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BYE-111403-71

Copy / of

29 November 1971

MEMORANDUM FOR: Chairman, COMIREX

SUBJECT : Ad Hoc Working Group on EOI Operations
Concept Documentation

1. In order to support the early phases of the EOI System Acquisition process, there are several critical Community interface issues which must be addressed. To provide a mechanism for documenting and reviewing these issues, OSP has formally added to the Program documentation tree an Operations Concept Document. This Document is intended to define in functional terms how the planning and targeting of the EOI System will be done. The attachment to this memorandum addresses the specific intent of the Document.

2. OSP has been studying the generic problems of target coverage planning for some time using both internal resources and limited contractor support. In order to meet the near term Program milestones, I have assembled within OSP an Ad Hoc Working Group on EOI Operations Concept documentation. As we have discussed, it would be very helpful to have full-time working level participation in this Group from CIA, DIA and the COMIREX Staff. I have also talked with the D/SOC about full-time participation from that quarter.

3. The overall Program plan calls for an initial draft of the Operations Concept Document by March 1972. We envision that this draft would then be formally reviewed by all concerned Community elements and the NRO and issued by the D/NRO to the System Program Director as formal guidance by July 1972.

4. We would hope to assemble the Working Group on or about 1 December and press ahead rapidly with detail planning and indoctrination.

Leslie C. Dirks

LESLIE C. DIRKS

Deputy Director of Special Projects

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MEMORANDUM FOR THE RECORD

SUBJECT: EOI Operations Concept Document

1. The development of software and operating procedures for the EOI Collection Planning and Targeting (CPAT) activity will be governed by the Operations Concept Document. This memo identifies the key questions which that document will address and briefly discusses some of the considerations involved. A rough outline of the Operations Concept Document is attached.

2. The CPAT activity has to do with the computer programs and operational procedures for planning and conducting the actual operations of the EOI System. The manner in which this activity is carried out is significantly affected by the way in which the user community and the CPAT activity interact. The Operations Concept Document is intended to describe that interaction in some detail.

3. The four major areas which must be addressed are briefly discussed below:

Organization/Responsibility

The total collection planning process includes the functions of accepting requirements as they arise, developing some understanding of the possible courses of collection action, choosing a plan, and executing it through the selection of targets which are to be imaged. This process obviously involves people as well as software. Expertise in the operation of the system and in the generation and interpretation of performance prediction information is required on the one hand; on the other, there must be an ability to understand requirements, weigh alternatives and

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SUBJECT: EOI Operations Concept Document

make authoritative decisions with respect to targeting plans. The former capabilities will be provided by the developers and operators of the System. The latter must come from the Intelligence Community. The scope of responsibilities, the manning and the location of these two groups of people and the way in which they interact with each other must be defined.

Collection Requirements

The EOI System is extremely flexible and this flexibility imposes a significant burden on the definition of the collection requirements. It is possible to control the GSD of the image, the mode (stereo or mono), stereo convergence angle, azimuth and obliquity angles (I/S to target) and the signal-to-noise ratio. Obviously not all of these parameters can be controlled absolutely nor can they all be controlled simultaneously.

There are two basic techniques for controlling these characteristics of the imagery. In one case hard limits are set outside which the imagery is judged to be useless and hence should not be collected. In the other case the utility or value of the imagery is downgraded as the parameter increases. These two techniques can, of course, be combined.

If these characteristics are to be controlled in the targeting, then the implications of such control should be evaluated during the planning process such that the Community can make the decisions with knowledge of the probable consequences. The number of characteristics to be controlled simultaneously and the control methodology will have a significant impact on the complexity of the CPAT software. It is, therefore, desirable that the decisions on what characteristics of the imagery are to be controlled, in what combinations, and to what degree be based upon intelligence requirements rather than an engineering "feel" for what is good.

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In addition to decisions on control of those characteristics discussed above, it is assumed that there will be requirements statements which indirectly address the timeliness of collection. It is expected that in the main the time requirement will be implied by a requirement to have a certain probability of acquiring an image every so many days, weeks or months or a certain fraction of a group of targets in a given time period.

If there are groups or categories of targets, and it is assumed there will be, how many categories will there be and will all targets in a category have the same imagery requirements?

There is also the consideration of how the targets or areas will be designated to the CPAT software. Must targets be designated by latitude, longitude and altitude in a reference coordinate or will the software accept map coordinates for designated map series, location relative to another target, etc., etc. The software can be configured to accept data in the form most convenient to the user. However, if 99.9% of the time the input data is in one form, then the remaining 0.1% is probably best worked off-line.

It is envisioned that most of the time the bulk of the requirements will be standing or continuing requirements. That is, the targets, the fraction required, periodicity, etc., will be relatively fixed. In addition, there will be requirements which are time critical, of limited duration, etc. These "special" requirements could generate unique software as well as procedural and planning requirements. For example, it might require targeting

a capability which had not been necessitated by the normal standing requirements.

Planning and Reporting

The EOI System does not have the convenience of a finite mission duration to place boundaries on the planning and reporting process. Thus, there is no natural period for the

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planning activity. It is to be expected that the period for which performance projections and/or plans are made and the frequency at which the planning activity will normally take place will be a function of the ability to make accurate predictions and of the utility of such projections to the Community.

It is necessary that the type of information to be supplied to support the planning process be identified. Quite likely the data required will be a function of the particular situation -- for example, the data required to support planning in a crisis environment will probably be considerably different from that required for the standing requirements.

In addition to the normal reporting activity, the data to be retained in "permanent" file to support special studies and the retention period for the data should be identified.

Timelines

The activities to be performed by each of the participating elements and the deadlines for providing information to or initiating an activity will be determined. Timelines will be established for normal and crisis or special situations, the difference being dictated primarily by the amount of evaluation or planning involved prior to initiating a course of action. For example, to make a target, which is already in the target file, mandatory without regard to the impact of such action on other requirements can be accomplished much later in the process than the insertion of new requirements for which trade-off data and weightings vis à vis other requirements is desired.

Deputy Chief, Design and Analysis Division
Office of Special Projects

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OPERATIONS CONCEPT DOCUMENT

1.0 Purpose and Scope

2.0 System Overview

General description of EOI System with emphasis on timelines, modes of operation and targeting flexibility/ constraints.

3.0 Organization

Describes top level concept of planning and targeting system and responsibility/authority of each operating element.

4.0 Collection Requirements

Defines those aspects of the imagery which can be controlled, the mechanism for defining the requirements and the procedure for changing/modifying requirements.

5.0 Reports

Defines reports to be generated on a regular basis and information to be available on an as needed basis.

6.0 Timelines

Defines when, who, what for normal and typical crisis situations. Emphasis is on latest times at which function can be accomplished.

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