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DEPARTMENT OF THE AIR FORCE
WASHINGTON

OFFICE OF THE ASSISTANT SECRETARY

18 OCT 1965

Dear Red:

Reference your letter to Dr. McMillan of 29 September 1965, with regard to mapping, charting, and geodesy.

As you know, the present satellite cartographic and geodetic collection capability has evolved over the last few years primarily in response to the needs expressed by the Department of Defense. These needs were met through the ARGON program, and as a secondary mission on other National Reconnaissance Program satellites.

The recent establishment of the Mapping and Charting Working Group of COMOR has provided the means for formalizing a national statement of requirements which includes those expressed by the Services and the Department of Defense. The DIA recently completed a study of the "Research and Development Requirements for Satellite Image Forming Acquisition Systems for Mapping, Charting, and Geodesy." This thorough analysis included the NRO collection capabilities and DIA correlation of these capabilities with the requirements. A summary of the map or chart accuracies desired is attached. Additional DOD coordination is being accomplished prior to forwarding this requirement formally to USIB/COMOR.

There is an apparent misunderstanding of the effort presently underway within the NRP toward an improved mapping, charting, and geodetic capability. A modest continuing effort is underway in three areas. A summary of the present activities in these areas is as follows:

(a) A feasibility study of a satellite with improved mapping, charting, and geodetic capability is scheduled to be completed in March 1966. This study considers the effect of possible future requirements and the lens effort described below.

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(b) Study and design of wide-angle, high-resolution lenses, capable of acquiring the necessary geodetic data and providing the high fidelity detail necessary for accurate maps and charts. This effort together with the feasibility studies in (a) above involves some $1.5 million, and is presently planned to continue to early 1967.

(c) Two tasks are underway to improve knowledge of the precise position of the satellite in orbit. The first will result in a more accurate computer program to determine best fit ephemerides. The second involves consideration of a radar altimeter for more accurate determination of altitude. This effort involves some $750,000 and will be completed in mid-1966.

Any decision to initiate a new cartographic program must consider future statements of requirements as well as the performance demonstrated by the panoramic reseau and the three-inch index camera both programmed for flight in mid-1966.

Sincerely,

ALEXANDER H. FLAX
Director
National Reconnaissance Office

Atch

Admiral W. F. Raborn
Director
Central Intelligence Agency

cc - Mr. Vance

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17 September 1965

Map-Chart Accuracies (90% Assurance)

Requirement	Effective Distance	Present System Accuracies
Medium Scale		
Aeronautical Charts		
*Contour 50-75 ft.	20-30 miles	100-160 ft.
Specific Significant Features - 20-50 ft.	5-10 miles	40-100 ft. at 10 miles
Topographic Maps		
Contour 25 meters	20 miles	30-50 meters
Large Scale Topo Maps		
Contour 5-10 meters	10-20 miles	10-40 meters

* Applicable to terrain slopes of 15% or less.

GROUP 1
Excluded from automatic downgrading and declassification

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