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4 September 1970

MEMORANDUM FOR: Assistant Deputy Director for
Science and Technology

SUBJECT : Reporting Requirements for
the EOI Processing Facility

1. In your memorandum of 2 July you asked four questions concerning the needs for exploitation of the product of the EOI so that you can continue planning for the EOI Processing Facility. Before answering the questions specifically, you should have some background on what we expect the reporting and exploitation tasks will be.

2. The most urgent and major portion of the EOI product will be for warning/indications and current intelligence purposes and should be exploited and reported to the intelligence community within [redacted] after it has been imaged by the satellite. This would involve some [redacted] sampled from a total target population of about [redacted]. About 80 percent of these images would be routinely programmed into the system for collection for sampling a relatively stable population of warning/indications targets. Another [redacted] per day would be collected in response to ad hoc national current intelligence needs and the requirements of military commands in the field.

3. The question of whether any photo-interpretation will be done at the processing center depends on whether the final electronic output which is used to prepare the film transparency can be transmitted to NPIC with little delay and at reasonable cost. If this is possible, then there would be no need for any substantive photo-interpretation readout at the processing center.

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4. The basic reason for having the warning/indications and current intelligence readout done at NPIC is the need for access to previously processed information. Regardless of the experience and background of the photo-interpreters, they will need extensive substantive files not only from the EOI system but from the other photographic systems which will be operating during the same period as well as access to some data from non-photographic sources. During the first year or so of operation, a major portion of the effort to exploit the EOI will be devoted to establishing a data base of "normality" on each of the warning/indications targets to be used for comparison with the flow of EOI material as it comes in. I expect that this will require extensive statistical analysis, and procedures will have to be established for updating and modifying the data base as we detect changes in "normality". Most of this work will involve photo-interpreters and producers of finished intelligence.

5. For these reasons we must have an authoritative reading on the feasibility (including the trade-offs between costs and time) of the electrical transmission of the image-generating product of the Processing Facility. Please undertake whatever studies are necessary to acquire this information. ✓

6. If these studies show that the electrical transmission of image data is not feasible or practical and if NPIC and the Processing Facility cannot be contiguous, a minimum level of photo-interpretation will have to take place at the Processing Facility. This would involve a quick readout of pre-designated targets for the levels and kinds of activity relevant to warning/indications, current intelligence, and the like. The primary purpose of this preliminary interpretation would be to alert the managers of the EOI collection system and those of other collection systems of a situation requiring quick decisions for additional collection. This level of photo-interpretation would not be for intelligence analysis and reporting. That kind of substantive interpretation would be performed by NPIC and other centers as soon as the images were delivered to them.

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7. Under this arrangement the Processing Facility would have to accommodate no more than a dozen photo-interpreters with a like number of image viewing and manipulation units and with access to a data bank of pre-designated information on targets to be covered. Access to this data bank which would be generated and maintained at NPIC could be acquired through remote display terminals at each of the photo-interpretation positions in the Processing Facility. In addition, the photo-interpretation unit would have to have rapid and secure communications with the EOI tasking manager, with those of other collection systems, and with CIA, DIA, NPIC, and NIC.

8. We see no need for electrical dissemination or for photo-interpreters at the Processing Facility to handle the less time urgent EOI collection for general surveillance and in-depth analyses of military forces. About [] images per day from a total population of about [] would probably be collected by the EOI for these purposes and could be delivered to the appropriate exploitation centers as film transparencies.

9. The number of film transparencies of each usable image that would be needed depends on whether images can be transmitted electrically to the interpretation centers. If electrical dissemination is not feasible or practical, a minimum of 15 prints would be required for the most urgent portion of the EOI product (for warning/indications, current intelligence, and contingency purposes). These would have to be reproduced and disseminated as rapidly as possible. Between 30 and 50 copies of the less urgent imagery for general surveillance and in-depth analysis would be required with delays of one day to a week after the image had been acquired. You should recognize that these are preliminary estimates and have not been checked out with the community.

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10. We can give you no definitive answer regarding your question about the need for storage image data in digital form. It would appear that there should be no need to store more than a very small portion of such data for more than a month. Procedures should be established which will require the photo-interpreters to purge such data from storage at specific intervals during that period. Some of the imagery would be rejected as soon as it is reviewed because of cloud cover or poor quality. Much would be designated for rejection from storage when it is first reviewed by photo-interpreters at NPIC within a day or two after receipt. Two or three additional reviews should be required over the next two or three weeks with automatic purging from storage after a month unless an authoritative positive decision has been made to store the image in digital form.

11. In this connection, some provision should be made for photo-interpreters to manipulate the stored digital imagery in order to extract incremental information latent in the digital data. Where this would be done would depend on whether the necessary equipment and stored digital information would be available at NPIC or only at the Processing Facility. If it is available only at the Processing Facility, some additional space and equipment would have to be made available for photo-interpreters, equipment, and backup files so that they can benefit from the potential advantages of digitally stored information. The best arrangement, however, would be for NPIC to have the capability to store some of the imagery in digital form and to have the equipment to manipulate it.

12. For this reason we must have an authoritative reading on the feasibility and costs involved in NPIC acquiring the equipment necessary for storing and manipulating digital image data. ✓

13. The intelligence community has not yet addressed the problem of tasking procedures for an EOI system or of providing an interface between the user of the information and the operators of the system. From what we know about the system and our experience with other satellite imaging systems, it would appear

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that there are two basic types of guidance for collection. First, target populations and sampling programs would have to be developed for collection information for warning/indications and for routine surveillance. COMIREX would be the best interagency mechanism to establish these target populations and to determine the frequency of collection. Most of the collection for these purposes would be operated on a routine pre-programmed basis. Once established, these programs would have to be reviewed and updated periodically. The only decision which would have to be made by the operator would be to validate the requirement prior to camera operation and subsequently to record whether a satisfactory image had been collected on a pre-programmed target. A large part of the entire collection deck would be handled on such a routine basis.

14. Some specialized intersystem tasking arrangements will have to be developed to maximize the effectiveness of coverage of targets by KH-9 or KH-8 during the periods when they are on orbit concurrently with the EOI. Similarly the results obtained from the film-return systems will be used to adjust the routine surveillance program for the EOI when appropriate. This interrelationship has not yet been studied. It will be necessary to have the means of displaying the current status of coverage of targets or categories of targets by all systems.

15. The second and more difficult type of collection guidance will be that pertaining to dynamic or immediate needs. These may range from targeting during a full-blown crisis to collection against an individual target based on tip-off from another source. The means must exist for immediate information needs of a variety of organizations, including overseas commands, to be submitted as collection requirements to the system, to have them reviewed in the context of other requirements, and, when appropriate, to receive immediate priority action. The tasking channels must be direct and unambiguous.

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16. Some form of community coordination will be necessary to establish the priority for collection against such immediate targets or categories. The logical component again is COMIREX, but probably with modified staffing arrangements from those presently in use. I would visualize that some relatively experienced senior officers, familiar with the target structures and their importance as well as the collection system potential, will have to be given responsibility for final decisions as to when immediate targets should override the pre-programmed collection based on the standing requirements. These officers would make the final selections when target conflicts or mode (stereo, mono, etc.) choices have to be made. It will take very careful study, and perhaps a good deal of experience, to determine the trade-offs in relative efficiency between "steady-state" pre-programmed operations and individually designated collection which overrides the standing requirements. Our experience with the KH-8 shows that there generally are about [redacted] individually identified targets [redacted] which have importance to analysts as individual targets at any given time.

17. There will obviously have to be a very close work relationship between the operator and collection guidance personnel. Explicit guidelines will have to be developed which will govern the final allocation of camera operations. It will probably take some experience with the system, both in terms of operations and results, before final guidelines can be determined. These will be governed in part by the time constraints and data requirements of the operator.

18. Just as there will be a need for at least some imagery information derived from the EOI system to move very rapidly to photo-interpretation and intelligence production components, new procedures will have to be developed to funnel community-wide requirements for immediate collection in a coordinated effective manner. In general, I anticipate that modifications or adjustments can be made to the tasking procedures in use for film-return systems rather than that the EOI will demand radical or entirely new procedures which would be independent of existing systems.

Edward W. Proctor
EDWARD W. PROCTOR

Acting Deputy Director for Intelligence

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Memorandum For: ADDS&T
Subject : Reporting Requirements for the
EOI Processing Facility

EWP Proctor:fbr

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