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## FINAL REPORT

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## MANAGEMENT AND CONTRACTING EVALUATION GROUP FOR PROCURING A STAR SENSOR SUB-SYSTEM

(WITH BRIEFING CHARTS)

24 March 1976

SSA COSTS CONSTRAINTS

BENDIX/ITEK WOULD SUBCONTRACT TO PE FOR CAMERA SYSTEM INTEGRATION

COMPARABLE TO THOSE ON K-4 WOULD BE REQUIRED FOR SSA

K-4 Type Star Sensor Assemblies Would be Used

HEXAGON SUSTAINING MANPOWER AT PE IS NOT NECESSARILY AVAILABLE FOR SSA

LMSC MIDSECTION MODIFICATIONS SIMILAR TO S<sup>3</sup> Except for A THERMAL SOLUTION

HANDLE VIA BYEMAN CONTROL SYSTEM

SSA COSTS BASIS OF ESTIMATE

\$ IN MILLIO SOURCE OF INFORMATION COST DESCRIPTION KPO NEGOTIATED COSTS \$ 3.420 C05118664 REDUNDANT ON K-4 System 6 MOUNTED ORTHOGONALLY 9/05/01 KPO COST ON K-4 \$ 3.620 STAR SENSORS ASSEMBLIES Release 3 SSAs .500 SUBCONTRACT MONITORING COSTS COST: AT THE PRIME \$ QA, QC, QE BEFORE DELIVERY \$11.030 PROPOSED FOR DESIGN LABOR AND OVERHEAD BUILD & INTEGRATION OF S<sup>3</sup> S<sup>3</sup> PROPOSAL .800 COMPUTER, TRAVEL, OTHER \$ S<sup>3</sup> PROPOSAL 23%/15% G&A/FEE AT PE S<sup>3</sup> Cost Estimate \$ 5.000 LMSC INTEGRATION

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### CONTINGENCY

FUND PROTECTION PROVIDING FOR:

INCREASING SENSITIVITY OF STAR SENSORS.

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REDESIGN OF THE SSA/SV INTERFACE.

NORMAL COST GROWTH.

HANDLE VIA BYEMAN

# SSA COSTS SAFSP ESTIMATE FOR SV 17-18

BENDIX/ITEK SUBCONTRACTS		с. Фе
Assemblies - 2	\$6.840	
STAR SENSOR ASSEMBLIES - 4	4.825	
SUBCONTRACT MONITORING BEFORE DELIVERY	1.000	
		\$12.665
PE CAMERA SYSTEM INTEGRATION		• •
Labor and Overhead	\$5,000	
COMPUTER, TRAVEL, OTHER	.800	
G&A (Including Subcontracts)	4.200	
FEE	3.390	
	1	\$13.390
LMSC SYSTEM INTEGRATION	· .	
MIDSECTION MODIFICATION	\$5.000	
THERMAL SOLUTION	1.000	· •
	•	\$ 6.000
SUBTOTAL	· ··	\$32.055
CONTINGENCY		\$ 5.200
TOTAL NOT TO EXCEED COST ESTIMATE		\$37.255

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#### FINAL REPORT

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### MANAGEMENT AND CONTRACTING EVALUATION GROUP FOR PROCURING A STAR SENSOR SUB-SYSTEM

#### INTRODUCTION

This report is a supplement to "Final Report of Star Sensor Assembly Evaluation Group" dated 15 March 1976. This report consists of six parts. The first part is a brief summary of facts gathered and conclusions drawn by the SSA Evaluation Group. Parts II through V contain background, management concerns, various contract approaches and conclusions drawn by the Management and Contracting Evaluation Group. The sixth part is a copy of the briefing charts used by this group to brief Major General Kulpa on the results of the evaluation.

### PART I

The Star Sensor Assembly Evaluation Group was formed at the request of Major General Kulpa to evaluate the capability of "off-the-shelf" Star Sensor Assembly (SSA) to fulfill the Hexagon Program's mapping requirements for Vehicle 17 and up. Based upon the group's evaluation, it was concluded that the SSA could not be eliminated as a possible contender to fulfill the DMA requirements for the Hexagon metric pan camera system. However, it was also recognized that time and lack of data left many significant areas only superficially reviewed and should a decision be made to pursue a more definitive proposal for the SSA use, the following areas required additional attention:

Adequacy of vehicle

2. Impact of dedicated on vehicle power budget.

3. The method, accuracy and mission impact of calibration of the (b)(3) overall system.

4. Signal/noise analysis of SSA operating at 6.5 MV.

5. Possibility of reducing SSA detection capability below the 6.5 MV thereby increasing star acquisition rate and lowering dependence on gyros.

6. Capability of any proposed system to fulfill the overall system requirements with special emphasis on the 3 arc sec relative accuracy.

In the process of performing the technical evaluation of the SSA, it became apparent that certain management and contractual factors also required attention. Some of the concerns were verbally addressed Hanalo Via

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during the preliminary briefing on 11 March 1976. As a result of this briefing, General Kulpa requested another group be formed to evaluate the management and contracting factors associated with contracting for a star sensor sub-system on a competitive basis, i.e., Solid State Stellar ( $S^3$ ) and SSA systems.

#### PART II

The Management and Contracting Evaluation Group was formed to evaluate:

1. Reasons  $S^3$  was originally considered to be a selected source.

2. Various contract approaches that could be taken to effect a competition for the procurement of the systems from PE or Bendix-Itek.

3. Opening the competition for the procurement of a system to all gualified sources.

4. In conjunction with the above, procurement lead times and development/production schedules of the total Hexagon system.

#### PART III

#### A. BACKGROUND

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1. In the summer of 1974, SAFSP, DMA, Aerospace and SAFSS personnel reviewed a number of proposed methods of determining Hexagon vehicle attitude to meet DMA mapping requirements. Basic conclusions made from this review were:

a. Slit-type star-tracker attitude reference cameras (SSA basic design) could meet the pointing accuracy requirements only with extensive integration effort with the vehicle This was considered unacceptable.

b. Film stellar cameras which would either image stars on Hexagon intra-op film or on a separate film web were considered but were determined to have an unacceptable impact on the host vehicle.

c. The Solid State Stellar  $(S^3)$  Camera concept had the potential to meet the accuracy requirements and was the only candidate which met the criteria for minimal impact on the current Hexagon vehicle.

2. After evaluating the  $S^3$  concept further, SAFSP concluded that the  $S^3$  cubed camera was a high risk development program due to its use of Charge Coupled Devices (CCD's) as the focal plane. In addition, the whole concept that the panoramic camera line of sight was stable to a 5 arc-second accuracy appeared to be a high risk assumption. For these and other concerns, the recommendation was made that  $S^3$  not be implemented. This recommendation was made by SAFSP to SAFSS during the fall of 1974.



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3. Based on these concerns for the S<sup>3</sup>/Panoramic Metric Pan concept, SAFSS requested a study be performed to evaluate the risks involved. This study was initiated in November 1974 and was intended for completion by July 1975, so a decision for SV-17 and SV-18 mapping requirements could be made. Shortly after the study was begun, direction was received stating that S-Cubed implementation would be no earlier than Block IV so the study completion date was changed to 1 January 1976 and made more comprehensive.

4. In February 1975, the Star Sensor Assembly (SSA) to be used by another program was reviewed by SAFSP with LMSC and customer personnel. This device was determined to be similar to the hardware reviewed in 1974 and would have the same problems meeting accuracy requirements without extensive integration with \_\_\_\_\_\_ on the Hexagon vehicle. In addition, the problems being experienced by the SSA at that time concerning cost, schedule, and performance did not make it appear as an attractive alternative.

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5. Prior to completing the  $S^3$  risk evaluation but after extensive effort had been completed (November 1975), the Staff requested a risk evaluation on the S-Cubed concept. A revised risk assessment (i.e.,  $S^3$  was now considered a low risk project) combined with other factors resulted in the following direction to SAFSP.

a. Cancel Itek mapping cameras for SV-17 and SV-18, and

b. Continue MPS work to assure SV-17 implementation with the proviso that not more than \$1 million be expended until SAFSS reviewed the mapping requirement and alternatives further with DMA. The final decision has been delayed from February 1976 until 1 April 1976.

## B. <u>SELECTED SOURCE CONSIDERATIONS FOR S<sup>3</sup></u>

After the decision to cancel SV-17 and -18 mapping cameras, SAFSP looked at the justification for continuing what had evolved as a selected source procurement. Sufficient justification was considered to be available for the following reasons:

a. Only  $S^3$  appeared as a workable concept that had been verified by detailed study and still met the criteria of minimal impact on the host vehicle.

b. Perkin-Elmer had the best chance of meeting <u>system</u> performance objectives because:

(1) They had two years to study and understand the problem from a system standpoint.

(2) They would have overall performance responsibility for meeting the 5 arc-second system pointing accuracy.

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(3) They have a 900-man task force capable of working any unforeseen problems in either the stellar camera or the panoramic camera.

c. Only Perkin-Elmer had the capability to continue to work the Metric Pan problem from November 1975 until SAFSS decides on a course of action with the limited dollars available. Perkin-Elmer is continuing with the sustaining engineering labor force available.

d. The sustaining engineering available at Perkin-Elmer made any alternative to S-Cubed questionable from a cost standpoint, especially if Block IV systems are considered without the non-recurring development costs.

e. Schedule requirements to meet a SV-17 effectivity were very tight, and open competition procurement schedule was considered to be prohibitive from a total program schedule standpoint.

#### PART IV

The following management concerns are presented to provide a summary of . the problems this group feels are involved in achieving a metric panoramic capability.

#### A. SSA CONCEPT MATURITY

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Use of the SSA as an attitude sensor for the Hexagon Program uses a totally different attitude determination concept than does S<sup>3</sup>, and the SSA has significantly different impacts on the Hexagon Program. This group recommends a detailed study be performed on the SSA concept. The following is a list of areas of concern which have not been addressed adequately by the SSA Technical Evaluation Group and should be studied in more depth:

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d. A total look at an integrated MPS using the SSA has not been performed to verify that the overall concept is sound. This study should also be performed.

3. <u>Verification of 6.5 Star Magnitude Sensitivity</u>. The ability to modify the SSA to detect 6.5 magnitude or greater is so important to this concept that this group feels this capability must be demonstrated or thoroughly evaluated through study.

4. Error Budget. Some of the pointing MPS error budget are interdependent on the star sensor and the panoramic camera. One example is the error in determining the interlock angle between the star sensor line of sight and the panoramic line of sight. This error is significant and needs further study for the SSA concept.

#### B. SCHEDULE

Meeting the SV-17 schedule is a concern since commitment to a metric pan program regardless of its form has seen so much delay. The current S<sup>3</sup> schedule is tight and further delay will jeopardize SV-17 effectivity. Changing to the SSA concept is an even more difficult schedule problem because of (1) concept study required, (2) procurement process delays involved, and (3) manufacturing lead time for the SSA (23 months from go-ahead). The schedule shown in Figure I-A is that currently being pursued for the S<sup>3</sup> sensor. Additionally, the SSA delivery schedule of 23 months is superimposed as is the 27 month Hexagon Program MOD II procurement time.

#### C. MPS INTEGRATION

Regardless which star sensor is used, an effective MPS integrating contractor is required. At this point, only Perkin-Elmer is considered to have the total understanding of the MPS concept and has the overall resources to assure success. This group feels that Perkin-Elmer is the only integrator which the government would be able to incentivize based directly on meeting DMA overall mapping requirements. Perkin-Elmer also would best be able to respond to new problems or requirements as the integrator.

#### PART V

#### A. CONTRACT APPROACHES

1. Taking into consideration the management concerns and the overall program schedule as set forth in the preceding parts, this group evaluated

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various contract approaches that could be taken to effect a competition for the procurement of a star sensor sub-system. The basic ground rules and assumptions used were:

a. Decision defining approach required by 1 April 1976.

b. Star Sensor Sub-System hardware required by 1 July 1978 to avoid jeopardizing overall Hexagon Program schedule.

c. Launch date for SV-17 - Fall 1980.

2. Each approach was evaluated in detail and a list of pros and cons prepared for each. The approaches were:

a. Issue an RFP to all qualified sources, approximately 12, to provide a sub-system that would meet DMA's performance requirement. This approach was evaluated at some length but proved to be unfeasible based on the lengthy procurement cycle and production schedule (see Figures I-B and I-H).

b. Procure SSA from Bendix-Itek as a directed sub to P-E and have P-E integrate sub-systems hardware. Even though the approach is not a competitive procurement, it was evaluated and again proved to be unfeasible not only from a technical and schedule standpoint, but it would be impossible to justify exclusion of the  $S^3$  sub-system from consideration (see Figures I-C and I-H).

c. Procure SSA direct from Bendix-Itek and provide to P-E as Government Furnished Equipment (GFE) for integration. Again, even though this approach is not a competitive procurement, it was evaluated and again proved to be unfeasible not only for the same reasons as stated in para b., above, but the government would be accepting full responsibility that the total system worked (see Figures I-D and I-H).

d. Issue an RFP to LMSC, as integrator, to provide a sub-system that would meet DMA's performance requirements. This approach showed merit over the first three approaches; however, from an overall management standpoint it was also considered to be unfeasible as it would be impossible to incentivize the accuracy of the sub-system by itself (see Figure I-E). In addition, the procurement cycle required to effect this approach still presents an overall schedule problem (see Figure I-H) and is not the most preferred approach.

e. Issue an RFP to P-E, as integrator, to provide a sub-system on a make or buy decision that would meet DMA's performance requirements. This approach, in addition to effecting a competition, was considered to be the most feasible of all, not only for the management concerns but provides a better understanding of overall systems requirements (see Figure I-E). However, even with this approach the total procurement cycle presents a slight problem (see Figure I-H).



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The group also prepared a pro and con chart and procurement timeline for procuring the S<sup>3</sup> sub-system from P-E as a selected source to compare total time required to deliver a sub-system on or before 1 Jul 78 (see Figures I-G and I-H). Of all approaches evaluated, this is the most feasible based not only on the overall schedule considerations but it also increases the confidence in satisfying the DMA requirements.

#### **B.** CONCLUSIONS/RECOMMENDATIONS

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Based upon the above, the group concluded that P-E is the only contractor that can integrate the sub-system/pan camera combination into the Hexagon metric pan camera system and that the S<sup>3</sup> and SSA systems cannot be competed effectively until the additional concept study of the SSA is completed. Therefore, the conclusions and recommendations are to procure the S<sup>3</sup> sub-system from P-E as a selected source or recognize an overall program schedule impact if competition of a sub-system is effected.

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### EVALUATION OF

### THE MANAGEMENT CONCERNS AND CONTRACTING CONSIDERATIONS

FOR PROCURING A

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STAR SENSOR SUB-SYSTEM

25 MARCH 1976

OF THE PROPERTY E



SUMMARY OF EVENTS

### DATE

EVENT

1.4 6.4

11 MAR 76

12 MAR 76

15 MAR 76

PRELIMINARY REPORT OF STAR SENSOR ASSEMBLY EVALUATION GROUP TO MAJ GEN KULPA INITIAL MEETING WITH COL ANDERSON AND COL CAMPBELL REGARDING ESTABLISHMENT OF MANAGEMENT/CONTRACTING EVALUATION GROUP APPROVAL OF SELECTED COMMITTEE MEMBERS/CHARTER BY MAJ GEN KULPA AND FORMULATION OF COMMITTEE CONCERNS AND ASSIGNMENTS FOR EVALUATION FINAL REPORT OF STAR SENSOR ASSEMBLY EVALUATION GROUP MANAGEMENT/CONTRACTING EVALUATION GROUP REPORT TO MAJ GEN KULPA

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### TEAM COMPOSITION



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### • BACKGROUND

- INITIAL SELECTED SOURCE CONSIDERATIONS FOR S<sup>3</sup>
- MANAGEMENT CONCERNS
- CONTRACTING CONSIDERATIONS
- COMMENTS ON SSA EVALUATION GROUP REPORT
- CONCLUSIONS/RECOMMENDATIONS



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	BACKGROUND	- -
APPROX TIME	ACTIVITY	RESUL TS/CONCLUSIONS
CITRERETATI 1004		
SUMMER 1974	SAFSP, SAFSS, DMA, AEROSPACE, LMSC, PE REVIEW OF CONFIGURATION TRADES	(1)
		(2) FILM TYPE STELLARS WOULD REQUIRE EXTENSIVE FILM PATH MODES
		(3) S-CUBED CONCEPT MET ACCURACY AND MINIMUM IMPACT CRITERIA
FALL 1974	SAFSP COMPLETED REVIEW OF S-CUBED CONCEPT	RECOMMENDED NOT TO PROCEED WITH S-CUBED DUE TO HIGH RISKS
FALL 1974	SAFSS REQUESTED STUDY OF HIGH RISK CONCERNS	STUDY INITIATED IN NOVEMBER 19'
FEB 1975	SAFSS STATED S <sup>3</sup> SHOULD BE A BLOCK IV CONSIDERATION	STUDY COMPLETION REVISED FROM 1 JULY 75 TO 1 JAN 76

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	BACKGROU	ND (Cont'd)		
				• • • • • • • • • • • • • • • • • • •
APPROX TIME	ACTIVITY			RESULTS/CONCLUSIONS
FEB 1975	SAFSP REVIEWED SSA WITH L	MSC/	(1)	CONCEPT DETERMINED TO BE SAME AS PROPOSED EARLIER ⊉ g
			(2)	oved
			(3)	COST, SCHEDULE, AND PER- FORMANCE RECORD VERY (D) (C) (C) (C) (C) (C) (C) (C) (C) (C) (C
NOV 1975	NRO/DMA RE-EVALUATED SV-17 & 18 MAPPING REQUIRE	MENTS	(1)	SAFSP NOW CONSIDERED DEVELOPMENT RISK LOW
	SAFSP REVIEWED S <sup>3</sup> RISKS		(2)	SV-17 & 18 MAPPING CAMERAS
•			(3)	METRIC PAN CAPABILITY TO BE PURSUED TO INSURE SV-17 EFFECTIVITY
•		1	(4)	FUNDING LIMITED TO ✓ \$1M UNTIL MAPPING REQUIREMENTS/ ALTERNATIVES REVIEWED
FEB 1976	MAPPING DECISION DELAYED APRIL 1976	UNTIL	LIMI PRES	TED FUNDING COMMITTED TO SERVE SV-17 EFFECTIVITY
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### INITIAL SELECTED SOURCE CONSIDERATIONS

S<sup>3</sup> WAS THE ONLY CONCEPT VERIFIED BY DETAILED STUDY

PERKIN-ELMER HAD BEST CHANCE TO MEET SYSTEM PERFORMANCE REQUIREMENTS

STUDIED OVERALL PROBLEM FOR TWO YEARS

COULD BE INCENTIVIZED FOR OVERALL PERFORMANCE

HAD 900 MAN FORCE AVAILABLE FOR UNFORESEEN PROBLEMS

- DURING DELAY IN MAKING MAPPING DECISION ONLY PE HAD CAPABILITY TO CONTINUE MPS STUDY WITHIN FUNDING LIMITS
- SCHEDULE REQUIREMENTS MADE OPEN COMPETITION SEEM UNWISE





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- INTEGRATION
- SCHEDULES

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- SSA CONCEPT REQUIRES FURTHER STUDY
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MANAGEMENT CONCERNS

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### PRUDENT SSA DEVELOPMENT REQUIRES FURTHER STUDY

• INTEGRATION

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- NEED

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- POWER
- HEAT DISSIPATION
- DATA RATES
- 6.5 MAGNITUDE CAPABILITY NEEDS DEMONSTRATION
- CALIBRATION TECHNIQUE
- TOTAL INTEGRATED SYSTEM



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### SCHEDULE IS A PROBLEM

### SSA CONCEPT ANALYSIS REQUIRES TIME AND MONEY

PROCUREMENT PROCESS

MANUFACTURE

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TOTAL SYSTEM TESTING

DYNAMICS OF HEXAGON PROGRAM/MAPPING REQUIREMENTS





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SCHEDULE COMPARISON



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Figure I-A

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### INTEGRATION

MPS REQUIRES AN EFFECTIVE INTEGRATOR

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- MUST UNDERSTAND TOTAL PROBLEM

- MUST BE ABLE TO WORK UNEXPECTED PROBLEMS

- MEETING 5 SEC POINTING REQUIREMENTS SHOULD BE INCENTIVIZED







### CONTRACTING CONSIDERATIONS

- GROUND RULES AND ASSUMPTIONS
- CONTRACT APPROACHES TO BE TAKEN TO EFFECT A COMPETITION OF A STAR SENSOR SUB-SYSTEM:
  - OPEN COMPETITION TO ALL QUALIFIED SOURCES
  - SSA AS DIRECTED SUB TO PERKIN-ELMER
  - SSA PROVIDED AS GFE TO PERKIN-ELMER
  - LMSC AS INTEGRATOR AND PROVIDE A SUB-SYSTEM
  - PERKIN-ELMER AS INTEGRATOR AND PROVIDE A SUB-SYSTEM ON A MAKE-OR-BUY DECISION
- CONTRACT APPROACH WITHOUT COMPETITION PERKIN-ELMER PROVIDE S<sup>3</sup>
  SYSTEM AS SELECTED SOURCE
- PROCUREMENT LEADTIMES







### GROUNDRULES AND ASSUMPTIONS

DECISION DEFINING APPROACH REQUIRED 1 APR 76

STAR SENSOR SUB-SYSTEM HARDWARE REQUIRED 1 JUL 78

LAUNCH DATE FOR SV-17 - FALL 80

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ISSUE AN RFP TO ALL QUALIFIED SOURCES TO PROVIDE A SUB-SYSTEM THAT WOULD

MEET DMA'S PERFORMANCE REQUIREMENTS

### PRO'S

- POTENTIAL FOR LOWER COST OF SUB-SYSTEM
- **OPEN COMPETITION**
- BROADEN TECHNICAL BASE
- MINIMIZES POTENTIAL DISPUTE FROM EITHER P-E OR BENDIX/ITEK OR OTHER CONTRACTORS
- RETAIN TECHNICAL CONTROL OF SOURCE SELECTION

### CON'S

- MAY SURFACE ADDITIONAL TECHNICAL PROBLEMS
- POSSIBLE SECURITY PROBLEMS
- **REQUIRES MORE PROCUREMENT** LEAD TIME
- BECOMES GFE TO P-E WITH ALL ATTENDANT PROBLEMS THERETO
- Approved for Release: 2019/05/01 C05118664 ADDITIONAL INTEGRATION COSTS FOR BOTH ASSOCIATE CONTRACTORS

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INCREASES COMPLEXITY OF **TECHNICAL INTERFACES AND** SOURCE SELECTION PROCESS



Figure I-B



### PROCURE STAR SENSOR ASSEMBLY (BENDIX-ITEK) AS DIRECTED SUB TO P-E

AND P-E INTEGRATE SUB-SYSTEM HARDWARE

### PRO'S

POSSIBILITY OF USING HRP FOR INTE -GRATION EFFORT-AVOIDS ADDITIONAL COSTS

### CON'S

- VERY RISKY FROM A TECHNICAL, SCHEDULE AND COST POINT OF VIEW DUE TO LACK OF FULL SUPPORT BY P-E
- DIFFICULT IF NOT IMPOSSIBLE TO INCENTIVIZE PERFORMANCE
- VERY TOUCHY INTERFACE PROBLEM WITH SUB

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- MORE COSTLY
- POSSIBLE SCHEDULE PROBLEM
- IMPOSSIBLE TO JUSTIFY EXCLUSION OF  $\ensuremath{\mathsf{S}}^3$







### PROCURE STAR SENSOR ASSEMBLY (BENDIX-ITEK) DIRECT AND PROVIDE TO

**P-E AS GFE FOR INTEGRATION** 

### PRO'S

- GOVERNMENT RETAINS TECHNICAL CONTROL OF SOURCE SELECTION
- GOVERNMENT MAINTAINS MANAGEMENT CONTROL OVER ASSOCIATE CONTRACTOR
- POSSIBILITY OF USING HRP FOR INTEGRATION EFFORT - AVOIDS ADDITIONAL COSTS

### CON'S

- GOVERNMENT ACCEPTS FULL RESPONSIBILITY THAT TOTAL SYSTEM WORKS
- DIFFICULT IF NOT IMPOSSIBLE TO INCENTIVIZE PERFORMANCE
- LESS THAN FULL SUPPORT BY P-E
- VERY TOUCHY INTERFACE PROBLEM BETWEEN P-E/BENDIX-ITEK
- TWO PROCUREMENT ACTIONS REQUIRED
- POSSIBLY MORE COSTLY
- POSSIBLE INCREASE FOR CLAIMS BASED UPON LATE OR DEFICIENT GFE
- IMPOSSIBLE TO JUSTIFY EXCLUSION OF S<sup>3</sup>



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Figure I-D



ISSUE AN RFP TO LMSC (AS INTEGRATOR) TO PROVIDE A SUB-SYSTEM THAT WOULD

MEET DMA'S PERFORMANCE REQUIREMENTS

### PRO'S

- GOVERNMENT IS OUT OF SOURCE SELECTION CYCLE ADMINISTRATIVE EFFORT
- GOVERNMENT IS NOT PROVIDING THE SYSTEM AS GFE
- ELIMINATES POSSIBLE INTERFACE CONFLICTS BETWEEN PE/BENDIX-ITEK
- LMSC EXPERIENCED AS INTEGRATOR

### CON'S

- GOVERNMENT LOSES TECHNICAL CONTROL OF SUB-SYSTEM SOURCE SELECTION
- ADDITIONAL COST FOR INTEGRATION OF SUB-SYSTEM
- ADD MORE COMPLEXITY TO LMSC/PE INTERFACE
- IMPOSSIBLE TO INCENTIVIZE THE ACCURACY OF SUB-SYSTEM BY ITSELF
- WOULD HAVE TO INCENTIVIZE BOTH THE SUB-SYSTEM AND PAN CAMERA INDIVIDUALLY
- FAIR AND OBJECTIVE COMPETITION OF SELECTING A SUBCONTRACTOR WOULD BE DIFFICULT





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Figure I-E

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ISSUE AN RFP TO P-E (AS INTEGRATOR) TO PROVIDE A SUB-SYSTEM, ON A MAKE-OR-BUY .

DECISION, THAT WOULD MEET DMA'S PERFORMANCE REQUIREMENTS

### PRO'S

- GOVERNMENT IS OUT OF SOURCE SELECTION CYCLE ADMINISTRATIVE EFFORT
- GOVERNMENT IS NOT PROVIDING THE SYSTEM AS GFE
- ELIMINATE SOME OF THE PERFORMANCE INCENTIVE PROBLEM
- APPROVAL OF MAKE-OR-BUY, GOVERNMENT WOULD NOT LOSE TECHNICAL CONTROL OF SUB-SYSTEM SOURCE SELECTION
- MORE CLEARLY DEFINED SYSTEM PERFOR-MANCE RESPONSIBILITY TO ATTAIN REQUIRE-MENT
- POSSIBILITY OF USING HRP FOR INTEGRATION EFFORT
- BETTER UNDERSTANDING OF OVERALL SYSTEM REQUIREMENTS
- POTENTIAL FOR LOWER COST

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CON'S

- NOT AS EXPERIENCED AS LMSC IN THE INTEGRATOR ROLE
- FAIR AND OBJECTIVE COMPETITION OF SELECTING A SUBCONTRACTOR WOULD BE DIFFICULT

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Figure I-F

PROCURE S<sup>3</sup> SUB-SYSTEM FROM P-E AS SELECTED SOURCE

### PRO'S

- GOVERNMENT RECEIVES BENEFIT OF EFFORT ACCOMPLISHED TO DATE ON S<sup>3</sup>
- ELIMINATES THE PERFORMANCE INCENTIVE PROBLEM
- MORE CLEARLY DEFINES SYSTEM PERFORMANCE RESPONSIBILITY TO ATTAIN REQUIREMENT
- AVOIDS ADDITIONAL COSTS FOR INTEGRATION EFFORT BY USE OF HRP
- ACHIEVES BETTER UNDERSTANDING OF OVERALL SYSTEM REQUIREMENTS
- REDUCES PROCUREMENT LEADTIME BY APPROXIMATELY 4 MONTHS
- PROTECTS TOTAL PROGRAM SCHEDULE
- GREATLY SIMPLIFIES INTERFACE PROBLEMS
- INCREASES CONFIDENCE IN SATISFYING THE DMA REQUIREMENT
- EFFECTIVELY USES AVAILABLE SUSTAINING LABOR

 POSSIBLE PROTEST BY BENDIX-ITEK OR OTHER CONTRACTORS

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CON'S



Figure I-G



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# PROCUREMENT LEADTIMES (IN MONTHS)

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	•				L MSC OR	•
			SSA		P-E AS	S <sup>3</sup>
			AS	SSA	SELECTED	AS
	•	OPEN .	DIRECTED	AS	SOURCE	SEL ECTED
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COMMENTS ON COMMITTEE REPORT

### QUESTION "OFF THE SHELF" DESCRIPTION

ONLY THE OPTICS ARE COMPLETE ELECTRONICS NECESSARY TO DETECT 6.5 MV STARS ARE NOT OFF THE SHELF REQUIREMENTS FOR ADDED

SECRET/H

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Approved for Release: 2019/05/01 C05118664

WILL IMPACT SV

(b)(1 (b)(3

POWER SUBSYSTEM AND HEAT DISSIPATION TELEMETRY

ADDITIONAL STUDY REQUIRED VERIFY 6.5 MV CAPABILITY INTEGRATION OF CALIBRATION TECHNIQUE DETAILED ERROR BUDGET

HANDLE VIA BYEMAN CONTROL SYSTEM ONLY



### CONCLUSIONS/RECOMMENDATIONS

- P-E SHOULD INTEGRATE THE SS/PAN CAMERA COMBINATION INTO THE METRIC PAN SYSTEM (MPS)
- OPEN OR LIMITED COMPETITION OF SUB-SYSTEM WOULD JEOPARDIZE OV ERALL PROGRAM SCHEDULE
- SSA CONCEPT REQUIRES ADDITIONAL STUDY WHICH WOULD JEOPARDIZE OVERALL PROGRAM SCHEDULE
- OVERALL PROGRAM/PROCUREMENT SCHEDULE DICTATES SELECTION OF S<sup>3</sup> SUB-SYSTEM AS A SELECTED SOURCE
- IF COMPETITION OF SUB-SYSTEM IS REQUIRED:
  - P-E SHOULD PROVIDE BASED ON A MAKE-OR-BUY DECISION
  - RECOGNIZE AN OVERALL PROGRAM SCHEDULE IMPACT



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