Approved For Release 2004/03/17 : CIA-RDP80B01139A000200080002-2

CODIB-D-82/20
28 July 1961

UNITED STATES INTELLIGENCE BOARD

COMMITTEE ON DOCUMENTATION

Terms of Reference for
Study of
USIB Information Processing Problems (Final)

1. Attached for information are the terms of reference for the USIB information processing study as they were approved by the Intelligence Board on 11 July.

2. The following individuals have to date been named to the study group:

Mr. Curtis L. Fritz, Acting Director
Capt. Donald C. Higgins, USN
Mr. John H. Toler

[redacted]
Chairman

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Attachment

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USIB-D-39.7/1
Final
24 July 1961

UNITED STATES INTELLIGENCE BOARD

MEMORANDUM FOR THE UNITED STATES INTELLIGENCE BOARD

SUBJECT : Terms of Reference for Study of USIB Information Processing Problems

REFERENCE : USIB-M-163, item 6

1. On 11 July the United States Intelligence Board considered the question of the CODIB-proposed terms of reference for a study of USIB information processing problems. The Board-approved minute of the USIB action is as follows:

"Mr. Borel referred to previous USIB discussion of the CODIB plan for conducting a study of information processing problems in the intelligence community (USIB-M-161, 27 June, item 8) and advised the Board about various suggested modifications to the draft proposed, especially regarding the provisions for staffing, that had been worked out in the interim in consultation with certain members of the Board. With respect to a general question raised regarding the use by member agencies of the term "SIGINT", the members agreed to check into technical or other relevant aspects of the matter and consider it further at an early meeting.

"The following actions were then taken on the CODIB proposal (Attachment to USIB-D-39.7/1, 16 June):

"a. The Board approved the terms of reference for a study of the USIB information processing problems as amended, * and indicated their full support for the project and its objectives.

*This document, as approved by the Board, will be circulated as USIB-D-39.7/1, Final.

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"b. The Chairman, CODIB, was authorized and directed to proceed with the selection of a staff director and staff. State, Army and Air Force each agreed to make one qualified person available, and Defense tentatively agreed to do so also. Navy and NSA will provide representation as appropriate to the task at hand. CIA will supplement this effort to build up the minimal staff required to secure the objectives of the study.

"c. It was recognized that CODIB should be given considerable latitude in implementing the plan. However, significant departures are to be referred to the Board for decision.

"d. The Board directed that it be kept current on progress made in organizing the staff and in the conduct of the study. Should problems arise which cause delay, they are to be referred to USIB promptly.

"e. Pending completion of the study and USIB consideration of the findings, the members of the Board agreed that, in managing their own internal automatic data processing (ADP) developmental programs they would take cognizance of the fact that this study is in progress.

"f. Action proposed by the staff or CODIB during the course of the study or upon its completion will be submitted to USIB in the form of recommendations supported by justification."

2. The attached terms of reference reflect the amendments agreed to by USIB and therefore supersede the draft previously circulated (USIB-D-39.7/1, 16 June).

3. In the light of the above USIB decision, the Chairman of CODIB is requested to take appropriate steps with respect to that Committee and the USIB agencies concerned to implement the Board action.

[redacted]
Executive Secretary

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USIB-D-89.7/1
Final
CODIB-D-82/9
11 July 1961

UNITED STATES INTELLIGENCE BOARD

COMMITTEE ON DOCUMENTATION

Terms of Reference for Study of USIB Information Processing Problems

Purpose of Study

1. The basic purpose of the study is to help the USIB and CODIB to prepare "guidelines for the development of information processing facilities in the Community" (USIB-M-115). "The study should seek to establish and define long-range goals, with particular emphasis on considerations attending the use of automatic data processing and the development of compatible systems" (USIB-M-144).

2. The need for such guidelines stems from the growing complexity of the intelligence community, and the appreciable increase in the types and amounts of intelligence information which must be handled. The interdependence of the individual intelligence organizations and the high cost of processing information make it mandatory that remedial action be taken now.

3. The results of a study of the data processing requirements of the intelligence community will of necessity reflect the problems uppermost in each

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intelligence component as a consequence of providing information to, or receiving information from, the other components of the community. Such problems should be identified and, to the extent possible solutions for them should also be sought during the course of the study.

4. To restate and summarize, we want to recommend guidelines for the development of individual information systems and services of common concern which take full account of the potential of modern techniques for processing information in order to improve the collective effort.

Scope

5. The scope of the study will be comprehensive as to sources from open literature through "exotic" collection programs. Similarly, it will have to take a broad view of the intelligence cycle and include in its investigations collection and the field preparation of documents, communication, systems input and information dissemination, storage retrieval and display, and user requirements for additional collection.

Conceptual Approach

6. We visualize the study being carried out in various phases, with considerable latitude permitted as long as the purpose of the study is kept

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clearly in mind:

Phase I:	Preparation of plan
Phase II:	Organizing the effort
Phase III:	Fact gathering
Phase IV:	Analysis
Phase V:	Formulation of conclusions
Phase VI:	Formulation of recommendations

7. The control of the study should remain unmistakably and firmly in the hands of CODIB under the guidance of USIB.

8. Dependence on outside help should be limited to expertise needed to make up deficiencies arising as a result of inability of the intelligence community to staff the effort from its own people.

9. The fact finding phase should include the identification of:

- the activities which by reason of function are to be included in the study.
- the needs of these activities for classified information and for open literature to discharge their intelligence missions.
- the problems of (a) knowing that the required information exists; and (b) gaining access to the information itself.
- the problems of preparing input in view of the multiplicity of sources, variety, formats, security controls, languages;

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of the perishability of the information; and of the competition for information.

- the problems of dissemination by receiving processing centers, including matching receipts with requirements.
- the problem of servicing requests for information by retrieval from storage.
- current and long-range programs affecting any of the above.

10. The analysis phase should carefully examine questions of organization, controls and procedures. The inadequacies of the present way in which the intelligence community processes its information are to be identified. Possible remedial steps should be examined, and statements made of prospective advantages, disadvantages and difficulties.

Key Problems Amenable to Analysis

11. In a further effort to make as clear as possible what we want from this study, the following tasks relative to intelligence processing activities should be accomplished during the analysis and subsequent phase of the project:

a. Review the present allocation of functional areas of responsibility of individual departments or agencies

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engaged in intelligence processing activities within the intelligence community.

b. For functional areas of common interest determine appropriate means of direction, integration, coordination or allocation of data processing responsibilities within the intelligence community to ensure effective accomplishment of assigned mission; consider that improved EDP capabilities provide a tool for more latitude in allocating responsibilities, but also that some new restraints that must be identified are imposed by the interplay of standardization and/or compatibility and the costs of operating EDP installations.

c. Through a knowledge of existing and planned capabilities of the various components of the community, including a survey of USIB holdings and the scope and subdivisions of the "common data base", determine means of providing direction to ensure the effective discharge by these components of proposed allocated responsibilities through:

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(1) Use of standardized procedures and techniques

(2) Use of compatible systems of equipment.

d. Determine an effective means within the intelligence community to ensure a dynamic and consistent advance in the capabilities of the various components of the community to prevent large discrepancies in capabilities from hindering the effectiveness of the community as a whole, including provision for evaluative-type experiments of general community interest but too expensive in funds or manpower for one agency to consider. Recommend procedures by which common services can best be provided for the community.

e. Determine the extent of standardization desirable throughout the intelligence community in areas such as:

(1) Indexing, including re-evaluation of the ISC and special consideration to relate any modified codes to prior codes to allow for machine transformations of prior coding efforts

(2) Input formating

(3) Problem oriented languages for computer usage

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(4) Compiler/translator usage

(5) Display symbolics and means

(6) Adequate security control of data within EDP systems

(7) Document storage in hard copy and reduced image for rapid retrieval purposes.

f. Project the evolving needs for communications in support of intelligence information processing activities and, in conjunction with appropriate communications agencies, appraise the adequacy of existing and planned communication facilities.

g. Determine the extent to which EDP can assist in areas such as:

(1) Indications and warning

(2) Document reference

(3) N-dimensional pattern analysis

(4) Evaluation of source data content and reliability

(5) Dissemination control at all levels

(6) Coordination of collection requirements and the matching of information as received to related

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requirements for purposes of dissemination and feed-back to permit continuous review and revision of requirements

(7) Analysis of economic, transportation and logistic system constraints

(8) Target intelligence support

(9) Intelligence incident to systematic analysis of range activity.

h. Consider the need for and practicality of having a single agency assume the archival responsibility for the community.

i. Establish means of accelerating progress in the above areas in a manner consistent with the needs of the intelligence community as a whole.

12. Major components which we can predict will be directly involved are:

a. State, including the Department and selected Foreign Service Posts.

b. CIA, including the various reference services and research offices.

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c. Defense, including the JCS, Unified and Specified Commands.

d. Army, including ACSI, the Tech Services Intelligence Agencies, the Field Data System, and the Office of Research and Development.

e. Navy, including ONI, Supporting Bureaus and Offices, Major Fleet Commanders and the Fleet Intelligence Centers.

f. Air Force, including AFCIN, AFIC, ATIC, ACIC, AFSC, AFOSR, ASTIA, and the AF major overseas commands.

g. NSA and associated Service components.

h. National Photographic Interpretation Center (NPIC).

i. National Indications Center (NIC).

j. AEC.

k. FBI.

l. Non-USIB agencies, such as USIA, NSF and NBS.

13. Numerous studies have been made over the past few years covering various aspects of the activities and problems of concern to us in the above components. These studies should be exploited as much as warranted in order to avoid unnecessary efforts during the fact-finding phase. Projects such as WALNUT (CIA's counterintelligence name check system), ACSIMATIC (Army's

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man-machine system), and the AIDS project (Air Force 438L system) are cases in point. In addition, there exist many general studies which provide contributions on the more theoretical aspects of our problems (e.g., NBS reports series prepared by the Research Information Center and Advisory Service on Information Processing).

14. The preparation of recommendations for Community action in specific areas need not await the completion of the entire study.

The Study Staff and Its Mission

15. The Staff assembled for conducting the study shall be a full-time working group with no other commitments. Members are to come principally from various Government intelligence organizations.

16. Expert consultants with skills needed to complement those of the members of the group are to be drawn from organizations outside of the intelligence community (some full-time, some part-time).

17. Staff personnel are to be qualified to develop long-range plans for information processing and to establish guidelines for the introduction of methods and equipments to achieve the long-range goals.

18. This analysis team should have within itself the capability to apply methods and techniques of analysis to a wide variety of system problems.

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While knowledge of state-of-the-art in equipments and utilization techniques must also be contained within the team, the primary focus should be on the operations--the problem of the users. Specification of the mode of information transmission is an engineering problem; determination of what information needs to be transmitted and in what format is an operations problem. The efforts of the group should be directed much more toward an operations analysis than an engineering analysis. In this regard, one of the pressing tasks the team would face is the identification of the information links among the various organizations and the problems of interface between them.

19. It is apparent that the orientation of the analysis team is critical to its success. It must be USIB oriented, its sole mission being to devise means for improving information processing services throughout the intelligence community. This attitude must be reflected in any system recommendations or specifications resulting from the group's efforts.

20. As a by-product of the planning function and its orientation toward service to the community, the analysis team could comment on the desirability of mounting a continuing effort in its field of investigation.

Sources of Manpower for Staffing

21. Major organizations involved in the study will provide staff participation and personnel support as agreed.

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22. In addition the staff may be augmented, as needed, by specialized outside assistance to be selected from such organizations as SRI, RAND, SDC, MITRE, and PRC. Organizations approached will be invited to make competent individuals available. We hope that the cost to the Government will not exceed $30,000/man/year, including expenses incidental to any necessary move. Costs incurred over and above normal operating costs will be borne equally by DOD and CIA.

Staff Control

23. The staff shall report to a staff director, who shall be responsible to the Chairman of CODIB and report regularly to CODIB itself. Arrangements will be made for interim reporting by the Staff to USIB.

Advisory Panel of Experts

24. Individuals in the Government having special competence in a field of the Staff's responsibility will be identified and, with their consent and that of their superiors, will constitute a panel of consultants to furnish advice and assistance.

Security Clearances

25. All members of the staff shall be cleared for special intelligence; a selected number shall be cleared into the NPIC; part-time experts will be

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cleared on a need-to-know basis.

Prospective Results

26. If properly organized and carried out, helpful results from this study may be expected in four general areas:

(1) Clarification of responsibilities (see para. 27);

(2) Clarification of compatibility goals (see para. 28);

(3) Inauguration of "system of systems" concept (see para 29);

(4) Creation of an integrated research support program (see para. 30).

27. Responsibilities. Here we should get some clarification of how to allocate responsibilities for performing processing services in support of individual systems charged with carrying out specific missions. For example, biographic information is a general category of intelligence; query, should processing be centralized in support of a number of other components such as NIC (early warning) or SAC (targeting and air defense analysis), or should processing be decentralized?

28. Compatibility. We should get help in firming up concepts, now rather loose, about the need for common coding, common formating, compatible computer programming (an extension of the COBOL approach), compatible

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remote systems input equipment, and compatible processing equipment. The entire business of planning data exchange programs, which is a corollary of the biographic example mentioned above, should be clarified. This effort should include the examination of dissemination and requirments control practices. The study should not only identify desirable goals but recommend means for their attainment.

29. "System of systems" approach. The existence of a multiplicity of separate but interdependent systems requires a broader look than is usually required when a single system is under study. There are certain basic processes common to all our systems (see Attachment A), and there are also certain operations common to all mechanized information storage and retrieval systems (see Attachment B for one such scheme including both textual and diagrammatic information). Moreover these processes and operations are performed on a data base much of which is common to the major intelligence components. A "system of systems" approach would therefore seem to insure an integrated intelligence effort as a minimum result.

30. Research program in support of USIB. The study will probably result in identification of problems which will require exploratory research in areas

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of common interest. Projects meriting community sponsorship should be referred to a mechanism through which the several interested agencies would support and direct a single development effort, or a group of closely related or parallel efforts (see Attachment C).

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Chairman
USIB Committee on Documentation

Attachments:
- A: Basic Process in Utilization of Intelligence Information
- B: A Mechanized Intelligence Information Storage, Search and Selection System
- C: Integrated USIB Research, Development, and System Planning

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ATTACHMENT A
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BASIC PROCESSES IN UTILIZATION OF INTELLIGENCE INFORMATION

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ATTACHMENT B
CODIB - D - 82/9
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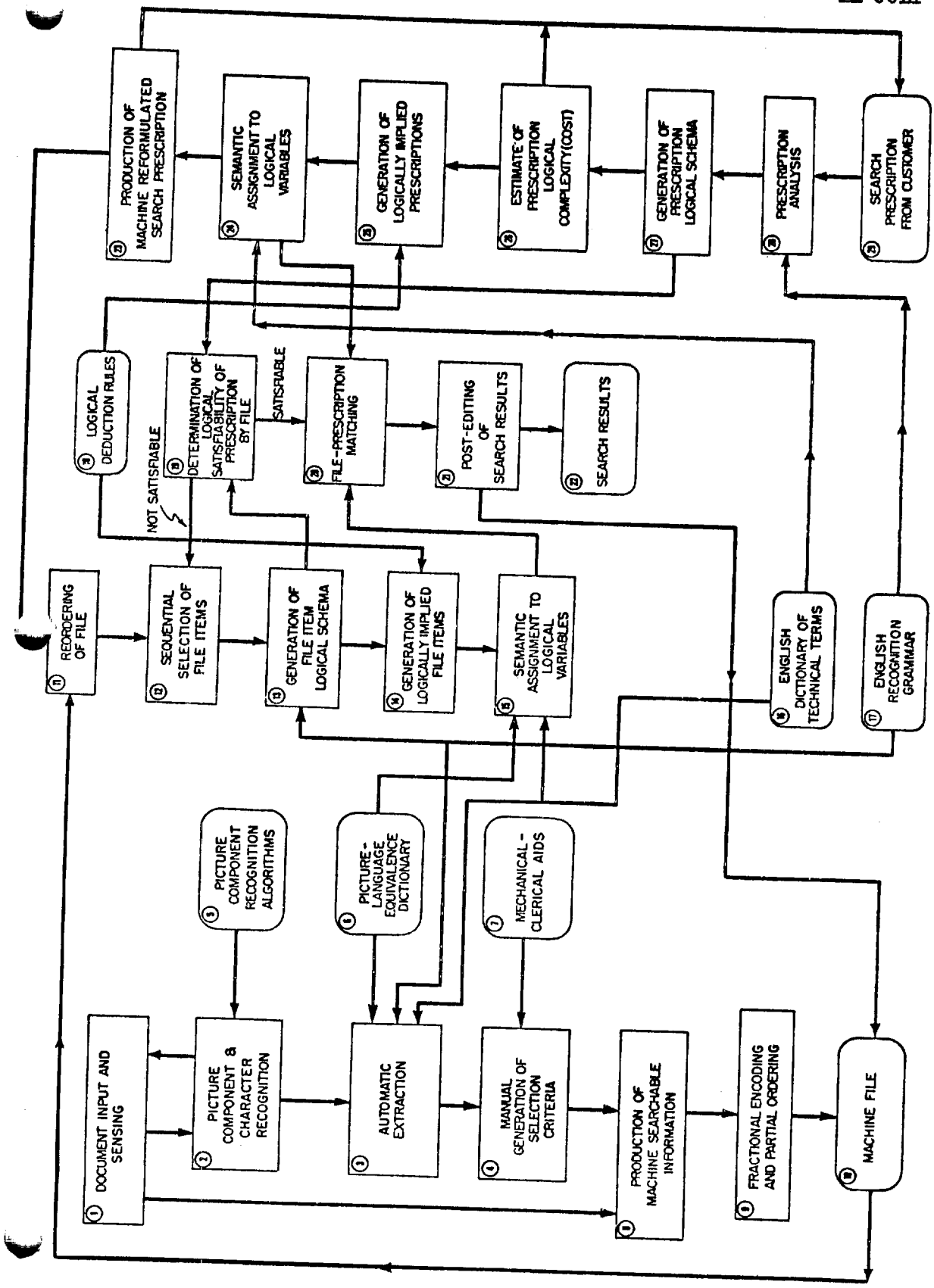

A MECHANIZED INTELLIGENCE INFORMATION STORAGE, SEARCH AND SELECTION SYSTEM

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ATTACHMENT C
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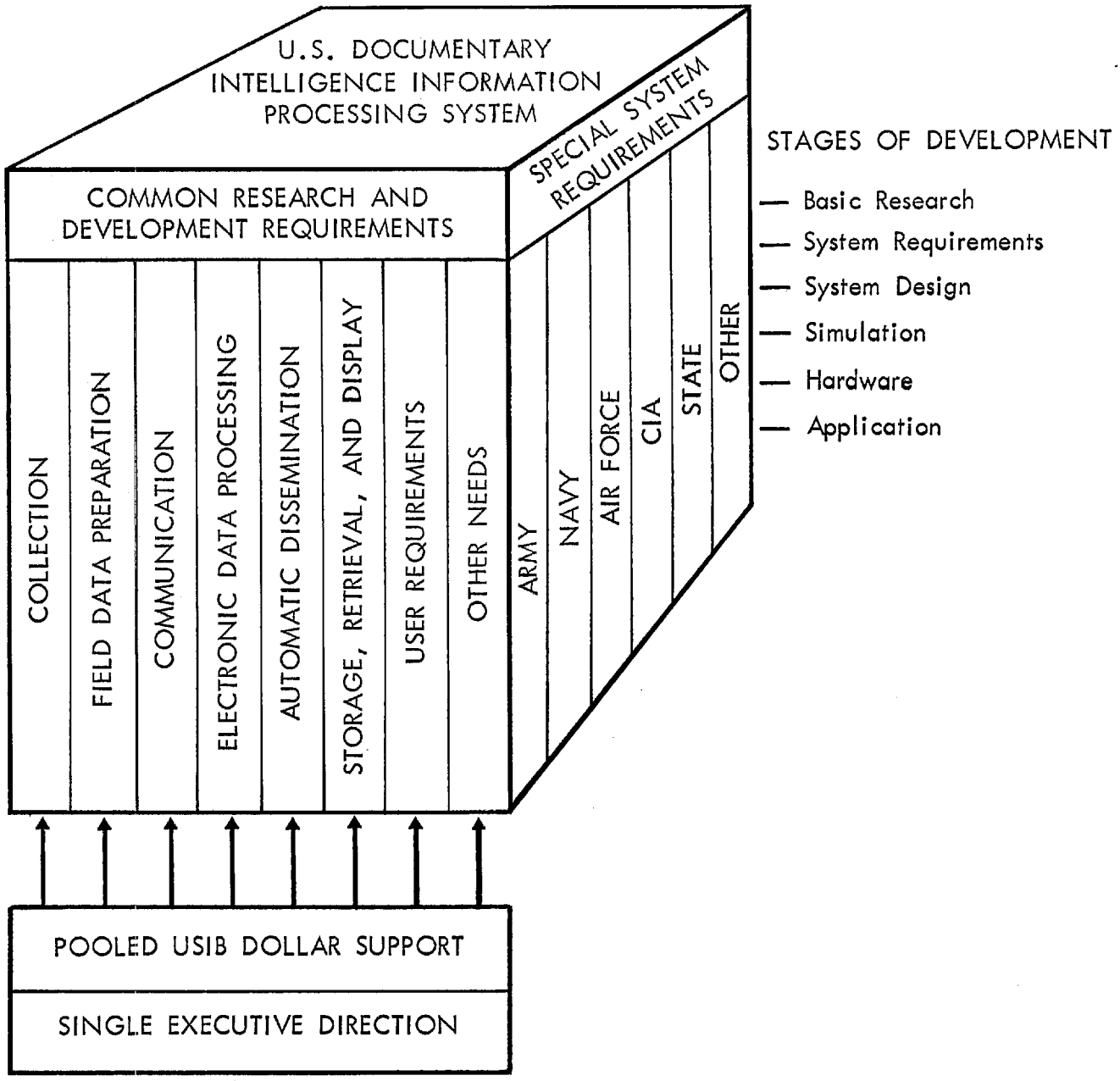
INTEGRATED USIB RESEARCH, DEVELOPMENT, & SYSTEM PLANNING



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