ELECTRONIC INTELLIGENCE RECONNAISSANCE SATELLITE SYSTEM

1. ~~TOP SECRET~~
To provide a system capable of detecting and surveying electromagnetic emissions.

2. General Considerations.
An ELINT Satellite Surveillance System must be capable of not only accurately locating electromagnetic radiating sources, but also analyzing the source to determine its characteristics. The following general requirements have been established:

a. Detection of pulsed signal with position of satellite at the time of detection.
b. Bearing of emitter and, if possible, position of emitter.
c. Frequency of emitter.
d.
e. Pulse repetition rate.
f. Relative intensity.

[illegible] is desired on ground, ship, and aircraft based sources. Maximum [illegible] could be realized, particularly for special applications, if the system incorporated satellites compatible with either land or sea launched boosters.

The U. S. Naval Research Laboratory is currently investigating the feasibility of [illegible] of the radiating source with respect to the satellite. This technique is based upon those presently employed in the Navy Space Surveillance System.

3. Tentative Schedule and Performance.

Schedule

Feasibility Studies	June 1961
Design Completion	January 1963
Fabrication of Prototypes	July 1964
Flight Evaluation	December 1964

Ground position error [illegible] (for "X" band emitter)
Satellite altitude 600 miles (for "X" band emitter)
Command shipboard readout.

4. Operational Systems.
None.

5. Programmed Systems.
None.

6. ~~TOP SECRET~~
[illegible] first satellites would provide for the surveillance of a limited region [illegible]

of the electromagnetic spectrum. The exact region to be selected will depend upon an analysis of the sources considered most critical. A relatively low altitude (600 miles) would be utilized, thus permitting the use of less expensive boosters.

Advanced systems will permit [redacted] illance of most targets of interest. By the addition of coding techniqu [redacted] cation and identification of cooperative emitting sources can be real [redacted] eased altitude and thus greater security of operation can be realized by the incorporation of improved receiver techniques and larger satellite antenna areas. The possible use of 24-hour orbits, thus permitting continuous surveillance, appears highly desirable for such improved satellites and will be investigated. For precise measurements a stabilization system is required; one similar to that proposed for the Navy Weather Satellite System should be adequate. The primary problem will be that of providing in a single satellite an antenna suitable for broad band coverage and maintaining adequate discrimination of targets. Additionally, accurate target locations from a satellite located in a 24-hour orbit, require relatively large antenna operations.

7. Reference. NRL Secret Rpt. of 18 Aug 1961, "A Satellite Surveillance System".

[redacted]

HANDLE VIA BYEMAN CONTROL SYSTEM ONLY