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BYE-2584-64

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*8 April 1964*

MEMORANDUM FOR: Deputy Director for Science and Technology

SUBJECT : Study to Identify the Physical Capabilities of Various Sensors for a Search Satellite System - Project KWFULCRUM

1. This memorandum contains a recommendation for the approval of the Deputy Director for Science and Technology. Such recommendation is contained in paragraph 6.

2. Since the advent of satellite photographic systems, considerable attention has been given to the sheer process of obtaining more and better photography and little effort devoted to the exploration of other or complementary sensing devices. Those efforts which have been undertaken are singular and not concerned with the variety of sensing activities as a whole.

3. To augment a present in-house effort we propose to conduct a study with the ITEK Corporation to determine the feasibility and potential intelligence value of using various individual sensors and combinations thereof in a satellite system. Specifically, the ITEK Corporation has agreed to perform an analysis of sensing techniques, such as infra-red, ultra-violet, color, etc., which are available or could be developed. Each such system would be evaluated against performance capabilities, environment, size and cost, data storage and transmission techniques, processing and interpretation, and finally requirements.

4. At the conclusion of the study, we hope to have identified not only a complete package of the physical capabilities of each sensor system or their combination but also the "atmospheric" limitations of each. Based upon this study producing a comparative analysis of the possible sensor systems, we would be in a position to weight the various trade offs against our intelligence requirements and a decision could be made then regarding the type and character for the next follow-on search system.

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5. Based upon ITEK's proposal and subsequent discussions, it is estimated that \$145,000 will be required to fund this study. Although we did not specifically budget for this project, funds are available in the ORD budget to meet this expense.

6. It is recommended that you approve the expenditure of \$145,000 from ORD funds for this study.

*Robert M. Chapman*

ROBERT M. CHAPMAN  
Deputy Assistant Director  
Office of Research and Development

The recommendation contained in paragraph 6 is approved.

*GILLIA*

Deputy Director for Science and Technology

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