

BYE-66358-88

DEPARTMENT OF THE AIR FORCE
 DIRECTORATE OF SPECIAL PROJECTS (OSAF)
 AF UNIT POST OFFICE, LOS ANGELES, CALIFORNIA 90045



REPLY TO
 ATTN OF: SP-1

19 May 1966

SUBJECT: FY 1967 Financial Plan/FY 1968 Budget Estimate

TO: DNRO (Dr Flax)

1. The attached FY 1967 Financial Plan/FY 1968 Budget Estimate and FY 1969 - FY 1972 Program Requirements are submitted in accordance with WHIG 5228.
2. During the past few weeks we have studied the FY 1967 budget level of \$43 million and have attempted to make an objective reply to your four alternatives. During this analysis we developed what I consider to be the optimum plan. This plan, and the reasons I consider it to be optimum, are fully covered in the attachment. The other alternatives are compared to this optimum plan, and I have serious reservations that any of the other alternatives would lead to a viable program. This optimum plan is shown as Alternative V which I recommend for approval.
3. Alternative I would result in the first STRAWMAN launch in late 1967, essentially the same as the optimum plan. The over-all three year cost of Alternative I is 25 per cent less than Alternative V, although the FY 1967 cost is \$64 million as compared to \$65 million. We would have only two 30 to 60 day life Multi-group/Setter missions in eighteen months as compared to three. The STRAWMAN launch rate would decrease from three to two per year. For an over-all saving in cost of 25 per cent, we would lose 60 per cent of the coverage capability. I am definitely of the opinion that such a low planned launch rate would seriously jeopardize the success of the ELINT collection program.
4. Alternative II would fly four Multi-group/Setter missions prior to the first STRAWMAN in late 1968, a delay of one year. During this year we would only be satisfying the USIB requirement in a very restricted portion of the frequency spectrum. The two per year projected launch rate is subject to the same serious reservations I have already indicated. The FY 1967 cost of this alternative is \$53 million. Total program costs are essentially the same as Alternative I; effective coverage is less.
5. Alternative III, which is based on the \$43 million FY 1967 funding level, would not result in a STRAWMAN launch until 1969. If this limitation must apply, a better approach would be to bypass STRAWMAN entirely and go to the

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However, this would mean that the present lack of effectiveness in satisfying the requirements would exist for over three more years and I question whether this would be acceptable.

6. Alternative IV, at \$45 million, would provide the same launch rates as Alternative I and is subject to the same discussion. However, it would require immediate termination of the POPPY and P-11 [] program. Cancellation of the P-11/[] program would leave a collection void above 3,300 megacycles for EOB, as well as stopping all COMINT and directed coverage missions.

7. Alternative V is essentially the plan briefed to you on 1 April. In the course of a thorough examination of the alternative courses of action, I have concluded that this plan represents the best means of satisfying the USIB requirements starting from our present unsatisfactory capability for ELINT collection. It would provide, at the earliest possible date, and with the highest confidence, an operational program for ELINT collection. I recommend that you approve this alternative, even if it must be at the expense of other programs.

8. I have contracted for \$292K of FY 1966 effort in studies to protect the STRAWMAN launch date of December 1967. I request \$4 million additional FY 1966 funds to insure a systematic development of STRAWMAN with a first launch in 1967. If funded in June, this effort can be placed on contract this fiscal year and will provide about three months development work at the three contractors involved. If the \$4 million is funded in FY 1966, FY 1967 requirements will be reduced accordingly.


JOHN L. MARTIN, JR.
Brigadier General, USAF
Director

1 Atch
FY 67 Financial Plan,
FY 68 Budget Estimate

Distribution:
Cy 1 - DNRO (Dr Flax)
Cy 2 - []
Cy 3 - SP-2 (Col Smith)
Cy 4 - []

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20 May '66

FY 1967 FINANCIAL PLAN

FY 1968 BUDGET ESTIMATE

FY 1969 - FY 1972 PROGRAM REQUIREMENTS

C O N T E N T S

INTRODUCTION

PART I

SIGINT

NARRATIVE

FY 1967 FINANCIAL PLAN

ALTERNATIVE I

ALTERNATIVE II

ALTERNATIVE III

ALTERNATIVE IV

ALTERNATIVE V

FY 1968 BUDGET ESTIMATE/FY 1969 - 1972 PROGRAM REQUIREMENTS

ALTERNATIVE I

ALTERNATIVE II

ALTERNATIVE V

PART II



PART III

APPLIED RESEARCH

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FY 1967 FINANCIAL PLAN

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PROJECT SIGINT

1. Alternative V. This alternative is a derivative of the STRAWMAN presentation to DNRO on 1 April 1966. Schedule changes and recent cost inputs have been integrated to update the STRAWMAN briefing. Alternative V is based upon making FTV 2734 the first STRAWMAN with a second quarter FY 1968 launch. From the production standpoint, this has the greatest merit of the five alternatives. The payload acquisition and vehicle integration effort have been programmed in blocks of three. The multi-group payloads for FTV's 2731, 2732 and 2733 have been placed on contract and are quite far along in production. The Setter payloads have been built for 2731 and 2732. The Setter for 2733 is on contract. The principal contractors have withheld work on FTV's 2734, 2735, and 2736 as late as possible in anticipation of FTV 2734 beginning the block change to STRAWMAN. Alternative V contains the following launch schedule:

	<u>FY 1967</u>	<u>FY 1968</u>	<u>FY 1969</u>	<u>FY 1970</u>	<u>FY 1971</u>	<u>FY 1972</u>
Multi-Group	3					
Strawman		3	3			
POPPY	1	1	1	1	1	1
P-11	4	4	4			

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2. Launch Rate vs. Mission Effectiveness. Subsequent to the 1 April 1966 briefing, we have studied intensively a longer mission life with a lesser launch rate. We concluded that this is a highly unsound approach inasmuch as a two per year launch rate drastically increases the probability of failure in an unproven and complex system. It is evident in the history of SAFSP systems that failure rate drops sharply when the program reaches a repetitious launch rate. Under Alternative V, six STRAWMAN missions would be launched over a 24-month period. These six missions would give us sufficient repetitiveness to effectively transition into the [redacted] since the vehicle will take advantage of existing technology and that developed during the life of STRAWMAN. Under this option we would foresee the first two systems of the [redacted] being built together. Then a block change incorporating improvements would be instituted with the third unit. Should the longer life materialize and

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probability of success appear satisfactory, the third of fourth system would be held in standby status, and the program would have a quick turn-around capability. In summary, we feel that a sound turn-around capability is mandatory before launch rates of a highly complex satellite system can be decreased.

3. Mission Coverage vs Costs.

a. Under our alternative V, during the period FY 1967, 1968, and 1969, we would launch three multi-group and six STRAWMAN missions. This would give 1,170 days or reduced by .9 reliability, 1,053 days. Under alternative II, four multi-group and two STRAWMAN missions would be launched. By the same factors this should result in 432 days of mission coverage. This is a reduction of 60 per cent in coverage for a cost savings of 25 per cent

b. There are two other significant points. First, the gap in the event of complete failure is more pronounced in Alternative II because of the slower rate of launch. Conversely, Alternative V has enough production to allow a faster turn-around. Secondly, we feel that the slower launch rate has a high level of risk in an unproven system. We foresee the need to launch the STRAWMAN at a higher rate at the inception of the project and spread the launch centers and the acquisition as the system passes from the development phase.

4. STRAWMAN Concept.

a. This concept is an optimization of today's hardware into a system which maximizes the complete satisfaction of the total ELINT collection requirements. It is oriented toward the collection of priority EOB information with emphasis on overcoming the major difficulties in the present system, namely, collection in the dense interleaved environment and meeting the USIB location accuracy requirements. It also contains a technical intelligence collection capability, some general search, and COMINT collection capability. The continuous coverage and timeliness requirement is satisfied by attaining six months life on orbit with command capability to task and change the collection program after launch during orbit operations.

b. Frequency coverage is 125 - 1,800 mcs with a modified AIL payload (THRESHER), and 1,800 - 3,350 mcs with a separate LTV extended range Setter payload (REAPER). The technical intelligence

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requirement is accomplished by selective predetection wide-band recording of signals of interest with the five megacycle band width analog recorder. The lifetime of this recorder is extended by a (RECOGNIZER) concept which essentially utilizes received signals of interest to physically control the recording operations. The recorder will be utilized with both the REAPER and THRESHER payloads providing wide-band TI capability over the total frequency spectrum from 125 to 3,300 megacycles.

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Both primary payloads will record digital information on SOLID STATE RECORDERS to provide longer life, low power operation and faster and more efficient data transmission and processing. The Air-Ground data link will be provided by incorporation of Space Ground Links System (SGLS) operating at S Band to handle the considerable increase in data collected. Real time command and control flexibility will be provided by the incorporation of a RELOADABLE PROGRAMMER which will allow on-orbit programming to change collection requirements and objectives after launch.

c. The frequency range above 3,300 megacycles will be covered utilizing P-11 vehicles with Fanion-like payloads directed against specific frequency bands and target emitters.

d. The STRAWMAN system thus provides a substantial improvement in all areas of SIGINT collection and matches the collection capability to the requirements. This includes: Increased probability of intercept, identification and accurate location of all EOB targets, capability to selectively collect technical intelligence quality data on targets over a wide frequency range, COMINT capability for longer periods of time than in the past, and a vehicle on orbit at all times with the capability to change collection objectives in near real time.

e. The following are the major parts of the STRAWMAN system:

(1) THRESHER. This payload covers the frequency range of 125 - 1,800 mcs. It is a modification of the AIL payload to provide the capability to operate in a dense interleaved emitter environment and to accurately locate emitters to within ± 10 miles. This is accomplished by measuring both elevation and azimuth of every received pulse utilizing data derived from six arm dual mode flat spiral antennas. Improved receivers contain narrower band IF channels, to reduce the density of received signals as well as providing a better phase tracking capability to minimize DF errors. The scan characteristics will be

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programable over variable frequency ranges to allow selective priority coverage while on orbit. Predetection wide-band recording of several classes of signals will be initiated upon recognition. Digital EOB data will be stored on a solid state recorder to provide a total solid state system capable of six months orbit lifetime.

(2) REAPER. This payload covers the frequency range from 1,800 to 3,300 mcs. It is a modification or extension of the frequency coverage of the Setter Payload but retains the data handling concepts and much of the hardware of the existing Setter units. Accuracy is improved to better than ± 10 miles by adding an additional set of six antennas for the extended frequency coverage and improving the frequency tracking capability of the system. The antenna spacing is also increased and the total antenna system is solid mounted on the forward face of the vehicle to reduce alignment errors. Selective frequency scan is provided while on orbit. Wide-band predetection recording of selected signals is also provided. Digital data is recorded on a Solid State Recorder to provide consistent lifetime with the balance of the system.

(3)

(4)

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(5) RECOGNIZER. The capability to recognize against several different parameters is accomplished by this concept. Recognition criteria such as pulse width (PW), pulse repetition interval (PRI), frequency, etc., are loaded into storage by the reloadable programmer. Comparison of received emitter

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characteristics with several stored values of signals of interest are continuously made. When a signal is received which matches the stored data, the receiver scan is stopped and wide-band recording of the signal is accomplished. The emitter characteristics of interest can be changed while on orbit, as well as the quantity of wide-band data collected. In this manner, the effective lifetime of the wide-band recorder can be extended to six months, thus substantially improving the probability of intercepting signals of high technical intelligence interest.

(6) RELOADABLE PROGRAMMER. The present Fairchild timer cannot exercise fully the technical features of the multi-group and Setter payloads and does not provide complete flexible control of the vehicle. Commanding capabilities needed, but not available, include: Independent programming of digital and analog modes, on-orbit reprogramming in response to updated intelligence requirements, reprogramming to correct for drift of the ground tracks, and orbital life of six months. Deficiencies of the present system will be greatly aggravated upon adoption of the STRAWMAN program. The reloadable programmer will eliminate all presently known deficiencies in the command system and will accommodate the sophistications planned for STRAWMAN payloads. This cost is in the "Satellite Peculiar" item.

(7) SOLID STATE RECORDER. The use of mechanical, rotating device tape recorders places serious limitations on the orbit lifetime, quantity of stored data, and capability to read out at tracking stations. STRAWMAN payloads will generate digital data in quantities, and at rates, approximately four times greater than the multi-group/Setter payloads. It is imperative that a significantly improved data storage device be developed, and indications are that this can be achieved now in a solid state core memory. Use of the solid-state recorder will give an over-all improvement in data system efficiency, will meet lifetime requirements and also provide greater flexibility in resolving SCF conflicts. Proposals by IMSC, LTV, and AIL are currently being evaluated. This cost is shown in the "Applied Research" section.

(8) SGLS. The Space Ground Link Subsystem (SGLS) is under development by the Air Force Satellite Control Facility. The SGLS is an integrated subsystem providing ground facilities at tracking stations and compatible satellite equipment to perform the functions of tracking, commanding, and telemetry. The SGLS will use the 1.7 gc and 2.2 gc regions of the radio frequency spectrum in compliance with the Executive Order to vacate the VHF and 2.9 gc regions of the spectrum. The SGLS uses range and range rate tracking, digital commanding, and PCM telemetry and data to replace the present obsolescent analog techniques. The satellite equipment uses modular packaging to accommodate program peculiar requirements and is designed for long life in orbital environments. This cost is part of "Satellite Control Peculiarities".

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5. Mission Planning. Computer programs are needed to generate commands which utilize the flexibility for on-orbit decision making inherent in the loadable programmer. These programs must be developed, tested and maintained to be compatible with the payload hardware, intelligence community requirements, and to interface with payload data processing. Requirements for constant updating of payload commanding and system improvements (hardware, tracking and control) necessitate a recurring level of support.

6. Mission Analysis and Data Services (MADS). The effort presently being expended in operational support of all vehicles on orbit, and preparations for new launches, has been isolated to provide more effective management. It is being separately contracted for and will be managed by tasking as a level-of-effort activity which includes payload processing, planning, operational support, data handling, engineering data analysis and mission related tasks.

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FY 1967 FINANCIAL PLAN

PROJECT SIGINT
Alternative I

SCHEDULE

		<u>FY 1967</u>	<u>FY 1968</u>	<u>FY 1969</u>	<u>FY 1970</u>	<u>FY 1971</u>	<u>FY 1972</u>
MULTI-GROUP	Buy	1					
	Launch	2					
STRAWMAN Payload	Buy	1	2	2	2	2	2
	Launch		1	2	2	2	2
POPPY	Buy	1	1	1	1	1	1
	Launch	1	1	1	1	1	1
P-11, <input type="text"/>	Buy	<input type="text"/>					
	Launch						
<input type="text"/>	Buy						
	Launch						

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\$ IN MILLIONS

FY 1967 FINANCIAL PLAN

PROJECT SIGINT
Alternative I

FUNDING REQUIREMENTS

<u>1st Qtr</u>	<u>2nd Qtr</u>	<u>3rd Qtr</u>	<u>4th Qtr</u>	<u>TOTAL</u>
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HARDWARE AND RELATED COSTS:

WHITE FUNDS:

- System Integration and Test
- Thor/Thorad Booster
- Thor/Thorad Launch
- Agena
- Agena Launch
- BTL Guidance
- Satellite Peculiars
- Aerospace SE/TD
- Support Services
- P-11
- Navy

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Sub-Total WHITE

SAFSP BLACK FUNDS:

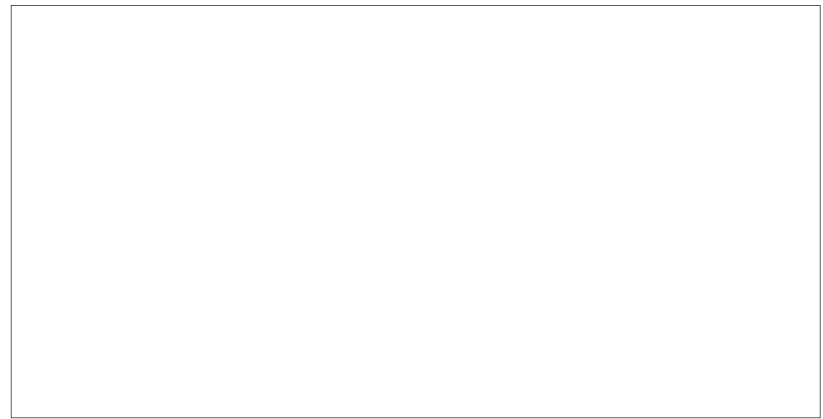
- Payload
- Thresher
- Reaper



- Multi-Group
- System Integration and Test
- Mission Planning
- MADS
- Satellite Peculiars

Sub-Total BLACK

TOTAL HARDWARE AND RELATED COSTS



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\$ IN MILLIONS

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PROJECT SIGINT
Alternative I

FUNDING REQUIREMENTS

<u>1st Qtr</u>	<u>2nd Qtr</u>	<u>3rd Qtr</u>	<u>4th Qtr</u>	<u>TOTAL</u>
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DEVELOPMENT COSTS

WHITE FUNDS:

Systems Integration and Test
Satellite Control Peculiars
Sub-Total WHITE

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SAFSP BLACK FUNDS:

Payload
Thresher
Reaper

[Redacted]

Satellite Control Peculiars
System Integration and Test

[Redacted]

MADS
Mission Planning
Sub-Total BLACK

TOTAL DEVELOPMENT COSTS

GRAND TOTALS

WHITE
SAFSP BLACK

TOTALS

[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
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FY 1967 FINANCIAL PLAN

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PROJECT SIGINT
Alternative I

AGENA SUMMARY

	<u>Units Acquired</u>	<u>Units Flown</u>	<u>Carry- over</u>	<u>Funding Summary</u>
FY 1965 and Prior	16	11	5	
FY 1966	3	2	6	
FY 1967	0	3	4	
FY 1968	2	2	3	
FY 1969	2	3	2	
FY 1970	3	3	2	
FY 1971	3	3	2	
FY 1972	<u>3</u>	<u>3</u>	2	
TOTALS	32	30		

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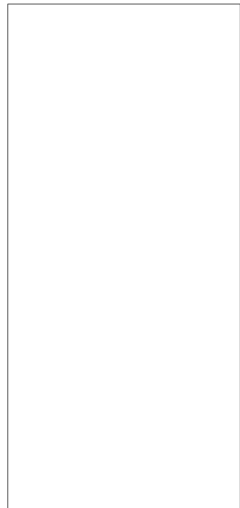
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FY 1967 FINANCIAL PLAN

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PROJECT SIGINT
Alternative I

BOOSTER SUMMARY

	<u>Units Acquired</u>	<u>Units Flown</u>	<u>Carry- over</u>	<u>Funding Summary</u>
FY 1965 and Prior	14	11	3	
FY 1966	4	2	5	
FY 1967	1	3	3	
FY 1968	1	2	2	
FY 1969	3	3	2	
FY 1970	3	3	2	
FY 1971	3	3	2	
FY 1972	<u>3</u>	<u>3</u>	2	
TOTALS	32	30		

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FY 1967 FINANCIAL PLAN

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PROJECT SIGINT
Alternative II

SCHEDULE

		<u>FY 1967</u>	<u>FY 1968</u>	<u>FY 1969</u>	<u>FY 1970</u>	<u>FY 1971</u>	<u>FY 1972</u>
MULTI-GROUP	Buy	2	1				
	Launch	2	2				
STRAWMAN Payload	Buy		1	2	2	2	2
	Launch			2	2	2	2
POPPY	Buy	1	1	1	1	1	1
	Launch	1	1	1	1	1	1
P-11 <input type="checkbox"/>	Buy	<div style="border: 1px solid black; width: 100%; height: 100%;"></div>					
	Launch						
<input type="checkbox"/>	Buy						
	Launch						

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\$ IN MILLIONS

FY 1967 FINANCIAL PLAN

PROJECT SIGINT
Alternative II

AGENA SUMMARY

	<u>Units Acquired</u>	<u>Units Flown</u>	<u>Carry- over</u>	<u>Funding Summary</u>
FY1965 and Prior	16	11	5	
FY 1966	3	2	6	
FY 1967	0	3	3	
FY 1968	2	3	2	
FY 1969	3	3	2	
FY 1970	3	3	2	
FY 1971	3	3	2	
FY 1972	<u>3</u>	<u>3</u>	2	
TOTALS	33	31		

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\$ IN MILLIONS

FY 1967 FINANCIAL PLAN

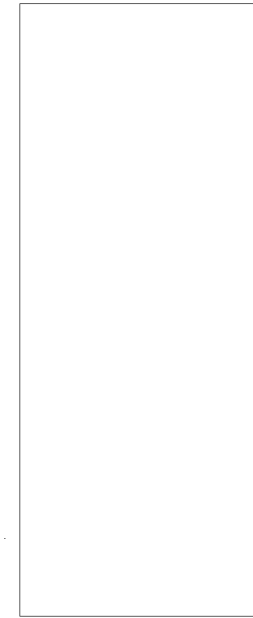
20 May 1966

PROJECT SIGINT
Alternative II

BOOSTER SUMMARY

	<u>Units Acquired</u>	<u>Units Flown</u>	<u>Carry- over</u>
FY 1965 and Prior	14	11	3
FY 1966	4	2	5
FY 1967	0	3	2
FY 1968	3	3	2
FY 1969	3	3	2
FY 1970	3	3	2
FY 1971	3	3	2
FY 1972	<u>3</u>	<u>3</u>	2
TOTALS	33	31	

Funding
Summary



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FY 1967 FINANCIAL PLAN

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PROJECT SIGINT

Alternative III.

1. Our concept of Alternative III would be an adjustment of Alternative II. Under Alternative II we would move FY 1967 development costs for system integration and test, and payload (THRESHER, REAPER) to FY 1968. This would lower FY 1967 by [redacted]. The reduction of POPPY in FY 1967 would be [redacted]. This would bring FY 1967 cost to [redacted]. Further reductions would have to be made in the P-11/[redacted] area to live within the [redacted]. This reduction would bring the P-11 [redacted] launch rate to approximately [redacted].

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2. The difference between the Alternative V and Alternatives I and II estimates is not significant; therefore, to contract at a lesser level of effort than the Alternative I and II level would result in diminishing savings.

3. Alternative II is based on a 1 January 1967 approval for STRAWMAN development. This would result in a launch in the second quarter of FY 1969, or a slip of one year from our Alternative V. By moving all STRAWMAN costs beyond FY 1967, the earliest expected launch would be in fourth quarter of FY 1969.

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PROJECT SIGINT

Alternative IV.

This alternative can be answered by adjusting Alternative I. To continue the STRAWMAN effort for a launch in December 1967, the P-11 [] effort and the POPPY effort would have to be terminated at start of FY 1967. This would reduce the FY 1967 Alternative I costs of [] to an alternative IV total of [] This plan would leave serious gaps in the SIGINT collection effort. In summary, we cannot foresee an answer to this alternative short of stopping the collection effort and applying the [] toward development of a sophisticated system for future years.

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PROJECT SIGINT
Alternative V

SCHEDULE

		<u>FY 1967</u>	<u>FY 1968</u>	<u>FY 1969</u>	<u>FY 1970</u>	<u>FY 1971</u>	<u>FY 1972</u>
MULTI-GROUP	Buy	2					
	Launch	3			50X1		
STRAWMAN Payload	Buy	2	3	1			
	Launch		3	3			
POPPY	Buy	1	1	1	1	1	1
	Launch	1	1	1	1	1	1
P-11 	Buy						
	Launch						
	Buy						
	Launch						

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\$ IN MILLIONS

FY 1967 FINANCIAL PLAN

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PROJECT SIGINT
Alternative V

FUNDING REQUIREMENTS

1st Qtr 2nd Qtr 3rd Qtr 4th Qtr TOTAL

HARDWARE AND RELATED COSTS:

WHITE FUNDS:

- System Integration and Test
- Thor/Thorad Booster
- Thor/Thorad Launch
- Agena
- Agena Launch
- BTL Guidance
- Satellite Peculiars
- Aerospace SE/TD
- Support Services
- P-11
- Navy

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Sub-Total WHITE

SAFSP BLACK FUNDS:

- Payload
- Thresher
- Reaper
-
- Multi-Group
- System Integration and Test
- Mission Planning
- MADS
- Satellite Peculiars

Sub-Total BLACK

TOTAL HARDWARE AND RELATED COSTS

	<u>1st Qtr</u>	<u>2nd Qtr</u>	<u>3rd Qtr</u>	<u>4th Qtr</u>	<u>TOTAL</u>

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FY 1968 BUDGET ESTIMATE

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FY 1969 - FY 1972 PROGRAM REQUIREMENTS

PROJECT SIGINT
Alternative I

SCHEDULE

		<u>FY 1967</u>	<u>FY 1968</u>	<u>FY 1969</u>	<u>FY 1970</u>	<u>FY 1971</u>	<u>FY 1972</u>
MULTI-GROUP	Buy	1					
	Launch	2					
STRAWMAN Payload	Buy	1	2	2	2	2	2
	Launch		1	2	2	2	2
POPPY	Buy	1	1	1	1	1	1
	Launch	1	1	1	1	1	1
P-11 	Buy						
	Launch						
	Buy						
	Launch						

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FY 1968 BUDGET ESTIMATE

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FY 1969 - FY 1972 PROGRAM REQUIREMENTS

PROJECT SIGINT
Alternative I

AGENDA SUMMARY

	<u>Units Acquired</u>	<u>Units Flown</u>	<u>Carry- over</u>	<u>Funding Summary</u>
FY 1965 and Prior	16	11	5	
FY 1966	3	2	6	
FY 1967	0	3	4	
FY 1968	2	2	3	
FY 1969	2	3	2	
FY 1970	3	3	2	
FY 1971	3	3	2	
FY 1972	<u>3</u>	<u>3</u>	2	
TOTALS	32	30		

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\$ IN MILLIONS

FY 1968 BUDGET ESTIMATE

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FY 1969 - FY 1972 PROGRAM REQUIREMENTS

PROJECT SIGINT
Alternative I

BOOSTER SUMMARY

	<u>Units Acquired</u>	<u>Units Flown</u>	<u>Carry- over</u>	<u>Funding Summary</u>
FY 1965 and Prior	14	11	3	
FY 1966	4	2	5	
FY 1967	1	3	3	
FY 1968	1	2	2	
FY 1969	3	3	2	
FY 1970	3	3	2	
FY 1971	3	3	2	
FY 1972	<u>3</u>	<u>3</u>	2	
TOTALS	32	30		

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\$ IN MILLIONS

FY 1968 BUDGET ESTIMATE

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FY 1969 - FY 1972 PROGRAM REQUIREMENTS

PROJECT SIGINT
Alternative I

	FY 1967 <u>FIN PLAN</u>	FY 1968 <u>BUD. EST</u>	<u>PROGRAM REQUIREMENTS</u>			
			<u>FY 1969</u>	<u>FY 1970</u>	<u>FY 1971</u>	<u>FY 1972</u>
<u>DEVELOPMENT COSTS:</u>						
<u>WHITE FUNDS:</u>						
System Integration and Test						
Satellite Control Peculiars						
Sub-Total WHITE						
		50X1				
<u>SAFSP BLACK FUNDS:</u>						
Payload						
Thresher						
Reaper						
<input type="text"/>						
Satellite Control Peculiars						
Systems Integration and Test						
MADS						
Mission Planning						
Sub-Total BLACK						
TOTAL DEVELOPMENT COSTS						
GRAND TOTALS						
WHITE						
BLACK						
TOTAL						

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Handle via BYEMAN
Control System

BYE-66358-66

\$ IN MILLIONS

FY 1968 BUDGET ESTIMATE

20 May 1966

FY 1969 - FY 1972 PROGRAM REQUIREMENTS

PROJECT SIGINT
Alternative I

	FY 1967 <u>FIN PLAN</u>	FY 1968 <u>BUD. EST</u>	<u>PROGRAM REQUIREMENTS</u>			
			<u>FY 1969</u>	<u>FY 1970</u>	<u>FY 1971</u>	<u>FY 1972</u>

HARDWARE AND RELATED COSTS:

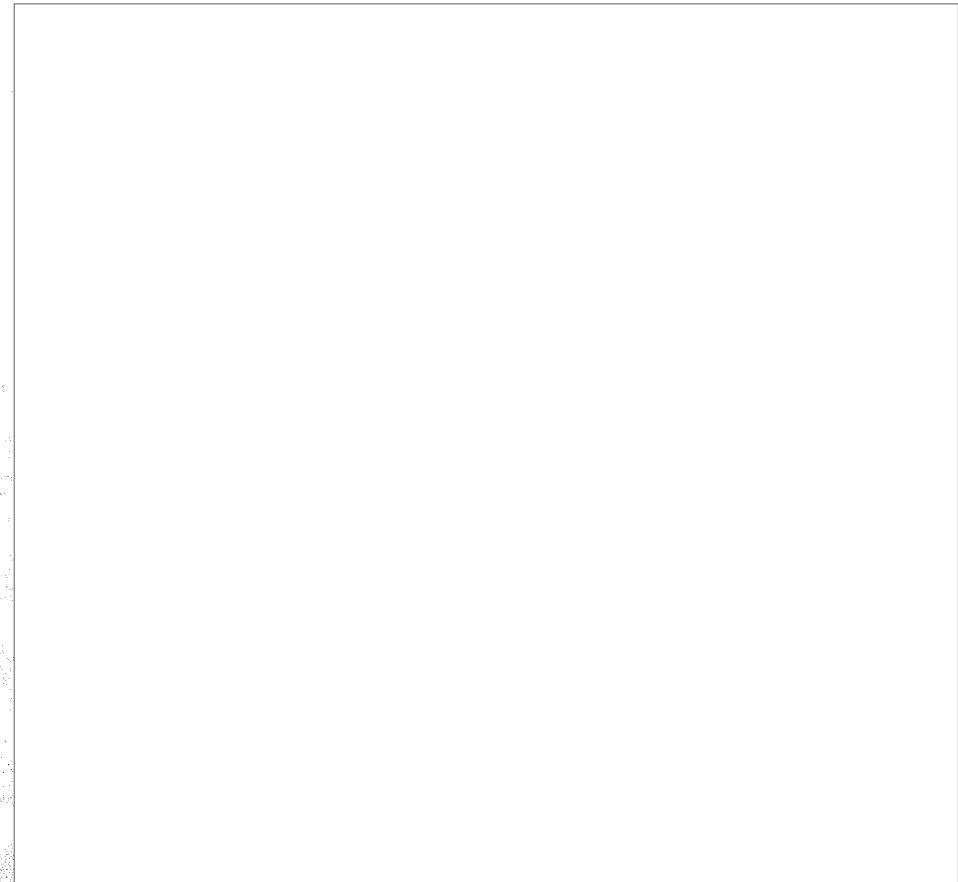
WHITE FUNDS:

System Integration and Test
 Thor/Thorad Booster
 Thor/Thorad Launch
 Agena
 Agena Launch
 BTL Guidance
 Satellite Peculiars
 Aerospace SE/TD
 Support Services 50X1
 P-11
 Navy
 Sub-Total WHITE

SAFSP BLACK FUNDS:

Payload
 Thresher
 Reaper
 []
 Multi-Group
 System Integration and Test
 Mission Planning
 MADS
 Satellite Peculiars
 Sub-Total BLACK

TOTAL HARDWARE AND RELATED COSTS



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via BYEMAN
System

BYE-66358-66

\$ IN MILLIONS

FY 1968 BUDGET ESTIMATE

20 May 1966

FY 1969 - FY 1972 PROGRAM REQUIREMENTS

PROJECT SIGINT
Alternative II

BOOSTER SUMMARY

	<u>Units</u> <u>Acquired</u>	<u>Units</u> <u>Flown</u>	<u>Carry-</u> <u>over</u>	<u>Funding</u> <u>Summary</u>
FY 1965 and Prior	14	11	3	
FY 1966	4	2	5	
FY 1967	0	3	2	
FY 1968	3	3	2	
FY 1969	3	3	2	
FY 1970	3	3	2	
FY 1971	3	3	2	
FY 1972	<u>3</u>	<u>3</u>	2	
TOTALS	33	31		

50X1

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Trans via BYEMAN
Control System

BYE-66358-66

\$- IN MILLIONS

FY 1968 BUDGET ESTIMATE

20 May 1966

FY 1969 - FY 1972 PROGRAM REQUIREMENTS

PROJECT SIGINT
Alternative II

DEVELOPMENT COSTS:

WHITE FUNDS:

System Integration and Test
Satellite Control Peculiars
Sub-Total WHITE 50X1

SAFSP BLACK FUNDS:

Payload
Thresher
Reaper

Satellite Control Peculiars
Systems Integration and Test
MADS
Mission Planning
Sub-Total BLACK

TOTAL DEVELOPMENT COSTS

GRAND TOTALS
WHITE
BLACK

TOTAL

FY 1967 FIN PLAN	FY 1968 BUD. EST	PROGRAM REQUIREMENTS			
		FY 1969	FY 1970	FY 1971	FY 1972
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Handle via BYEMAN
Control System

BYE-66358-66

\$ IN MILLIONS

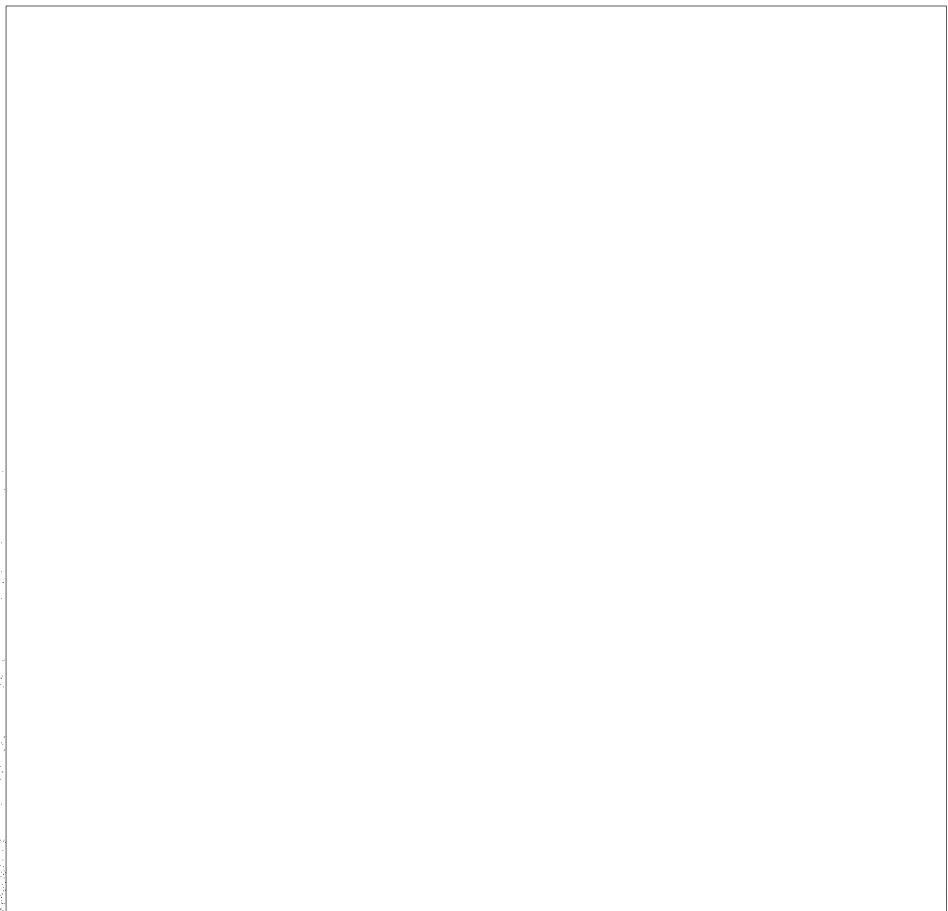
FY 1968 BUDGET ESTIMATE

20 May 1966

FY 1969 - FY 1972 PROGRAM REQUIREMENTS

PROJECT SIGINT
Alternative II

	FY 1967	FY 1968	PROGRAM REQUIREMENTS			
	<u>FIN PLAN</u>	<u>BUD EST</u>	<u>FY 1969</u>	<u>FY 1970</u>	<u>FY 1971</u>	<u>FY 1972</u>
<u>HARDWARE AND RELATED COSTS:</u>						
<u>WHITE FUNDS:</u>						
Systems Integration and Test						
Thor/Thorad Booster						
Thor/Thorad Launch						
Agna						
Agna Launch						
BTL Guidance						
Satellite Peculiars						
Aerospace SE/TD						
Support Services	50X1					
P-11						
Navy						
Sub-Total WHITE						
<u>SAFSP BLACK FUNDS:</u>						
Payload						
Thresher						
Reaper						
Setter						
Multi-Group						
Systems Integration and Test						
Mission Planning						
MADS						
Satellite Peculiars						
Sub-Total BLACK						
TOTAL HARDWARE AND RELATED COSTS						



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Trans via BYEMAN
Control System

EYE-66358-66

FY 1968 BUDGET ESTIMATE

20 May 1966

FY 1969 - FY 1972 PROGRAM REQUIREMENTS

PROJECT SIGINT
Alternative II

SCHEDULE

		<u>FY 1967</u>	<u>FY 1968</u>	<u>FY 1969</u>	<u>FY 1970</u>	<u>FY 1971</u>	<u>FY 1972</u>
MULTI-GROUP	Buy	2	1				
	Launch	2	2				
STRAWMAN Payload	Buy		1	2	2	2	2
	Launch			2	2	2	2
POPPY	Buy	1	1	1	1	1	1
	Launch	1	1	1	1	1	1
P-11	Buy						
	Launch						
	Buy						
	Launch						

50X1

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Handle via BYEMAN
Control System

BYE-66358-66

\$ IN MILLIONS

FY 1968 BUDGET ESTIMATE

20 May 1966

FY 1969 - FY 1972 PROGRAM REQUIREMENTS

PROJECT SIGINT
Alternative II

AGENA SUMMARY

	<u>Units Acquired</u>	<u>Units Flown</u>	<u>Carry- over</u>	<u>Funding Summary</u>
FY 1965 and Prior	16	11	5	
FY 1966	3	2	6	
FY 1967	0	3	3	
FY 1968	2	3	2	
FY 1969	3	3	2	
FY 1970	3	3	2	
FY 1971	3	3	2	
FY 1972	<u>3</u>	<u>3</u>	2	
TOTALS	33	31		

50X1

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Control System

BYE-66358-66

FY 1968 BUDGET ESTIMATE

20 May 1966

FY 1969 - FY 1972 PROGRAM REQUIREMENTS

PROJECT SIGINT
Alternative V

SCHEDULE

		<u>FY 1967</u>	<u>FY 1968</u>	<u>FY 1969</u>	<u>FY 1970</u>	<u>FY 1971</u>	<u>FY 1972</u>	
MULTI-GROUP	Buy	2						
	Launch	3						
STRAWMAN Payload	Buy	2	3	1				
	Launch		3	3				
POPPY	Buy	1	1	1	1	1	1	
	Launch	1	1	1	1	1	1	
P-11	Buy							50X1
	Launch							
	Buy							
	Launch							

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Handle via BYEMAN
Control System

BYE-66358-66

20 May 1966

\$ IN MILLIONS

FY 1968 BUDGET ESTIMATE

FY 1969 - FY 1972 PROGRAM REQUIREMENTS

PROJECT SIGINT
Alternative V

DEVELOPMENT COSTS:

WHITE FUNDS:

System Integration and Test
Satellite Control Peculiars

[Redacted]

Sub-Total WHITE

SAFSP BLACK FUNDS:

Payload

[Redacted]

Thresher

Reaper

[Redacted]

Satellite Control Peculiars
Systems Integration and Test

[Redacted]

MADS

Mission Planning

Sub-Total BLACK

TOTAL DEVELOPMENT COSTS

GRAND TOTALS - WHITE

SAFSP BLACK

TOTALS

FY 1967 FIN PLAN	FY 1968 BUD. EST	PROGRAM REQUIREMENTS			
		FY 1969	FY 1970	FY 1971	FY 1972

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						50X1
						50X1

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Control System

BYE-66358-66

\$ IN MILLIONS

FY 1968 BUDGET ESTIMATE

20 May 1966

FY 1969 - FY 1972 PROGRAM REQUIREMENTS

PROJECT SIGINT
Alternative V

AGENA SUMMARY

	<u>Units Acquired</u>	<u>Units Flown</u>	<u>Carry- over</u>	<u>Funding Summary</u>
FY 1965 and prior	16	11	5	
FY 1966	3	2	6	
FY 1967	1	4	3	
FY 1968	3	4	2	
FY 1969	2	4	0	
FY 1970				
FY 1971				
FY 1972	—	—		
TOTALS	25	25		

50X1

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Handle via BYEMAN
Control System

BYE-66358-66

\$ IN MILLIONS

FY 1968 BUDGET ESTIMATE

20 May 1966

FY 1969 - FY 1972 PROGRAM REQUIREMENTS

PROJECT SIGINT
Alternative V

BOOSTER SUMMARY

	<u>Units Acquired</u>	<u>Units Flown</u>	<u>Carry- over</u>	<u>Funding Summary</u>	
FY 1965 and prior	14	11	3		50X1
FY 1966	4	2	5		
FY 1967	1	4	2		
FY 1968	4	4	2		
FY 1969	4	4	2		
FY 1970	4	4	2		
FY 1971	4	4	2		
FY 1972	<u>4</u>	<u>4</u>	2		
Totals	39	37			

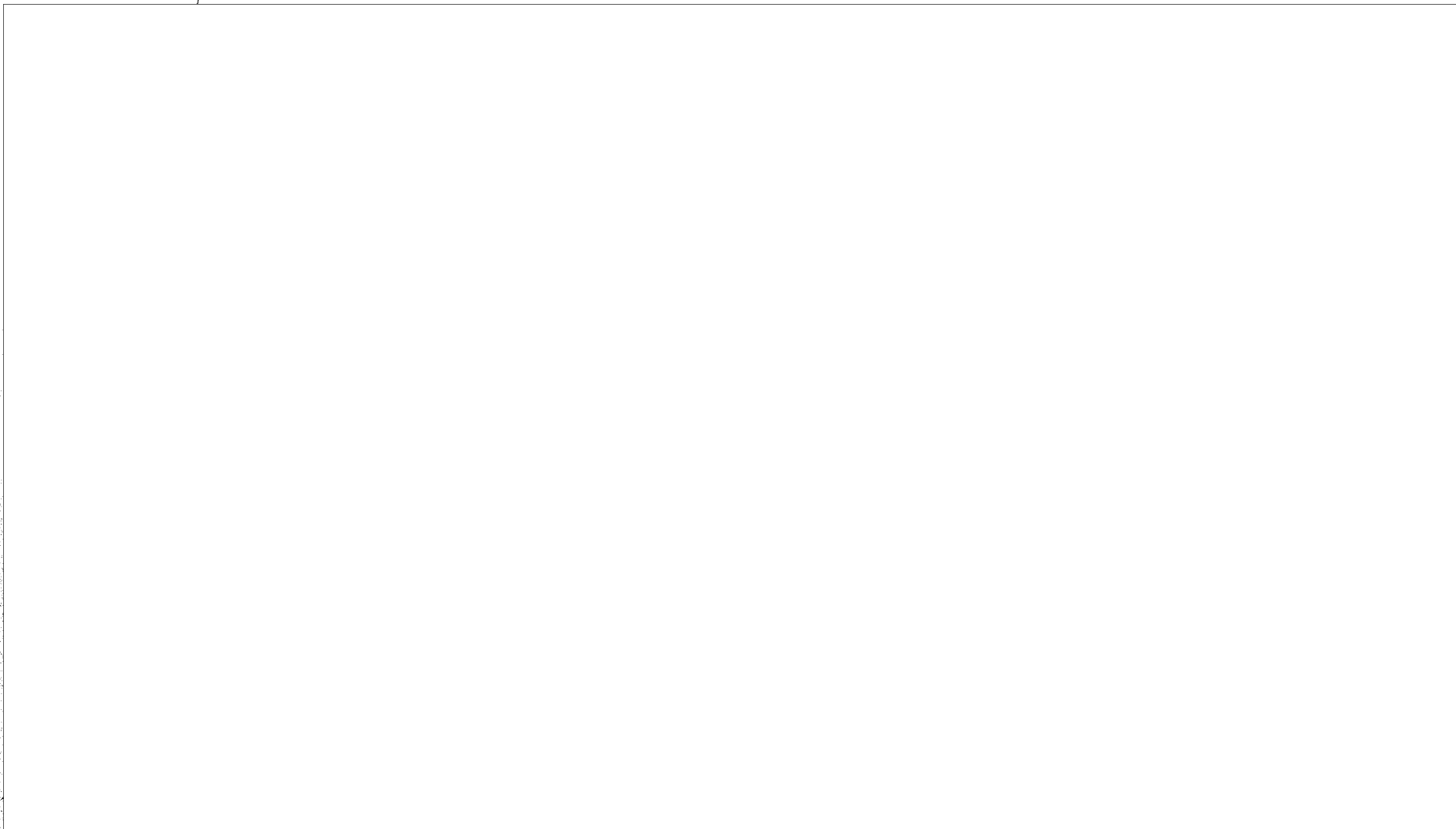
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Handle via BYEMAN
Control System

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50X1

FY 1967 FINANCIAL PLAN

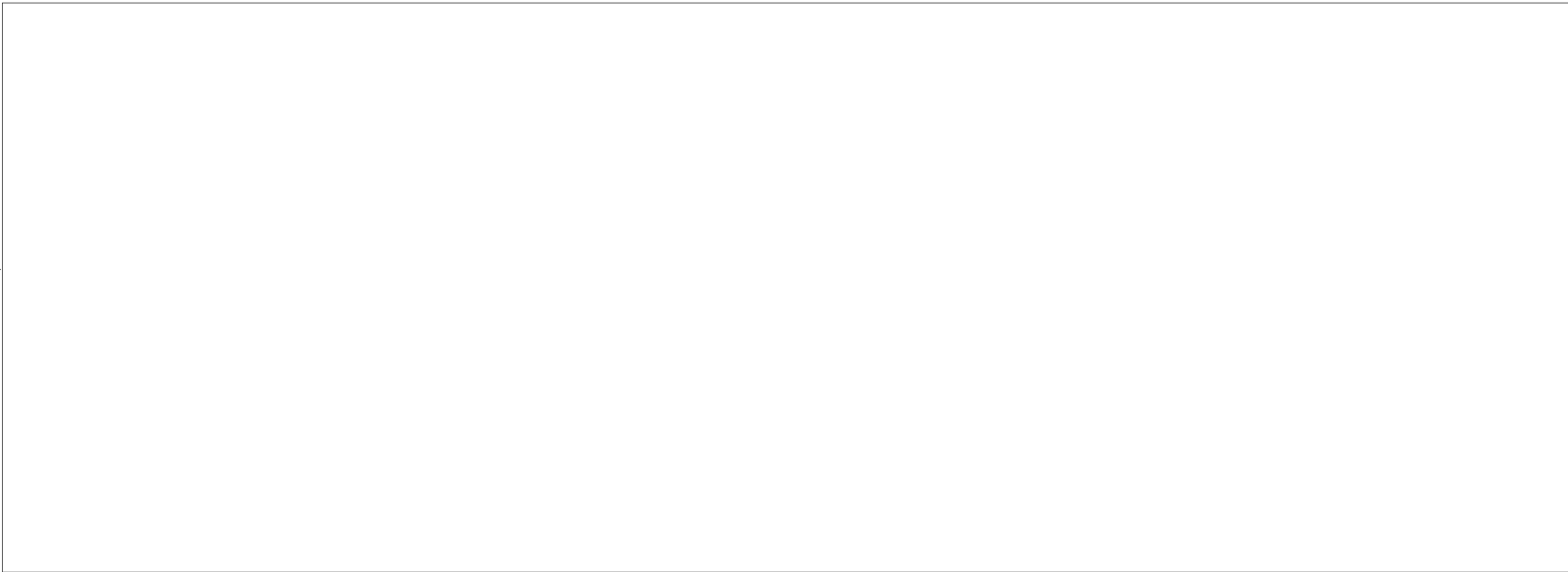


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Control via BYEMAN
Control System

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Handle via DYEMAN
Control System

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\$ IN MILLIONS

FY 1967 FINANCIAL PLAN

20 May 1966



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CONTROL SYSTEM BYEMAN
Control System

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FY 1968 BUDGET ESTIMATE

\$ IN MILLIONS

FY 1969 - FY 1972 PROGRAM REQUIREMENTS

20 May 1966



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Control System

BYE-66358-66

FY 1967 FINANCIAL PLAN



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Control System

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\$ IN MILLIONS

FY 1967 FINANCIAL PLAN

20 May 1966



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Control System

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