

~~TOP SECRET~~DEPARTMENT OF THE AIR FORCE
WASHINGTON

OFFICE OF THE UNDER SECRETARY

14 August 1969

MEMORANDUM FOR THE RECORD

SUBJECT: Planning for our Future Photographic Reconnaissance
Systems

Our general problem is that we have several systems which offer very interesting possibilities and on which we would like to continue to make appropriate technical progress.

Another general problem is that we have an optics capability which was built up as a result of work on the DORIAN system, which we would not like to see dissipated because it will undoubtedly be needed for future systems which we will be in a position to specify within a reasonable period of time.

There are two basic needs which we would like to satisfy: (1) the requirement for ~~very~~ very high resolution photography, and (2) the requirement [redacted]. When the MOL was canceled, it was decided tentatively to continue the DORIAN camera system. Within the last two months, we have had time to think through the problem further and have concluded that it is not necessarily a good idea to proceed on the DORIAN camera as such. If the requirement is for very high resolution photography, rather than for the specific output of the DORIAN system, then there may be better and cheaper ways to go. These possibilities are being followed up through the contract with Eastman Kodak, which has been transferred from the MOL project office to our SP office. Two things are being looked at: (1) what can be done to improve the present G-3 system and how far can we go toward higher resolution; (2) we are looking at a GAMBIT-like vehicle which might go to [redacted] using a vehicle of about 45 days life.

With respect to [redacted] systems, there are two promising techniques which we are pursuing: (1) the system based on solid

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state arrays; and (2) the tape camera which is being investigated by CBS.

It is our conclusion that the technology essential to either of these two systems has not yet demonstrated that we are ready to proceed with a system go-ahead. On the other hand, the technology is interesting enough to justify continued technology efforts and at least some level of system definition studies so that the components of potential systems are tailored to the real needs. Therefore it is our recommendation that no system go-ahead be given on any real time system for the time being, but that we continue to push aggressive technology programs. The specific areas which need to be covered are those items which are keyed to the success of a given approach and which represent something more than just straight forward engineering.

For the solid state array camera, the key items are the solid state arrays themselves, the data processing techniques which will be used to generate a picture from the output of these arrays, the data relay satellite and the optics.

For the tape camera system, there is the tape camera itself and the print-out system, the data relay satellite, and the optical technology.

Obviously, there is much overlap between the critical components of these two systems; therefore, it is our proposal that we authorize the CIA to proceed on those elements which are essential to and unique to the solid state array type camera system, that we authorize the Air Force to proceed on those systems that are essential to and unique to the tape camera and that we set up a joint technical review group from both agencies which will plan and oversee those elements which are common to both systems.

This leads to the following breakdown of elements by supporting agency and the following fund requirements in 1970:

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		(\$ millions)	
		<u>1970</u>	
		<u>Funding</u>	
a.	solid state arrays	CIA	6 12
b.	data processing	CIA	2 2
c.	system definition	CIA,AF	2 2
d.	overall tech. mgt.	CIA,AF	0
e.	tape camera	AF,SP	5 5
f.	data relay satellite	AF,SAMSO	-
g.	CMG	AF,SAMSO,SP	3 4
h.	optics technology (mostly EK)	CIA,AF	<u>36</u> 36
TOTAL			\$54 61

This program will put us in a position to make a much better decision a year from now as to how to proceed through the following year. However it is our assumption, based on what we now know, that a year from now we would be in a position to do continued systems definition work on a more realistic basis, leading toward a systems start a year thereafter. It is possible that something would have changed so that we would want to proceed faster than that, but it is unlikely.

While not strictly photograph/^{ic}imagery, there is another imagery program which Dr. Foster would like to have us pursue.



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John L. McLucas

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