so that further items for acquisition could be put through a processing sequence with a minimum of attention. As a paradigm for the treatment of serial files, the ERIC tapes were used, while the Census tape purchases served as an example of a "monographic" file. This division of material by form of publication is a more significant criterion in terms of library technical processing than a division according to content (bibliographic, numeric, etc.). In addition, as noted above (2.1.2) the concept of single-point acquisition within the University of California system was studied, using as a vehicle UC Davis' subscription to the CAIN file.

3.2.2. ACQUISITIONS

Orders for ERIC and Census tapes were initiated by the "library unit of primary expertise," a phrase designed to identify one responsible agent in cases where a data base is multi-disciplinary, and therefore of concern to more than one library unit. As indicated elsewhere, the Education and Psychology Library and the Public Affairs Service constituted the "primary expertise" vis a vis ERIC and Census tapes.

The librarian initiating the order coordinated the request with CIS personnel, to ensure that technical specifications such as the block size, recording density, and tape labelling, were suitable for the UCLA computer. An authority card was then created to reflect the ordering information. At the same time the order form, lease agreement, or other document required by the manufacturer was completed, again by librarians and project staff together. Both documents were then forwarded to the Acquisitions division of the Library's Technical Services Department. Here the standard 10-part order manifold was typed, the various copies being distributed as usual--two to the supplier with the completed order, one to the "In Process" file, two for bookkeeping, etc.

Control of the records then passed to the Standing Order clerk, who was given the authority card, copies of the order manifold, and any special handling instructions. The standing order procedure was judged the most effective present way of dealing with data bases in that it took account of their special characteristics and was also a useful mechanism for centralizing data base ordering at one point in the Acquisitions division.

In the Standing Orders Section standard cardex records were created, with any special handling instructions noted in pencil. When the tape and invoice were received, the Standing Order clerk photocopied the invoice, and forwarded this copy, together with the tape and the remaining copy of the order manifold, to CIS for verification. He would then await the return of the photocopied invoice authorizing payment, and any special instructions from CIS if the need arose for claiming, return of reels, etc. The CIS staff had the primary responsibility for verifying that the data received was the data ordered. Project staff at CCN did the necessary testing, including a dump of the first portion of the tape, and creation of the CIS working copy. The original tape was then returned to the CIS section in the Library, where it was stored archivally. The photocopy of the invoice was countersigned and returned to the Standing Order clerk, who was then able to forward the invoice to the Bookkeeping section for payment.

The foregoing is a summary of almost thirty distinct procedural steps (many of them significant only in terms of the UCLA Library environment) now specified for the acquisition of machine-readable data bases. It will be apparent that the reasons why the number is this high are two: first, the material itself presents many new and complex characteristics, and second, largely as a result of this, several library groups are giving the acquisitions process for data bases their detailed attention.

Particularly during the first part of this phase, the already complicated task of fitting the acquisition of data bases into the library's workflow was rendered more difficult due to distribution problems on the part of the supplier. Although at the time these extraneous factors seemed like ominous portents for the future (inducing a certain scepticism about the whole operation in some librarians) they did not prove insurmountable, and much was learned by everyone involved, including the suppliers. Project staff attended several meetings of ASIDIC during this phase, and observed that the suppliers no less than the service centers have been approaching the complex question of marketing these data bases in an essentially experimental way, introducing changes and modifications as more experience has been gained.

3.2.3. CATALOGING

Trial cataloging of the same two data bases (ERIC and Census) was undertaken during Phase IIB. The method followed was based closely upon earlier project efforts, particularly the form suggested in the Phase I Final Report, Part 4 ("Standards for Cataloging of Magnetic Tape Material" by Joan C. Troutman, UCLA, Institute of Library Research, 1967.).

The procedure was for CIS staff, using the available documentation, to write into the catalog sheet as much of the data as possible (mainly such items as the name of the supplier, the name of the file, its technical specifications, etc.). The cataloger assigned to work with the project then translated this into a useful catalog record compatible with other catalog records at UCLA; to achieve this, joint meetings and discussions were sometimes helpful between CIS staff, cataloging staff, and staff from the library unit which had been designated as the "unit of primary expertise."

Catalog cards for the ERIC and Census files were then filed in the public catalog; these are reproduced in Appendix C. The second main part of the desired catalog procedure for data bases, namely the creation of a catalog data sheet and a holdings sheet for distribution to reference points, was not undertaken during this period, but deferred until Phase III. More discussion is needed of the precise arrangement and content of this form, as well as of the logistics of creating and distributing it, and the preparing of reference librarians to use it.

It is important to note that the American Library Association has a subcommittee working on the formulation of rules for the cataloging of machine-readable data files. UCLA's input to this committee has been considerable: the cataloger working with the project, Betty Herman, is one of the members of the subcommittee, and, when possible, Peter Watson of the CIS project has also attended its sessions. Ms. Herman's work on "real-life" records, as reflected in Appendix C, constituted the first example of a product, based on the subcommittee's work, that the subcommittee saw. The discussions have now reached the international stage, with the United States, Canada, and Great Britain working together to draw up a body of library cataloging rules for this new and problematic medium . Thus, it has not been in UCLA's interest to press on too far with independent work and so activities have remained on a trial basis, with continuous interaction with the American Library Association subcommittee, in hopes of producing the lasting nationwide solution that machine-readable files really demand.

3.3. LOCAL DATA BASE DEVELOPMENT

During Phase IIB, the CIS project increasingly became a focal point for several campus agencies which, having their own information storage and retrieval problems, began to make inquiries about the use of the computer for such tasks. These agencies (departments, research institutes, journal editorial offices, special projects, etc.) covered a wide disciplinary spectrum, from Symbolic Logic to Physical Education, and each had its own particular needs and constraints. From the many phone calls, memos, meetings, and even formal proposals to the CIS project, the following composite picture emerged.

A group of people working in a given academic area has, over the years, built up an extensive bibliography of literature pertinent to its activity. It is usually kept in trays of file cards and arranged according to some ad hoc classification scheme. As the file grew to several thousand entries, maintaining and accessing the data became a major problem. At this point, members of the group would inquire at CCN or the Library, and would be channeled toward the CIS project, where they would find that the services being designed there provided exactly the kind of capability they had in mind. The reaction would invariably be one of pleasant surprise that some campus agency had seen the problem and begun to deal with it; and the fact that the Library and Computing Network were both working experimentally on it validated their feeling that this was a genuine and serious information problem which others might also be experiencing. Several of those approaching CIS knew enough about computers and information retrieval to recognize that what they were really seeking was a way to build their own data base and some available programs to search it.

CIS was not prepared in Phase IIB to cope with this type of problem, but has planned to develop during Phase III a capability whereby active assistance can be given to departments and individuals wanting to construct their own bibliographic files. This will include recommendations for organizing and classifying the data, suggestions for data entry and update, and instructions for using CIS software for searching and index production.

As preparation for this activity CIS worked with one group, the Department of Kinesiology, on the construction of a file containing citations for the journal reprints that it holds. A small interactive program, developed primarily for internal CIS use, was used for entering an initial set of bibliographic citations. While the remainder of the file was being prepared by professional keypunch operators, procedures for entry, update, and search, using CIS software, were established. This file and the associated procedures should reach operational status about midway through Phase III. It is expected that the pattern developed here will be applicable to similar files held by other groups.

4. ADMINISTRATION

4.1. PROJECT ORGANIZATION

William B. Kehl, Director of the Campus Computing Network (CCN) was the Principal Investigator for Phase IIB. Robert Vosper, UCLA University Librarian, Harold Borko, Professor in the Graduate School of Library Service, and Robert Carmichael, Manager of the UCLA Institute of Library Research (ILR), served as Co-Investigators. Professor Robert M. Hayes, the Principal Investigator in the previous two phases of the project, served as an advisor to CIS during Phase IIB.

Peter Watson, Head, CIS Section of the Library, was responsible for the Library's tasks for Phase IIB. Completion of the tasks assigned to CCN was the responsibility of Bruce Briggs, CIS Project Manager for CCN. The responsibility for ILR's tasks was shared by Harold Borko and Robert Carmichael.

Staff personnel assigned to the CIS Project are listed in Figure 2. The organization of the project staff for Phase IIB is shown in Figure 3.

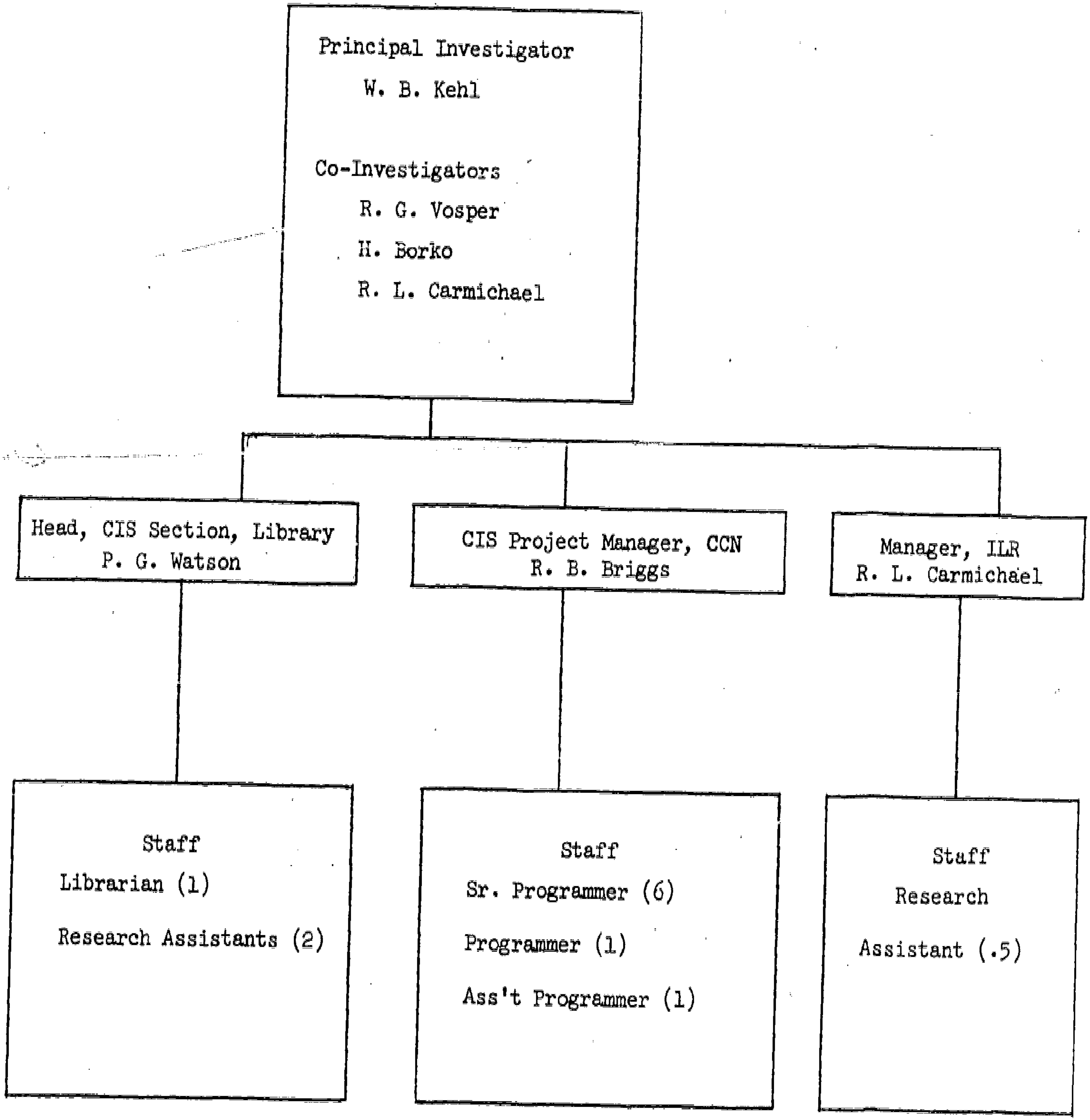
4.2. ESTABLISHMENT OF A CIS SECTION IN THE LIBRARY

Beginning January 1972, the Library's involvement in CIS was upgraded with the formation of a CIS Section of the Library Systems Department. Peter Watson, formerly the "CIS Coordinator," is Head of the section which consists of an information systems librarian, a secretary and some part-time assistance. The post of "CIS Coordinator was then abolished. The CIS Section is under the direction of the Head of the Library Systems Department, Anthony Hall, who has overall responsibility for automation activities in the UCLA Library system.

Figure 2: Project Personnel

University Library	Man-Months
R. Vosper, Co-Investigator	1.8
P. Watson	18.0
C. Robbins	12.0
S. Power	9.0
J. Campbell	12.0
Campus Computing Network	
W. Kehl, Principal Investigator	1.8
B. Briggs	18.0
A. de Boer	18.0
P. Donahoe	18.0
S. Farrell	4.0
W. Jordan	18.0
N. Kolb	18.0
N. Ludlam	18.0
W. Maillian	2.0
L. Miroff	18.0
J. Pine	9.0
I. Riordan	9.0
L. Truesdale	4.5
Graduate School of Library Service	
H. Borko, Co-Investigator	1.8
Institute of Library Research	
R. Carmichael, Co-Investigator	7.5
M. King	2.0
E. Neuman	1.0
S. Schippleck	1.0
D. Matthews	8.0
C. Armstrong	3.0
L. Gillen	1.0
C. Robbins	1.0

Figure 3: Project Organization


Principal Investigator
W. B. Kehl
Co-Investigators
R. G. Vosper
H. Borko
R. L. Carmichael
Head, CIS Section, Library
P. G. Watson
CIS Project Manager, CCN
R. B. Briggs
Manager, ILR
R. L. Carmichael
Staff
Librarian (1)
Research Assistants (2)
Staff
Sr. Programmer (6)
Programmer (1)
Ass't Programmer (1)
Staff
Research
Assistant (.5)

4.3 MEETINGS AND SEMINARS

Only major meetings and seminars sponsored by the CIS project are reported in this section. A complete list of visits and presentations made by CIS staff during Phase IIB is given as Appendix D.

4.3.1. SEMINAR ON INNOVATION

For four days, September 7-10, 1971, Professor Richard M. Dougherty of the School of Library Science, Syracuse University, gave a series of seminars for UCLA Library staff. These were, in effect, follow-up sessions to the two 10-week CIS seminars held in 1970. The general theme was the dynamics of the process of change in libraries, with computer-induced change as the primary focus of attention. The half-day presentations were tailored where possible to fit the professional interests of particular groups, and were attended by 49 library staff (some more than once). The schedule is shown in Figure 4.

4.3.2. WEST COAST MEETING OF NSF-OSIS GRANTEES

On Thursday and Friday, November 4 and 5, 1971, at UCLA, a meeting took place between members of NSF Office of Science Information Services (OSIS), and representatives of the eight institutions then receiving NSF-OSIS support in developing innovative information services for science and technology on university campuses. Being the first such meeting, it was devoted to identifying problems of mutual concern and exploring possible mechanisms for approaching their solution cooperatively. Names of those attending are given in Figure 5, and the agenda is shown in Figure 6.

On Thursday, November 4, 1971, after introductory remarks by Vice Chancellor Barber of UCLA and W. B. Kehl, the three west coast institutions gave presentations covering the origins, basic goals, present status, and future directions of their respective projects. E. Parker and J. Schroeder (Stanford) first discussed SPIRES/BALLOTS. Parker outlined their aim of acting as an "information retailer" mediating large and frequently complex files of information to users with highly specialized individual information requirements, and of the prime place given to development of on-line capabilities for SPIRES/BALLOTS. SPIRES II, the first operational version, is designed to become active in mid-1972. Schroeder then gave details of the system's capabilities, in terms of the hardware environment, file building, file manipulation, and searching, and outlined its relation to other computational activities at Stanford.

P. Rohn (University of Washington) next discussed in similar detail his Treaty Information Project. This had its origin in one person's perception of a large gap in the management of legal information, namely international treaties. Condensed information regarding the 15,000-18,000 such treaties signed since 1920 is being encoded for machine manipulation, to be available to the community of scholars, lawyers, diplomats, and others working in this field.

After lunch, UCLA's CIS staff reported on their project. P. Watson outlined the broad implications of having the ultimate responsibility for acquiring data bases and making them available, rest with the library. He pointed to their experience so far in mounting trial services through UCLA Library units from CA-Condensates, and the project's technical assistance with ERIC and Census tapes. R. B. Briggs followed up with a presentation on technical aspects of CIS development; the interim software used for experimental services, and the specification and design of general purpose programs for the operational CIS system.

The group then heard R. T. Braden of UCLA's Campus Computing Network describe the ARPA Network of major research computers in the U. S. This communication network enables the sharing of outstanding national resources in such areas as software and large core capacity; hardware assets such as the developing trillion-bit store and the ILLIAC IV computer; and large or specialized data bases. The ARPA Network is not yet fully operational, but many of the protocols for the various types and levels of communication are complete, and such activities as transmitting a program for submittal to another computer in the system are already being carried on.

Thursday evening was devoted to an informal discussion among the group about specific proposals for additional cooperation between centers. While the ARPA Network represents the sophisticated end of the spectrum, a wide range of more mundane, but realizable, goals (e.g., sharing statistics, newsletters, etc.) also was explored. A particularly important point that began to emerge from the day's discussions was concern over the impact of these new methods (of disseminating references to documents) upon the library when it is called upon to deliver the actual documents.

On Friday, November 5, 1971, the Principal Investigators and the NSF representatives met to continue discussion of the issues raised the previous day. Again the linking of computerized bibliographic services to document delivery systems formed a main talking point. M. Day (NSF) delineated the role of NSF in these developments, and pointed out that the academic segment of the information community, as represented at the meeting, was a basic component in a potential nationwide network. He said that NSF would in the future be paying more attention to science communication as an integrated whole. He closed with a review of the recent UNISIST meeting. The meeting then adjourned.

4.3.3. PROFILE-WRITING WORKSHOPS

Four workshops were conducted on the CIS bibliographic services. These provided a necessary introduction to the project and the experimental services, and a tutorial in writing TEXT-PAC profiles. This included, where possible, an actual search using profiles written in the workshop, followed by an evaluation and refining of profiles by participants. The workshops were in turn conducted by L. Miroff and C. Robbins, and took place as follows:

7 and 9 February, 1972, at UCLA, for Library Staff

2 March, 1972, at Arizona State University, for Library Staff and prospective users

11 May, 1972, at Stanford University, for Library Staff

19 June, 1972, at California State University, Long Beach, for Library Staff.

Figure 4: Seminar on Innovation

TUESDAY

1:30 - 4:30

ADMINISTRATIVE ISSUES

Administrative patterns at other schools
Staff development programs
Financing
Manpower requirements
Equipment requirements

WEDNESDAY

9:30 - 12:00

INTEGRATING SERVICES

Statement of needs
Formulating of requests
Processing requests
Review of results of searches
Processing feedback

1:30 - 4:30

IDENTIFICATION OF USER NEEDS

Methods of gathering input
Evaluating data
Relating services to needs
Review of present services
Implementation of services

THURSDAY

9:30 - 12:00

TECHNICAL PROCESSING

Selection
Ordering
Accession
Cataloging
Physical preparation

1:30 - 4:30

See Wednesday morning
schedule - same

FRIDAY

9:30 - 12:00

CIS IN LIBRARY

Place in library
structure
How staffed
How to integrate
(library, CCN and
academic departments)
Public relations

12:00 Adjourn.

Figure 5: Participants in the West Coast Meeting
of NSF OSIS Grantees
November 4-5, 1971

National Science Foundation

Mr. Mel Day
Dr. Ed Weiss

University of Georgia

Dr. Jim Carmon
Dr. Charles Douglas
Ms. Margaret Park

Lehigh University

Dr. Don Hillman

University of Pittsburgh

Prof. Allen Kent

The Ohio State University

Prof. Gerald Lazorick

Stanford University

Prof. Ed Parker
Mr. Hank Epstein
Mr. Dave Phillips
Mr. John Schroeder
Mr. David Weber

University of Washington

Prof. Peter Rohn

Illinois Institute of Technology Research Institute

Ms. Martha Williams
Mr. Peter Schipma

University of California, Los Angeles (CIS Project)

Mr. William Kehl
Mr. Robert Vosper
Dr. Harold Borko
Mr. Robert Carmichael
Mr. Peter Watson

University of California, Los Angeles (CIS Project) Continued

- Mr. Bruce Briggs
- Dr. Robert Hayes
- Mr. Aeint de Boer
- Mr. Pete Donahoe
- Mr. William Jordan
- Mr. Neil Ludlam
- Ms. Linda Miroff
- Ms. Ida Riordan

University of California

- Dr. Albert Barber, Los Angeles
- Mr. Barry Beckerman, Los Angeles
- Mr. Charles Bourne, Berkeley
- Mr. Bob Braden, Los Angeles
- Ms. Louise Darling, Los Angeles
- Mr. Roy Fry, Los Angeles
- Mr. Tony Hall, Los Angeles
- Dr. Lorraine Mathies, Los Angeles
- Mr. Paul Miles, Los Angeles
- Mr. Tom Riedel, Los Angeles
- Ms. Mary Ryan, Los Angeles
- Ms. Anita Schiller, San Diego
- Ms. Joanna Tallman, Los Angeles
- Mr. Donald Wilson, UC Library Council

University of Maryland

- Mr. Hal Olson

Institute for Scientific Information

- Mr. Mel Weinstock

Figure 6

West Coast Meeting of NSF OSIS Grantees

November 4 - 5, 1971

AGENDA

THURSDAY

9:15 Transportation from motel to UCLA
9:30 Coffee, introductions, etc.
9:45 Introductory remarks
10:00 Stanford presentation
11:00 University of Washington presentation

12:00 LUNCH

1:30 UCLA presentation

2:30 BREAK

2:45 Networking - Technical Issues
    ARPANET
    Remote Terminals
    Other Alternatives

4:15 ADJOURN

4:30 CCN Tour and Demonstration
7:30 Round Table Discussion
    Sharable Resources
    Administrative Issues

10:00 ADJOURN

FRIDAY

8:30 Presentation by ISI
9:15 Planning Session
    Summary of discussions
    Future plans

10:45 BREAK

11:00 NSF meeting with grantees

12:15 ADJOURN

APPENDIX A

1. STATEMENT OF INTEREST FORM
2. PROFILE CODING FORM

CENTER FOR INFORMATION SERVICES
CAMPUS COMPUTING NETWORK
UNIVERSITY OF CALIFORNIA, LOS ANGELES

FOR CIS USE
Profile No.________
Profile Analyst________

STATEMENT OF INTEREST FORM

1. Name (Please print)________________ Date________
2. Position________________ Telephone________
3. Organization/Department________________
4. Address________________

   City________ State______ Zip Code______

5. Individuals who will actually use the service (if different from above):

   Name________________

   Position________________ Telephone________

6. Indicate which data bases are to be searched:

   CA-CONDENSATES (Chemical Abstracts Service)
   ODD ISSUES ________
   EVEN ISSUES ________

   CAIN (National Agricultural Library) ________

   COMPENDEX (Engineering Index, Inc.) ________

   ERIC (U.S. Office of Education)
   RIE ________
   CIJE ________

7. Type of search requested: _____Current Awareness (SDI)

   _____Retrospective From____ To____

8. Profile Title (short descriptive phrase): ________________________________

____

9. Please describe in your own words the subject in which you are interested and on which you want references. Be specific, and define terms which have special meaning in your request. If certain facets of the subject are not of interest to you, explicitly state that they are to be excluded.

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10. List the important terms (words and word phrases) in your statement of interest and any synonyms or special uses you wish to exclude. Be sure to include both scientific and common terms. Your careful completion of this table will help to refine the profile.

TERMS	SYNONYMS, CLOSELY RELATED TERMS	EXCLUDED USES

11. List any particular authors whose writing always interest you (specify first and middle names, if possible):

____

____

12. List any journals or other periodicals which you regularly read and of whose contents you do not need to be informed:

____

____

____

13. Check any of the following types of references that you do not want to receive: (For use in searching CA-CONDENSATES only.)

patents	_____	technical papers	_____
dissertations	_____	books	_____
conference proceedings	_____	periodical articles	_____

14. Do you wish to receive references to documents written in: (For use in searching CA-CONDENSATES only.)

_____English _____any language _____other (specify)____________________

15. Do you wish to receive:

_____nearly all possibly relevant references

_____fewer, very probably relevant references

16. What is the maximum number of references you would wish to receive in any one current awareness search?__________

17. List one or two references in your area of interest that you have recently found useful.

____

____

____

FOR CIS USE ONLY
Profile No. ____________
Effective ____________

CENTER FOR INFORMATION SERVICES
CAMPUS COMPUTING NETWORK
UNIVERSITY OF CALIFORNIA, LOS ANGELES

PROFILE CODING FORM

1. Name ______________________________ Date ____________
2. Position ______________________________ Telephone ____________
3. Organization/Department ____________________ Code ____________
4. Address ____

City ____________ State ____________ Zip Code ____________

5. DATA BASE:

____CA-Condensates, Odd Issues ____CAIN ____COMPENDEX
____CA-Condensates, Even Issues ____ERIC, CIJE ____ERIC, RIE

For CA-Condensates, check one:

CHEMISTRY FIELD CODE:

____Biochemistry ____Organic Chemistry
____Applied Chemistry, Chemical Engineering ____Physical and Analytical Chemistry
____Macromolecular Chemistry

5. Type of search: ____Retrospective From____ To____

____Current Awareness

7. Maximum number of hits to be printed __________.
8. Number of concepts required to produce a hit __________.
9. Profile Analyst ______________ Initials __ __ __

Profile Title____ Profile No._______________

Page ____ of ____

Symbols (e.g., A1, CON1)	Logic Expressions (PLEASE PRINT)
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APPENDIX B

1. SUMMARY OF CA-CONDENSATES SEARCHES
2. SUMMARY OF CAIN SEARCHES
3. CURRENT AWARENESS PROFILES BY DATA BASE
4. SUMMARY OF CENSUS TAPE SERVICE ACTIVITY

SUMMARY OF "CA-CONDENSATES" SEARCHES
JANUARY - JUNE, 1972

ISSUE NUMBER	76/01	76/02	76/03	76/04	76/05	76/06	76/07
DATE OF ISSUE	01/03	01/10	01/07	01/24	01/31	02/07	02/14
NUMBER OF CITATIONS	4159	5928	4815	6051	4592	4853	4120
NUMBER OF PROFILES	136	60	142	60	144	65	149
NUMBER OF CONCEPTS	793	340	884	340	911	405	967
NUMBER OF TERMS	4202	1464	4462	1461	4530	1626	4671
NUMBER OF ALERTS	1226	462	1665	427	1724	360	1964
PROFILE UPDATE COST	9.15	3.43	10.03	0.00	9.10	4.99	9.77
CONVERSION TIME	34.11	52.63	37.11	53.18	37.40	42.65	33.66
I/O	2116	3779	2368	2965	2300	2425	2088
REGION	200	200	200	200	200	200	200
SEARCH TIME	252.06	133.91	304.52	127.97	306.85	119.96	291.25
I/O	607	594	698	596	672	510	656
REGION	280	200	280	200	200	200	280
SORT-PRINT TIME	11.59	5.05	14.43	4.40	15.84	4.46	18.75
I/O	6659	3282	8094	3199	8373	3020	9330
REGION(1)	120	120	120	120	130	110	130
PAGES(2)	1484	659	1550	634	1954	613	2130
COST(3) : CONVERSION	11.18	18.76	12.36	16.46	12.20	13.34	11.03
SEARCH	38.65	21.33	46.59	20.47	46.86	19.04	44.53
SORT-PRINT	36.02	16.93	41.29	16.34	46.36	15.62	51.34
TOTAL(4)	85.85	57.02	100.25	53.27	105.42	48.00	106.91
CONCEPTS/PROFILE	5.83	5.67	6.23	5.67	6.33	6.23	6.49
TERMS/PROFILE	30.90	24.40	31.42	24.35	31.46	25.02	31.35
COST/PROFILE	0.63	0.95	0.71	0.89	0.73	0.74	0.72
COST/TERM	0.02	0.04	0.02	0.04	0.02	0.03	0.02
ALERTS/PROFILE	9.01	7.70	11.73	7.12	11.97	5.54	13.18
CONV.TIME/CITATION	0.0082	0.0089	0.0077	0.0088	0.0081	0.0088	0.0082
CONV.COST/CITATION	0.0027	0.0032	0.0026	0.0027	0.0027	0.0027	0.0027
SEARCH TIME/PROFILE	1.85	2.23	2.14	2.13	2.13	1.85	1.95
SEARCH COST/PROFILE	0.28	0.36	0.33	0.34	0.33	0.29	0.30
SORT-PRINT TIME/ALERT	0.0095	0.0109	0.0087	0.0103	0.0092	0.0124	0.0095
SORT-PRINT COST/ALERT	0.0294	0.0366	0.0248	0.0383	0.0269	0.0434	0.0261
TOTAL COST/ALERT	0.0700	0.1234	0.0602	0.1247	0.0611	0.1333	0.0544

(1)...CONVERSION AND SORT-PRINT ARE MORE THAT ONE STEP, THEREFORE REGION SIZE IS APPROXIMATE.
(2)...SORT-PRINT COST INCLUDES $0.01 PER PAGE.
(3)...COST IS CALCULATED AT $0.11 PER MUS, WHERE MUS = (T+0.02*I)*(1+.0036*MIN(R,250)+.0004*P).
THESE COSTS REFLECT THE OVERNIGHT RATE, WHICH CALCULATES MUS WITH R=82.5K.
(4)...TOTAL ISSUF RUN COST = CONVERSION COST + SEARCH COST + SORT-PRINT COST.

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                        SUMMARY OF "CA-CONDENSATES" SEARCHES
                               JANUARY - JUNE, 1977

ISSUE NUMBER                 76/08     76/09     76/10     76/11     76/12     76/13     76/14
DATE OF ISSUE                02/21     C2/28     03/06     (3/13     03/20     03/27     04/03
NUMBER OF CITATIONS           7187      4732      7625      5923      7887      4811      8103
NUMBER OF PROFILES              66       151        70       157        73       161        81
NUMBER OF CONCEPTS             416       990       449      1037       452      1108       501
NUMBER OF TERMS               1667      4739      1774      4962      1804      5183      2239
NUMBER OF ALERTS               601      2176       707      2662       694      2094       886
PROFILE UPDATE COST           4.04     10.74      5.65     11.66      5.13     12.55      5.68
CONVERSION TIME              63.29     40.36     63.63     47.34     65.91     40.43     69.72
           I/O                3486      2390      3676      2855      3736      2398      3871
           REGION              200       200       200       200       200       200       200
SEARCH TIME                 189.08    342.50    220.47    439.49    228.55    371.90    252.39
     I/O                       701       774       687       896       737       772       800
     REGION                    200       280       200       360       200       360       200
SORT-PRINT TIME               5.58     22.83      7.12     30.04      6.63     20.90      7.23
           I/O                3862     10299      4380     11984      4217      9925      5072
           REGION(1)           112       130       110       120       120       130       120
           PAGES(2)            784      2274       873      2580       869      2312      1061
COST(3) : CONVERSION         19.46     12.90     20.07     15.28     20.57     12.93     21.53
          SEARCH             29.71     52.37     34.26     66.92     35.59     56.67     39.27
          SORT-PRINT         19.96     56.21     22.64     65.26     22.00     55.22     26.51
          TOTAL(4)           69.13    121.49     76.97    147.46     78.17    124.82     87.30
CONCEPTS/PROFILE              6.30      6.56      6.41      6.61      6.19      6.88      6.19
TERMS/PROFILE                25.26     31.38     25.34     31.61     24.71     32.19     27.64
COST/PROFILE                  1.05      0.80      1.10      0.94      1.07      0.78      1.08
COST/TERM                     0.04      0.03      0.04      0.03      0.04      0.02      0.04
ALERTS/PROFILE                9.11     14.41     10.10     16.96      9.51     13.01     10.94
CONV.TIME/CITATION          0.0088    0.0085    0.0083    0.0080    0.0084    0.0084    0.0086
CONV.COST/CITATION          0.0027    0.0027    0.0026    0.0026    0.0026    0.0027    0.0027
SEARCH TIME/PROFILE           2.86      2.27      3.15      2.80      3.13      2.31      3.12
SEARCH COST/PROFILE           0.45      0.35      0.49      0.43      0.49      0.75      0.48
SORT-PRINT TIME/ALERT       0.0093    0.0105    0.0101    0.0113    0.0096    0.0100    0.0087
SORT-PRINT COST/ALERT       0.0332    0.0258    0.0320    0.0245    0.0317    0.0254    0.0299
TOTAL COST/ALERT            0.1150    0.0558    0.1089    0.0554    0.1126    0.0596    0.0985

(1)...CONVERSION AND SORT-PRINT ARE MORE THAT ONE STEP, THEREFORE REGION SIZE IS APPROXIMATE.
(2)...SORT-PRINT COST INCLUDES $0.01 PER PAGE.
(3)...COST IS CALCULATED AT $0.11 PER MUS, WHERE MUS = (T+0.02*I)*(1+.0036*MIN(R,250)+.0004*R).
      THESE COSTS REFLECT THE OVERNIGHT RATE, WHICH CALCULATES MUS WITH R=82.5K.
(4)...TOTAL ISSUE RUN COST = CONVERSION COST + SEARCH COST + SORT-PRINT COST.
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                              SUMMARY OF "CA-CONDENSATES" SEARCHES
                                    JANUARY - JUNE, 1972

ISSUE NUMBER                    76/15     76/16     76/17     76/18     76/19     76/20     76/21
DATE OF ISSUE                   04/10     04/17     04/24     05/01     05/08     05/15     05/22
NUMBER OF CITATIONS              5236      8200      5707      7620      5815      7736      6153
NUMBER OF PROFILES                165        82       171        87       177        90       178
NUMBER OF CONCEPTS               1147       531      1181       640      1336       765      1429
NUMBER OF TERMS                  5699      2281      6100      2583      6578      2826      6648
NUMBER OF ALERTS                 2873      1084      2985       871      3044      1007      3329
PROFILE UPDATE COST             12.56      5.91     16.16      6.76     12.14      5.53     12.96
CONVERSION TIME                 41.38     67.64     47.22     65.74     44.76     65.63     49.97
             I/O                 2574      3917      2772      3689      2814      3745      2981
             REGION               200       200       200       200       200       200       200
SEARCH TIME                    402.02    281.20    448.43    258.64    467.24    301.46    506.61
         I/O                      877       847       909       780       909       774       946
         REGION                   360       200       360       200       360       260       360
SORT-PRINT TIME                 30.57     10.22     32.19      6.83     31.93      9.37     35.90
             I/O                12601      5854     12555      5021     12362      5627     13111
             REGION(1)            142       128       130       120       160       130       140
             PAGES(2)            2772       966      2340      1079      2770      1201      3109
COST(3) : CONVERSION            13.59     21.36     15.02     20.41     14.78     20.56     16.03
          SEARCH                61.38     43.62     68.27     40.12     71.02     46.37     76.89
          SORT-PRINT            69.06     28.28     64.85     26.48     68.54     29.85     74.70
          TOTAL(4)             144.03     93.26    148.13     87.01    154.34     96.77    167.62
CONCEPTS/PROFILE                 6.95      6.48      6.91      7.36      7.55      8.50      8.03
TERMS/PROFILE                   34.54     27.82     35.67     29.69     37.16     31.40     37.35
COST/PROFILE                     0.87      1.14      0.87      1.00      0.87      1.08      0.94
COST/TERM                        0.03      0.04      0.02      0.03      0.02      0.03      0.03
ALERTS/PROFILE                  17.41     13.22     17.46     10.01     17.20     11.19     18.70
CONV.TIME/CITATION             0.0079    0.0082    0.0083    0.0086    0.0077    0.0085    0.0081
CONV.COST/CITATION             0.0026    0.0026    0.0026    0.0027    0.0025    0.0027    0.0026
SEARCH TIME/PROFILE              2.44      3.43      2.62      2.97      2.64      3.35      2.85
SEARCH COST/PROFILE              0.37      0.53      0.40      0.46      0.40      0.52      0.43
SORT-PRINT TIME/ALERT          0.0106    0.0094    0.0108    0.0078    0.0105    0.0093    0.0108
SORT-PRINT COST/ALERT          0.0240    0.0261    0.0217    0.0304    0.0225    0.0236    0.0224
TOTAL COST/ALERT               0.0501    0.0860    0.0496    0.0999    0.0507    0.0961    0.0504

(1)...CONVERSION AND SORT-PRINT ARE MORE THAT ONE STEP, THEREFORE REGION SIZE IS APPROXIMATE.
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(3)...COST IS CALCULATED AT $0.11 PER MUS, WHERE MUS = (T+0.02*I)*(1+.0036*MIN(R,250)+.0004*P).
        THESE COSTS REFLECT THE OVERNIGHT RATE, WHICH CALCULATES MUS WITH R=82.5K.
(4)...TOTAL ISSUE RUN COST = CONVERSION COST + SEARCH COST + SORT-PRINT COST.
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                          SUMMARY OF "CA-CONDENSATES" SEARCHES
                                JANUARY - JUNE, 1972

ISSUE NUMBER               76/22      76/23      76/24      76/25      76/26
DATE OF ISSUE              05/29      06/05      06/12      06/19      06/26
NUMBER OF CITATIONS         7900       5910       7258       5441       7870
NUMBER OF PROFILES           112        204        119        209        122
NUMBER OF CONCEPTS           662       1400        713       1427        759
NUMBER OF TERMS             2789       7100       3213       6765       3769
NUMBER OF ALERTS            1028       3105        934       3144       1137
PROFILE UPDATE COST         7.56      14.85       2.29      14.85      10.08
CONVERSION TIME            67.82      47.03      60.23      50.34      67.15
           I/O              3827       2692       3535       2736       3834
           REGION            200        200        200        200        200
SEARCH TIME               356.69     534.17     336.75     517.12     361.74
      I/O                    804        948        776        933        833
      REGION                 260        360        260        360        260
SORT-PRINT TIME             9.57      33.94       7.83      35.87      10.40
           I/O              6289      12474       4975      12809       6186
           REGION(1)         110        110        130        130        138
           PAGES(2)         1710       2655       1223       2706       1342
COST(3) : CONVERSION       21.12      15.34      19.16      15.37      21.04
          SEARCH           54.54      80.92      51.54      78.38      55.36
          SORT-PRINT       36.90      68.01      27.93      69.79      33.04
          TOTAL(4)        112.56     164.28      98.62     163.54     109.44
CONCEPTS/PROFILE            5.91       6.86       5.99       6.83       6.22
TERMS/PROFILE              24.90      34.80      27.00      32.37      30.89
COST/PROFILE                1.00       0.81       0.83       0.78       0.90
COST/TERM                   0.04       0.02       0.03       0.02       0.03
ALERTS/PROFILE              9.18      15.22       7.85      15.04       9.32
CONV.TIME/CITATION        0.0086     0.0080     0.0083     0.0093     0.0085
CONV.COST/CITATION        0.0027     0.0026     0.0026     0.0028     0.0027
SEARCH TIME/PROFILE         3.18       2.62       2.83       2.47       2.97
SEARCH COST/PROFILE         0.49       0.40       0.43       0.38       0.45
SORT-PRINT TIME/ALERT     0.0093     0.0109     0.0084     0.0114     0.0091
SORT-PRINT COST/ALERT     0.0359     0.0219     0.0299     0.0222     0.0291
TOTAL COST/ALERT          0.1095     0.0529     0.1056     0.0520     0.0963

(1)...CONVERSION AND SORT-PRINT ARE MORE THAT ONE STEP, THEREFORE REGION SIZE IS APPROXIMATE.
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(3)...COST IS CALCULATED AT $0.11 PER MUS, WHERE MUS = (T+0.02*I)*(1+.0036*MIN(R,250)+.0004*R).
      THESE COSTS REFLECT THE OVERNIGHT RATE, WHICH CALCULATES MUS WITH R=82.5K.
(4)...TOTAL ISSUE RUN COST = CONVERSION COST + SEARCH COST + SORT-PRINT COST.
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SUMMARY OF "CAIN" SEARCHES
JANUARY - JUNE, 1972

ISSUE NUMBER DATE OF ISSUE	72/01	72/02	72/03	72/04	72/05	72/06
NUMBER OF CITATIONS	11633	13043	13369	12230	11719	11967
NUMBER OF PROFILES	58	77	89	99	105	110
NUMBER OF CONCEPTS	250	363	411	447	496	514
NUMBER OF TERMS	1720	2336	2672	2969	3260	3414
NUMBER OF ALERTS	3673	4026	4143	3634	3638	3508
PROFILE UPDATE COST	4.01	9.40	12.39	10.37	11.75	7.34
CONVERSION TIME	308.76	347.89	366.74	323.33	325.95	298.37
I/O	5856	6286	6419	6006	5954	5852
REGION	200	200	200	200	200	200
SEARCH TIME	291.26	380.18	443.29	436.81	452.70	447.30
I/O	1006	1120	1075	1077	1104	938
REGION	280	280	280	280	280	280
SORT-PRINT TIME	40.94	50.35	53.34	42.04	44.46	39.05
I/O	13293	14648	15241	13542	13971	11562
REGION(1)	120	120	120	120	120	120
PAGES(2)	1175	2415	2532	2359	2400	2709
COST(3) : CONVERSION	62.31	69.29	72.44	64.88	65.11	60.77
SEARCH	45.55	58.90	68.00	67.06	69.46	68.18
SORT-PRINT	56.63	74.38	77.72	69.36	71.38	66.63
TOTAL(4)	164.50	202.56	218.15	201.30	205.95	195.59
CONCEPTS/PROFILE	4.31	4.71	4.62	4.52	4.72	4.67
TERMS/PROFILE	29.66	30.34	30.02	29.99	31.05	31.04
COST/PROFILE	2.84	2.63	2.45	2.03	1.96	1.78
COST/TERM	0.10	0.09	0.08	0.07	0.06	0.06
ALERTS/PROFILE	63.33	52.29	46.55	36.71	34.65	31.89
CONV.TIME/CITATION	0.0265	0.0267	0.0274	0.0264	0.0278	0.0249
CONV.COST/CITATION	0.0054	0.0053	0.0054	0.0053	0.0056	0.0051
SEARCH TIME/PROFILE	5.02	4.94	4.98	4.41	4.31	4.07
SEARCH COST/PROFILE	0.79	0.76	0.76	0.68	0.66	0.62
SORT-PRINT TIME/ALERT	0.0111	0.0125	0.0129	0.0116	0.0122	0.0111
SORT-PRINT COST/ALERT	0.0154	0.0185	0.0188	0.0191	0.0196	0.0190
TOTAL COST/ALERT	0.0448	0.0503	0.0527	0.0554	0.0566	0.0558

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Current Awareness Services, January-June, 1972

No. of Profiles/No. of Users

Data Base	31 March 1972	30 June 1972
CA-Condensates (Odd-numbered issues)	161/96	201/130
CA-Condensates (Even-numbered issues)	76/40	122/75
CAIN (Nat. Agricultural Library)	89/82	110/99
COMPENDEX (Engineering Index)	-----	43/31
ERIC: Research in Education	-----	48/39
ERIC: Current Index to Journals in Education	-----	48/39
TOTAL	326/185	572/353

Census Tape Service: Summary of Activity through 30 June 1972

	Signed-on Users	Interested
UCLA Faculty	2	5
UCLA Graduate students	11	18
UCLA Undergraduates		
UCLA Centers, Institutes, etc.	1	
Non-UCLA (academic)	1	8
Non-UCLA (non-academic)		8
TOTAL	15	39

Total number of patrons: 54

APPENDIX C

1. CATALOG CARDS FOR ERIC DATA
2. CATALOG CARDS FOR CENSUS DATA

MRDF
Z
5811
R311

[Research in education] Machine Readable Data File
Report resume files. Nov. 1966-
Washington, 1970-
Quarterly update. (ERIC master files)
Library has 1966 to date.

For assistance inquire at the Education and Psychology Library reference desk.

Citations and abstracts of ED numbered documents as issued in Research in education (RIE)

CLU

1. Educational research - Bibl. 2. Education - Bibl. I. ~~U.S.~~ Educational Resources Information Center. II. Title: Report resume files. III. RIE. IV. Series.

ESH

Education - Bibliography

MRDF
Z
5811
R311

[Research in education] Machine Readable Data File
Report resume files. Nov. 1966-
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ESH

Educational research - Bibliography

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Educational Resources Information Center.

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ESH

RIE.

MRDF
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CLU

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ESH

Report resume files.

MRDF
Z
5811
R311

[Research in education] Machine Readable Data File
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CLU

1. Educational research - Bibl. 2. Education - Bibl. I. ~~U. S.~~ Educational Resources Information Center. II. Title: Report resume files. — III. RIE. IV. Series.

ESH

MRDF
HA
201
1970
A2
1971

U. S. Bureau of the Census.
[Census of population and housing, 1970. First count summary tapes] Machine readable data file.

1970 compressed state-merged first count census tapes. File[s] A [and] B. Arlington, Va., DUALabs, 1971.

Max. record size: 1800; max. block size: 5404.

For information and service inquire at reference desk, Public Affairs Service, URL.

Contents. File A. First count tallies: block groups and enumeration districts.-File B.

see next card

ESH

MRDF
HA
201
1970
A2
1971

U. S. Bureau of the Census. [Census of population and housing, 1970. First count summary tapes] Machine readable data file. 1970 compressed state-merged first count summary tapes. File[s] A [and] B. 1971. (card 2)

First count tallies: selected census areas - state, counties, minor civil divisions or county divisions, place segments, place summaries and Congressional Districts.

1. U. S. Census, 19th, 1970. 2. U. S. - Population. 3. Ho using - U. S.

ESH

Housing - U.S.

MRDF
HA
201
1970
A2
1971

U. S. Bureau of the Census.
[Census of population and housing, 1970. First count summary tapes] Machine readable data file.

1970 compressed state-merged first count census tapes: File[s] A [and] B. Arlington, Va., DUALabs, 1971.

Max. record size: 1800; max. block size: 5404.

For information and service inquire at reference desk, Public Affairs Service, URL.

Contents: File A. First count tallies: block groups and enumeration districts.-File B.

CLU

see next card

ESH

Housing - U.S.

MRDF
HA
201
1970
A2
1971

U. S. Bureau of the Census. [Census of population and housing, 1970. First count summary tapes] Machine readable data file. 1970 compressed state-merged first count summary tapes: File[s] A [and] B. 1971. (card 2)

First count tallies: selected census areas - state, counties, minor civil divisions or county divisions, place segments, place summaries and Congressional Districts.

1. U. S. Census, 19th, 1970. 2. U. S. - Population. 3. Housing - U. S.

CLU

ESH

U.S. - Population

MRDF
HA
201
1970
A2
1971

U. S. Bureau of the Census.

[Census of population and housing, 1970. First count summary tapes] Machine readable data file.

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CLU

see next card

ESH

U.S. - Population

MRDF
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1970
A2
1971

U. S. Bureau of the Census. [Census of population and housing, 1970. First count summary tapes] Machine readable data file. 1970 compressed state-merged first count summary tapes: File[s] A [and] B. 1971. (card 2)

First count tallies: selected census areas - state, counties, minor civil divisions or county divisions, place segments, place summaries and Congressional Districts.

1. U. S. Census, 19th, 1970. 2. U. S. - Population. 3. Housing - U. S.

CLU

ESH

APPENDIX D

VISITS AND PRESENTATIONS

4.4. VISITS AND PRESENTATIONS

Place: UC Berkeley
Date: 15-16 January 1971
Project Personnel: R. L. Carmichael and H. Borko
Personnel Contacted: American Association of Library Schools

Place: UC Berkeley
Date: 20-21 January 1971
Project Personnel: R. L. Carmichael
Personnel Contacted: University of California Library Systems Task Force
Summary: Reported on the status of CIS-LSD future integration problem areas.

Place: ILR-LA
Date: 18 January 1971
Project Personnel: R. L. Carmichael
Personnel Contacted: J. Meredith, Research Center for Library and Information Science, Indiana University
Summary: Interested in CIS.

Place: ILR-LA
Date: 24 March 1971
Project Personnel: R. L. Carmichael
Personnel Contacted: L. Livingston, Council on Library Resources, Washington, D. C.
Summary: Interested in CIS.

Place: Los Angeles
Date: January 1971
Project Personnel: P. G. Watson
Personnel Contacted: American Library Association
Summary: Attended meeting.

Place: Arlington, Virginia
Date: February 1971
Project Personnel: Bruce Briggs
Personnel Contacted: Association of Scientific Information Dissemination Centers
Summary: Attended meeting.

Place: CCN; CIS project
Date: 29 March 1971
Project Personnel: CIS staff
Personnel Contacted: Dr. P. Rohn, University of Washington
Summary: Interested in CIS.

Place: CCN; CIS project
Date: 31 March 1971
Project Personnel: CIS staff
Personnel Contacted: Mr. McDonald and Mr. Donnel, Chemical Abstracts Service
Summary: Interested in CIS.

Place: College Park, Maryland
Date: 1-2 April 1971
Project Personnel: P. Donahoe
Personnel Contacted: Association for Computing Machinery's Special Interest Group on Information Retrieval
Summary: Attended meeting.

Place: Computing Center, University of Texas, Dallas
Date: 27-29 April 1971
Project Personnel: Aeint de Boer
Personnel Contacted: Computing Center staff, University of Texas, Dallas
Summary: Installed a retrieval system for demonstration at ALA meeting (20-26 June).

Place: Stanford University

Date: 4 May 1971

Project Personnel: William Kehl, P. G. Watson, Bruce Briggs
Pete Donahoe, Tom Riedel

Personnel Contacted: SPIRES project staff

Summary: Exchanged information about CIS and SPIRES projects; discussed possible areas of cooperation.

Place: UCLA

Date: 13 May 1971

Project Personnel: R. L. Carmichael, P. G. Watson, Bruce Briggs,
Pete Donahoe

Personnel Contacted: Everett Wallace, Systems Librarian;
Steve Farrell, Programmer, UC Riverside

Summary: Discussed cooperative efforts in area of current awareness services.

Place: UC San Francisco

Date: 26 May 1971

Project Personnel: R. L. Carmichael

Personnel Contacted: University of California Library Systems Task Force

Summary: Described Phase IIB plans and schedules.

Place: UCLA

Date: 3-4 June 1971

Project Personnel: CIS staff

Personnel Contacted: Dr. Richard Dougherty, Professor of Library Science, Syracuse University

Summary: Discussed management of information centers, identification of users' information needs, financing of information centers.

Place: University of Georgia, Athens, Georgia
Date: 7 June 1971
Project Personnel: William Jordan
Personnel Contacted: UGA Computer Search Center staff
Summary: Viewed Search Center.

Place: UCLA
Date: 15 June 1971
Project Personnel: Bruce Briggs, P. G. Watson
Personnel Contacted: Ken Carroll, American Institute of Physics
Summary: Visited CIS.

Place: Dallas, Texas
Date: 20-26 June 1971
Project Personnel: P. G. Watson
Personnel Contacted: American Library Association (annual conference)
Summary: Prepared tutorials for preconference institute on "Computer Based Reference Service;" attended meetings of the Information Retrieval Committee of the Reference Services Division, the Library Research Round Table, and the ALA subcommittee on the cataloging of machine-readable data files.

Place: UCLA
Date: 13 July 1971
Project Personnel: Institute of Library Research staff
Personnel Contacted: Russell Young of the California State Finance Department
Summary: Discussed project status.

Place: Cranfield Institute of Technology, Cranfield, England
Date: 20-23 July 1971
Project Personnel: P. G. Watson
Personnel Contacted: Third Cranfield International Conference on Mechanized Information Storage and Retrieval Systems.
Summary: Delivered a paper on "Computerized Information Services for the University Community" written by Bruce Briggs and himself.

Place: UC San Diego
Date: 27 July 1971
Project Personnel: R. L. Carmichael
Personnel Contacted: University of California Library Systems Task Force
Summary: Reported on the CIS Phase IIA Final Report and on CIS Phase IIB plans and schedules.

Place: National Lending Library for Science and Technology, Boston Spa, England
Date: 23 August 1971
Project Personnel: P. G. Watson
Personnel Contacted: Dr. D. J. Urquhart; Miss R. M. Bunn
Summary: Discussed the National Lending Library's role in the provision of new types of library service to science and technology.

Place: Jerusalem, Israel
Date: August, 1971
Project Personnel: Jerry Pine
Personnel Contacted: Jerusalem Conference on Information Technology and the Seventh National Conference on Data Processing; spoke with S. O. Falaki, University of Lagos, V. Rajaraman, Indian Institute of Technology.
Summary: Attended sessions on information storage and retrieval, data management, and data bases.

Place: Research Center for Library and Information Services at Indiana University
Date: 19-20 August 1971
Project Personnel: R. L. Carmichael
Personnel Contacted: Research Center staff
Summary: Discussed methods of identifying user needs and the problems of defining the roles and performance characteristics of an information specialist.

Place: University of California at Davis
Date: 14 September 1971
Project Personnel: Bruce Briggs
Personnel Contacted: Dr. Ed Jestes, Coordinator of Library Systems and Automation
Summary: Discussed cooperative efforts between UCD and UCLA in providing service from magnetic data bases.

Place: University of California at Berkeley
Date: 14 September 1971; 17 September 1971
Project Personnel: Bruce Briggs
Personnel Contacted: Mr. Ralph Shoffner, Manager of the Institute of Library Research
Summary: Discussed the extension of CIS services to the UCB campus, and the role of ILR in the UC-wide application of CIS.

Place: Technical Information Division of the Lawrence Radiation Laboratory, Berkeley
Date: 15 September 1971
Project Personnel: Bruce Briggs
Personnel Contacted: Miss Gloria Smith, Miss Gail Jones, Dr. Raymond Wakerling, Mr. Sam Perry
Summary: Discussed exchange of services and the cooperative development of new services.

Place: Stanford University
Date: 16 September 1971
Project Personnel: Bruce Briggs
Personnel Contacted: Dr. Ed Parker and Mr. Doug Ferguson of the SPIRES project
Summary: Discussed conference to be held at UCLA in November, exchange of services, and the paths of future developments at each campus.

Place: UC San Francisco
Date: 24 September 1971
Project Personnel: R. L. Carmichael
Personnel Contacted: UNCLSTAF
Summary: Reported on CIS Phase IIB progress and a number of university-wide service aspects.

Place: Chicago, Illinois
Date: 26-28 September 1971
Project Personnel: Bruce Briggs
Personnel Contacted: ASIDIC meeting
Summary: Round table discussion of problems common to centers.

Place: Ventura, California
Date: 8-10 October 1971
Project Personnel: R. L. Carmichael
Personnel Contacted: ASIS-SLA seminar and workshop attendees
Summary: Discussed cost analysis techniques applied to library operations.

Place: ILR-LA
Date: 3 November 1971
Project Personnel: ILR staff
Personnel Contacted: Jerry Lieblich and David Simonton of Global Engineering Documentation Services
Summary: Discussed data base development for engineering standards and CIS development plans.

Place: Denver, Colorado
Date: 7-11 November 1971
Project Personnel: Ida Riordan
Personnel Contacted: 1971 Annual Meeting of the American Society for Information Science (ASIS)
Summary: Attended a tutorial on "Collecting and Reporting Real Costs of Information Systems," and a workshop on "The User Interface for Interactive Bibliographic Searching."

Place: San Diego, California
Date: 11-12 November 1971
Project Personnel: Linda Miroff and Aeint de Boer
Personnel Contacted: 1971 ACM-SIGFIDET Workshop on Data Description, Access, and Control
Summary: Discussed problems of data description and data privacy and integrity in generalized data base systems.

Place: Las Vegas, Nevada
Date: 16-18 November 1971
Project Personnel: Neil Ludlam
Personnel Contacted: 1971 Fall Joint Computer Conference
Summary: Attended sessions on data base management and data security.

Place: UC Riverside; UC Irvine
Date: 11-12 November 1971; 6 December 1971
Project Personnel: R. L. Carmichael
Personnel Contacted: University of California Library Council members; UNCLSTAF
Summary: Presented a CIS progress report.

Place: UCLA
Date: 2 February 1972
Project Personnel: CIS staff
Personnel Contacted: Junior College Leadership Program
Summary: Demonstrated an ERIC retrieval system developed by CIS.

Place: Dallas, Texas
Date: 28-29 February 1972
Project Personnel: CIS staff
Personnel Contacted: Over 100 viewers; organized by the ERIC Clearinghouse for Junior Colleges
Summary: Demonstration using ERIC tapes in conjunction with an automatic microfiche retrieval unit; topic from Dallas communicated through on-line video console to UCLA's CCN, computer search carried out, and results displayed on CRT in Dallas.

ERIC
Full Text Provided by ERIC

Place: UCLA

Date: March 1972

Project Personnel: CIS staff

Personnel Contacted: Vladimir Borovansky, chief science librarian, Arizona State University at Tempe

Summary: Discussed procedures for using CIS services.

Place: San Francisco, California

Date: 6-10 March 1972

Project Personnel: Neil Ludlam

Personnel Contacted: SHARE XXXVIII meeting

Summary: Attended Share Data Base Committee discussion.

Place: Atlanta, Georgia

Date: 19-21 March 1972

Project Personnel: Bruce Briggs

Personnel Contacted: ASIDIC meeting attendees

Summary: Attended discussions and sessions.

Place: UC Davis, UC Berkeley, Stanford University

Date: 21-24 March 1972

Project Personnel: P. G. Watson

Personnel Contacted: Library staffs

Summary: Discussed cooperative information services from CIS data bases.

Place: UC San Francisco

Date: 23 March 1972

Project Personnel: R. L. Carmichael

Personnel Contacted: UNCLSTAF

Summary: Reported on CIS progress during the fourth quarter.

Place: UCLA

Date: 11 April 1972

Project Personnel: P. G. Watson

Personnel Contacted: Mrs. Elizabeth Stecher, librarian in charge of technical services, Royal Melbourne Institute of Technology, Australia

Summary: Visited Systems Department, URL; discussed CIS.

Place: UCLA, Systems Department, URL

Date: 12 April 1972

Project Personnel: P. G. Watson

Personnel Contacted: Evan Gray, Foundation Center, New York

Summary: Discussed possible acquisition of the computerized Grants Index of the Foundation Center by UCLA.

Place: UCLA Library

Date: 1 May 1972

Project Personnel: P. G. Watson

Personnel Contacted: Dr. F. G. Kaltwasser, Librarian of the Bavarian State Library, Munich, and Dr. J. Stoltzenburg, Librarian of the University Library of Constance

Summary: Exchanged information on new developments in library automation.

Place: UCLA, SLS

Date: 18 May 1972

Project Personnel: Christy Robbins, P. G. Watson

Personnel Contacted: Reference class in School of Library Service

Summary: Presented an introduction and overview of the Center for Information Services.

Place: Washington, D. C.

Date: 12-14 June 1972

Project Personnel: Sue Ann Power

Personnel Contacted: Staff of DUALabs

Summary: Attended training seminar on 4th Count 1970 Census data.