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STAFF FOR THE COMMUNITY INFORMATION PROCESSING STUDY

(SCIPS)

STAGE I REPORT

Volume I

SUMMARY AND CONCLUSIONS, RECOMMENDATIONS, A LIST OF REFERENCES, AND A LIST OF ILLUSTRATIONS

October 1963

THIS MATERIAL CONTAINS INFORMATION AFFECTING THE NATIONAL DEFENSE OF THE UNITED STATES WITHIN THE MEANING OF THE ESPIONAGE LAWS, TITLE 18, USC, SECTIONS 793 AND 794, THE TRANSMISSION OR REVELATION OF WHICH IN ANY MANNER TO AN UNAUTHORIZED PERSON IS PROHIBITED BY LAW.

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STAFF FOR THE COMMUNITY INFORMATION PROCESSING STUDY

(SCIPS)

SCIPS D-2/3
17 October 1963

MEMORANDUM FOR: Chairman, United States Intelligence Board

THROUGH : Chairman, Committee on Documentation, United States Intelligence Board

SUBJECT : Transmittal of Stage I Report

REFERENCE : (a) CODIB D-82/9 and USIB D-39.7/1, 24 July 1961 (Terms of Reference)
(b) CODIB D-82/16 and USIB D-39.7/3, 23 February 1962 (Stage I Plan)
(c) USIB M-202, 28 February 1962

Transmitted in accordance with references is the SCIPS Stage I report, which is submitted in six volumes. Volumes II through VI are of varying security classifications and are published under separate cover. Volume I, forwarded herewith, contains the summary and conclusions, the recommendations, a list of references, and a list of illustrations, together with a table of contents for all volumes.

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Director/SCIPS

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FOREWORD

The USIB Committee on Documentation (CODIB), like its sister committees, exists as a mechanism for interagency coordination of an intelligence activity. In the case of CODIB the activity being coordinated is that activity called "information processing" (IP). Information processing is that central part of the intelligence cycle between intelligence collection and intelligence analysis-production. There is relatively common agreement as to what activities belong in the core of the IP sector, but the edges are not so distinct or agreed. This vagueness of boundaries is due to (1) an inability to agree on useful criteria as to when "information" becomes "intelligence" and (2) the fact that formal organizational structure is influenced by many factors other than functional division. With this situation pertaining, it is very safe to say that CODIB is not the only USIB committee trying to coordinate in the area of information processing. But it was CODIB that conceived and initiated and (with subsequent support from the Joint Study Group and the Director's Coordination Staff) was given monitorship by USIB over a unique study effort known as SCIPS (Staff for the Community Information Processing Study). The term "unique" is an understatement of description. The SCIPS effort is not unique in outward appearance ("another committee," "another feasibility study," "another coordination staff," and so forth), but it is unique in the scope and area of application of the methods used. Even more important, and unique in the intelligence community, is the tenet governing the approach and content of the SCIPS effort to date. That tenet is that the lack of factual and statistical information about current operations is the major cause of present problems and inadequacies and of the corollary to it -- that if such information were available, management at the respective levels would utilize it to the net benefit of the intelligence community.

The following report and its appendages, both here published and unpublished, is the formal, but not the sole, product of Stage I of the SCIPS effort. The story is long and the product so voluminous that surely no one person will ever read it all -- but, then, what better time to test the basic tenet and corollary?

Introduction

"Intelligence information processing" resides in two or three worlds simultaneously:

1. From an organizational point of view, it is a part of the several independent departmental operations.

2. From the point of view of its mission, it is an integral part of the United States Intelligence Community.

3. From the point of view of discipline, it is historically part of the "library" and more recently the scientific and technical information processing world.

As used in this study, intelligence information is defined as information about foreign persons, activities, subjects, places, and things. Again, "processing" refers to activities sequentially following initial or field acquisition and preceding intelligence analysis. Thus the term as used herein excludes the processing of the following:

1. Business-type data (payroll, budget, inventory, and so forth)

2. Management control data (monthly status reports, research and development [R & D], and so forth), and internal security (badge control system, employee clearance records, and so forth)

3. Scientific computation

The study does include, in addition to substantive foreign information, the procedures and files used for the control of the processing of substantive information. It is a certainty that automatic data processing (ADP) and the computer are only minority constituents of intelligence information processing.

The composition of the US Intelligence Community has to be defined usefully for each purpose under consideration. The composition of the community for information processing purposes is the broadest because processing occurs all the way from every initiating point inbound to

every receiving point outbound. The scope and depth of study envisioned for SCIPS in Stage I and ultimately is given in Appendix G, as are the authorization, terms of reference, and other documentation.

Size, time pressures, security classifications, varying audience interest, and reproduction limitations all prompted publication of the report in separate volumes:

25X1	Volume I [redacted]	Contains the summary and conclusions, the recommendations, a list of references, and a list of illustrations, together with a table of contents for all volumes.
25X1	Volume II [redacted]	Contains the study findings and discussion, both narrative and graphic (Appendix A), including Appendix F, which is integral to the findings but separable on a security classification basis of SECRET.
25X1	Volume III [redacted]	Contains Appendixes B-1, C, D, and E, which are essentially reproductions of computer print-outs from the SCIPS data files selected on the basis of broad interest. The fact that Appendix B-1 was hand-typewritten from a computer print-out is the more obvious sad commentary on the state-of-the-art.
25X1	Volume IV [redacted]	Contains Appendix B-2, which also is a reproduction of a computer print-out considered to be more useful on a broad basis at the lower classification that it enjoys.
25X1	Volume V [redacted]	Contains Appendix G, the narrative "SCIPS story," together with the exhibits and a list of references that document the story, the survey system, and the computer data base system. Not included in the volume are three exhibits on the computer system. These exhibits are already available in a limited number of copies and were not reproduced.

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Volume VI

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Contains Appendix H, which deals with photographic information processing.

The report is extensive because

1. A great volume of valuable and useful information was produced,

2. The potential audience is wide and varied,

3. Periodically, comprehensive summarization of accumulated findings is needed so that fragments can be discarded and forward progress enhanced, and

4. The SCIPS Stage I Report may be the terminal report.

SCIPS STAGE I REPORT

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SCIPS STAGE I REPORT

VOLUME I

I. Summary and Conclusions

The summarization of a long and complex effort such as that represented in the following report is most difficult. On the other hand, the summary and conclusions are fortunately not so important as the findings, from which the diligent can draw his own conclusions. This summary is divided into three sections -- hopefully one or another section will be that which a given member of the varied audience is seeking, and some intersectional redundancy will thereby be forgiven. The conclusions reached are not the result of a poll of experts or even of system operators. Rather, the conclusions are those resulting from a small group of people who had a unique look at the situation. Those who seek the answer will be disappointed. Those who seek specific remedies for local symptoms of system failure also will be disappointed. The report will be of assistance, however, for the person who is seeking a perspective and framework of guidelines within which to do some long-term planning and capital investment in improving information processing in the community.

The first section (A) deals with the present total system or situation -- that is, what is the problem? The second section (B) points out and discusses some of the major problem areas of information processing and then itemizes other selected findings and problems identified during the study. The third section (C) concerns the SCIPS effort itself, past and future. The last section (D) considers community management factors together with a range of alternatives, needs, and conditions for future action.

A. The Situation

1. The Present System of Systems

Information processing for intelligence purposes can be regarded as a cyclic sequence of operations. Within the community, there is a definite tendency for each component to attempt to gain control over all the information that it needs from the point of acquisition through all phases of processing, production, and presentation. When this is not possible, the component will attempt to receive the information in as raw a form as possible and establish and maintain control from that point on, through the remaining processing, production, and presentation. Thus the community system can be characterized as comprising several acquisition-oriented processing systems.

Adjustments are continually being made among these component operations to achieve maximum performance. Many of the same items of information, however, are continually being acquired and processed by more than one organizational "system." In view of present acquisition-processing "system" autonomy, many potentially significant information intersections among these systems are overlooked during "normal" operations. This fact is particularly striking, for during times of stress these very correlations are sought by concentrating the focus of all available acquisition-processing systems on critical subjects or areas.

During normal operations, correlations between systems are obscured by the following:

a. Different reporting criteria and characteristics,

b. Different technical processing requirements imposed by method of acquisition,

c. Different lapse times from acquisition to initial and subsequent exploitation, and

d. Different formatting, different subject-area content representation and coding requirements presently applied within each acquisition-processing system throughout their processing cycles.

An examination of present information processes conducted by USIB components reveals certain fundamental orientations that may explain "why we are the way we are" and what might reasonably be done to improve our condition.

The "picture" of information processing (items, flows, processes, and files) reveals that present USIB "systems" are strongly oriented to method of acquisition of the information. Thus we have major acquisition-processing systems associated with human observation and reporting; photography; interception of communications in a variety of forms; and product exploitation, both publications and material.

Some of these acquisition-processing systems employ various techniques and devices that require strict access control to provide source-method protection. Consequently, information acquired by high risk methods retains high risk controls through much if not all of its

processing. Much information will remain in rigid control channels as long as its existence in US hands could have come about only by the employment of a certain acquisition technique. A tool in lowering access restrictions is the existence of collateral coverage whereby low or no risk methods are directed to acquiring identical information and thus permit wider access to the same information with credibility remaining at the restricted access level. Directed acquisition of this "collateral" information need only be undertaken after it has been determined that such information has not been already acquired and is residing in one or more intelligence community files.

However, our inability to identify information in files only adds further confusion and frustration. From the number and size of, and the limited access points to, the existing files as presented in the findings section, it would appear often to be more expeditious to reacquire a specific item of information from the field than to determine that it has already been acquired and where it has been filed and to retrieve it therefrom. In numerous instances the analyst does not have time to exercise either option -- he must proceed with what he has or can acquire in a short period of time.

Such conditions must continue to obtain in the absence of an effective information correlation capability across "sources." In addition, until such information control is achieved our ability to evaluate performance capabilities of acquisition-processing "systems" will remain largely intuitive, sufficient to justify the implementation of additional acquisition methods but not sufficient to demonstrate which of the present methods deliver unique information in a timely manner and which, if any, do not do so.

The need to improve our ability to deliver potentially significant information in forms useful for exploitation and to allocate limited exploitation resources justifies immediate system-wide adjustments leading to sufficient information control to enable cross-source correlation. These adjustments should address at the outset those processing variations and accommodations that cause an item of information to lose its identity to a degree that cross-source correlation becomes impossible and retrospective research must be done at the document rather than item of information level.

Furthermore, these adjustments should be made at that point in the process where they will do the most good. This will, in many cases, seem to impinge on the "private preserves" of our source-oriented systems. This initial control point has to be after meaningful form is derived but before great proliferation. Therefore, the real impingement on present "technical exploitation" organization elements will be in the form of different but greater responsibilities.

However, the only alternative seems to be the present practice, which is to gain control over information content only after it reaches the analytic support environment. This practice results of course in the reproduction, transformation, processing, and filing of the items when and wherever it is deemed desirable and resources permit. The increasing flow of unfiltered, uncontrolled information into fourth and fifth echelon processing (all-source synthesis) implies that the community is already following this course of action on a pragmatic basis, even though its resources are and always will be demonstrably insufficient to do so.

2. Information Control

Technical processing, source protection, time of receipt, format design, content representation techniques, and personal and organizational preference all militate against efforts to identify and maintain control of relationships existing in items of information acquired and processed independently. As items of information are acquired and reduced to comprehensible form, they are reproduced for local and lateral as well as onward distribution. Once this occurs, this information finds its way into post, station, and command summaries, briefs, and digests which in turn receive local and lateral distribution and also are placed into the main streams of dissemination. In some cases, source identification may be obscured and second-order reporting might be regarded as corroboration rather than repetition. Items received at numerous processing points may be reproduced, if necessary, and filed in a manner to provide local access. The information as initially acquired from collection or reacquired from files is incorporated in analytic outputs that are published and disseminated to consumers, many of whom also receive the "raw" take. Both of these may be considered as equally "raw" to that consumer who will reestimate in accordance with the dictates of command, need, point of view, or capability.

There is always the hope of "filter" operations at successive levels in the collection-analysis cycle. ("Filter" means to associate fragmentary information on a rational basis and forward to the next level only, but all of, the nonredundant significant information.)

It must be recognized that the ability, particularly of intermediaries, to determine what is or will be of significant intelligence value, even when based on experience, is suspect. The threat of reserving to the user the determination of significance is inundation of the user in duplicative and insignificant reporting. This need not be the case if (a) judgment as to significance is made only after redundant reporting within a source-system has been eliminated by the

technical processors and if (b) the information has been brought under initial content control. Standard formats are not necessarily a prerequisite of content control. This approach would impinge on the present de facto prerogatives of the source-oriented systems in three respects: (a) requiring their effective elimination of duplicate reporting (and this could be a tremendous burden in some source-systems), (b) imposition of content control, and (c) filtering for significance based on content control against consumer requirements expressed in the same content control terms. Prerogatives notwithstanding, if our problems are to be solved, not salved, system adjustments must be made at points in the process where they will do the most good. Such a point occurs where items of information are being put into a comprehensible report form but before great numbers of copies have been released. This implies, as a generalization, that some content control and related filtering must be introduced at the second not the first or fourth echelons, and it must be done in all intelligence "worlds" including Photographic, Foreign Publications, Foreign Broadcasts, Communications Intelligence, Human Observation, and so forth. It is believed that this information control can be achieved without jeopardy to the early warning or watch function, the primary products for which would not have to be delayed. On the other hand, achieving this content control would require severe and basic changes in the present division of functional responsibility, not so much between agencies as between elements within each source-oriented system. The collectors, the technical exploiters, the reference servicer, and the consumer would be redividing the load -- and the present division is deeply ingrained.

B. Information Processing Problems

1. Information Exchange

The present policy of free information exchange dare not be questioned in the face of "anti-Pearl Harbor" missions and in the absence of a good alternative, but the result of this practice is the rapidly approaching situation where "everyone needs everything to do anything," and consequently there may soon be no small or medium-size information processing problems, only large ones. If this day does arrive, then the supposedly "only" policy of free exchange will have failed and an alternative policy will have to evolve. The alternative may lie in the possibility that nobody really needs or even wants everything but is forced to require everything for even reasonable assurance of getting what is needed. It is believed that the latter situation is the true one and that the policy is ineffective in that regard. More important than changing the policy, however, is to facilitate selectivity through better content-control practices, because the other and more important result of the policy is lack of responsibility in providing information support. The manifestation of

this most serious situation is the list of items and the list of files appended to this report. Can an analyst really be held responsible to "consider all pertinent available information" when it is of this variety, dispersion, and form? Are the present file holders responsible for information support to outside analysts? The only responsibility on the books is to the policy of "free exchange of information," and that is legally satisfied by the initial dissemination system. In addition, if a specific document is cited, it will even be reproduced and again provided, but it is a certainty that no other component has a need-to-know for the entire file, and the file is not built to extract on those criteria for which there is a need-to-know by other analysts or components. If the file is big enough to ensure foundering by the recipient, it might be provided at cost despite lack of full need-to-know. It does not seem possible that the policy as stated could be wrong, but when it becomes a substitute or provides an escape for needed functional responsibility, then it is wrong.

2. Indexing and Information Control

Indexing is still, as it was when this study started, considered central to all the major problems of data exchange, intersystem compatibility, report formatting, and duplicate processing. The difference now is that the indexing problem is not what it seemed. The real indexing problem is not the codes used but the elements of information to be controlled. Analysis of formatted files shows that only about one-half of the elements are concerned with information content control, while 10 percent are concerned with local processing factors not essential to information exchange, and the rest are ephemeral or document description type elements. It is this latter group that should be the first concern of data exchange, and although it appears amenable to standardization, it has not been attacked. For the information elements providing content control the number of different indexing tools and procedures is multitudinous, and yet this is the area of past standardization efforts.

As discussed previously, the point at which standardization of content control has been sought in the past is too late in the process to be achieved on a community-wide basis and may not be desirable. Some of the failure to achieve a greater degree of standardization is due to deficiencies in the tools. There is no present single set of indexing tools that would seem to fill a majority of the community's needs. The Intelligence Subject Code (ISC) would be a better tool if a fully hierarchic notation scheme were developed and issued together with full conversion equivalents to the present notation. There is still a great need for a good, well-coordinated tool for "Biographic" and "Organizations" information elements -- either as additional chapters of the ISC or as separate tools. Surely it is

recognized by now that a code is only a part of a system -- a tool -- and that neither standard tools alone nor identical equipment will ensure compatibility of "systems," which include instructions, training, supervision, items, dictionaries, people, and so forth. The present ISC does suffer from inadequate coordination during development, but the main point is that it is a good tool and no single code or set of codes is going to fill a broad spectrum of local deep indexing needs. So the object is to provide good tools for local indexing in depth and keep legislation of standards in the content-control category to a shallow common depth and at a point in the process where it is implementable.

Although not unanimous, the appropriate "common depth" for content control seems to be (a) for area: a country code such as the AFIC or NSA digraph plus bloc codes such as the ISC area trigraph codes and (b) for subject: somewhere between about 20 categories and the 300 that would result from the first 3 digits of the ISC (using a true hierarchic notation scheme), dropping many entries but adding some for organizations, biographic, and other special popular elements of information. The area digraph codes are not so far apart, and direct conversion with other area codes is a reasonable prospect. The subject code is another matter. The depth of content control will have to be not the conceptual ideal but a compromise with other factors. The principal influencing factor is the point in the process where the content control is first applied. Within a given "source-oriented" system the flow is typically hourglass in configuration. There are a great many points of acquisition from which raw information flows to one or a few technical exploitation/publication points where it is edited, reproduced, published, and thence disseminated to multitudinous activities in the community. The "publishers" points are identifiable within each of the source "worlds" and comprise a relatively few and finite number for the bulk of information reporting, and therein lies a reasonable promise of uniformity. Even so the content coding system must be simple, not allowed to be elaborated until after a long period of successful application, if ever, and must be put on the master form of the item from which all successive copies are produced. DDP/FI, STAT [redacted] NSA, [redacted] DIA/AC, RM/STATE, and NPIC are the organizations within the intelligence community that identify and eliminate redundant reporting and serve as initial distribution points for the bulk of published intelligence information. A community-sponsored content control coding (4C) applied by each of the above identified organizations plus perhaps four to five lesser points (by the editorial staff in some cases and technical exploiters in others) would provide some degree of common content control at the most effective point. Such coding might eliminate some of the necessity for multiple readings of the source document by disseminators within the community. The 4C 25X1

code also might serve as filing and indexing guides by the individual research officers or other points where deeper indexing resources are not available. Such a code must be specific enough so that intersection of multiple broad subjects and areas will give a useful discrimination and yet must be shallow enough to facilitate reasonably consistent application by other than coding specialists. The code also must require little updating and a minimum of rules and instructions for application. It is believed that a code meeting these criteria can be developed, and relatively easily if too much is not expected of it. There should not be much invested in its application, and then, too, many benefits will not be expected to result -- for example, it would not be expected to replace the ISC, and it would not necessarily enable automatic dissemination. When combined with standard item identification the 4C code would be the first real step, however unsophisticated, in intersystem compatibility and data exchange on a community scale, and untold benefits might be achieved, especially in comparison with the limited results of the past 10 years of reissuing "policies" and putting official seals on "coordinated codes."

It is believed, as indicated by the element occurrence distribution in present formatted files, that there are considerable potential benefits and opportunities in community standardization of item description elements (versus content description or processing elements). These elements should be finite in number and less dependent upon "point of view" (and therefore less controversial) than content elements but would do much to facilitate data exchange and communication between systems in identifying items, categories of items, and terms of requests. There needs to be a unique list of such elements (as well as content control elements) developed (present SCIPS data base will provide the bulk) for community use as well as for departmental system designers. There needs to be further specific identification (possibly machine-controlled) and publication of coding tools being used to show who is really doing what with which information elements, for the use of both system designers and consumers. The development and publication (not necessarily legislation) of "how to" handbooks for information control system operators would be useful tools for the community to sponsor. The general theme of this report is particularly appropriate for this section -- the problem of undercontrol of information is more critical than duplication of control processing. Duplicate control processing is symptomatic of the real problem, which is lack of information control.

3. Report Formatting

General "report formatting" requirements for true automatic input to files as implied by present file formats are unknown and will continue to be unknown for a long time to come -- that is,

not until there is information content control over items and files. For specially designed automated files the formatting of a few specific report series will prove to be useful, if machine readable but not electrically transmitted. These cases are not going to be frequent enough to have serious impact on the community in proportion to the total system. The first step in automatic input is to identify the item; then to determine the information elements; then to standardize on a way to identify (tag) the elements; and then to consider format, machine readability, and carrier. If taken in this sequence, there are appreciable processing benefits which result from each step and which are not dependent upon the success of the next step or upon automation.

Although a special survey form was specifically designed to elicit report formatting requirements for automatic input there were no responses. It is believed that although part of the "no response" was due to surveyor deficiencies, there were two other good and sufficient reasons: (a) the present state-of-the-art in IP does not enable automatic input, even when machine-readable, and (b) the present systems are not developed to a level where such requirements are determinable. There are almost some exceptions to these generalizations. In the interim and in preparation for the time when those two conditions are overcome the best community action would be to

a. Standardize item (series) identification,

b. Develop common lists of information elements from present files,

c. Develop standard element identifications (standard within a series sometimes and more often between series), and

d. Then start using the element identifications in particular series having greatest impact.

Up to and somewhat beyond this point the using systems probably will have to develop their own input means to fit local system design. A little further in development fully standard formats might be considered. The only other interim useful standardization would be to adopt a standard character set, and the set recently adopted by the American Standards Association warrants first consideration.

4. Systems Integration and State-of-the-Art

After viewing the dispersion and variety of information processing (IP) systems just within the scope of the Stage I study,

it is understandable why everyone is concerned with systems "integration" or "interface." After viewing the present state of automation and true information control it is also more understandable why systems do not seem to "integrate" or "interface." The most pressing systems integration-interface problems seem to be between components within agencies more than between agencies, but virtually all agencies have these problems. It is not only the state-of-the-art that inhibits system integration-interface -- it is also the inability to identify the systems in all the necessary terms.

A state-of-the-art survey was not made during Stage I. However, after viewing present computer applications, examining the IP problem, and actually experiencing an application (the SCIPS automated data base), it is doubted that present general-purpose computers will ever solve the bulk information processing problems in the substantive intelligence community. It is not that they are not conceptually adaptable to the major problems -- it is just that the implementation requirements are self-defeating. Present computers are only truly successful when used for highly structured and circumscribed processing, and even then they take man only halfway to his problem solution. The present computers must and should be used even more than they are in the intelligence community, but on specific problems. The pitfall seems to be the building of an entire information processing system around a general-purpose computer. The IP system should be designed and performance specifications determined, and then it will become clear at what points in the system present electronic data processing (EDP) equipment should be used. It will also become more clear which functions of the system require research and development to make significant gains in capabilities. It is believed that intelligence information processing problems include requirements for EDP equipment quite different from those represented by today's general-purpose computer. Many of these requirements might well be met by developments in the electro-optical, content-addressable/associative, or the analog equipment areas. The state-of-the-art solution will be successful and timely in direct proportion to the degree of specification of the problems to be solved. So what is required is <u>problem specification</u> (not statements of objectives or procurement requirements) by the community and then <u>applied research</u> on the real and significant problems by the joint efforts of the best people that the community and private industry have. Unfortunately, in that single-sentence condition there are five or six specific pitfalls; however, there is a good probability of success if the pitfalls are avoided. Unless we recognize those problem areas not susceptible to solution with present EDP systems and redirect our money, manpower, and attention resources, significant gain will never be achieved. The present-day computers are performing an invaluable function on special problems, and more of these applications should be made (including individual specific problems in

central reference facilities). Unfortunately, like the policy for free exchange of information substituting for information support responsibilities, the computer in "total system" applications has become a substitute for systems engineering. If the reason for this is the lack of systems engineers, rather than too much vendor salesmanship to the executives, then the community has yet another prerequisite to work on. The first task then, is to identify adequately the system such that present techniques can be best applied and good focus given to the development of critical additional techniques. IP systems will then attain a better degree of information control, which is the key to systems integration/interface-versus amalgamation. The best ready-made method known that might provide adequate system identification is that used in the SCIPS field survey system.

5. Item Identification

Items flowing throughout the community contain a variety of information. In some cases an attempt is made to limit and identify the scope of the subject matter by establishing specific reports series for specific subjects. However, these are the exceptions rather than the rule. In the greater number of cases, a given issue of a series may contain information on any subject or in extreme cases any number of subjects. Consequently, it becomes necessary to peruse each issue to determine information content. This in itself would not present much of a problem if each issue required only one reading. Many copies of each issue are produced, which are read over and over by many different people. Seldom, if ever, is the subject (or subjects) of the document designated. Generally, external notations on the documents consist of routing slips designating the organization components which should get the document but no indication as to why they are getting it. The result is that every component and subcomponent that gets a document must read the document to determine subject content. Report titles, even when most appropriate to the individual report, are often either too general to provide sufficient discrimination on subject content or are so specific as to become technical and prevent a nontechnical screener from properly categorizing the item.

When the term "dissemination discrimination" or "information control" is used, most reactions are negative because of the inference of more restrictive practices. This reaction is based on the false belief that everybody is now getting everything. The Stage I data base is proof enough that this is not the case [see Figures III r (1-24)].* The 32,000 locally identified items were resolved into some 14,000 items. On the average, of the 14,000 items identified during survey, any one of them occurred in only 2.3 of the some 50 organizations

* For the illustrations, see Appendix A, Volume II.

surveyed. Even subtracting the 10,000 foreign publications, the ratio is less than four organizations for the same item. Failure to identify items accounts for some of this lack of commonness, but the uncommon occurrences of items is still dramatic. Although not yet analyzed, it is suspected that there are some 500 to 1,000 of the 4,000 non-foreign-publication items that account for most of even the 4 to 1 ratio -- meaning that the other 3,000 or so items are almost unique to one organization. Whatever overstatement of the case the study figures cause, there can be no doubt that there is a high degree of selectivity over-all, even though "everybody" gets a certain group of items. The general implication of concern here is not costly duplication but the danger of missed items.

A remarkable aspect of the community's information processing operations, as implied by the inability to collect (at least readily) the survey information, is that present systems do not know, and do not seem to care to know, what individual items in what volume are coming into the system for processing or from whom. Neither do they know what specific items are going into which file, and often they do not know the file size or growth rate. Although the foregoing is of course a generalization, it was so common that in retrospect it seems a phenomenon. These same systems usually had prolific records on their own processes occurrences, but not on the items to which the processes were applied.

It was realized very early in the study that if we were to trace the flow of information in the community, we must be able to identify specific items of information uniquely regardless of where they appeared or what they were called. However, it was also recognized that we would not know what the specific items were until after the completion of the survey. It was therefore necessary first to establish an item concept and then during the initial survey to record descriptive information about items for subsequent comparison and identification. This descriptive information consisted primarily of the organization being surveyed, the originating organization of each item, the series or serial designation (if any), and the item title.

After the information collected on the survey sheets had been entered in the SCIPS item file, computer print-outs were made and unique SCIPS item numbers were assigned to each locally described item. Unfortunately it was not always possible for the surveyor to identify individual items at every organization surveyed, because records (if any) were not kept in the same way. Items were very often included in aggregations that forced the use of "item group" and "super item" identification numbers. Obviously, when the items could no longer be identified uniquely, the study of the further flow and processing of the item could not be done. However, when the SCIPS item numbering was possible, it permitted us to develop flow patterns of information and greatly facilitated the manipulation and analysis of the data.

If there is to be efficient management of the flow, processing, and filing of information in the community, or further study thereof, it is important that some standard method be instituted to identify the information items. Such a method should result in a published and maintained authoritative list of items (something like Appendix B-1, Volume III) which would be used in management record keeping and facilitate intersystem document identification for information exchange. Just the availability of such a list, even without legislating its use, would result in some degree of improvement in record keeping and communication.

One approach to the establishment of such an authoritative item list would be as follows:

a. Select from the SCIPS Stage I data the items already sufficiently identified (see Appendixes B-1 [Volume III] and B-2 [Volume IV] and Exhibit a [Appendix G, Volume V]). Make corrections to standardize title and originator.

b. Reestablish the mechanized item file, utilizing provisions for additions or deletions.

c. Design and print input forms to be used for additions and deletions to the file.

d. Resume the "product-organization" study (see Exhibit a, Appendix G, Volume V), adding items which can be identified positively.

e. Make print-outs of items by originating organization. Send the lists and a supply of forms to the originating organizations for correction, deletion, and additions. Make provision for continuing additions and deletions by these organizations.

f. Design and implement a standard community item numbering system. This would not be substituted for present originator numbering systems or necessarily obviate accession numbering. The only thing worse than yet another number as here

proposed is to try to do everything with one numbering system.

g. Maintain the file and provide periodic item catalogs on a community wide basis.

6. Other Observations

Given below without further discussion are selected observations and questions deriving from the Stage I data. No significance or validity factor is implied by the order in which listed. Parenthetical references are to particularly related sections or data figures in Section III (Findings and Discussion), Volume II, of this Stage I Report.

a. Information processing is not very centralized within the intelligence agencies (see Section III, A, 1, Volume II).

b. The recognized central reference activity is nearly the last place to get EDP (see Figures III f-i).*

c. There are already more "pieces" of EDP equipment than EAM, but files are still by far punched card versus magnetic tape -- so EDP is present but not impacting on files picture.

d. In general, from the clerical to the professional ratio, the IP systems must be neither particularly sophisticated (requiring a high professional to clerical ratio) nor routinized (requiring a high clerical to professional ratio) (see Figure III d).

e. The intelligence community is neither monolithic nor isolated -- it has extensive (in number of points and flow volumes) contact with non-USIB agencies [see Figures III r (7-24)].

* For the illustrations, see Appendix A, Volume II.

f. CIA serves as something of a community focal point for acquisition from noncommunity elements, but there is no particular focal point for dissemination -- everybody disseminates his own products [see Figures III r (7-18)].

g. The level of intradepartmental IP activity is four or five times the interdepartmental IP activity -- so hard to stay concerned with "community" problems versus departmental problems [see Figures III r (1-24) and Section III, B, 4, Volume II].

h. Systems that are "source-oriented" tend to become "all-source" systems, and producers become consumers [see Figures III r (1-24) and s (1-5)].

i. There seem to be as many as four echelons of dissemination. There are typically about 6 to 10 organizations involved in the first level, 150 in the second level, perhaps 400 in the third level, and as many as 900 in the last level. Is it possible to divide and subdivide functionally the intelligence job between some 1,500 organizational elements -- is it possible to eliminate duplication? [See Figures III s (1-5) and t (1-12)].

j. Foreign published information is proportionately and absolutely little processed in terms of information content control -- supposedly because it is "low-grade ore." The community exists as a community because of foreign security restrictions on information. Is open literature actually low-grade, or is it just too voluminous for available IP techniques? Would full exploitation of foreign published information permit high risk collection to be done on an ad hoc rather than programmed basis? (See Appendix F, Volume II, and Appendix B-2, Volume IV).

k. A very large variety of information elements are used as first and second file order criteria throughout the community. This does not bode well for standardization and data exchange when combined with manual control only [see Figures III v (68), (74), and (75)].

l. Only about 25 percent of all information element occurrences in standard format files are coded (see Section III, B, 1, and Volume II).

m. We must interfile-communicate in unstandardized text that requires human "converters" (see Section III, B, 2, Volume II, and unpublished SCIPS data catalogs).

n. The number, size, and variety of files in community storage and retrieval systems make the internal and external R & D work now being done of questionable pertienence and applicability to community problems (see Sections III, A, 5, and III, B, 4, Volume II, and Appendix D, Volume III).

o. Internally consistent formats for file records is neither a panacea nor necessarily an incentive to data exchange between files. Over one-third of the community files (78 million items) have internally consistent formats (see Section III, A, 5, g, Volume II).

p. The small proportion of machine-readable items indicates a low degree of true automation [see Figure III n (7)].

q. Some 78 million unit records are machine-maintained. Should we machine the other 150 million in file and the 15 million to 25 million items added to file each year? (See III, A, 5, h, Volume II, and reference 35/.*)

* For a list of references used in all volumes, see p. 33, below.

r. The general absence of file-purging and the non-use of time "activity rates" as a criterion when there is purging are indications of not knowing what is needed or what is in the file -- that is, no content control [see Section III, A, 5, f, Volume II, and Figure III v (13)].

s. There are more file items for control purposes than there are items being controlled, and "documents" apparently are unsatisfactory as an information storage and control form [see Figure III v (26)].

t. Security classification of items seems to be more of a file access problem than a criterion for filing. That is, generally, separate files are not established on the basis of security classification, nor is it a file order. Either the not-fully-cleared go without, or else we multiple-file (see Section III, A, 5, m, Volume II).

u. The popularity of "area" ordered files is not as real as apparent. Most area files are functionally subject, date, or serial no. -- ordered files. Only some 10 percent of all unit records are ordered solely on elements in the USIB-sponsored Intelligence Subject Code (see Section III, A, 5, q, Volume II).

v. Authorized Dissemination Controls (DCID 1/7) are not being used as an access discriminator to file items. Even more than security classification, dissemination controls only restrict utilization of whole files -- another dimension of file content being unknown [see Figure III v (33)].

w. Hard copy documents as a file form of information are evidently of more perishable utility than other forms (3 x 5, 5 x 8, magnetic tape, etc., which files continue to be added to). This indicates that document files might be more susceptible to

common archiving than other files [see Figures III v (61-67)].

x. Some items produced by "finished intelligence" producing components are the type produced by central reference components and, in any event, fill central reference needs (see Appendix B-1, Volume III, and CIA/OSI-MP/63-3).

7. Problems Identified

One of the principal tasks of the Stage I plan was to identify information processing problems requiring further study. To the extent that the problems discussed in 1 through 5, above, have not been resolved, they head the critical list for future study. In addition, the following problem areas seem of particular commonness and importance throughout the intelligence community:

a. The development of additional tools whereby the intelligence research analysts can inform themselves more rapidly and more completely on what information exists where that might bear on a particular problem. (Files inventory plus filing criteria? Item inventory? Personal contact inventory?) The absence of such tools results in the analyst's spending too much time, not looking at all, initiating unnecessary field collection, or drawing wrong conclusions.

b. Loss to the community at large of the results of individual analysis of a given report or piece of information. There is insufficient system capability to make generally available either the analysts' initial assessment of incoming information or, retrospectively, the analytic assessment of his file data in sufficient specificity. There is neither sufficient motivation nor facility for analyst input to the data base.

c. The lack of quick ad hoc response from automated information and reference systems. Either you thumb through a thick print-out correlated six different ways and published periodically -- or you wait until tomorrow or next week -- or you maintain your own file. The fallacious object seems to be, first to have an "efficient" computer operation and, second, to provide service.

d. Multiple screening of the same item at multitudinous points throughout the community to determine not how to process but just whether the item qualifies for the process (content control code).

e. Undocumented screening criteria at the thousands of branch points throughout the community system.

f. Lack of common bibliographic control citing, limiting retrieval from several reference facilities (see indexing and common element discussion).

g. Lack of documentation and terminology variations prohibit communication on depth of indexing being applied.

h. Diversion of ADP system resources from substantive information processing to administrative-management support work.

i. The lack of ability to test assertions such as "cable information is either of transient value or is followed up with hard copy."

j. The feasibility of and basis for allocation of information processing functional responsibility between agencies or components in the absence of clear-cut division of intelligence production responsibilities.

k. Duplicate processing of foreign documents and unwanted long file life of items in many places because there is no central facility on which to rely.

l. Specification of a variety of file conversion conditions to enable feasible techniques to be devised.

m. Use of ADP equipment as printing presses due to overloaded and uncleared printing facilities.

n. Definition of the intelligence community in terms of an organization identification system -- for information processing and for communication and research purposes.

o. The lack of identification of commonness and uncommonness of information elements and source items as well as search terms in systems, such as in "positive" and "counter" intelligence biographic systems, prevents resolution of questions of integration/interface between these systems.

p. The question of a special common programming language for intelligence information processing purposes (COINOL) versus adequacy of available languages (COBOL).

q. Identification and specification of the apparent R & D gap between the NSF-sponsored basic research and departmental sponsored operational system development. This gap is best described as techniques application to real intelligence problems.

r. Development of an effective way to integrate systems, usewise, but leave organizationally and physically separate such files as the target folders in IR/CR with the indexed documents in the CIA Library with the computerized target briefs in NPIC with the magnetic tape AIF file in DIA against locational-type ad hoc queries from decentralized users. These four systems represent the four degrees of storage and retrieval, each containing unique and overlapping information in different forms with their respective advantages and disadvantages of cost and usability.

C. The SCIPS Effort

The terms of reference for the study as approved by USIB in July 1961 are no longer believed to be appropriate without modifications in light of Stage I findings and experience [see Section III, B (Introduction), Volume II]. The Stage I effort and the 7 months' launching period have finally resulted in products believed to be more than a bargain for the community in terms of the input (see Section III, C, Volume II, and Appendix G, Volume V). In addition to a unique data base of about 30 percent of what's needed, there is a systems study system appropriate to intelligence information processing operations and a computerized management information manipulation system. Although there is not an experienced, expert organization to point to as a product, there are some individuals with increased capabilities. The effort is believed to have been unique (at least in degree) as a cooperative community effort in terms of concrete significant results and in terms of "community" motivation and orientation. Although the staff members came from specific agencies and departments, it was found that they could be motivated to community goals. This is noteworthy and commendable whether there is a "community" market or not. At the same time, as a result of being departmentally owned, contributed, and career-obligated individually, the staffing as a whole suffered all the other usual disadvantages of "joint" efforts. When it comes down to an individual, a department usually and understandably determines the utilization of its talent on the basis of greatest departmental return. By definition, a component department's objectives are not congruent with community needs, though temporarily coincident.

From quite a different point of view, the complexity and conditions of the activities studied were a severe limitation on accomplishments. From both points of view the past experience and findings

lead to the conclusion that as long as it is as difficult to conduct such a community-wide fact-finding systems study as Stage I was, it will never be done again. It takes too long to obtain, standardize, and analyze the necessary information on the spectrum of present operations. So, still believing that lasting solutions must be specific and can only evolve from specific factual data in a "broad system context," there are three things that must be done:

1. Provision of the most advantageous staffing conditions,

2. Standardization in departmental recording of management data on IP operations, and

3. Initial simplification of the IP system itself.

Although believing that true solutions generally cannot be legislated, only facilitated, it might be that the first two cited preconditions will have to be legislated. The second could be developed by adaptation of the Stage I survey system. The initial simplification of the present IP systems could be the institution of content control and filtering on bulk series by "producers" or perhaps just "little" things like unique item identification, information element lists, and the common element control (see Section III, B, 7, Volume II).

The principal conclusion on the past effort, bluntly and succinctly stated, is that by doing it we proved that it could be done, and at the same time we became convinced that it never will be done again on the same basis.

D. Community Management of Information Processing

Present

In this section are the principal conclusions and observations not so relatable to specific data and findings during Stage I. What follows is the result of accumulated experiences including the recent past. This is where the problems are seen in relation to mismanagement, or more often the lack of management.

1. The information processing (IP) sector of the intelligence cycle -- that is, those functional operations between collection and intelligence production -- has not received the share of community concern that it warrants. Some indicators of this are as follows: a review of USIB agenda and minutes shows USIB attention divided between collection problems and substantive estimates; the community structure itself reveals four USIB committees on substantive

production (not including the Board of National Estimates) and four on collection coordination and one on information processing (CODIB); the Priority National Intelligence Objectives refer to "collection" and "research" -- information processing is lost in the shuffle and is assumed to fall within either production or collection, and nobody seems to care which. What are the Priority National Intelligence Objectives for intelligence information processing? Are they the same as for collection and production, or are they to do backup in non-priority areas? Until the present situation of not knowing what is in the file is corrected, both the necessity of collection and the validity of estimates are suspect.

2. The imbalance between the amount of information collected and that exploited and content-controlled is evidence of imbalance in allocation of resources, and yet the recent trends are to shift resources from reference facilities to collection-related activities.

3. The use of computers for substantive information processing brings on new management decisions, such as who should own the computer. As discussed in Section B, 4, the present general-purpose computer is not very satisfactory, and yet it is a tool that we have, and it should be applied to even more IP problems -- but specific problems. Business administration type applications are almost always done by closed-shop methods. Scientific computation applications are usually done by open-shop methods. Substantive intelligence information processing is yet a third and different category that is teetering between the two camps. At this stage of development, the ADP application should be done on an open-shop basis from inception up through the initial months of routine production. If it is a substantive analytical problem, the intelligence analyst and the programmer should work directly with the machine and be inefficient if necessary, but effective. If it is a reference support problem, the present system operator and the programmer should have direct access to the machine. If, when, and as such jobs become stabilized and routine, they can be done by a centralized computer complex in a closed-shop fashion. More progress will be made sooner if computer capability is separately provided for development of applications on an open-shop basis. Centralized operations control production work efficiently and inhibit developmental operations. Decentralized open-shop developmental work will be very expensive in terms of idle computer time, but a real bargain in terms of accomplishing long-range objectives.

4. There is virtually no national assignment of responsibility to provide specific reference services. As a result, each department, understandably, does not take any chances and relies on

itself only by getting, processing, and filing all the information that it can afford. This condition will continue until responsibility is fixed and until dependable capability to provide information in the time and form needed is demonstrated, at least to a better degree than the departmental resources can do. Blanket assignment of responsibility in general subject areas will not do.

5. It is questionable whether genius could do anything with the present system; so it is a certainty that mediocrity can not. Responsibility has never been successfully contracted out. The chief reason for limitations in the successful use of contractors in information system design is the lack of sufficient in-house capability even to develop adequate system requirements or to monitor the development and implementation effort.

6. When the solution seems to be "centralization" and a "national center," it is usually symptomatic of failure to define and coordinate. The total of community objectives is comprised for the most part of constituent departmental objectives. At this state of development of the information processing systems, the greatest needs are for common relief of burden and a real operating success on other than a special problem. Either of these two realizations would put any benefits of centralization or "compatibility" accomplishments to shame.

7. There is in the community no accepted organization or system in terms of objective leadership or outstanding acumen or success in information processing. There is hardly a successful mousetrap, much less a better one, and successful leadership will not be legislated.

8. The only community body officially concerned with information processing is CODIB. This committee is comprised of departmental operators with almost insoluble problems in their own components. Understandably, they are seeking in committee activities community assistance in solving their own problems. It is asking too much to expect such a body to be concerned primarily with community problems, per se, at the monthly meetings, much less the other 160 working hours in between. The community problems like the departmental problems will not be solved by such intermittent attention.

Future

1. Alternatives

It is easy enough to say that the whole fault is "bad management"; the ultimate is to try to specify what good management would be. This section is the ultimate.

The following cumulative continuum is presented as the range of actions that could be considered for improvement of information processing in the intelligence community:

a. Continued committee coordination (CODIB)

b. Ad hoc problem groups under CODIB

c. Joint Fact Survey Staff (Stage I continued)

d. Joint Information Exchange Staff

e. Systems Coordination Staff

f. Community Operations Research Center

g. Centralized ADP Systems Center

h. Series of Technical Information Processing Centers

i. Three Information Processing Centers (Photo, Signals, Documents)

j. One National Information Processing Center

Working from either extreme, some considerations are:

Alternatives a and b represent the past practice in a coordination mode. The tools used are regular committee action, formal directives, liaison, ad hoc committees, and problem study groups. In some instances a contribution to the community is realized from using these techniques, but mutual benefits of any permanent significance are very difficult because of (1) a lack of continuous control, (2) operating on a part-time basis, (3) self-defined objectives, (4) all elements not being represented, (5) conflict of departmental versus community objectives, and (6) competition for personnel resources. The present condition of information processing and the SCIPS terms of reference attest to limitations of past practice.

Alternatives i and j are put forward most often as the ultimate objective. Doing i and j is the antithesis of doing a and b -- that is, with complete centralization no coordination is necessary. After viewing the nonexclusiveness of the existing centers, the size and nature of the information processing operations, and the divers departmental missions, it is easy to agree with the phraseology of the President's Science Advisory Committee 39/ -- "over-simplification of

a perplexing problem" and "To expect miracles of management to follow from centralization of the information system is unjustifiably optimistic ... ."

Alternative c is a natural first consideration -- it represents a continuation of the present. The only apparent requirement is for CODIB and USIB to evaluate that the results of Stage I warrant a continuation on a Stage II basis and restaff the effort. The documentation in Appendix G, Volume V, plus either the Basic Study Plan of November 1961 or the Stage I Plan would provide the basis.

Alternative h has some appeal and is in vogue both inside and outside the intelligence community -- at least it is a large topic of discussion. In the nonintelligence community the technical information processing centers are discipline-oriented -- that is, physics, chemistry, medicine, engineering, metallurgy, and so forth. There are three potential orientations that the intelligence information centers could take:

(1) Discipline-oriented centers:

Economic information
Biographic information
Scientific and technical information
Political information
Order-of-battle information
Installations information
Commodities information
Geographic information

(2) Source-oriented:

Electronic information
Photographic information
Open literature information
Human observation (IR's) information
Foreign broadcast information
Signals information

(3) Mission-oriented or use-oriented:

Early warning
CI and CE and other intelligence operations
Military operations
Policy support
Basic intelligence production
Management and planning

The existence of the three alternatives brings to mind the disadvantages of any one of them, and certainly none of them coincides with present departmental organization lines, and thereby has the same disadvantages, though lesser in degree, as alternative i or j.

Alternative d is alternative c plus a facility for the referral and exchange of information over and above those kinds collected in Stage I of SCIPS. The need for a central systems-documentation facility has been expressed recently in CODIB and SIGINT Committee, and reading the CODIB 5th Annual report attests to the need. Additionally such a staff could be charged with the functional responsibility of assisting actively in the interchange of substantive intelligence. In either case, however, there is an implied continuation -- unlike alternative c, which could be staged and stopped at any point.

Alternative e is alternative d on a continuing basis plus a responsibility and authority for the coordination of some specified range of IP activities, whether it be R & D projects, reporting formats, indexing standards, or system changes. The alternative implies coordination of CODIB-type matters on a full-time continuing basis.

Alternative g is the amalgamation of present departmental ADP staffs into one community operation. This would be centralizing the staff functions of systems engineering and design, whereas line production functions would be centralized under alternatives h, i, or j. The appeal is of course commonness of design and resultant compatibility of the decentralized operating systems. As in alternatives h, i, and j, the factor of divers departmental missions is against centralization of functional activities. In addition, there is more to do at home than the ADP staffs can get done now.

Alternative f implies any or all of the aspects of alternatives a through e but none of g through j. The term "Operations Research" is the present popular one for the function that provides the quantitative information input to aid management in rationally choosing between alternatives, particularly long-term decisions as to change in equipment and facilities, resource allocation, and products and markets. The term "community" implies that the orientation is to common problems and to departmental problems of community-wide impact. The term "center" implies an appreciable magnitude and a product. This kind of activity is concerned with such questions as the following: Is the volume of information flowing, present and projected, exceeding the design potential of present systems singly or combined? Is there anything in the nature and characteristics of new collection, processing, or production techniques that might drastically affect present methods, organizational structure,

or resource allocation? Are demands on operations increasing or decreasing? Likewise, is the scope of operations increasing or decreasing? Are capabilities, manpower, and equipment decreasing, static, increasing, or all three if specified by area of concern such as by subject, system, organization, and so forth? Are systems of priority in existence or under development within various organizations that tend to maximize limited capability? Is there an over-all community system or priority, or does everybody concentrate on "problems" as they occur? What are the characteristics of crash efforts to solve immediate problems? What are the potential benefits of optimizing total resources across the community if a system of priorities is in fact necessary?

2. Needs

There was never unanimity of the SCIPS Staff on any substantive issue, but perhaps the greatest majority consensus developed on the immediate needs in the community, though not necessarily on the ultimate community needs or configuration. The following list contains unfinished Stage I tasks plus reactivation of some of the original tasks, plus other additional functions, all of which it is felt that the community needs, to improve intelligence information processing:

a. Cleaning up of present SCIPS data base and recataloging for further analysis.

b. Extending the data base coverage to some 200 other organizations of particular IP concern.

c. Designing survey data collection updating procedures to make the data base dynamic and current.

d. Redesigning the machined data base system to provide cross-file correlation and on-line query response capability.

e. Providing a data base query and research services to departmental operating and management people.

f. Developing, publishing, and maintaining standards such as called for in this report -- that is, authoritative items and files inventories, community content control code, unique information element lists, "how-to" handbooks, noncontent control element standards, and so forth.

g. Special survey and analysis on a "problem" basis with individual reports thereon -- such as archiving, central reference for foreign pubs, transliteration, and so forth.

h. Development of community requirements and specifications for specific IP techniques.

i. Techniques development, monitoring, testing, and recommendation.

j. Systems information library.

k. Community-oriented technical and operational feasibility review of IP R & D proposals and system changes, plus ad hoc technical consultant service to constituent departments.

l. Continuous review and recommendation to USIB of functional division of responsibility for information processing.

m. A means for testing proposed changes for impact on other community systems without actual trial and error (system simulation with the SCIPS data base).

n. An operational training facility tailormade for community system operators and designers.

3. Conditions

Some discussion of the required conditions and mechanism for accomplishment of these needs was held within the staff. The necessary conditions are the following:

a. A large permanent organization with a choice of staff. Continuity of staff, full range of skills and grades with internal progression, and career-volunteer membership.

b. All-source acceptance of scope (including SI and CI).

c. Departmental responsive reporting.

d. Contractual funds.

e. Assured EDP machine support.

f. Continuous departmental logistic support without departmental identification.

g. Single point direction.

h. Community orientation and motivation.

Although the staff did not delinate a specific mechanism, there was a consensus that the needs (see 2, above) and conditions given above could be met best by alternative f in the range of alternatives a to j as given in 1, above. On the OTHER hand, no means of accomplishing this alternative and conditions is descernible by the staff.

II. Recommendations

A. Summary Conclusion

There is no single action that can be taken which will result in the solution of the community's information processing problems. There are a series of specific actions that will result in improved intelligence production and operational effectiveness. Corporate community management has devoted an inappropriately small proportion of its attention to the information processing activities and problems. The problem of duplicate processing and standardization between agencies is secondary to the major problem of providing more information content control and ease of access by the consuming analysts to collected information and developed intelligence. The constituent departments need help in overcoming this deficiency because no one agency can achieve independently sufficient content control over all the information that it needs. With the present quantity, variety, and scattering of unidentified processed and unprocessed information the chances of the analyst drawing the right intelligence conclusion are endangered. The results to date of applying ADP techniques and equipments to the principal intelligence information processing problems in the community are not very encouraging, and no particular factor or development was discerned that would cause a dramatic change in either the near or the mid-range future, and yet the use of ADP remains one of the few hopes for real progress.

B. Recommendations

1. That the DCI and USIB devote a greater proportion of their attention to the functional sector between collection and research, including thorough study of this report with a view to filling the identified short-term needs and the need for long-term planning in community information processing.

2. That a means of implementing alternatives e or f in Section I, D, 1 (Alternatives), above, be sought. Unless this means is found with the necessary conditions, it is recommended that SCIPS not be reconstituted.

3. That a technical review panel, such as the PSAC Ad Hoc Study Panel on Non-Numerical Information Processing, 40/ be assembled to review the detailed findings of the study and provide comments thereon.

4. That the Committee on Documentation give full consideration to the Stage I Report findings and conclusions and concern itself with determining the means of filling the identified community needs and recommend to USIB accordingly.

5. That the disposition of the Stage I data base be made dependent upon the following:

a. That if there is a continuing full-time effort (alternatives c through g), it be charged with operating and maintaining the data base and servicing ad hoc requests therefrom and no further general dissemination of the data base be made.

b. That if there is no continuing effort (that is, alternative a, b, h, i, or j is implemented), the machined data base be made fully and equally available to all USIB principals and the nonmachined collections be destroyed or the pieces be returned to the component from which obtained.

6. That the individual departments and agencies develop and devote the best possible in-house talent that they can to document and engineer this engineerable part of the intelligence cycle.

7. That Stage I of SCIPS be considered completed.

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List of Illustrations [Contained in Volume II]

[In Appendix A]

Figure Number

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Figure Number

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[In Appendix F]

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