

OPTIONAL FORM NO. 10
MAY 1962 EDITION
GSA FPMR (41 CFR) 101-11.6

UNITED STATES GOVERNMENT

Memorandum

TO : Reid D. Mayo

5614-429:GP:bf

DATE: 11 December 1970

FROM : George Price

SUBJECT: Status Report on PDE

Part of Augmentation of Prog C (Tos Ocean Surveillance)

1. This report will augment my memo #5614-404:GP:bf that was sent to NIC 30 on 20 Nov 70. My report to NIC 30 did not elaborate on the extensive options which are being built into the PDE. Neither did it indicate any schedule problems. The major sub-systems of the PDE are (1) System Interface and Control Unit (SIC), (2) Reformatter Unit (REFOR) and (3) the Pulse Train Filters and ΔT devices. Only items (1) and (2) were discussed briefly with NIC 30. While there is no funding for item (3) the capability for its later addition must be built into items (1) and (2). The total PDE is shown in Figure 1.

2. If the PDE is built without a sophisticated SIC it will operate, however an excessive burden may be put on the operators of the System. A sophisticated SIC would communicate with the Display Panel, the operator, the T.C.G. in A/DDS with the computer, and with the remainder of the PDE. The communications could consist of Header/Trailer information to the computer, Time info from the T.C.G., control and parameters from the computer or operator, and control and activity information to the Display Panel. The SIC would store the information necessary for the operation of the REFOR and the PTF's. This information might consist of control signals, channel selection or rejection, and parameters to the PTF, ΔT devices. Areas which are being ignored at the present time, due to manpower shortages, are the (1) A/DDS modification necessary to make the appropriate signals available, (2) definition of the Header/Trailer requirement (3) and definition of what activity indicates and other operational aids are necessary. The A/DDS modification is probably going to be extensive and cause the A/DDS to be rotated. In short very little is being done on the SIC area. The reason for this is that there is no one to do it.

3. The REFOR is essentially as described in the memo to NIC 30 with the following options. The REFOR will be capable of blanking any logical channel within the A/DDS. This means that complete separation between the Navy and Fort requirement can be maintained. However, when the desirability of this feature was put to the Fort they were unresponsive. Therefore they do not know this feature is being added. The REFOR will also include a Matrix Selection Network so that when the PTF, and ΔT devices are added, their outputs can be effectively utilized to inhibit or select data.



5010-108

~~Top Secret~~*Handle Via
By (M.A.) - Talent - rephd/
Control system Comin
jointly*

Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan

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11 December 1970

Since we have no authorization to proceed on PTF or Δ T devices and have not informed anyone of this option. The problem areas associated with the REFOR are the SEL 810A modifications necessary before the PDE will operate with it. The design of the REFOR is progressing.

4. Since no authorization to proceed has been given the PTF, and Δ T devices are not being pursued. If additional information is needed on the PTF to write a proposal for ADF please inform me precisely what is needed.

5. In conclusion, the work on the PDE is progressing at a minimum rate since there is only one person working on it. The PDE has at least doubled in size from what was originally conceived. In order to get additional funds for the PDE project I have canceled stub #1851 for the small computer. I would like the 35K from this stub applied to the PDE project. In addition if the update is bought there will be 100K of profit in this task. I think half of this should be applied to the PDE task bringing the PDE cost ceiling to 235K.

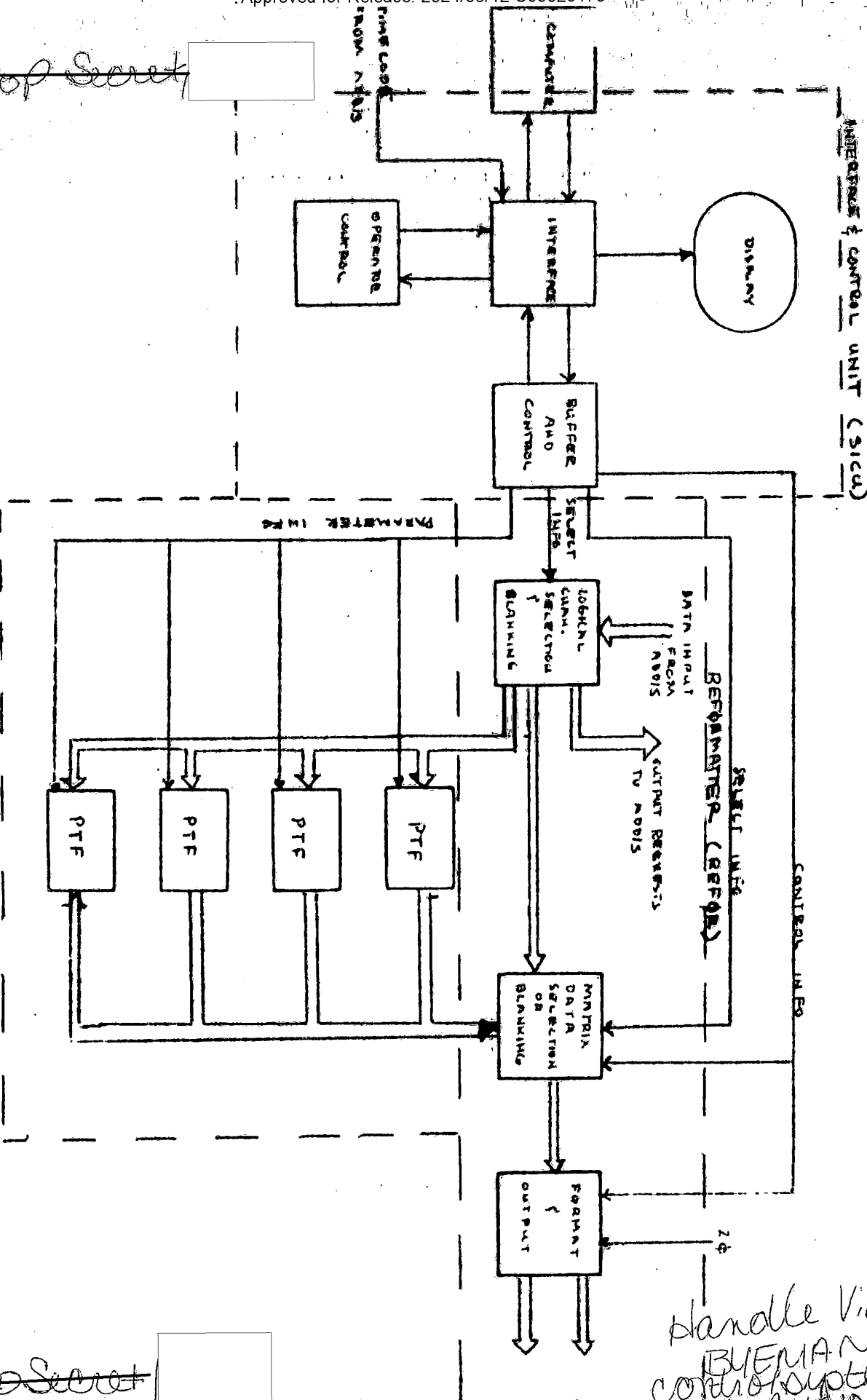
GEORGE PRICE

2

Handle Via
BUENAW McKonint
control system
Only jointly

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PDE

FIGURE 2

12/11/70

9111/70

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Handle via
BIEMAN NTK/cont
control system
on system

~~TOP SECRET~~ TOG AGENDA

0930, 10 December 1970

Hoffman Building

1. Program C Organizational Changes (Program Manager)
2. 7106 Calibration Status (NRL)
3. Payload Status (NSG)
4. Status of Construction (NSG/NRL)
5. Extended Theory Implementation (NRL)
6. Ephemeris from SCF (SAFSS)
7. Recording NPO Analogs (NSA)
8. (NRL)

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RECEIVED
811220
CONTROL SYSTEMS
Valent Keyhole
Snow
jointly

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Tog. 10 Dec '70

1.) Prog. C from OP 42 → CUM, PM-16
Jan 5 [redacted] replace Capt Heizer

2. $1\frac{1}{2}$ lb accuracy
stanford, move dish in azimuth,
can provide adequate EIRP.
could start now.
[redacted] call meeting

3. 05A mod receiver and add pre amp at ant.
AB spacing 160 nm closing .7/day
CD. " 220 nm, closing, 3.4 m/day
need new Thrusting, talk to Pete
Quer on narrowing bandwidth of rec at
other sites.

send 2 back from [redacted] ?

NRL Will not rec. for [redacted] (one ea)

06A 4 Dec. msg. out of service

Quer on 07 schedule by Heizer.

Band assign. & bin assign for 07.

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Normalized Pulse Output (NPO) Threshold

outline recording from [redacted] site

Do 1 station at a time, need attention jointly

L.H. 9/12/70

6

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"E"

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12/8/70

To: R. D. Mayo
From: Fred V. Helrich
Subj: Briefing, [redacted]

On Thursday, 12 December 1970, a
discussion was held with [redacted]
and [redacted] on the subject of
Program "C" overseas station data processing.

[redacted] was in attendance
from approximately 1:30 p.m. to 5:00 p.m.

[redacted] was in attendance from
approximately 1:30 pm to 2:30 pm and 3:30 pm
to 4:00 pm.

Participating in the discussion were:
R. D. Mayo and F. V. Helrich of NRL and

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and
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Lee Hammarsstrom of HRB-Singer, Inc.

~~The primary topic of discussion was~~

~~field station processing~~

The primary topic of discussion was

overseas processing, but included was also

a brief background introduction by

Reid Mayo and a very few minutes

on the selection of the next generation

computer by Fred Hellrich.

In Reid Mayo's introduction, he

briefly described the ~~to~~ events leading

up to the digitizing the data at the

overseas stations and the installation

of the first computers. Reid also described

~~briefly~~ program organization with respect

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to implementation of tasking requirements
as set forth by NRO ^{SORS} USIB and NSA.

After this introduction by Reid,
Lee Hammarstrom discussed the philosophy
of the program and the subsequent factors
dictating the hardware design and software
techniques. This included the mandate
upon Program "C" to provide to the
intelligence community a system for
general search in the frequency spectrum
of 150 MHz to 15,000 MHz, with the system's
primary goal of finding and identifying
new and unused signals. Also, brought out
was the NRC philosophy of designing
simple but long life satellites,

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a concept which has proven itself successful in the face of competition over the years.

He also itemized a few of the Poppy achievements over the past few years including signals first heard by Poppy, beam pattern determination using the signal level capability of Poppy, and the tracking of various ships. Special note was made to the recent tracking of Soviet ships across the Atlantic to Cuba and back.

~~Discussion on the environment and the problems it presents to the Poppy system~~

[]

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Became

h.

[]

had ~~new~~ ~~time~~HANDLE WITH
BYEMAN

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indicated an interest in a dedicated Navy system for tactical use, some discussion on what a Poppy type system could accomplish ensued. Both some of the good points and the problems were addressed briefly. Also, the approach to deploying the "next generation" computer was ~~brief~~ touched upon.

~~was next~~ was next in line and he went into significant detail on the philosophy taken in the method of data processing at the overseas stations. A flow chart of the processing steps was presented and

~~TOP SECRET~~a brief discussion on the ~~topic~~HANDLED BY
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programs used and the algorithms of each.

☐ concentrated on the sorting and plotting programs; essentially those which allow the operator to ~~arrive at~~ ^{calculate} a valid "delta-T's". This, was described as the tough part of the processing, since once valid delta-T's are determined, location of the emitter is fairly straight forward. Significant detail was presented on the problems associated with isolating specific emitters from the environment and sample print-outs ~~of the~~ and plots of the computer programs were shown to clearly illustrate problems and their

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basic form of presentation
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by [] was to go through the step-by-step processing technique for ~~each~~ of a few sample emitters. These included a [], a ship board emitter, an X-band emitter, and a K-band emitter.

The problems associated with various types of emitters, such as unstable PRF and scan, moving emitters, multiple beams, pulse stagger, and others, were discussed and the solutions to these problems were presented.

Bob Daniels devoted approximately one-half hour to the technical details of certain programs. This included the mathematical details and statistical ~~advantages~~ techniques ~~attained~~ of the

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BYEMAN
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not algorithms ~~and~~ utilized. Discussed were ~~these included~~ details on how very accurate PRI measurements are made, ^{and} how PRI and pulse and scan phasing are utilized to isolate emitters. Problems associated with vehicular positioning and the ephemeral model were also discussed.

Fred Helbrick, at the ~~very~~ end of the discussion, very briefly enumerated the status of the "second generation" computer selection and the evaluation processes utilized in the selection.

In conclusion, [redacted] was extremely interested in the total discussion.

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present in the discussion. ^{HANDLE VIA}
^{BOEMAN}
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[REDACTED] were impressed with [REDACTED]

~~understanding of the problems associa~~

ability to comprehend the technical details of the processing techniques. All at the discussion were ~~fully~~ very satisfied with general course of the discussion and felt that a significant amount of information was transferred.

[REDACTED] seemed to express confidence in the people and the philosophy ~~that~~ followed by this program. He also specifically requested that this group submit to him a technical proposal for a Navy oriented tactical system. He indicated this was to be a thorough

~~TOP SECRET~~ [REDACTED]proposal for ~~an~~ ^{an} ~~optimum~~ ^{optimum} ~~control~~ ^{control} system onlyHANDLE VIA
CYBERMANAGEMENT
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system, regardless of cost, to provide complete ~~the~~ sea surveillance for the fleet at all times, with location finding ~~ability~~ time almost instantaneously after intercept. The proposal should address the details of ~~platform~~ ^{flight hardware}, configuration, ground hardware and software.

With this, [] the discussion was ended and [] requested to have a demonstration of processing at [] at some future date.

Fred O. Helbrick

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12-8-70

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614 meeting.

Conflicts in Schedule for Mission 7107@NR2.

1- Solrad delays are diverting several key-people
[redacted] = Command System
[redacted] = Telemetry

2- Overtime could extend the ^{capability} professional team in a case by case basis where critical path exists.

3- Funds - All "major-Procurement" money has been expended except 56R 06-29A funds + \$500K of there have been passed on 12-9-70 to 5170 to assist in critical major procurements now unfunded. Late on 12-8-70 we heard informally that [redacted] had approved the portion of our budget deficiency and that 56R 06-29A funds have been released.

4- Supply Div expediting is essential on certain critical procurements which appear at this time to be schedule-limiting -

Space Tac
I.T.T. -

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BYEMAN-TALENT-KEYHOLE-COMINT
CONTROL SYST XES JOINTLY

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BYEMAN-TAL NT-KEYHOLE-COMINT
CONTROL SYSTEMS JOINTLY

5. Public Work - ~~SECRET~~ ☐
Rm 409/Bld 59
~~Sec~~ Penthouse extension Bld 56.

6- ESD - Construction & Fabrication vs Supply source

7- Lay out personnel for P-C boards. ☐

8. Vince Rose ITT procurement.

Band 18 7107B - June 15th

Band 20 7107D - Sept 15th

Band 17 - 7107D - " 15th

9- Cmd Frequency to move on top of D/C's.

10 - Gravity Gradient.

11- Micro Thrusters

12 - 3-D Plots.

13 - - MM D

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MEMORANDUM

3 Dec 70

to PROGRAM "C" To [redacted]

~~Secret~~

1. Several events of the past month are of such significance that I thought it desirable to make a Memo out of it... First the 17 Nov. meeting with [redacted] where it became very evident that NRL must have a greater formalization of the management of this Program; particularly in the areas of Cost accounting and Scheduling the man-power. Toward this end [redacted] will be provided with Monthly Status Reports (MSR) on or about the second Thursday each month, beginning 14 December.

A- Monthly Status Reports must have the following information:

- Procurement Summary with itemized list of all Stubs above \$5K.
- Pert-Time type Schedule
- Operational Summary
- Prediction for month ahead.
- The first MSR should develop historic growth using JOSRs.

2. Branch Formation is moving along with a push by [redacted] to recruit strong Section Heads and an Administrative Assistant ASAP.

[redacted] even sent an application down to Mr. Lorenzen to review for possible employment in our Branch. Keep in mind that the Priority for hiring personnel has been set by [redacted] and we do not yet control which is the most urgent, of all our personnel actions.

3. [redacted] were given a 3½ hour briefing on the Operational Software System with many Examples of Output of this Program. This was one of the most rewarding briefings we have ever had, with the extremely perceptive audience and the testimony they gave us as to our future and the potential of this Program. We have a strong mandate to prepare a Study on the future Tactical applications of our Program and steps necessary to exploit our demonstrated system. [redacted]

[redacted] is not going to Europe with the Director and therefore next week his schedule has opportunity to go to [redacted] to view the software in action. This provides us with a delima since the hardware is not very healthy and [redacted] is extremely busy getting the 810A Off to [redacted]. I submit that we must not loose the momentum that was built up in [redacted] enthusiasm Thursday in his briefing and that we should bend every effort toward getting the Computer "UP" and a plan of just what we want to do when he gets there.

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control system only

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4. Budget:

Our Deficiency which was briefed to the SPONSOR on 26 Oct is to be supported early next week but most of these funds will probably be going to our COOP because I expect that the items we were seeking will not be approved.

The Augmentation of the Program for NAVY use has resulted in two significant efforts being started about mid-October; (1) the selection and procurement of the second Generation computer system for the Program under the leadership of Fred Hellrich. (2) The PDE development under George and Terry. These two efforts and the \$1,220 500.00 have a strong demand to receive special accountability. Therefore we have asked Sadie to start up a companion Problem Number for these funds...thus 56R06-29A. Each time that an order is placed for materials to support the PDE or the second generation computer system (SEL System 8 the problem number must be 56R06-29A.

5. Monthly Report-Major Procurement

Each Unit Head must keep a tabulation of his Major procurements and give these to me early in the first week of the new month. I must be able to defend each procurement large and small so if there is anything controversial or out of the ordinary, ^{justification} must be made apparent.

We also must have a gross estimate of the procurements of the next month.

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3 Dec 70

Briefing for

(4000)

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1. GENERAL DISCUSSION R.D. MAYO

REQUIREMENTS

2. SYSTEM DISCUSSION L.M. HAMMARSTROM

SOFTWARE EVOLUTION

3. SOFTWARE SIGNAL FLOW R.L. WALES

SPECIFIC DATA/ENVIRONMENT EXAMPLES

4. PROGRAM DISCUSSION R.E. DANIELS

STUDY DISCUSSIONS

5. NEW COMPUTER REVIEW F.V. HELLRICH

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BUENIA WTK/Comint
Control Systems
Only

POPPY'S CHARTER

~~Top Secret~~

I. ELINT GENERAL SEARCH OVER THE
153MHz-35GHz FREQUENCY RANGE
MEETING BASIC USIB REQUIREMENT
FOR INTERCEPT AND RECOGNITION OF
NEW WEAPON SYSTEMS.

II. SPECIFIC PRIORITY TARGETS AND/OR
AREAS ESTABLISHED BY USIB
SUBCOMMITTEE (SORS) WITH NATIONAL
RECONNAISSANCE OFFICE DIRECTING
SATELLITE TASKING AND NSA DIRECTING
SPECIFIC EMITTER PROCESSING.

III. ALL DATA FROM THE POPPY SATELLITES
MUST BE SENT TO NSA FOR PROCESSING

~~Top Secret~~

Handle Via
BUENAM/TK/Comint
control systems.
Only for use

~~Top Secret~~

POPPY COLLECTION

A. LARGE TIME OVER TARGET - I.E. LARGE
INSTANTANEOUS COLLECTION AREA

B. WIDE FREQUENCY BAND MAIN BEAM
COLLECTION

C. SIMPLE LONG LIFE SPACE CRAFT

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control systems
only priority

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GENERAL PROBLEMS

1. FRIENDLY / SOVIET USE OF SAME RF IN LARGE NUMBERS, S, X-BAND
2. MULTIPLE EMITTERS WITH SMALL GEOGRAPHIC AREA (SA-1:45 WITHIN 40NM OF MOSCOW, ALL AT 2000PPS)
3. SOVIET USE OF IDENTICAL RADARS LAND/SEA ETC.
4. VERY BROAD PARAMETERS FOR RADARS.
5. USE OF IDENTICAL CRYSTAL FOR MULTIPLE FUNCTION RADARS (80.9 KC -)

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BUERMAN/TK/Comint
control systems
only 40mly

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~~Top Secret~~

VARIOUS SIGNALS

3. DOG HOUSE

RADAR - 1 STABLE BEAM,

1 UNSTABLE 10 PPS

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BYEMAN/TK/Comint
control systems.
Only Directly

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SUCCESSSES

~~Top Secret~~

1967

1. DIGITIZING
2. BASIC DEMONSTRATION

1968

1. ABM
2. SA-4

1969

1. QUANTITY OF ACCURATE
LOCATIONS

2. ABM
3. SA-6
4. SAM-N-3

1970

1. EOB
2. TACTICAL SHIPS
- 3.
4. ABM

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control systems
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yourly

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SOVIET SHIPBORNE RADARS

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NUMBER OF DIFFERENT RADARS = 49

RF RANGE : 70 MHz TO 9600 MHz

PRF RANGE : 34 PPS TO 4200 PPS

SCAN RANGE : 75 SECONDS PER REVOLUTION TO
55 SCANS / SECONDTHIS CONSTITUTES APPX. 5% OF THE
DIFFERENT TYPES OF RADARS INTERCEPTED

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~~Top Secret~~

SOFTWARE EVOLUTION

I 1967

"CONCEPTUAL SOFTWARE"

1. SUCCESSFUL DIGITIZING AND RECORDING FOR NSA
2. SIMPLE PRF SORTING (STABLE PRF)
3. ITERATIVE LOCATION TECHNIQUE (1 HOUR ROUTINE)
4. 1ST ORDER ORBIT DETERMINATION [] ACCURACY
5. SIMPLE GEOGRAPHIC SORT (VERY SLOW)
6. SIMPLE AVERAGE FOR BURST DATA
NO EXTRAPOLATION

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II 1970

TAILORED TO THE ENVIRONMENT- WITH
SPEED/ACCURACY

1. WIDE RANGE OF PLOTTING ROUTINES
TO DISPLAY COMPLEX DATA
2. LARGE NUMBER OF SORTING/REJECTING
ROUTINES
3. LEAST SQUARES DATA FITTING
4. DATA INTEGRATION OVER ENTIRE
INTERCEPT
5. BROUWER-LY DANE ORBIT MODEL
6. REFINED SUBROUTINES
7. EXECUTIVE SYSTEM-(TAPE AND/OR DISK)
8. GENERATION OF ROUTINE OPERATOR
LOGS, TASKING, ETC.

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FUTURE

1. 2ND 810A TO [REDACTED] (JAN)

A. DEFINE X-BAND PROBLEMS

2. PDE TO [REDACTED] (JUNE)

A. HARDWARE VERSION OF SOFTWARE

B. SETUP FIRST ON-LINE OPERATIONS

3. NEW REQUIREMENTS

4. NEW COMPUTER TO [REDACTED] (NOV.)

Handle Via
BUENIAN/TK/Concert
Control Systems
only
jointly

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TO SSO DIA
DIRNSA
EEIC
INFO SSO HEIDELBERG
AFSSO USAF
ZEM

22 15 56Z SEP 70

SPD

22 SEP 70 16 21Z

~~TOP SECRET~~ TITIT HANDLE VIA TALENT KEYHOLE CHANNELS
ONLY. VHN3200T CO.

SSO DIA FOR DIAXX; NSA FOR MGEN MORRISON (DELIVER DURING
NORMAL DUTY HOURS); SSO HEIDELBERG FOR AEAGB-SX;
AFSSO USAF FOR IN.

SUBJECT: SPECIAL ELINT COLLECTION REQUIREMENT

REFS: A. VHN 3060 TCO, DTG 111530Z SEP 70 (NOTAL).

B. DISCUSSIONS [REDACTED] A-67, NSA, AND MGEN
GIBBONS, 22 SEP 70.

PARA 5 EMITTERS, REF A IS DELETED. SUBSTITUTE FOLLOWING:

1.
2.
3.
4.
5.
6.
7.

[REDACTED]

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HANDLE VIA
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CONTROL SYSTEM ONLY

8.
9.
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11.
12.
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14.
15.
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17.
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0015

(Signature)

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By EMAN/TKK/omint
control systems
only 100% 01733

ROUTING										SUSPENSE				
OFFICE	OPI	INFO	ACT	COPY	OFFICE	OPI	INFO	ACT	COPY	OFFICE	OPI	INFO	ACT	COPY
DIAXX					DIAXX-4					PAF, ST				
DIAXX-1	✓	✓		2	DIAXX-3A2		✓		3-4					
DIAXX-2					DIAXX-3C		✓		5-7					
DIAXX-3					JCS-JRC					AP-3A7, CO				
DIAXX-3A1					GMAIC									
DIAXX-3B					SAFSS									
DIAXX-3A (FILE)		✓		1	DIASO-2									

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HANDLE VIA
TALENT-KEYHOLE
CONTROL SYSTEM ONLY

11 SEP 70 19 10z

DIAXX-3A

ZCZCNKC2391KB817NLA695

11 18 35z SEP 70

SAD

PP YSNKQA
DE YSIKOL 010 2541531
ZNY MMNSH
P 111530Z
FM SSO USEUCOM
TO SSO DIA
EEIC
INFO SSO HEIDELBERG
AFSSO USAFE
ZEM

PRIORITY

~~TOP SECRET~~ TTTT HANDLE VIA TALENT KEYHOLE CHANNELS ONLY

VHN 3050 TCO

SSO DIA FOR DIAXX; SSO HEIDELBERG FOR AEAGB-SX; AFSSO
USAFE FOR IN.

SUBJECT: SPECIAL ELINT COLLECTION REQUIREMENT

1. REFERENCES: A. VHN 2087 TCO, DTG 251320Z AUG 70,
SAME SUBJ.

B. DIACO-18 MSG DIA SECRET 9277, DTG
042107Z SEP 70 GENSER (NOTAL)

2. THIS IS A REQUIREMENT FOR LEVYING ON SAO RESOURCES

3. OBJECTIVE-OBTAIN MAXIMUM ELINT COVERAGE OF
WARSAW PACT EXERCISE "COMRADES-IN-ARMS."

4. (SS) PREPARATIONS ARE UNDER WAY IN EAST GERMANY FOR
A WARSAW PACT EXERCISE TITLED "COMRADES-IN-ARMS." THE
EXERCISE WILL PROBABLY BEGIN ABOUT 20 SEPTEMBER AND
MAY CONTINUE UNTIL MID-OCTOBER. EAST GERMAN, SOVIET,
POLISH, AND CZECHOSLOVAK GROUND AND AIR UNITS WILL
PROBABLY PARTICIPATE IN THIS EXERCISE AND THE OPERA-
TIONS ARE EXPECTED TO CENTER IN THE REGION OF THE

LIEBEROSE TRAINING AREA. INFORMATION ON EXERCISE IS
NEEDED TO REVEAL STATUS OF TRAINING AND TACTICS EM-
PLOYED BY PARTICIPATING FORCES.

5. REPORTING REQUIREMENTS:

Handle via
BYENIAN/TK/Com
control systems
only
identity

ROUTING

SUSPENSE

ROUTING					SUSPENSE				
OFFICE	OPI	INFO	ACT	COPY	OFFICE	OPI	INFO	ACT	COPY
DIAXX					DIAXX-4				
DIAXX-1	✓			2	DIAXX-3A2	✓		2-4	APPAF:ST
DIAXX-2									

PHASE II: AIR-GROUND TACTICAL OPERATIONS**(1) PERIOD: ABOUT****~~20~~ 20 SEP TO 17 OCT 70****AREA:****(2) SAME AS IN PHASE I****EMITTERS:****(3) SAME AS IN PHASE I****6 REPORTING**

A. TIMELINESS: A REPORTING FREQUENCY OF SIX HOURS FROM TIME OF INTERCEPT TO RECEIPT OF DATA AT EEIC IS REQUESTED TO FULFILL REQUIREMENTS FOR REGULAR, TIMELY REPORTING DURING THIS TEST

B. ACCURACY: DESIRED ACCURACY FOR ALL EMITTER LOCATIONS IS FIVE NM OR LESS

7. REPORT DISTRIBUTION:**SSO USECOM****EEIC****AFSSO USAF****BYEMAN**

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ERRORS

<u>SOURCE</u>	<u>ERROR IN μ SEC</u>
RECEIVER NOISE	1.8
QUANTIZATION	.21
IONOSPHERE	0.3
SOFTWARE	.01
SATELLITE THRESHOLD	1.0
CROSS CHANNEL BIAS	0.4
EPHEMERIS	2.0
GEODETIC	0.3
INCOMPLETE SORTING	—

BYEMAN

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CONTROL SYSTEMS JOINTLYTALENT-KEYHOLE-COMINT
CONTROL SYSTEMS JOINTLY~~TOP SECRET~~

..... 3 December 130PM until 5 PM

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INTRODUCTION

Overseas data processing in Program "C" is an outgrowth of the A-to-D data conversion effort which was authorized by the Harry DAVIS/PSAC review in late 1966. This effort provided not only the first A-to-D conversion complexes, but also provided the small computer system to ^{attempt} provide near real-time assessment of these conversion systems. The mandate was also explicit in requiring the development of a [] Geographic Location Sort" in order that the 7105 data could be assessed as to its potential for having emanated from one of the several known ABM sites. This geographic location sort/^{technique} was demonstrated and the briefing given the NRO in Dec. 67. ~~xxxx~~ No extension of the technique was called for after this briefing and for that matter the computers role was clearly only to provide the quality assessment of the A-to-D conversion systems.... In April 68 CNO in a briefing prior to his luncheon with Sec Eaton on SIGINT matters, was briefed by [] Mayo/Lorenzen with [] from Program Office present. ADM. MOORER gave us a clear mandate to demonstrate our capability for locating ships....there followed almost immediately, our first ship location and by August prior to the CZECH invasion we were reporting ships rather regularly. This period before CZECH " saw the widest variety seen over the next 12 months...particularly the emitters on Small Craft ~~were~~

The guidance given to the sites was more word of mouth from the NRL visitors during the period prior to October 1968 when the SOI priority lists were first generated by NSA. In Sept 68 the Quest for the identity of weapons system associated with [] (SA-5 or SA-4) led NSA to investigate the [] already over 4½ years old and by its characteristics it could have been a Missile associated signal. NSA asked -17 to geoposition several of these emitters; these results were the first X-Band signals geopositioned and reported in this program and their location on airfields in several spots in England came as quite a surprise. The British have a tail mounted ^{Radar} ~~set~~ in the VULCAN bomber called RED STEER that turned out to be [] but we got no credit for this identity, some message was found which allegedly made the association prior to our discovery.

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