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#### TOP SECRET - HANDLE VIA BYEMAN CHANNELS ONLY

### MEMORANDUM FOR NAVAL SECURITY GROUP COMMAND

SUBJECT: Revised SOI List and Signals for Local Location Processing

REFERENCES: a. BYE-1471-70, SORS 10/96/21, 17 November 1970 b. BYE-1457-70, SORS 10/47/24, 27 August 1970

1. References a. and b. establish the most recent SORS mission guidance for POPPY Missions 7105 and 7106. This guidance supersedes all previous SORS guidance for these missions.

3. The priority signals listed and the processing functions desired on each SOI in general are not applicable to all of the POPPY ground sites. Some sites are not capable of seeing the SOI at this time because of the limited deployment of the emitter while others are not equipped with digital equipment required for geopositioning and other data refinement operations. Stations should be directed to utilize their capabilities to satisfy those signal and processing requirements which are achievable in their geographical area with their present equipment configuration.

4. The attached table is keyed to paragraph 5 below and presents the revised SOI list in priority order along with the intelligence needs and processing reporting requirements which can be satisfied with the POPPY system for each signal (indicated by an "X" or appropriate foot note). The processing functions have been separated into two categories; analog and digital. The intelligence needs and the reporting requirements indicated under the analog scanning function may be accomplished in most cases by utilizing only analog and ephemeris data coupled with geometrical analysis of the orbit and time of intercept. Those needs and reporting requirements listed under digital processing require a digital computer for analysis.



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#### a. Analog Scanning (QC Function)

(1) Initial Detaction - Initial detection refers to the intelligence need for a signal which can be equated to a known structure which has been confirmed by other sources, or the detection of a new/unusual or unidentified emission.

(2) New mode of operation - Continual efforts should be made when working an SOI to detect any new characteristics which can be associated with it. Those designated signals which display no new or unusual parameters should be reported in Part B of the SOI alert series of messages. There is no analog SOI tape forwarding requirement. Any designated SOI which displays characteristics slightly different from the EPL or those previously reported for this signal should be reported in Part A of the SOI alert series of messages and should include sufficient comments to indicate the anamoly observed. Part A entries should be followed up by shipping the analog tape in accordance with normal SOI handling procedures. If signals are sufficiently different from known SOI to be considered new/unusual or unidentified, they should be handled as initial intercepts and reported in the unidentified SOI series of messages and backed up with an analog tape. Technical feedback from NSA will be provided to the POPPY field site on all unident SOI entries and all entries in Part A of the SOI series of messages.

(3) Activity surveillance of unique or limited deployed emitters -Those signals for which activity surveillance is required are so designated in the table and are unique in the sense that many times the

. (In some

cases intercept is sufficient.) Specific requirements for each signal type will be given in paragraph 5.

. (4) Reporting - SOI and unidentified SOI reporting is required on those signals so indicated in the table and the analog screening work load should be done within the timeliness guide lines specified. The timeliness at



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which processed data is required varies with the target and the consumers' needs. In general, those targets associated with mobile emitters and for which there is a tactical requirement, require first priority handling. Those targets associated with present ocean surveillance processing capabilities such as the have been given

first priority handling because of the rapid reporting requirement.

b. Digital Processing

(1) Refinement of Parameters - Parameter refinement should be accomplished on all signals designated in the table even if the signal duration is not long enough for normal geopositioning techniques to be applied.

(2) Geopositioning of intercept - Emitter locations should be attempted on those signals designated in the table whenever sufficient intercept data is available.

(3) Reporting - Location reports should be forwarded on those signals indicated in the table utilizing the established formats and addresses. Timeliness factors represent the relative order in which locations are desired in the event that a processing bottleneck occurs.

c. Special technical intelligence collection efforts - Various collection options are available on command to provide additional signal information for analysis purposes. Options such as: SLX, Polarization, normal-high sensitivity and quadrant antenna selection can under certain circumstances be used to provide the analyst with additional signal descriptions of high intelligence value. These are not generally desirable as routine task configurations and need discretion in their use if usable end product is the objective. Utilization of an option against an SOI will be handled on a case-by-case basis as the technical intelligence need arises which can be satisfied by the system. There are presently two SLX tasks which are active against the and the

5. Signals of interest - In addition to the information indicated in the table for each SOI, a summary follows of the basic intelligence requirements for each signal or group of signals, and in some cases additional information on the level of effort required is given.





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2146 MHz 89.6 pgps Sary Shagan,
2182 MHz 83.1 pgps Moscow,
2203 MHz 89.9 pgps Moscow and
2145.83 MHz 89.28 pgps Moscow.



Although g, h, and i are unique one-of-a-kind emitters with fixed sectors of coverage, the DOG HOUSE emitters requency. swept arrays and are not suitable for location processing utilizing delta-time of arrival techniques. Orbital intercept geometry and ephemeris data can be used to determine if the observed emission is emanating from a known site and can therefore satisfy the activity surveillance requirement for these emitters. Emissions emanating from the southward looking face of the DOG



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HOUSE radar have now been confirmed. Therefore, increased emphasis must be placed on the determination of which of the two differently boresighted antennas is operational during each intercept.

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activity surveillance, identification of new active faces and definition of their ELINT sectors are the prime contributions which POPPY can make to the requirement. Activity surveillance may be accomplished by utilizing the shortest technique available to determine the origin of the intercept. If the intercept is from a unique sector and no ambiguity exists then this is sufficient and a intercept may be utilized. If the intercept could be coming from more than one emitter because of overlapping sectors or the possibility of a new becoming active, then several should be used to resolve the ambiguity. It is not necessary to run a complete geopositioning routine and . erefinesa.logation.ox.copy.whom.aynevatia.covis.csus.pectedya.cviy.oxfor.cthe.stirst+time . or if it is the only way to resolve an ambiguity.

The signal is believed to emanate from a mobile vehicle associated with the SA-6 missile system. Activity surveillance and generation of the most accurate locations possible are required to pin point this emission to field activities utilizing SA-6 equipment.

#### د هار در مهمینا به که مورد میدوسد. در من وی سم مربق اینان بر میترد این میدود. ماه میدان میدود کنیز این استان مورد و کرد. میلوید مایند این این روس و حق با این میترد میدان میدان میدان این می ماه ماه میدان میدان میدود با و در ماه و میدان میدون میدون با میلود و میترد.

Primary interest in this family of emitters is for ocean surveillance purposes. Present computer capacity and software techniques available for exploitation of this emitter are not adequate for production of timely location reports. This emitter should be processed at lowest priority on a not-to-interfere basis in an attempt to more adequately define the problems associated with location processing of \_\_\_\_\_\_ The experience gained will aid in the identification of new software requirements and data handling techniques which when coupled with the new, approved System 86, will be capable of producing timely locations.



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n.

SOI reporting on the is desirable even if a location is not possible from the data. Of particular interest is any low PRF mode of operation. When data permits, geoposition the intercept.

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SOI reporting is desired on intercepts for activity surveillance purposes. Known installations are sufficiently separated to prevent any ambiguity as to the source of the emission. No digital processing required.

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emissions are of interest only when a location can be computed. Primary interest is in associating this emission with related activities and is highly dependent on accurate locations. No SQL reporting or analog tape forwarding requirement.

6. Updates to this SOI list will be handled via electrical messages and will provide similar information, as found in this document, concerning the priority and methods to be used in handling the intercept. SOI alert and tipoff technical support messages to the field stations concerning unidentified emissions reported by other sources will usually be handles on a quick reaction basis and it should be understood that these messages serve to guide the analog screener in his normal search for new/unusual signals. Any unidentified signals found should be handles as a normal unidentified emission.

annually and will incorporate all electrical updates in effect at the time of the revision.





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Approved for Release: 2024/06/13 C05026195 (1) Unique or limited deployed emitter, single vehicle intercept sufficient. U=Unident SOI series of messages; S=SOI series of messages; (A) if feed desired by SITE

(2) Forward all intercept of the high frequency component regardless of whether or not feedback is desired.

(3) Current operational capabilities are quite limited. Intent here is to establish procedures for use with a future processing system and to develop software and techniques necessary for timely location production and reporting.

(4) Following initial detection, special SLX, collection task will be implemented if the signal is within the system capabilities.

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