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CONTROL SYSTEM~~US~~ NATIONAL RECONNAISSANCE OFFICE

WASHINGTON, D.C.

THE NRO STAFF

19 January 1971

MEMORANDUM FOR DR. ~~WELCH~~

SUBJECT: Project COLT

REFERENCES: a. 7 Oct 1970 Memo, same subject (TAB A)  
 b. 3 Nov 1970 Msg, WHIG 0992 (TAB B)  
 c. 10 Dec 1970 Msg, CHARGE 5614 (TAB C)

BACKGROUND

Project COLT is a proposal by Dr. Meinel of the University of Arizona to build a large synthetic aperture telescope working in the 10.6 micron IR region. The construction would utilize six (6) surplus 72" DORIAN blanks, and result in an effective 220" aperture system. In accordance with your approval of our recommendation (TAB A), we have instructed SP-6 to investigate a \$100K study of feasibility and performance of the concept, (TAB B). A Statement of Work has been prepared by Dr. Meinel and SP-6 (TAB C) and reviewed by the Staff. This work statement details the proposed efforts in the design and performance of the optical system and detectors.

DISCUSSION

To determine what overlap there might be between this project and somewhat similar work being done under [redacted] contracts (ORD), we discussed the project with [redacted]. He pointed out that there is effectively no overlap, and that certain aspects of Project COLT complement the work being done for him; specifically, the use of Project COLT as a test and proving vehicle for synthetic aperture concepts and digital output data analysis techniques developed under [redacted] contracts.

We feel that Project COLT offers these advantages:

- a. A study and test model synthetic aperture device in the 8-13 micron region.
- b. Utilization of salvaged DORIAN blanks permits construction of a large aperture system at reduced cost.

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c. The synthetic aperture concept has the potential for large optics at a significantly reduced weight over conventional fabrication techniques.

The proposed statement of work (TAB C) will address the questions of feasibility, design fabrication, output and output analysis of a large synthetic aperture system. Upon completion of this work, a review of accomplishments and potential will indicate advisability of proceeding with a program to build the entire COLT system.

### RECOMMENDATION

Recommend you authorize SP to contract with Dr. Meinel's group for the \$100K study as outlined in TAB C.



LAWRENCE E. PENCE  
Captain, USAF

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