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WASHINGTON, D.C.



OFFICE OF THE DIRECTOR

June 15, 1971

MEMORANDUM FOR MR. PACKARD

SUBJECT: Senator Ellender's Questioning on EOI and FROG

On Tuesday, June 15, I briefed the Senate Appropriations Committee on the FY 1972 NRP budget. Senators Ellender and Young and Executive Assistant Woodruff attended. [redacted] and Col. Dave Bradburn backed me up at the session. Chairman Ellender zeroed in on one main point: He considers that our current plan to begin FROG and EOI this year represents unacceptable duplication. He said he intends to question you on that subject and on other possible cases of duplication tomorrow. (Mr. Woodruff said that AX vs. Cheyenne would be one of the other cases you would be asked about.) This memo is to assist you in the discussions with Senator Ellender's Committee on FROG and EOI.

Properties of the EOI System.

a. Favorable. EOI has some properties which are not achievable by any of today's photographic collection systems:

(1) High signal-to-noise ratio. This means better image quality within its resolution capability of around two feet.

(2) A promising capability for [redacted]

(3) [redacted] return of imagery to the [redacted]

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CONTROL SYSTEMb. Unfavorable.

(1) Depends upon new technology. The system elements which involve some technical risk are the [redacted]

(2) Schedule and cost risks. All of the technical problems appear solvable; nevertheless they introduce a considerable degree of uncertainty as to when the system will be available and how much it will cost.

Properties of FROG.a. Favorable.

(1) Low development risks. The main system elements are made up of the GAMBIT space vehicle and camera. The new components, consisting of film processor scanner, electronics, and ground reconstruction equipment, have all been proven in space or in laboratory life tests.

(2) Potential for GAMBIT-quality photography. While FROG will normally produce imagery of about the same resolution as EOI, FROG could, on demand, be brought down to a low operating altitude and produce one foot GAMBIT-quality imagery for brief periods in a crisis situation.

(3) Lower development costs. This follows from the limited amount of development actually necessary.

(4) Lower net operating costs. FROG can replace some GAMBIT flights as a result of its capability for high resolution photography on demand.

(5) Growth potential: By replacement of the film and film handling mechanism by the tape storage camera, a considerably simpler and hence more reliable system could be achieved in about 5 years' time.

b. Unfavorable.

(1) Requires [redacted] for return of imagery because of time needed for on-board development of film.

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CONTROL SYSTEM(2) Has no growth potential for

Rationale for current plan. EOI is the preferred technical approach for the long term. Our plan provides for the best orderly progress for an EOI system. Our best estimate of an availability date is 1976. We have also been asked, however, to provide an interim crisis response capability appreciably sooner than our best estimate of EOI availability. FROG does appear to be entirely practical and can provide the necessary interim capability we have been asked for. FROG can be operating 30 months from go ahead or about two to two and one-half years before EOI.

I believe Senator Ellender will ask you to select one or the other of these near-real-time systems. He will probably ask you to decide between an early capability, FROG, or a better eventual capability, EOI. Either course would be at variance with what USIB has at one time or another asked us to do but either course would be cheaper than our present plan.

ML
John L. McLucas

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