~~TOP SECRET~~ BYE-16868-68

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

Cy 1

29 November 1968

REPLY TO ATTN OF: SP-1

SUBJECT: HEXAGON Management

TO: Director, NRO (Dr. Flax)

REFERENCE: "Management Plan and Organizational Responsibilities for the New General Search and Surveillance Satellite System," 30 April 1966 (BYE-52316-66)

1. During the course of our work on the HEXAGON project, several differences of interpretation of the referenced management directive have become evident, and I have previously mentioned these in discussions and other correspondence. The purpose of this letter is to summarize the present status of some outstanding major differences in interpretation, and to ask your assistance in resolving them. I have provided separately an explicit discussion of the way I propose to conduct HEXAGON on-orbit operations, which may be useful in providing a clear, in-context picture of my interpretation summarized in this letter. This document (BYE-68-16818,"HEXAGON On-orbit Support Activities") shows the roles and relationships that I think the SPD, SPO, SSSPO, and Aerospace should have at the STC during HEXAGON flights, which I believe conform in every way with the intent of the present HEXAGON management directive as illuminated by discussions with you on this subject.

2. I have separately discussed an outstanding problem concerning software development responsibilities, together with specific recommendations for its solution (BYE-16851-68, 14 Nov 1968). I mention it here to show the relationship of the original problem and subsequently injected additional problems to interpretations of the HEXAGON management directive. The problem of development responsibility for system software first arose over an apparent difference in interpretation of the management directive as to whether the SPD is responsible for developing the mission software, or whether the SSSPO is responsible for this development. I have maintained that the management directive is very explicit on this point, in defining the sensor subsystem in detail, with no mention of software, and in the explicit assignment to the SPD of all other subsystems (last paragraph, page one: " * * the SPD will direct and supervise the development and production of all subsystems except the sensor subsystem. ") In your 10 January 1968 meeting on this subject

with the SPD, SSSPO, and other members of the CIA, you confirmed that the SSSPO is not responsible for the software. but the extent to which the SPD is responsible was not resolved, and the SPD was blocked from proceeding with the proposed development. A new question was raised as to the possibility that the non-SSSPO CIA might be assigned some responsibility, but without specific reference to, or apparent basis on the management directive. This question was not settled and also remains unresolved. In practice, the non-SSSPO aspects of the CIA which are interested in obtaining some responsibility for this software are in the same internal organization as the SSSPO and function in such an interrelated way that it is not easy to keep them distinct in working associations. The resulting complete impasse in SPD-SSSPO discussion of the software development obviously has not stopped CIA work aimed at obtaining assignment of some HEXAGON software responsibilities.

3. One fundamental difference of interpretation concerns the responsibility of the SPD during on-orbit operations. I have maintained that while the HEXAGON management responsibility is divided during development and production, it is not divided during on-orbit operations. The second paragraph on page two of the management directive assigns the responsibility for "launch and mission operations" to the SPD, and the first paragraph on page four reaffirms this responsibility for "launch and on-orbit operations," and includes this activity as one of the matters in which the SSSPO is expected to be responsive to appropriate direction from the SPD." In addition, the second paragraph on page three specifies that the SSSPO is "to act as the principal sensor assistant to the SPD during pre-mission planning, on-orbit operations, and post-mission analyses." You have verbally stated to the SPO, SSSPO, SPD and non-SSSPO CIA personnel at the 10 January 1968 meeting in your office that during the conduct of HEXAGON missions, divided management is not acceptable; that the SPD is unequivocally responsible for the conduct of on-orbit activities. The SSSPO maintains that management continues to be split throughout the conduct of on-orbit activities in the same way that it is split in the development and production activities, with the sole exception that, during on-orbit operations, the SPD, as a single individual, has an overall responsibility only in the limited sense of a final field authority as outlined in the first paragraph on page six of the directive, i.e., an arbiter when, and only when differences of opinion exist and the other stated conditions apply. They further interpret this paragraph to mean that all responsibility for all matters of sensor mission planning and sensor on-orbit

operation has already been assigned to the SSSPO, and that the SPD may not alter this exclusive pre-assignment; he must operate as a single individual to whom two completely separate organizations separately report on their respective aspects of the HEXAGON system. Missions are to be conducted by the two separate organizations exclusively handling their respective areas until and unless a problem is identified by either organization. After the SPO or the SSSPO have separately identified a problem, and both agree that there may be some system implications, the SSSPO will agree to support an individual ad hoc team to analyze the specific problem on a system basis; otherwise, they do not agree to any overall system analysis being conducted. They have argued that the SPD, with Aerospace support if desired, can analyze only the performance of hardware provided by SPD contractors, and only the SSSPO exclusively can analyze any aspect of performance of the sensor subsystem. The SSSPO interprets the designation of the SSSPO (in the second paragraph on page three) as "the principal sensor assistant to the SPD during pre-mission planning, on-orbit operations, and post-mission analyses" as meaning not an assistant role at all but exclusive line responsibility and authority, under the limited personal direction of the SPD. In their view, the SPD has no function affecting the sensor subsystem until after the two separate organizations have failed to agree on something, and then only if all of the conditions are met which are listed in the last sentence of the first paragraph on page six of the directive. The extent of this difference in interpretation may be seen from the following SSSPO statements which are quoted from a letter (BYE-7488-68) to the SPD on the subject of on-orbit operations: " * * It is my plan to develop the SSSPO to assume the on-orbit responsibility for sensor mission planning, sensor readiness, sensor on-orbit operations, and sensor health assessment. * * * I intend that SSSPO senior representative will be the sole source of information to the SPD on matters which are wholly internal to the sensor * *."

4. Another related difference affecting on-orbit operations concerns the intent of the last sentence in the first paragraph on page six of the directive. The SSSPO apparently interprets this as severely limiting the authority of the SPD, as noted above, and it is evident that they expect direction from the SPD only when there is evidence at hand that catastrophic mission failure may be imminent. Based on my discussions of this subject with you, and your statements in meetings (such as the 10 January 1968 meeting, already referred to), I have

maintained that the intent is not to limit the SPD to operational decisions when catastrophic mission failure may be imminent, but that his responsibility for such decisions specifically includes any instances in which, in the judgment of the SPD, any mission degradation may be imminent. I believe that you intend the SPD to be responsible for the degree to which the decisions made during on-orbit operation result in the most effective mission possible under the circumstances, not just to be responsible in those cases where there is reason to believe catastrophic mission failure may be imminent. That is, I believe the intent of "mission failure" is "any mission accomplishment where the overall effectiveness is lower than the limits necessarily imposed by any abnormalities anywhere within the orbiting system or its ground support environment." In summary, I believe that the SPD is responsible for the degree of effectiveness realized during on-orbit operations; he is not just a referee of two separate organizations who is empowered to act when a difference of opinion exists and catastrophic failure may be imminent, but who is powerless to act if the mission can continue in a non-optimum, but non-catastrophic manner.

5. Another difference of interpretation which has impeded progress concerns the second sentence of the second paragraph on page four of the directive. The SSSPO has interpreted "The SPD is not expected to accomplish engineering analyses of the sensor subsystem except as required by his overall system engineering and integration role * * *" to mean that the SPD will not accomplish such analyses at all, apparently because they feel that such analyses are not necessary to the accomplishment of the SPD overall systems engineering and integration role. The SSSPO considers that the system interfaces were essentially defined at the start of the development, and that in any case, the task of systems engineering is to take the sensor subsystem as they define it, and design and build the rest of the system so that it is adequate, and that no analysis across interfaces is required for this task. I cannot see how any responsible overall systems engineering can be done without thorough and continuing analyses across all interfaces, including detailed analyses of the sensor subsystem performance and computer modelling of the dynamic, electrical, and thermal performance of the entire system. We have eventually gotten work under way in all of these areas, but progress has been slow and difficult. The SSSPO considers that the SPD has no responsibility of any kind for "matters wholly internal to the sensor subsystem," and therefore no reason for any analyses of the sensor subsystem operation or performance.

6. The SSSPO interpretation of "matters internal to the sensor subsystem" also involves a major difference in interpreation of the permissible role of Aerospace Corporation personnel. The limitation in the last paragraph on page six that Aerospace employees " * * * shall exercise no technical influence or judgments over matters internal to the sensor subsystem, and shall not be charged by the SPD with advising him on such matters" is interpreted by the SSSPO as completely precluding any advice which has any impact on the sensor subsystem. I believe that this limitation is intended to apply only to the development of the sensor subsystem, and is not intended in any way to limit Aerospace analyses in detail of the sensor subsystem for the purpose of defining and verifying adequacy of technical interfaces, interactions between subsystems and other matters in support of the overall system engineering and system integration responsibilities of the SPD. I also do not believe that this paragraph is intended to prohibit use of Aerospace personnel participation in analyses of overall system performance on orbit, nor to preclude their making recommendations to the SPD concerning the most effective on-orbit system performance. I understand that Aerospace has no responsibility for SE/TD or any kind of other direction over the development of the sensor subsystem, but Aerospace is responsible to the SPD for overall system engineering, and this cannot be carried out without analyses which include analyses of the sensor subsystem and advising the SPD as a result, and this advice may have some sensor subsystem impact. The SSSPO has reflected the view that the role of Aerospace personnel is exclusively one of SE/TD over SPD contractors, and of conducting analyses only on the "SPO side" of the SPO-SSSPO interfaces. We have made some progress in getting Aerospace analyses under way, but it has been difficult, controversial, and slow.

7. I bring these differences to your attention with the belief that any further progress toward resolving them in the field is dependent upon specific clarification of the meaning of the management directive with respect to the referenced questions. Perhaps this could be done by your issuing a clarifying memorandum. As the one who issued the directive, it would seem appropriate for you to clarify its intent where necessary. The only alternative that I can see would be to issue a revised directive. I must emphasize that these are my conceptions of the outstanding differences of interpretation, derived from much

personal discussion as well as written reactions to documents I have written. I hope that I have reflected opposing views fairly; I know that I have reflected them as I have encountered them personally in my efforts to get on with the HEXAGON job. Whether you decide on a revision, or a clarifying memorandum, I must urge your personal action to resolve the software problem and to clarify the points discussed in the above paragraphs. Any further delay will have serious impact on HEXAGON development progress.

JOHN L. MARTIN, JR
Major General, USAF
Director

cc: Gen Berg (SAFSS)

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HANDLE VIA BYEMAN CONTROL SYSTEM

~~(S)~~ NATIONAL RECONNAISSANCE OFFICE
WASHINGTON, D.C.

OFFICE OF THE DIRECTOR

March 15, 1969

MEMORANDUM FOR THE DIRECTOR SAFSP
FOR THE DIRECTOR, CIA RECONNAISSANCE PROGRAMS

SUBJECT: HEXAGON Management

As the HEXAGON Program has proceeded and working relationships between the System Project Office (SPO) and the Sensor Subsystem Project Office (SSSPO) have evolved in a generally satisfactory fashion, it has become apparent that some differences of interpretation may still exist as to the intent of the Management Plan for this system which I issued on April 30, 1966.

I believe that the overall assignments of responsibility in this plan, as regards the design, development and procurement aspects of the program, are quite clear and generally agreed to. On the other hand, a difference of interpretation seems to have arisen with respect to the orbital operations phase. In the design, development and procurement phases of the HEXAGON Program the Management Plan makes quite clear that the SSSPO is responsible to the DNRO and not to the System Project Director (SPD) for technical and performance matters wholly internal to the sensor subsystem. At the same time, the SPD is charged with responsibility for overall system engineering and system integration including the definition of interface specifications between the sensor subsystem and the other elements of the system.

The Management Plan is explicit in assigning total responsibility to the System Project Director during on-orbit operation of the HEXAGON system, although it is also stated that the SPD will normally assign responsibility for the sensor operation including analyses of sensor technical difficulties to the senior SSSPO representative as "the principal sensor assistant to the SPD." It is clearly stated in the Management Plan that "the SPD is the final field authority during a mission operation from launch through recovery" and that in launch and on-orbit operations among other things, "the SSSPO is expected to be responsive to appropriate direction from the SPD."

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The Management Plan also states that the SPD will utilize the services of the Aerospace Corporation in a general engineering role. To accomplish this, it was specified that "Aerospace Corporation employees supporting the SPO shall have free access to information and data from the SSSPO and the sensor subsystem contractors but shall exercise no technical influence or judgment of matters internal to the sensor subsystems and shall not be charged by the SPD with advising him on such matters." It is further stated that "the exchange of information contemplated herein will in many cases require direct contact with contractor engineering staffs at the contractor plants and test facilities. However, all such direct contacts must be coordinated through the government agency responsible for contractor supervision. Such coordination is to be for purposes of informing the responsible agency and permitting full participation or monitoring of such direct contacts; however, the SPO and SSSPO should each honor the requests of the other for any item of information or any required direct communication with contractors." During a mission such direct contact with contractor field personnel at the Satellite Test Center, Sunnyvale, is clearly required and should be provided under the provisions of the HEXAGON Management Plan. The requirement on both the SPO and the SSSPO to provide both free flow of information and direct communication with their contractors as required, applies in all aspects of the HEXAGON Program; it is particularly compelling on the orbital operations phase where the operational situation permits little or no delay in such communication.

The SPD has prepared a plan for the conduct of on-orbit operations under which the Aerospace Corporation will provide engineering support for overall systems engineering in relation to mission performance. This will be done by utilizing small staffs at the Satellite Control Facility representing each major subsystem contractor. The sensor subsystem contractor staff is to be provided by the SSSPO at a level of effort agreed to with the SPD. This contractor staff will remain under the contractual control and administrative supervision of the SSSPO. Overall Aerospace Corporation access to all subsystem contractor staffs is necessary in order to assure coordinated and integrated

monitoring, control, and data analysis on a continuous basis throughout a mission. It is not intended or permitted under the Management Plan that the Aerospace Corporation will be the authority on the internal functioning of the sensor subsystem. In particular, when a malfunction occurs in the sensor subsystem, the SPD, in accordance with the Management Plan, will normally consult with the senior designated representative of the SSSPO. However, an assessment of the overall performance of the many systems which interface and interact with the sensor subsystem cannot be made without detailed knowledge of conditions within the sensor subsystem. Moreover, any action to correct deficiencies in the sensor subsystem (if these are identified during the mission) or in subsequently delivered units of the sensor subsystem, will be entirely the responsibility of the SSSPO but must also be coordinated with the SPO and the Aerospace Corporation for interface control and system integration.

The foregoing plan of operations is entirely consistent with the HEXAGON Management Plan. Provision of sensor on-orbit performance and operational data during a mission to Aerospace representatives charged with advising the SPD on the overall system performance is in accordance with the assignment of overall responsibility for on-orbit operations to the SPD (and is in fact essential to the exercise of this responsibility) and is in accordance with the provision for free exchange of information and the requirement that the SPO and the SSSPO should each honor the requests of the other for any item of information or any required direct communication with contractors. The Management Plan makes clear, and I have restated in a meeting on January 10, 1968 at which NRO staff, SAFSP and CIA personnel were present, that during the conduct of HEXAGON missions no division of management responsibility is acceptable and that the SPD is unequivocally responsible for the conduct of on-orbit operations.

Although analogies between different types of systems are not always the best way to illustrate a point, I believe that the typical relationship between an airframe and engine contractor, each under direct and separate contracts to the government, provides a good analogy to some aspects of the system/subsystem organizational relationships in the HEXAGON Program.

Typically, the engine contractor provides to the airframe program office and the airframe contractor complete computer programs describing the operation of the engine over the entire range of environmental and operational conditions, including data on internal engine operating conditions which may be susceptible to measurement and diagnosis in flight or ground tests. The airframe program office may or may not be responsible for the engine contract (which in the DoD is often held by a different Service from the one procuring the airframe and other subsystems). In any event, such exchange of detailed information on the propulsion subsystem is not for the purpose of permitting the airframe program office or the airframe contractor to redesign internal elements of the engine such as compressors, turbines, or combustors and has never, to my knowledge, resulted in such action.

Analogously, the SPD and his systems engineering support contractor must have available to them for on-orbit operation all pertinent operating data on the sensor subsystem in its normal operating modes and all possible means for identification correction of malfunctions or out-of-specification performance in any major subsystem interfacing with the sensor subsystem including, but not limited to, power, thermal control, attitude control, command and telemetry. During on-orbit operations when a malfunction is specifically localized to the sensor subsystem, the SPD will normally be expected, as specified in the Management Plan, to consult with the senior SSSPO representative in his capacity as principal sensor subsystem advisor to the SPD during on-orbit operations. Moreover, when other than normal sensor operation must be undertaken in order to compensate for malfunctions in any other subsystem for the purpose of obtaining the maximum overall operational collection effectiveness, the senior SSSPO representative will also normally be consulted prior to taking any action. Aerospace Corporation system engineering personnel will not be responsible for matters internal to the sensor subsystem in this sense. However, since any action taken to correct sensor subsystem malfunctioning may affect other subsystems essential to performance of the mission, it is absolutely

essential that they, as overall system engineering contractors, be as fully informed as possible on all aspects of corrective measures contemplated in the sensor subsystem for the purpose of assuring that such measures will not by the effect on other subsystems degrade rather than improve overall mission collection effectiveness. By the same token, in order to assure that no adverse effects on sensor performance result from out of specification performance or malfunctions of other subsystems, it is essential that the senior representative of the SSSPO be fully informed on all subsystem status reports and all contemplated abnormal modes of operation to the same extent as the SPD himself. The HEXAGON Management Plan provides fully for such information to be made available to any designated representative of the SPO or the SSSPO and their contractors.

I stated at the time of issuance of the original Management Plan that its successful implementation would require the wholehearted cooperation of both CIA and SAFSP. I believe that in general we have had that cooperation with respect to the ongoing development and procurement effort. There has been a natural tendency to view on-orbit operations, since they lie in the future, as an area for protracted negotiation as to the fine details of working relationships. Since we are now at a point where definite and positive arrangements must be made for on-orbit operation, the time has clearly come to pin down these working relationships and to proceed with implementation of operational plans. In view of the major national investment in the HEXAGON system and the high degree to which we are depending upon it as a major component of our total intelligence collection capability, I believe it is essential for both the SPO and the SSSPO to make final these plans and working arrangements for operations in accordance with the original HEXAGON Management Plan, which the foregoing discussion may clarify but does not change.

Alexander H. Flax

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HANDLE VIA BYEMAN CONTROL SYSTEM

~~(S)~~ NATIONAL RECONNAISSANCE OFFICE
WASHINGTON, D.C.

OFFICE OF THE DIRECTOR

March 15, 1969

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The Management Plan is explicit in assigning total responsibility to the System Project Director during on-orbit operation of the HEXAGON system, although it is also stated that the SPD will normally assign responsibility for the sensor operation including analyses of sensor technical difficulties to the senior SSSPO representative as "the principal sensor assistant to the SPD." It is clearly stated in the Management Plan that "the SPD is the final field authority during a mission operation from launch through recovery" and that in launch and on-orbit operations among other things, "the SSSPO is expected to be responsive to appropriate direction from the SPD."

~~HEXAGON~~

HANDLE VIA BYEMAN CONTROL SYSTEM

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The foregoing plan of operations is entirely consistent with the HEXAGON Management Plan. Provision of sensor on-orbit performance and operational data during a mission to Aerospace representatives charged with advising the SPD on the overall system performance is in accordance with the assignment of overall responsibility for on-orbit operations to the SPD (and is in fact essential to the exercise of this responsibility) and is in accordance with the provision for free exchange of information and the requirement that the SPO and the SSSPO should each honor the requests of the other for any item of information or any required direct communication with contractors. The Management Plan makes clear, and I have restated in a meeting on January 10, 1968 at which NRO staff, SAFSP and CIA personnel were present, that during the conduct of HEXAGON missions no division of management responsibility is acceptable and that the SPD is unequivocally responsible for the conduct of on-orbit operations.

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essential that they, as overall system engineering contractors, be as fully informed as possible on all aspects of corrective measures contemplated in the sensor subsystem for the purpose of assuring that such measures will not by the effect on other subsystems degrade rather than improve overall mission collection effectiveness. By the same token, in order to assure that no adverse effects on sensor performance result from out of specification performance or malfunctions of other subsystems, it is essential that the senior representative of the SSSPO be fully informed on all subsystem status reports and all contemplated abnormal modes of operation to the same extent as the SPD himself. The HEXAGON Management Plan provides fully for such information to be made available to any designated representative of the SPO or the SSSPO and their contractors.

I stated at the time of issuance of the original Management Plan that its successful implementation would require the wholehearted cooperation of both CIA and SAFSP. I believe that in general we have had that cooperation with respect to the ongoing development and procurement effort. There has been a natural tendency to view on-orbit operations, since they lie in the future, as an area for protracted negotiation as to the fine details of working relationships. Since we are now at a point where definite and positive arrangements must be made for on-orbit operation, the time has clearly come to pin down these working relationships and to proceed with implementation of operational plans. In view of the major national investment in the HEXAGON system and the high degree to which we are depending upon it as a major component of our total intelligence collection capability, I believe it is essential for both the SPO and the SSSPO to make final these plans and working arrangements for operations in accordance with the original HEXAGON Management Plan, which the foregoing discussion may clarify but does not change.

Alexander H. Flax

Alexander H. Flax

~~TOP SECRET~~ Microfilm

HANDLE VIA BYEMAN CONTROL SYSTEM

~~1ST~~ NATIONAL RECONNAISSANCE OFFICE
WASHINGTON, D.C.

THE NRO STAFF

March 26, 1969

MEMORANDUM FOR DR. McLUCAS

SUBJECT: HEXAGON Management

Only for your information at this time, John Martin's response to you for getting on with the HEXAGON software is at the right. As I mentioned to you, your Staff will provide you with a couple of briefings on Thursday and Friday, which will indicate to you how the NRO functions as a collector to accomplish USIB-assigned requirements. Hopefully, this background will give you a brief insight as to what everyone is talking about when they refer to GAMBIT, CORONA, or HEXAGON software.

I am attaching some documents, which I ask you to read prior to our briefings. They are not entirely pertinent to John's proposal but may serve to clarify some points of assigned responsibility which I believe are at the root of this problem. In order to more clearly identify these documents for you, I would like to diverge for a moment to discuss some history. The birthing of the HEXAGON Program was somewhat stormy in itself. In other words many have said that this problem of software is 15 months old, but this particular problem was emerging at the very outset of the program. In 1965 both SAFSP and CIA were working rather diligently on a CORONA follow-on system; SAFSP called their study S-2 and CIA called theirs FULCRUM. This dual activity led to some extremely strained relations within the NRO and finally caused the formation of a special group of "experts" representing both the CIA and SAFSP to sort out the CORONA follow-on system. This group produced the HEXAGON Management Plan, which is at Tab A. Although some of the very strong earlier feelings never did subside, which incidentally led to some rather drastic management action, the HEXAGON Program was approved, funded and launched under this management plan.

~~GAMBIT CORONA HEXAGON~~

As the Program proceeded it was evident that SAFSP and the CIA were not entirely in sync. I mean to say that SAFSP was doing all that they could in all development areas other than the sensor-associated activities and CIA was working diligently in that area but the interface was not working smoothly at all. I am in no way attempting to point fingers or to find blame since I honestly believe that the management plan left room for interpretation and rightly or wrongly those interpretations were being made.

Dr. Flax did take action to sort these out and was, in my opinion, successful in that the two organizations got together and formed interface working groups. However, one important management decision that was to remain unsolved was who has on-orbit control of this bird. The problem became apparent when John Martin published his HEXAGON Software Procurement Plan in December 1967. Therefore, it is this particular problem that has been with us for 15 months.

As you will see at Tab B, which is strictly John Martin's identity of management interpretations and which was requested by Dr. Flax, the interpretations were pretty much all being made in the areas of on-orbit control and on-orbit activities at the SCF. This has been an extremely knotty problem and one whose solution escaped SAFSP/CIA OSP, the SOC, Mr. Reber and me; its escalation to Dr. Flax could not be avoided. Dr. Flax personally struggled with this one and I dare say, he probably became the most and best informed person on this particular subject. Tabs C & D represent the decisions he made before departing.

The unfortunate result of the 12th hour publication of Tabs C & D has been to keep the problem open and in turn pass it to you.

I'll not now try to brief down John Martin's message, but ask that such briefing or discussion be delayed until Friday.

During your visit to CIA on Monday, Les Dirks will address the CIA thoughts on this subject. After hearing the Staff briefings and Les Dirks' briefing you may then wish to further discuss with John Martin on 7 April. I have alerted John to this possibility.

Attachments
Tabs A-D

Russell A. Berg
Brigadier General, USAF
Director

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~~T O P S E C R E T~~ 260322Z MAR 69 CITE CHARGE 1109
PRIORITY WHIG
HEXAGON
FOR DR MC LUCAS FROM GEN MARTIN
SUBJECT: HEXAGON SOFTWARE PROCUREMENT PLAN
REFERENCES:
A. WHIG 8715, SUBJ: HEXAGON SOFTWARE PROGRAMS.
B. WHIG 8716, SUBJ: HEXAGON SOFTWARE PROCUREMENT.
THIS MESSAGE IN EIGHT PARTS.
PART I. SUMMARY.
1. IN ACCORDANCE WITH DIRO DIRECTION OF REFERENCE B, I SUBMIT THE FOLLOWING PLAN FOR THE PROCUREMENT OF COMPUTER SOFTWARE TO ACCOMPLISH THE HEXAGON ON-ORBIT FUNCTIONS IN ACCORDANCE WITH REFERENCE A. UPON RECEIPT OF YOUR APPROVAL, I AM PREPARED TO PROCEED.
PART II. TYPE OF PROCUREMENT.
1. I HAVE EXAMINED THE QUESTION OF SOLE SOURCE PROCUREMENT, AS MENTIONED IN REFERENCE B, AND FIND NO VALID BASIS FOR A SOLE SOURCE PROCUREMENT. THERE ARE AT LEAST SIX CONTRACTORS WHO KNOW OF THE EXISTENCE OF THIS PROGRAM, WHO HAVE DEFINITELY EXPRESSED INTEREST IN THIS SOFTWARE WORK, AND WHO HAVE THE GENERAL CAPABILITY TO CARRY OUT SUCH

PAGE 2 CHARGE 1109 ~~T O P S E C R E T~~
DEVELOPMENT. ALL OF THESE HAVE AN EXISTING BASE OF BLACK SOFTWARE WORK. OTHERS ALSO KNOW OF THE PROGRAM AND HAVE SOME BLACK SOFTWARE WORK. FIVE OF THE SIX MENTIONED ABOVE ARE QUITE FAMILIAR WITH MUCH OF OUR CURRENT OPERATIONAL SOFTWARE. AT LEAST THREE OF THESE HAVE DONE WORK IN SPECIFIC ANTICIPATION OF BEING INVITED TO COMPETE FOR THIS DEVELOPMENT.
2. I THEREFORE PROPOSE TO COMPETE THIS SOFTWARE, USING OUR BLACK PROCUREMENT METHODS, BUT, IN GENERAL, FOLLOWING THE SOURCE SELECTION PROCEDURES OUTLINED IN AFM 70-17 AND AFR 70-15.
3. IN THE PAST, SYSTEM SOFTWARE DEVELOPMENT HAS BEEN ACCOMPLISHED ON A CPFF BASIS. TO ENHANCE THE PROBABILITY OF HAVING ADEQUATE SOFTWARE ON SCHEDULES CONSISTENT WITH HEXAGON SYSTEM HARDWARE AFTER SUCH A LONG DELAY IN STARTING THIS DEVELOPMENT, I PROPOSE TO USE A CPIF TYPE CONTRACT, ADAPTING MY FLYING INCENTIVE PHILOSOPHY TO THE SOFTWARE DEVELOPMENT AS OUTLINED LATER IN PART V OF THIS MESSAGE. TO ENHANCE THE ACCURACY AND REALISM OF THE SCHEDULES AND COSTS IN THE COMPETITION, I PROPOSE TO INCLUDE THE INCENTIVE FEE STRUCTURE IN THE PROCUREMENT PACKAGE AND TO REQUIRE ALL RESPONSES TO BE MADE ON THIS BASIS.
4. I ALSO PROPOSE TO REQUIRE EACH CONTRACTOR TO PROVIDE A SPECIFIC

CONTRACTUAL WORK STATEMENT IN SUFFICIENT DETAIL THAT IT CAN BE USED IN A DEFINITIVE CONTRACT AT THE TIME OF SOURCE SELECTION. EVEN THOUGH SUCH AN EXHIBIT WILL PROBABLY REQUIRE CHANGES BEFORE THE CONTRACT IS SIGNED, IT SHOULD ASSIST IN REDUCING THE NEGOTIATION AND DOCUMENT PREPARATION TIME.

2. IN ORDER TO RESPOND ON THE BASIS OUTLINED ABOVE, THE CONTRACTORS WILL HAVE TO ACCOMPLISH SOME WORK THAT WOULD HAVE TO BE DONE ANYWAY, BUT WHICH IS NORMALLY NOT DONE UNTIL AFTER THE AWARD OF A CPFF LETTER CONTRACT. THUS THE COMPETITION PERIOD WILL NOT DELAY THE START OF USEFUL WORK. BY USING THE CPIF STRUCTURE, BY REQUIRING THE COMPETITION TO BE MADE ON THIS BASIS, AND BY REQUIRING THE SUBMISSION OF A DEFINITIVE CONTRACT WORK STATEMENT WITH EACH PROPOSAL, I PROPOSE TO NEGOTIATE A DEFINITIVE CONTRACT FROM THE OUTSET.

PART III. SOURCE SELECTION PLAN.

1. SSA. IN CONSONANCE WITH THE RESPONSIBILITIES OUTLINED IN PARA 1 OF REFERENCE A, THE DIRECTOR OF SPECIAL PROJECTS, AS MEXAGON SPO, WILL SERVE AS THE SOURCE SELECTION AUTHORITY FOR THIS PROCUREMENT.

2. SSAC. THE FOLLOWING PERSONNEL ARE NOMINATED BY THE SSA TO SERVE AS THE SOURCE SELECTION ADVISORY COUNCIL FOR THIS PROCUREMENT:

CHAIRMAN: BRIG GEN [redacted] C KING, JR SAFSP

MEMBERS: MR JOHN CROMLEY CIA
COL E F SWEENEY SAFSS
[redacted] AFSCF
SAFSP
RECORDER: [redacted] SAFSP
(NON VOTING)

3. SSEB. THE FOLLOWING PERSONNEL ARE NOMINATED TO SERVE AS THE SOURCE SELECTION EVALUATION BOARD AND PANELS:

A. SSEB.

CHAIRMAN: [redacted] SAFSP
MEMBERS: COL F BUZARD SAFSP
MR D PATTERSON CIA
MAJ R A ROSENBERG SAFSP
MR F EVANS CIA
MAJ R KOHLHAAS SAFSS
[redacted] SAFSP
CAPT R J RANDAZZO AFSCF
RECORDER: [redacted] SAFSP
(VOTING)

B. SSEB MANAGEMENT PANEL

CHAIRMAN: COL F BUZARD — SAFSP
MEMBERS: MR D PATTERSON — CIA
[redacted] — SAFSP
[redacted] — SAFSP
RECORDER: [redacted] — SAFSL
(VOTING)

C. SSEB TECHNICAL PANEL
CHAIRMAN: MAJ R KOHLHAAS — SAFSS
MEMBERS: [redacted] — SAFSP
[redacted] — CIA
CAPT R STEARNS — SAFSP
RECORDER: [redacted] — AFSCF
(VOTING)

D. SSEB OPERATIONS PANEL
CHAIRMAN: [redacted] — SAFSP
MEMBERS: MAJ R A ROSENBERG — SAFSP
MR F EVANS — CIA
CAPT J AUSTIN — SAFSS
RECORDER: CAPT R J RANDAZZO — AFSCF

(VOTING)

E. SSEB CONSULTANTS/ADVISORS

(1) MANAGEMENT
[redacted] — SAFSP
LT COL C MC BRIDE — SAFSP
[redacted] — SAFSP

(2) TECHNICAL
MR B BESKIND — AEROSPACE
MR H JOHNSON — AEROSPACE
[redacted] (WEATHER) — SAFSL

(3) OPERATIONS
MR O LIDSTROM — AEROSPACE
[redacted] (WEATHER) — SAFSL
[redacted] — CIA

(4) LEGAL
[redacted] — SAMSO

4. SELECTION SCHEDULE.
THIS SCHEDULE IS BASED UPON ASSUMED APPROVAL IN TIME FOR PERSONNEL TO MAKE TRAVEL ARRANGEMENTS FOR THIS COMING WEEKEND, IN ORDER TO BEGIN SSAC WORK BY MONDAY 31 MARCH. IT IS ALSO COORDINATED WITH THE AVAIL-

ABILITY OF KEY PERSONNEL TO SERVE DURING THE PERIODS INDICATED WHEN THE SSAC AND SSEB ARE IN SESSION.

29 MAR SSSUCE PLAN APPROVAL RECEIVED
31 MAR SSAC CONVENES
- REVIEW SOFTWARE DEVELOPMENT PLAN
- ESTABLISH DETAILED WORKING SCHEDULES
- DETERMINE SOURCE SCREENING CRITERIA
- DETERMINE PROSPECTIVE BIDDERS

31 MAR SSEB CONVENES
- REVIEW RFP

2 APR SSAC BEGIN REVIEW OF RFP
4 APR SSEB BRIEF SSAC ON RFP
11 APR SSAC APPROVE RFP
14 APR RFP TO CONTRACTORS WITH BRIEFING
21 MAY SSAC ESTABLISHES EVALUATION CRITERIA, STANDARDS, RATINGS AND WEIGHTS
26 MAY SSAC/SSEB MEETING WITH SSA
26-29 MAY SSEB REVIEW OF RFP AND SSAC DIRECTIVES, AND PREPARATION FOR EVALUATION OF PROPOSALS
2 JUN PROPOSALS RECEIVED

3-13 JUN SSEB EVALUATION OF PROPOSALS
18 JUN SSEB BRIEFING AND EVALUATION REPORT TO SSAC
20 JUN SSAC ANALYSIS COMPLETE
23 JUN SSAC RECOMMENDATION TO SSA
24 JUN NEGOTIATIONS INITIATED
30 JUN DEFINITIVE CONTRACT SIGNED

PART IV. SOFTWARE STRUCTURE.

1. THE SOFTWARE TO BE DEVELOPED IS THE HEXAGON-PECULIAR ON-ORBIT SOFTWARE TO BE USED AT THE STC TO CONDUCT HEXAGON MISSIONS, INCLUDING ALL COMMAND GENERATION AND TARGETING SOFTWARE, AS OUTLINED IN PARA 1 OF REF A. THIS SOFTWARE WILL INCLUDE THE ENTIRE INTEGRATED SOFTWARE PACKAGE REQUIRED FOR ON-ORBIT OPERATION OF THE HEXAGON SYSTEM WITH THE FOLLOWING SPECIFIC EXCEPTIONS: (A) COMPUTER PROGRAMS TO SUPPORT VEHICLE AND PAYLOAD TESTS AT CONTRACTOR PLANTS PRIOR TO LAUNCH, AND THOSE FOR SUCH USE AT THE LAUNCH PAD (B) THOSE USED FOR ASCENT GUIDANCE, AND (C) SAFSP AND AFSCF COMPUTER PROGRAMS WHICH SUPPORT GENERAL ORBTIAL OPERATIONS FROM THE STC WHICH ARE NOT UNIQUE TO HEXAGON (ORBIT SEARCH AND SELECTION, ORBIT DETERMINATION AND EPHEMERIS GENERATION, ORBIT MAINTENANCE AND ORBIT ADJUST DETERMINATION, TRACKING STATION ACQUISITION DATA AND SCHEDULING, TELEMETRY PROCESSING, VEHICLE CLOCK

CALIBRATION, DATA HANDLING, ETC).
2. THE SOFTWARE DEVELOPMENT WILL BE DIRECTED TOWARD "MAXIMIZING COLLECTION EFFECTIVENESS IN THE LIGHT OF THE UNIQUE CAPABILITIES OF THE HEXAGON SYSTEM", RATHER THAN ADAPTING EITHER CORONA OR CAMTIT SOFTWARE, AS DIRECTED IN REF A.
3. THE SOFTWARE WILL BE AN INTEGRATED SET OF ROUTINES IN WHICH THE TARGET SELECTION WILL BE MADE INITIALLY ON THE BASIS OF ALL LIMITATIONS SUCH AS WEATHER, VEHICLE, PAYLOAD, OR SCF ANOMALIES OR LIMITATIONS, RATHER THAN SELECTION FIRST AND THEN DELETION LATER FOR CONFLICT WITH THESE FACTORS, AS IS THE CASE WITH PAST AND PRESENT SOFTWARE. THE RESULT WILL BE A MORE OPTIMUM OPERATION UNDER EITHER NORMAL OR NON-NORMAL CIRCUMSTANCES.
4. I PROPOSE TO CHARGE THE SSAC WITH THE SPECIFIC TASK OF FINAL COORDINATION OF THE SPECIFIC CAPABILITIES TO BE PROVIDED BY THE SOFTWARE, AS THE CONCE[illegible] ORGANIZATIONS ARE ALL RESPONSIBLY REPRESENTED ON THIS GROUP. A [illegible]OSLY PREPARED PRELIMINARY SOFTWARE DEVELOPMENT PLAN, AND AN ASSOCIATED PAPER OUTLINING THE DEVELOPMENT AND TEST PHASE SUBSEQUENT TO SOURCE SELECTION HAVE BEEN COMBINED INTO A SINGLE REVISED SOFTWARE DEVELOPMENT PLAN WHICH WILL BE PROVIDED TO THE SSAC AS A PART OF MY INSTRUCTIONS TO THAT GROUP. IT WILL ASSIST IN THE FINAL

DEFINITION OF THE SPECIFIC PROVISIONS OF THE SOFTWARE BY THE SSAC TO BE INCORPORATED IN THE REQUEST FOR PROPOSAL.
5. SUBSEQUENT TO SELECTION OF THE CONTRACTOR THE DEVELOPMENT OF THE SOFTWARE WILL BE CARRIED OUT IN THE SAME MANNER AS OTHER HEXAGON DEVELOPMENTS FOR WHICH SAFSP HAS MANAGEMENT RESPONSIBILITY. THE SSSPO WILL PARTICIPATE AS OUTLINED IN PARA 2 OF REF A, AND A HEXAGON SYSTEM SOFTWARE INTEGRATION WORKING GROUP WILL BE ESTABLISHED IN ADDITION TO THE EXISTING HEXAGON INTERFACE WORKING GROUPS. THE SSSPO AND THE SOC WILL HAVE MEMBERSHIP ON THIS WORKING GROUP, IN ADDITION TO SAFSP, THE SCF, AEROSPACE, AND THE CONTRACTORS.
PART V. INCENTIVE STRUCTURE.
INCENTIVE FEE CONTRACTING WILL BE NEW TO SOFTWARE CONTRACTING BUT AS A FORM OF CONTRACTING, APPEARS TO BE FEASIBLE AND SHOULD OFFER DISTINCT ADVANTAGES IN ASSURING DELIVERIES OF MILESTONES ON TIME AND IMPROVE THE EXPECTATION OF RECEIVING SOFTWARE ROUTINES THAT WILL ADEQUATELY PERFORM.
1. I PROPOSE TO ADAPT THE INCENTIVE PHILOSOPHY EMPLOYED IN OUR FLYING PROJECTS, AS FOLLOWS:
A. THE ONLY WAY THAT ANY FEE CAN BE EARNED WILLHROUGH MEETING DESIGNATED MILESTONES IN THE SOFTWARE DEVELOPMENT (SUCH AS MILESTONES

2, 4, 5, AND 8). A MAXIMUM FEE OF 15 PERCENT OF TARGET COST CAN BE EARNED. WHEN EACH OF THESE MILESTONES HAVE BEEN SATISFACTORILY DEMONSTRATED, A SPECIFIED FEE INCREMENT WILL HAVE BEEN EARNED. THE CONTRACTOR WILL BE REQUIRED TO PROPOSE, IN SPECIFIC CONTRACT EXHIBIT FORM, THE WAY HE PROPOSES THAT THESE MILESTONES BE DEMONSTRATED (I.E., WHAT

HE PROPOSES TO BE THE BASIS OF GOVERNMENT ACCEPTANCE). IN THE MEANTIME, WE WILL INDEPENDENTLY WORK THIS PROBLEM.
B. I PROPOSE TO PENALIZE THE CONTRACTOR FOR LATENESS IN MEETING MILESTONE DEMONSTRATION DATES SPECIFIED IN THE CONTRACT FOR THE ABOVE LISTED MILESTONES AT ABOUT THE FOLLOWING RATES:
.03 PERCENT/DAY FOR MILESTONE 2, UP TO A MAXIMUM OF ABOUT 2 PERCENT AT THE END OF 60 DAYS.
.15 PERCENT/DAY FOR MILESTONE 4, UP TO A MAXIMUM OF ABOUT 9 PERCENT AT THE END OF 60 DAYS.
.15 PERCENT/DAY FOR MILESTONE 5, UP TO A MAXIMUM OF ABOUT 13 PERCENT AT THE END OF 90 DAYS.
WE ARE STILL WORKING ON THE MILESTONE 8 PENALTY, BUT IT WILL INCLUDE PENALTIES UP TO 15 PERCENT FOR LATENESS IN DEMONSTRATION OF HIS SOFTWARE AT THE MILESTONE 8 LEVEL, TO THE EXTENT AFFECTED BY HIS WORK OR PRODUCTS, THIS PENALTY WILL BE DETERMINED IN ACCORDANCE WITH A SPECIFIC

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SCORING SCHEDULE.
C. I PROPOSE TO PENALIZE THE CONTRACTOR FOR COST OVERRUNS AT A SHARING RATIO OF 80/20 UP TO A CUMULATIVE FEE PENALTY OF 4.5 PERCENT, WHICH WOULD OCCUR AT AN OVERRUN OF 22.5 PERCENT OF TARGET COST, AND AT A SHARING RATION OF 70/30 FOR AN ADDITIONAL 4.5 PERCENT FEE PENALTY WHICH WOULD OCCUR AT AN OVERRUN OF 37.5 PERCENT OF TARGET COST (MAKING THE TOTAL MAXIMUM FEE PENALTY FOR COST OVERRUN 9 PERCENT OF TARGET COST). THIS BALANCE OF A MAXIMUM LOSS DUE TO COST OVERRUN OF 9 PERCENT COMPARED TO A MAXIMUM FEE THAT CAN BE EARNED OF 15 PERCENT KEEPS THE SAME 6 PERCENT MARGIN THAT I USE ON ALL SAFSP FLYING PROJECTS. IT ASSURES A CONTINUED INCENTIVE TO SUCCEED EVEN IF THE CONTRACTOR HAS BEEN HEAVILY PENALIZED FOR OVERRUNS. (HOWEVER, TO EARN THIS HE WOULD HAVE TO HAVE ALL MILESTONES ACCEPTED ON THE CONTRACT SCHEDULE.)
2. AS NOTED EARLIER, A WRITTEN EXPLANATION OF THIS INCENTIVE STRUCTURE WILL BE INCLUDED IN THE BIDDERS PACKAGE, AND THE COMPETETIVE COST AND MILESTONE SCHEDULES WILL BE PROPOSED ON THIS BASIS. ASIDE FROM ITS VALUE DURING THE SOFTWARE DEVELOPMENT, THIS SHOULD RESULT IN MORE RESPONSIBLE SCHEDULES AND COSTS BEING PROPOSED, IN COMPARISON WITH THE USUAL TENDENCY OF SOFTWARE CONTRACTORS TO SUBMIT UNREALISTIC COST AND SCHEDULE PROPOSALS IN COMPETITIVE OR SOLE SOURCE SELECTIONS FOR CPFF SOFTWARE

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DEVELOPMENT.
PART VI SCHEDULE.
1. ON THE BASIS OF THE CURRENT OFFICIAL HEXAGON SCHEDULE, THE SOFTWARE FOR THE FIRST FLIGHT WILL BE DEVELOPED IN 17 MONTHS. THIS TIMING IS BASED UPON THE SELECTION SCHEDULE AND OTHER FEATURES OUTLINED PREVIOUSLY, BUT DOES NOT TAKE INTO ACCOUNT WORK ALREADY DONE BY SEVERAL CONTRACTORS IN ANTICIPATION OF THIS DEVELOPMENT. AS THESE ARE THE MOST

EXPERIENCED SOFTWARE CONTRACTORS, THIS ADVANCED PREPARATION WILL HAVE SOME EFFECT, AS WILL SOME OTHER WORK WHICH SOME OF THEM MAY BE ABLE TO DRAW UPON IN MEETING THE REQUIREMENTS OF THIS DEVELOPMENT. THESE FACTORS, TOGETHER WITH THE INCENTIVE FEE STRUCTURE, SUPPORT THE CONCLUSION THAT BY PROCEEDING IMMEDIATELY WE CAN DEVELOP ADEQUATE SOFTWARE TO MEET THE CURRENT SCHEDULE, EVEN THOUGH THE AVAILABLE TIME IS SHORTER THAN THE DEVELOPMENT SPAN WE NORMALLY ALLOW FOR THIS TYPE OF WORK.

2. THE RFP WILL REQUIRE THE CONTRACTOR TO SPECIFY THE DATE FOR MILESTONE 8 FOR SOFTWARE WHICH PROVIDES THE FULL OPERATIONAL CAPABILITY (FOC) DESCRIBED BY THE RFP AND ASSOCIATED DOCUMENTS. WE WILL ALSO SPECIFY A MILESTONE 8 DATE CONSISTENT WITH THE OFFICIAL HEXAGON FIRST FLIGHT DATE AT THE TIME OF ISSUANCE OF THE RFP, AND WILL REQUIRE, AS A MINIMUM AN INITIAL OPERATIONAL CAPABILITY (IOC) BY THAT DATE IF THE CONTRACTOR'S

PROPOSED FOC DATE IS LATER, IN THIS EVENT, HE WILL BE REQUIRED TO DEFINE THE FULL SCOPE OF IOC HE PROPOSES, AND TO SHOW THE GROWTH FROM THIS IOC TO THE FOC HE PROPOSES.

3. I HAVE RECENTLY BEEN ADIVSED BY CIA/OSP PERSONNEL THAT SOME HARDWARE SHIPPING DATES HAVE SLIPPED. (THE QUALIFICATION UNIT WILL BE DELIVERED 72 DAYS LATE TO THE WEST COAST (LMSC) AND THE FIRST FLIGHT ARTICLE 52 DAYS LATE). THIS MAY AFFECT THE PRESENTLY SCHEDULED FLIGHT DATES. AS HEXAGON SPD, I INTEND TO REVIEW THE OVERALL PROGRAM SCHEDULES LEADING TO THE FIRST FEW FLIGHTS AND EITHER REVALIDATE THE CURRENT SCHEDULE OR ESTABLISH A NEW ONE AT THE EARLIEST DATE, WHICH WILL BE PRIOR TO THE ISSUANCE OF THE SOFTWARE RFP ON 14 APRIL. THE RESULTING HEXAGON FLIGHT SCHEDULE WILL FORM THE BASIS OF THE END DATES USED IN THE RFP.

PART VII. FUNDING:

1. IN PREVIOUS BUDGETING ACTION THE FOLLOWING FUNDING ESTIMATES FOR HEXAGON SOFTWARE DEVELOPMENT HAVE BEEN INCLUDED IN THE SAFSP BUDGET:

FY 69	FY 70	FY 71	FY 72
1.0M	4.0	4.0	3.0

OF THESE AMOUNTS, THE FY 69 FIGURE HAS BEEN APPROVED AND IS CURRENTLY AVAILABLE IN SAFSP. THEREFORE, NO NEW FUNDS ARE REQUIRED TO INITIATE THE DEVELOPMENT DESCRIBED IN THIS MESSAGE.

2. MY JUDGEMENT IS THAT THE FY 70 AND FY 71 FIGURES ARE LOW IN THE VIEW OF THE COMPRESSED SCHEDULE AND INCENTIVE FEE CONTRACT PROPOSED. ADDITIONALLY, THESE ESTIMATES DO NOT PROVIDE FOR CHANGES REQUIRED TO ADAPT THE SOFTWARE TO CHANGES IN THE HEXAGON HARDWARE, SOME OF WHICH WILL OCCUR SINCE THE HARDWARE IS STILL IN A DEVELOPMENTAL STATE IN AREAS WHICH HAVE A SOFTWARE IMPACT. ACCORDINGLY, I WILL SUBMIT THE FOLLOWING REVISED ESTIMATES IN THE NEW FY 70 FINANCIAL PLAN AND FY 71 BUDGET ESTIMATE:

FY 70	FY 71	FY 72

4.5M 4.5M 3.Ø
PART VII. ACTION REQUIRED.
I HAVE DISCUSSED THIS PLAN OF ACTION AND THE PROPOSED CIA MEMBERSHIP ON THE SSAC AND SSEB (BOARD, PANELS, AND ADIVISOR/CONSULTANTS) WITH MR CROWLEY (CIA/OSP). HE STATED THAT HE WAS NOT FREE TO PROCEED BECAUSE OF SOME FURTHER DISCUSSION SCHEDULED BETWEEN YOU AND SOME (UNNAMED)

CIA PERSONNEL, BUT THAT IF THE DIRECTION IN REFERENCES A AND B IS UPHELD AFTER THIS DISCUSSION, THEN HE AGREES WITH THE OVERALL APPROACH AND SPECIFICALLY WITH THE CIA PARTICIPATION AS OUTLINED HEREIN. GEN BLEYMAIER, GEN BERG AND GEN LOWE HAVE CONCURRED WITH THE SSAC/SSEB PARTICIPATION OF THEIR PERSONNEL AS OUTLINED. UPON RECEIPT OF YOUR CONCURRENCE, I WILL PROCEED.

~~T O P S E C R E T~~
BT

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DIRECTOR OF DEFENSE RESEARCH AND ENGINEERING
WASHINGTON, D.C. 20301

1 July 1969

MEMORANDUM FOR DR. McLUCAS

John:

In the time remaining until HEXAGON becomes operational, I think that we must ensure a wise trade-off between schedule, performance, and costs. The Perkin-Elmer briefing suggests that program management up to now has consistently stressed performance and schedule over cost.

I recommend that we listen to a CIA evaluation of program management, that we seek their views on these trade-offs, and that you institute quarterly reports on progress and direction.

Johnny
John S. Foster, Jr.

cc: Mr. Packard

Rec'd 16 Jul

~~TOP SECRET~~

HANDLE VIA BYEMAN CONTROL SYSTEM

~~(S)~~ NATIONAL RECONNAISSANCE OFFICE

WASHINGTON, D.C.

THE NRO STAFF

3 July 1969

MEMORANDUM FOR DR. McLUCAS

SUBJECT: HEXAGON Program Management

PROBLEM

Dr. Foster in his attached letter at TAB A has indicated that the HEXAGON program management has stressed performance and schedule over costs.

DISCUSSION

During the presentation by Perkin-Elmer on 30 June, it was apparent that the primary factors being considered were schedule and performance since these would yield the largest fee. The schedule at TAB B shows the fee is less sensitive to cost than performance. Dr. Foster feels that while this outlook may be good for Perkin-Elmer, it is not a healthy outlook from the Government's point of view.

In order to insure that the trade-offs between schedule, performance, and costs are fully evaluated, it is suggested that the monthly HEXAGON progress report and the SAFSP quarterly program reports on HEXAGON be expanded to cover this item.

CONCLUSION

The expansion of the monthly HEXAGON progress report and the SAFSP quarterly program reports will accomplish the goals desired by Dr. Foster.

RECOMMENDATION

That the attached message to General King and Mr. Crowley be signed.

WILLIAM E. WILLIAMSON
Lt Colonel, USA

Atchs
TAB A, BYE 78191-69
TAB B, Cost Schedule

HANDLE VIA BYEMAN CONTROL SYSTEM ~~HEXAGON~~

~~TOP SECRET~~

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907-03-008

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