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PRNC-NRL-10-863c (Rev. 5-54)

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CODE	DATE	INITIALS	*PURPOSE	REMARKS
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SUBJECT

Adjustment of POPPY Resources

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From: Director, Naval Research Laboratory, Washington, D. C. 20390
 To: Director, National Reconnaissance Office
 Via: Director, Program C
 Subj: Adjustment of POPPY Resources

Ref: (a) NSA (SPO 1637-7) msg 281908 of Sept 1967 to SAFSS

1. The Naval Research Laboratory concurs with the NSA suggestions for the adjustments of the POPPY resources outlined in reference (a) and to expedite the installation of the Field-Digitizer Systems in the sites at [redacted]

Since each of these three sites provides a unique contribution to the overall POPPY capability and together will provide the maximum total potential against the Southeast Asia and Chinese Communist areas, all three sites should be equipped with the POPPY Field-Digitizing System.

2. The Field-Digitizing System in [redacted] has demonstrated very significant improvement both in the data quality and in an efficiency with which the data can be processed. The present digitizing system meets the operational requirements of MISSION 7105, but because of the multiple pulse-widths which are to be incorporated in future POPPY Missions, it will also be necessary to up-date the [redacted] equipment to accommodate this future data format.

3. The Field-Digitizing System includes the following major components:

(a) New solid-state linear-phase response receivers.

[redacted]

(d) Analog-to-digital data conversion system.

(e) Multiplexing system which formats the data and time negotiations in a compact digital record.

(f) Buffered digital tape recorder system which accumulates the data in a small core-memory and then records it homogeniously on tape, using the IBM-729 (800 bpi) standard recording format.

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(g) A small general purpose computer is utilized to provide real-time diagnostic support for the digitizing system, thus, assuring highly reliable data as well as providing for [redacted] and other technical characteristics in support of the NSA objectives.

4. The Naval Research Laboratory proposes to implement the NSA requirements in order to:

(a) Up-date the existing field digitizing system at [redacted] to make it compatible with future POPPY Missions which will employ a variety of pulse-lengths as proposed for MISSION 7106.

(b) Arrange to fabricate the systems so the installations at [redacted] will have a uniform digital data format and operational capability.

(c) Provide for assembly and check-out of the systems so the entire complex can be shipped as a completed unit, which has been fully de-bugged.

(d) In keeping with the NSA priorities, it is proposed to expedite the equipment for [redacted] so the installation will be available about five months after NRL receipt of authorization to proceed. Delivery of the equipment for the remaining two stations will follow at about two-month intervals. [redacted] analog-to-digital data conversion system will be replaced prior to the launch of MISSION 7106 so that the multiple pulse-lengths used in the data, can be adequately handled.

5. The costs of the items required for the field digitizers for each of the three sites in the Pacific are given as follows:

- (a) Receiver system - including [redacted] == \$61 K
 - (b) Analog-to-digital data conversion system including de-interleaver and multiplexer.....=== 152 K
 - (c) Buffered digital tape recording system..... == 35 K
 - (d) Input, output and display peripherals with associated computer..... == 205 K
- \$453/site

*NOTE: Item (b) above must be added to [redacted] to up-date for future missions at a cost of== 152 K.

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Thus, the total supplementary funds needed is \$1,511,000.00. The Naval Research Laboratory has contractual type options for the purchase of additional quantities of some of the above items. To exercise these time-limited options and take advantage of the savings both in time and costs, which they represent, it will be imperative that the authorization to proceed be provided before 15 November 1967. This would assure the completion of the field installations prior to the launch of MISSION 7106.

6. The Naval Research Laboratory intends to continue to improve the programming for target-of-interest selection by [redacted] [redacted] identification in order that these new digitized installations may be more responsive to the high priority targets in processing both at the sites and at NSA.

[redacted]

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