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MCGWG-D-7/1

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24 January 1966

MEMORANDUM FOR: United States Intelligence Board

SUBJECT: Mapping, Charting, and Geodesy Requirements for [Redacted]

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1. That portion of the intelligence community concerned with problems of mapping, charting, and geodesy is going through a revolutionary period as a result of:

a. Increasing U.S. needs for mapping, charting, and geodetic information in support of new weapons systems and other changing military requirements; and

b. The receipt of large quantities of data from the [Redacted] programs that can be applied against these increasing requirements.

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c. The potential for achieving a significantly improved worldwide geodetic system made possible by the development of earth satellites for geodetic purposes.

The collection programs conducted to date have provided substantially complete coverage of the Sino-Soviet bloc and approximately nine million square miles of terrain outside of the bloc that can be used to provide

DIA and NRO review(s) completed.

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accurate cartographic detail for small and medium scale maps and charts. In addition to this mapping and charting information, it is anticipated that the information already collected will permit by 1968 the refinement of geodetic locational data on targets in the Soviet bloc to an error of approximately [Redacted]

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2. Against this background of rapidly changing needs and the acquisition of large volumes of new data, it is necessary to set forth a new statement of requirements in support of mapping, charting, and geodesy that must be fulfilled by satellite collection systems. These requirements are directly related to U.S. military needs insofar as they can be predicted for the 1970 period. The principal points of these new requirements are:

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[Large Redacted Area]

in the Sino-Soviet bloc, but a solution of the problem of world-wide geodetic accuracy requires photo coverage of a large portion

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of the world outside of the Sino-Soviet bloc in order to provide the necessary data to improve the World Geodetic System as well as relating these targets to the World Geodetic System.

b. There is a need to acquire photography with improved geometry for the production of large scale maps for military purposes and to provide the required high relative accuracy within local areas in order to support the operations of tactical missiles and artillery in large hitherto unmapped portions of the world.

c. It is not anticipated that all of the mapping and charting information collected can be used during the time period under consideration. Since map production is a very time consuming process, it is urgent that adequate photographic coverage be obtained well in advance of military contingencies that may arise anywhere in the world. It will also be necessary to update this basic map coverage from time to time.

3. We believe that the requirements outlined above can be met in a timely manner by the satellite reconnaissance systems that will be in operation during this time period, provided that certain relatively minor modifications are made in the next generation of system design now before

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the design becomes fixed. We are not familiar with all of the problems that may arise in connection with the design of advanced satellite reconnaissance systems, but we have discussed with representatives of the NRO a number of the design features that might be introduced for mapping and geodesy. A number of the technical needs for mapping, charting, and geodesy can be accomplished in more than one way. These various technical points and possible trade-offs are discussed in greater detail in Annex A. As mentioned above, it is our intent to state requirements in such a way that they can be fulfilled by general purpose reconnaissance systems provided that certain technical features can be incorporated in these systems. On the other hand, we recognize that unforeseen problems in system design may arise which would make it impossible for a given reconnaissance system to satisfy both the requirements for intelligence reconnaissance and the requirements for mapping, charting, and geodesy. We have requested the NRO Staff to advise us at the earliest possible date if such a situation should arise in order that we might review our requirements and make appropriate recommendations in support of a separate system for mapping, charting, and geodesy requirements.

4. Recommendations: It is recommended that:

- a. USIB approve the requirements set forth in paragraph 3 of Annex A and forward this paper and Annex A to the NRO for their use in considering mapping, charting,

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and geodesy needs at an early point in the design of satellite reconnaissance systems to be flown in the 1970 period.

b. The NRO advise COMOR at the earliest feasible date of any unreconcilable problems that might arise which would prevent the use of general purpose intelligence reconnaissance systems in fulfilling mapping, charting, and geodesy requirements.

[Redacted Signature]

Chairman

Committee on Overhead Reconnaissance

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