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CONTROL SYSTEM

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Handwritten notes and signatures

DISTRIBUTION		
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SAFUS		✓
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SS-1		✓
SS-2		✓
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SS-5		✓
SS-6	✓	✓
SS-7		✓
COMP		✓
SS-TRF		✓
RF-11		
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AA 2271 *RR*

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HEXAGON [redacted]
DELIVER BY 0700 29 MAR 76
FOR: MR PLUMMER
FROM: GEN KULPA

SUBJECT: BENDIX-ITEX STAR SENSOR ASSEMBLY (SSA)
1. AS I MENTIONED IN OUR TELECON ON FRI, 26 MAR 7, WE HAVE COMPLETED BOTH A TECHNICAL AND MANAGEMENT/CONTRACTUAL REVIEW OF THE SSA TO DETERMINE IF THE SSA WOULD BE A COMPETITIVE ALTERNATIVE TO S-CUBED FOR THE HEXAGON METRIC PAN SYSTEM (MPS). THIS MESSAGE SUMMARIZES THE RESULTS OF THESE REVIEWS AND CONTAINS MY RECOMMENDATIONS.
2. TECHNICAL EVALUATION A FAIR AND OBJECTIVE TECHNICAL EVALUATION BY SAFSP, SAFSS, DMA AND AEROSPACE PERSONNEL ARRIVED AT THE FOLLOWING CONCLUSIONS:
A. THE SSA REQUIRES SIGNIFICANT MODIFICATIONS IN ORDER TO BE USED FOR THE MPS APPLICATION.

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PAGE 2 CHARGE 2594 ~~SECRET~~

B. THE MODIFICATIONS REQUIRED TO MAKE THE SSA CAPABLE TO MEET THE MPS REQUIREMENTS APPEAR FEASIBLE FROM A TECHNICAL STANDPOINT.
C. ASSUMING THE MODIFICATIONS WOULD BE SUCCESSFUL, NO TECHNICAL BASIS COULD BE FOUND TO ELIMINATE THE SSA CONCEPT FROM BEING A POTENTIAL CANDIDATE FROM A FEASIBILITY STANDPOINT. THE SSA CONCEPT (WITH MODIFICATIONS) COULD POTENTIALLY PROVIDE ALMOST AS GOOD ACCURACY AS THE PERKIN-ELMER SOLID STATE STELLAR (S-CUBED) SENSOR.
D. THE TECHNICAL REVIEW REVEALED SEVERAL AREAS OF CONCERN WHICH SHOULD BE STUDIED IN DETAIL BEFORE SUCCESS OF THE SSA IN THE MPS APPLICATION CAN BE ASSURED. THESE CONCERNS CENTER AROUND THE SSA CONCEPT REQUIRING HIGH ACCURACY [redacted] DATA WHICH PROBABLY WOULD REQUIRE [redacted] BE INCORPORATED WITH THE SSA. ADDING [redacted] WILL UNDOUBTEDLY HAVE SIGNIFICANT IMPACT ON THE HEXAGON VEHICLE AND WOULD

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REQUIRE FURTHER STUDY. IN GEN Approved for Release: 2019/05/01 C05118666 THE
SAME TYPE OF CONCERNS WHICH LEAD A S-CUBED FEASIBILITY STUDY BEING
PERFORMED.

3. COL, BLANKENSHIP WAS A MEMBER OF THE TECHNICAL EVALUATION COMMITTEE
AND CAN PROVIDE ANY FURTHER DETAILS YOU MAY DESIRE REGARDING THE TECH-
NICAL EVALUATION. THE TECHNICAL REVIEW WAS CONDUCTED LIKE A SOURCE
SELECTION BOARD SO I WOULD SUGGEST THE NUMBER OF PEOPLE ALLOWED TO REVIEW
THE COMMITTEE'S FINDINGS BE SEVERELY RESTRICTED.

PAGE 3 CHARGE 2594-~~SECRET~~

4. MANAGEMENT/CONTRACTUAL ASPECTS - A SEPARATE REVIEW
OF THE MANAGEMENT AND CONTRACTUAL ASPECTS WAS PERFORMED AND
ARRIVED AT THE FOLLOWING CONCLUSIONS:

A. THE TIME REQUIRED TO STUDY AND SSA CONCEPT,
COMPLETE CONTRACTUAL REQUIREMENTS, AND COMPLETE MANUFACTUR-
ING AND TESTING WOULD EXCLUDE SSA EFFECTIVELY FOR SV-17.
TO INSURE SV-17 EFFECTIVITY WE MUST CONTINUE WITH S-CUBED
ON A SELECTED SOURCE PROCUREMENT.

B. PERKIN-ELMER SHOULD INTEGRATE THE STAR SENSOR
INTO THE HEXAGON SENSOR SUBSYSTEM REGARDLESS WHO BUILDS
THE STAR SENSOR.

C. ONLY TWO COMPETITIVE CONTRACTUAL ARRANGEMENTS
OF MANY REVIEWED ARE CONSIDERED POSSIBLE. ONE APPROACH WOULD BE
FOR US TO COMPETE THE SSA AND S-CUBED AND PROVIDE THE
HARDWARE AS GFE OR AS A DIRECTED SOURCE TO PE. A SECOND
APPROACH WOULD BE TO HAVE PERKIN-ELMER PROVIDE A STAR
SYSTEMS ON A MAKE OR BUY BASIS AND REQUIRE SSA, S-CUBED AND
POSSIBLY OTHER SENSORS TO BE COMPETED. SELECTED SOURCE
PROCUREMENT OF THE SSA WITHOUT COMPETITION COULD NOT BE
JUSTIFIED.

5. THE SSA APPROACH IS ESTIMATED TO COST 32.0 MILLION

PAGE 4 CHARGE 2594-~~SECRET~~

DOLLARS. FUND PROTECTION FOR AN ADDITIONAL 5.2 MILLION
DOLLARS SHOULD BE PROVIDED FOR POSSIBLE MODIFICATIONS AND
UNKNOWN. THE DETAILS OF OUR IN-HOUSE ESTIMATE IS SHOWN
BELOW.

6. A. BENDIX/ITEK SUBCONTRACTS

AND OTHER SUBCONTRACT

COST	\$7.800M
STAR SENSOR ASSEMBLIES (4)	4.800
SUBTOTAL	\$12.600

B. PERKIN-ELMER CAMERA SYSTEM INTEGRATION.

LABOR AND OVERHEAD	5.000
COMPUTER, TRAVEL AND OTHER	.800
G&A AT 22.75 PCT	4.200
FEE	3.400
SUBTOTAL	13.400

C. LMSC MODIFICATION AND INTEGRATION 6.000

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D. CONTINGENCY (20 PCT OF CAMERA SYSTEM) 5.200
TOTAL \$37.200M

7. OUR COST ESTIMATE IS BASED ON THE FOLLOWING ASSUMPTIONS:

A. BENDIX/ITEK WOULD BE SUBCONTRACTORS TO P.E. FOR CAMERA SYSTEM INTEGRATION.

PAGE 5 CHARGE 2594 ~~SECRET~~

B. BENDIX/ITEK [] AND STAR SENSOR ASSEMBLIES BOUGHT FOR [] ARE BASICALLY THE SAME SYSTEMS THAT WILL BE USED IN THIS SSA APPROACH. MAJOR MODIFICATIONS ARE NOT ANTICIPATED.

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C. HEXAGON SUSTAINING MANPOWER AT PERKIN-ELMER IS NOT NECESSARILY AVAILABLE FOR THE EFFORT. (THIS IS THE SAME BASIS AS OUR ORIGINAL S-CUBED ESTIMATE.)

D. LMSC MIDSECTION MODIFICATION AND INTEGRATION COST WOULD BE SOMEWHAT HIGHER THAN S-CUBED BECAUSE OF [] THERMAL IMPACTS.

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8. IN SUMMARY, WE COULD FIND NO TECHNICAL ADVANTAGE TO

THE SSA OVER THE S-CUBED APPROACH, THE COST OF THE SSA IS NO LESS THAN THE S-CUBED, AND THE SSA COULD NOT BE AVAILABLE BEFORE SV-18. THEREFORE, I RECOMMEND THAT WE PROCEED NO FURTHER ON THE BENDIX/ITEK SSA AND THAT WE CONTINUE WITH THE PRESENT DEVELOPMENT OF THE S-CUBED FOR SV-17 EFFECTIVITY.

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DEPARTMENT OF THE AIR FORCE
OFFICE OF THE SECRETARY

MEMORANDUM

Per conversation with

Dr. Cook.

Coordination:

SS-1 for Gen Shields last

Signature:

DDNSO ✓



30 Mar 76

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