RAE-B-22

[redacted]

DEPARTMENT OF THE NAVY
OFFICE OF THE SECRETARY
WASHINGTON, D. C. 20350

Handle via BYEMAN
Control System

OP-76/tjch
OP-922Y3 ser:
BYE-23069-66
27 OCT 1966

~~TOP SECRET~~
~~TOP SECRET~~

MEMORANDUM FOR THE DIRECTOR OF DEFENSE, RESEARCH AND ENGINEERING

Subject: MOL/NRO Tasks for Ocean Surveillance

In a memorandum of 12 September 1966, you commented on a Navy proposal for an experiment using a high resolution radar to be developed in conjunction with the MOL program. You also recommended that the Air Force (NRO) provide collection system management, with the assistance of technical personnel from the Navy. I concur with this recommendation. Arrangements will be made for the assignment of one naval officer of the rank of Commander or Lieutenant Commander to the NRO to assist in the development of this type of collection system and to provide interface with the Navy's collection requirements and final processing functions.

I am of the opinion that it is also desirable to assign one or two naval officers to the staff of Brigadier General John L. MARTIN, USAF at the Space Systems Division in support of this project. These officers will be appropriately detailed as additional duty assignments from the Navy Space Systems Activity at SSD pending more formal arrangements with General MARTIN.

The Assistant Secretary of the Navy (Research and Development) has recently reported to you on the status and plans for improving the Navy's capabilities for processing Communist Naval and Naval-related air and missile activity as an integral part of the DoD warning and current intelligence functions. While the importance of this activity is indeed our major concern, the movement of Communist, and to some extent Allied as well as Free World, merchant shipping is a significant part of the Navy's ocean surveillance system in direct support of major national intelligence requirements.

~~TOP SECRET~~
~~TOP SECRET~~

Handle via BYEMAN
Control System

OP-76/tjch
OP-922Y3 ser:
BYE-23069-66

Fundamentally, the problem of surface ship ocean surveillance involves detection, location, course and speed, and identification and intention. Utilizing all available sources of information, a large percentage of surface shipping can eventually be correlated and identified as normal trade. The basic problem in ocean surveillance is the development of a reasonable method of improving our detection capabilities which would permit a more rapid correlation with available information. Surface vessels which do not correlate would therefore classify as unknowns and would be subject to further determinations and actions dependent, as an example, on the political situation in the area involved.

It appears that a satellite borne radar surveillance system composed of several unmanned low altitude satellites could function as an important, but related, sensor in the Navy's overall, all-source, ocean surveillance system. This multi-satellite system consisting of at least three polar orbiting satellites should be capable of tracking medium sized surface vessels in selectable areas by using sequential pass techniques. The satellite collected information including target, range and bearing, and time would be transmitted to our ground Automatic Data Processing System for correlation, evaluation, and distribution.

There is now a need to support developments in at least three important areas associated with a space borne radar. These include; the determination and design of an adequate electronic data processing, storage and readout system compatible with the volume of information obtainable by a radar; the design of a reliable long-life radar and the associated components; and the design of a long-life, space-safe, relatively high output, power supply. These developments will form the basis for the determination of the adequacy, cost-effectiveness and schedule of a "detection only" surveillance type radar which would collect the location of rather discrete "blob types" of information as opposed to the more sophisticated, more technically difficult, high resolution reconnaissance type radar system which would have an intelligence collection capability as well. However, a reconnaissance type radar system may be less cost-effective since a multi-satellite system is basic to ocean surveillance which involves the movement of ships.

~~TOP SECRET~~
~~TOP SECRET~~

Handle via BYEMAN
Control System
OP-76/tjch
OP-922Y3 ser:
BYE-23069-66

The Project QUILL experiment referred to in your memorandum was a profitable evaluation of the intelligence worth of a satellite side-looking radar. The results of this experiment indicated that this technique could prove to be a valuable source of intelligence under certain extremes of political/military conditions. However, as you also imply, a decision to permit the use of active detection from space over foreign land areas, ports and harbors, or over open seas has not been established. It does appear, however, that a decision to permit the use of an active space detection radar over the open sea will be a less difficult decision than one involving foreign land areas or ports and harbors, and may not, in fact, include severe security measures.

I want to express my appreciation for your personal interest in this project and to assure you that the Navy recognizes the need to evaluate the potentials of this system in an effort to provide an orderly, progressive program. I am therefore hopeful that early decisions can be reached which will permit the continuation of this satellite ocean surveillance project.

~~TOP SECRET~~
~~TOP SECRET~~

HANDLE VIA BYEMAN CONTROL CHANNELS

Handle via BYEMAN
Control System

DORIAN
DORIAN

QUILL
QUILL

Handle via BYEMAN
Control System