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MISSION AREA REVIEW. INTELLIGENCE, SURVEILLANCE AND TARGET ACQU--ETC
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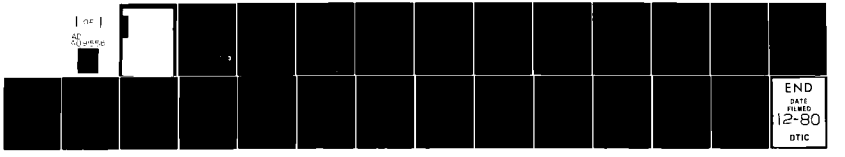

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Mission Area Review.

Intelligence, Surveillance and Target Acquisition,

EXECUTIVE SUMMARY

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ABSTRACT

This paper provides an overview summary of a review of the Intelligence, Surveillance, and Target Acquisition (ISTA) mission area. The review addresses the present and future Army battlefield capabilities to conduct the ISTA mission during a non-nuclear, mid-intensity war in Europe. This paper summarizes the available information about U.S. Army ISTA needs, capabilities, functional relationships, and deficiencies; identifies key issues, uncertainties, and opportunities; and suggests areas for emphasis in future work programs.

Full documentation of the mission area review can be found in MTR-7460, Intelligence, Surveillance, and Target Acquisition Mission Area Review - Final Report (U) Secret, and in seven supplementary reports:

MTR-7491, Supplement to the ISTA Mission Area Review: Examination of the European Environment, UNCLASSIFIED.

WP-12111, Supplement to the ISTA Mission Area Review: A Threat Developed for ISTA Analysis Review (U), SECRET.

WP-12127, Supplement to the ISTA Mission Area Review: Funding for RDT&E and Procurement of ISTA Systems (U), CONFIDENTIAL.

WP-12115, Supplement to the ISTA Mission Area Review: A Review of ISTA Systems Capability (U), SECRET.

MTR-7500, Supplement to the ISTA Mission Area Review: An ISTA System Context (U), CONFIDENTIAL.

MTR-7508, Supplement to the ISTA Mission Area Review: The Integration of ISTA Systems with Army Command and Control Structure, UNCLASSIFIED.

MTR-7497, Supplement to the ISTA Mission Area Review: Exploring ISTA Contributions to Tactical Actions at Division Level and Below (U), CONFIDENTIAL

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1.0 INTRODUCTION

The Intelligence, Surveillance, and Target Acquisition (ISTA) Mission Area Review was conducted in support of USADARCOM's Battlefield Systems Integration Directorate. Oriented primarily toward corps and division tactical capabilities, this review covers present and future Army capabilities through 1990 to accomplish the ISTA mission in a non-nuclear, mid-intensity conflict in Europe. The primary objectives of this review are to:

- Summarize the available information on ISTA mission needs, capabilities, functional relationships, costs, and deficiencies.
- Identify key issues, uncertainties, and technological opportunities.
- Suggest areas for emphasis in future work programs.

To accomplish these objectives in the framework of a "state of knowledge" review, the tasks were to:

- Review significant study efforts of the past ten years and determine the status and trends of ISTA capabilities and funds.
- Develop a mission context for ISTA and assess the current ISTA capability to operate against the anticipated threat in the European environment.
- Examine major alternatives for the future conduct or structure of ISTA.
- Identify and discuss key issues and opportunities.
- Recommend improvements to ISTA mission area capabilities.

In addition to the final report, which discusses the main points and findings of the review, seven supplementary reports are available for more detailed information on the Soviet/Warsaw Pact threat, the European environment, the capabilities of ISTA systems, the status of ISTA funding, the ISTA mission context, the integration of ISTA within Army C^2, and the value of ISTA to tactical actions.

2.0 GENERAL BACKGROUND AND STATUS

The objectives of the ISTA Mission Area are embodied in a blending of the objectives of intelligence, surveillance, target acquisition, electronic warfare (EW), and reconnaissance (RECCE), which, in the main, have been thought of as separate, loosely related combat functions carried out at each level of military organization in the field. The ISTA mission area includes the following principal functions:

- Surveillance and reconnaissance of the battlefield and the approaches thereto.
- Intelligence and information analysis, integration, processing, and utilization.
- Target detection, identification, and location.
- Exchange of relevant intelligence and information between sources, higher headquarters and agencies, and units engaged in combat.
- Utilization of technology and electronic warfare techniques and assets to accomplish any or all of these functions.
- Management of these functions.

The functions listed above must be accomplished in a manner that supports effectively a military unit's tactical planning and conduct of maneuver, combat, and target engagement activities. The modern battlefield demands their accomplishment under severely reduced time constraints.

2.1 Recent Studies

Five studies are considered to be major "drivers" of ISTA developments or especially pertinent to current problems of ISTA in the European environment. These studies are the Tactical Reconnaissance and Surveillance 1975 (TARS-75) study; the Commanders' Surveillance, Target Acquisition, and Information Needs

(CSTAIN) study; the Family of Army Surveillance and Target Acquisition Requirements (FASTAR) study; the Intelligence Organization and Stationing Study (IOSS); and the Integrated Tactical Information System (ITIS) design study.

These studies have many points of commonality, particularly concerning the needs for wide-area surveillance, longer range sensors, improved integration facilities, and responsive organizational arrangements. However, in developing a "system view" of ISTA, it is essential to know, in some detail, the information needs of each user, the time frame to accomplish each tactical action, and the value of the information in terms of the effectiveness of the action taken. The commanders' information needs, as defined in TARS-75, CSTAIN, and FASTAR, do not provide this information. ITIS recognized the failing and developed and analyzed information needs appropriate to the battlefield functions of planning, battle management (or maneuver unit control), and targeting at different echelons. While ITIS, as well as some of the other studies, cites information needs at echelons below division, the means to satisfy the needs and the relationship of information to the effectiveness of tactical actions are not fully treated.

Accordingly, this mission area study complements these prior studies by explicitly:

- Focusing attention on ISTA systems and battlefield activities as a whole, and, in particular, on linking the collection and processing of information to the specific tactical actions taken in response to that information.
- Capitalizing upon new capabilities offered by technological advances.

2.2 The Threat and Environment in Europe

There is a significant numerical disparity between the Warsaw Pact forces and NATO forces deployed in Central Europe and, furthermore, the traditional NATO margin of qualitative superiority is being reduced constantly. Soviet doctrine stresses the importance of the offensive, achievement of surprise, rapid concentration of combat power, intense firepower, and high rates of advance. From an ISTA viewpoint, the main characteristics of the enemy forces are:

- Large numbers of units, moving rapidly, provide a "target-rich" but constantly changing battlefield picture. A significantly high percentage of enemy targets are within 15-20 km of the Forward Edge of the Battle Area (FEBA); i.e., well within range of friendly artillery and advanced sensors.

- A prolific, highly mobile, air defense system provides extensive protection of local maneuver units and has significant long-range capability to threaten aircraft operating well on the NATO side of the FEBA.

- A well-developed Radio Electronic Combat (REC) capability integrates the operation of EW and firepower resources against NATO electronic systems.

The Central European environment has significant impact on the operational effectiveness of ISTA systems and on the ability of U.S. military forces to operate at optimum levels. Weather, particularly in winter, significantly limits the performance of visual surveillance systems, especially those on airborne platforms. Unless provided with all-weather navigation systems and de-icing capability, airborne surveillance platforms (such as the Standoff Target Acquisition System (SOTAS) and OV-1D MOHAWK) may not be able to provide continuous surveillance during winter.

Similarly, land form, vegetation, and land use, or cultural features, in Central Europe have significant influences on air and ground visibility as well as on the movement rates of ground forces.

In open, rolling terrain, for example, a tank-size target can seldom be seen at ranges in excess of 3 km and is usually visible for only short segments of about 50 meters in length. An observation (or attack) helicopter, operating at 200 feet above ground level, has a 0.5 probability of viewing a target at 3 km range. In general, the impact of bad weather and topography tends to degrade U.S. capabilities more than those of the enemy.

Urban developments are creating new barriers to rapid advances. Numerous north-south running bodies of water with steep banks require engineer preparation prior to their being crossed by combat vehicles. These aspects of terrain (including land forms, built-up areas, bridges, and roadway widths and networks) combine to cause predictable, potential choke points where vehicles can be expected to cluster in numbers, and thus, provide lucrative targets for engagement and an opportunity for the application of advanced ISTA sensors.

2.3 ISTA Systems and Funding Trends

Over the five year period, FY78-82, about one-third of the $4,403 million total ISTA funds are directed toward RDT&E and two-thirds toward Procurement. Emphasis is placed upon achieving improvements in EW capability with 58 percent of total funds directed toward EW programs.

The impact of this funding should be felt when advanced systems are deployed in the 1980s. Major improvements in EW capability are expected because of an increase in the number of systems, frequency coverage, and efficiency. Capabilities to locate precisely and to jam non-communications emitters will be provided for the first time. Surveillance and target acquisition capability will be significantly improved by the introduction of SOTAS, additional improved ground surveillance radars (GSR), new artillery locating capability, remotely monitored sensors (REMS), and sensors on remotely piloted

vehicles (RPV). In addition, the Air Force will deploy a precise, non-communications emitter location system (PELSS) in the mid-80s and there also is a possibility of developing a precise communications emitter location capability in the 80s. Both of these emitter location capabilities offer significant potential for satisfying Army needs. The overall trend has three significant aspects:

- The systems planned for deployment in the 1980s will provide a unique capability to see the battlefield in-depth and nearly continuously.
- These systems will produce large volumes of data requiring processing and interpretation prior to battlefield use.
- Because many of these systems rely on airborne platforms, they will be vulnerable to weather, enemy air defense systems, and enemy air attack.

3.0 THE ISTA MISSION CONTEXT: STATUS AND ASSESSMENT

An examination of current ISTA systems, data flows, operational characteristics, concepts, doctrine, and training material provided a context for the ISTA mission as it is normally practiced in the field today. The current information characteristics are:

- The preponderance of available data/information flows upward, with filtering occurring at the various nodes which lie along any particular transmission path.
- The main downward flow of data/information is the output of intelligence analysis and is used primarily for planning, and to a significantly lesser degree, for control of fire and maneuver units.
- There is very little downward flow of information for targeting.
- Current systems are mostly ground-based (limited to line-of-sight ranges) and non-automated (voice and narrative/formatted information transmissions coupled with manual processing) systems. Consequently, these systems are not able to handle very large volumes of information rapidly.
- Data for intelligence and data for target acquisition are handled somewhat separately, although there are many potential and actual cross linkages existing at all echelons.

The current operational philosophy, which emerges from this study, possesses these major conceptual features:

- <u>Implies friendly initiative</u>:

  Army emphasis is placed upon planning for the next friendly offensive operation, continuing to accept an assumption that there are days (not hours and minutes) in which to prepare for combat action.

- <u>Complex, but decentralized</u>:

  Although much of the complexity emanates from the profusion of information sources, control points, weapon systems, and lines of communications, this

is consistent with the overall military concept of centralized planning and decentralized execution of operations.

- Single-purpose--ISTA systems remain focused on the battle in the immediate vicinity of the FEBA:

  This is partly due to the physical characteristics of most current information acquisition and intelligence processing means and weapon systems, but it is also a function of the fact that the Army expects (and reality demands) its frontline battalions to carry the burden of the battle.

- Cyclical concepts of planning and control of maneuver and fire units:

  ISTA support to tactical planning is built around the idea of an intelligence cycle and the idea of preparing formal, and most often, written operations orders. ISTA support to control of maneuver and fire units is geared to the idea of maintaining Enemy Order of Battle (EOB) and situation plots and providing updates at periodic and special briefings, although provision is certainly made for the immediate reporting of important information and for the personal interaction of the corps/division commander with his G-3 and G-2.

- Redundant to assure continuity in command and operations:

  While the profusion of information sources, control points, and communications creates an impression of complexity, ISTA is, in fact, simple in concept. To the extent that voice and message communications are available, corps/division commanders enjoy a high degree of information redundancy and support.

Given that the enemy will have superior numbers, considerable mobility, and, at least at first, the initiative, the enemy strategy will largely determine times, places, and general tempos of combat. While U.S. forces in Europe are able to exploit the advantages of the defense, they are disadvantaged in that their peacetime garrison roles and activities differ from those of wartime. It is vital that sufficient warning of attack be present to allow the time required for transition from garrison to combat ready status. Considering

probable scenarios in NATO Europe, there are clear needs for improvement in ISTA employment and equipment concepts. ISTA systems and operations should be directed toward the following primary battlefield objectives:

- Identifying enemy axes of advance and enemy intentions and capabilities with sufficient detail and at sufficient range to allow effective deployment of friendly forces from corps to company level and to support operations to interdict enemy forces.
- Supporting near-real time targeting in Zones I and II (from the FEBA to approximately 50 km beyond the FEBA).
- Determining enemy vulnerabilities rapidly to allow immediate exploitation and the seizure of the initiative locally as often as possible.
- Providing commanders at all echelons with a capability to understand and exploit collected information about the enemy rapidly.

The key attributes of ISTA systems, focused upon achieving the objectives cited above, can be stated as needs to:

- Handle high peak data loads rapidly in a target-rich environment, including different types of information from different types of sources for different applications and under different time and accuracy constraints.
- Operate effectively in the presence of significant enemy air defense and electronic warfare threats, in adverse weather and reduced visibility, in a very mobile environment.
- Survive or provide for graceful degradation in a high attrition environment.
- Permit rapid retasking to satisfy rapidly changing operational needs.
- Be functional in peacetime and capable of rapidly transitioning to a wartime mode of operation.

4.0 FUTURE DIRECTIONS FOR ISTA

The search for major alternatives in the future structure or conduct of ISTA leads to the following central question: How should ISTA information, from the new wide-area coverage sensors, be organized to support both higher echelon decision-making and immediate conduct of the battle in fast-paced, highly mobile conflicts?

Successful combat against an echeloned enemy in Europe will require significantly increased and more responsive Army-Air Force interaction for battlefield interdiction as well as for close air support. While this interaction might be achievable through command coordination procedures, previous military experience with air-ground coordination suggests that it may be far better to collocate Army and Air Force personnel in a single facility responsible for planning, controlling, and assessing corps-level strikes in support of the ground forces. Such a facility should be capable of: receiving information from other coordination centers or from sensor systems; evaluating information sufficiently to determine and prioritize targets; planning and coordinating strike and air defense suppression operations; and performing damage assessment functions. Alternatives for such a facility could be based on expanding the present Direct Air Support Center (DASC) or on devising a joint corps-wing facility as proposed by the ITIS study. However, while there is a clear need for a capability which integrates in near-real time Army firepower support and tactical airpower support, the appropriate organizational structure is not easy to define. This is so, in part, because the current Army C^2 structure itself is not designed to accept and act upon the data from the advanced sensors which are essential to conducting combat beyond the physical line-of-sight of ground units.

At present there are four main centers* at both division and corps that are concerned with such data: Command is exercised from a tactical operation center (TOC); firepower support is controlled at an artillery TOC; all-source information is assessed at an Electronic Warfare Intelligence Operations Center (EWIOC), which also controls the use of EW and intelligence collection assets; most EW sensors are controlled from, and their data correlated at, a Control and Analysis Center (CAC). There are a multiplicity of possible paths for routing sensor data between these centers and echelons. The choices made will have significant impact on overall system responsiveness and effectiveness, organizational and functional relationships, and design of center capabilities. In many respects, the choices have not been made or have been made without full consideration of their impacts. It is not yet clear that the number of centers** and the definition of their functions have been firmly decided.

Until there is an agreed upon concept of ISTA operations embedded in an overall Army tactical C^2 concept and until the number, responsibilities, and functions of centers at both corps and division are fixed, there is a great deal of uncertainty associated with attempts to determine an appropriate ISTA systems structure and to develop optimum communications and ADP capabilities. A broad scope analysis which sets the operational and conceptual framework for systems development is a basic need.

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*In addition, there are other centers, at these and subordinate echelons, for coordination or control of specific activities.

**Recent indications are that the EWIOC and CAC may be consolidated into one center.

Regardless of the overall command and control structure selected, ISTA must support the effective accomplishment of tactical actions which are the essence of combat operations. An analysis of the value of advanced wide-area surveillance sensors to certain types of tactical actions and the implications for information distribution on the battlefield reveals the following:

- Many actions taken in response to data generated by division-level sensors will be executed by lower-level units rather than by division centers.
- Combat effectiveness measured in terms of rounds on target could be considerably improved by providing better ISTA information support to division and lower echelons.
- The type of sensor required to produce these data is more sophisticated, has greater coverage and range, or is more expensive an asset than one might wish to provide to lower-level units.
- The need for field commanders at different echelons to have a common perception of the battlefield situation in the same time frame may require implementation of distributed information systems in command and control, and combat intelligence applications.

Although there is potential for very significant gains in battlefield effectiveness by providing key ISTA data directly to lower echelon tactical users and although it is feasible to develop capabilities which allow several users to employ simultaneously the data from key sensors, little has been done to take advantage of this opportunity. Needed is an effort to design and develop a capability which links the forthcoming sensors to the key decision points involved in executing critical time-sensitive tactical actions. As a first step, selected tactical actions should be analyzed to determine the key decisions, where they are made, and the requisite tactical information. It is postulated that a sufficiently comprehensive capability can be defined by analyzing only eight specific time-sensitive tactical

actions which appear to be relatively scenario independent and encompass the major portion of ISTA information's contribution to battlefield effectiveness at division and lower echelons.

From consideration of both C^2 center concepts and tactical actions, it is apparent that significant improvements can be made by exploiting advanced ADP and communications technology. A key characteristic of Army operations and use of ISTA in the field is a high degree of diversity and decentralization. While more centralized capability may be needed for command and information analysis purposes, the execution of combat actions will remain decentralized. ADP has largely been considered in terms of central facilities. Clearly, it will be essential for these facilities although effectiveness will depend upon the skillful specification of specific functions and processes within each center. However, current ADP technology is characterized by mini- and micro-computer capabilities which offer great data handling and display power for use in decentralized operations. Distributed communications technologies are operationally feasible. The fact that the Army has not yet developed or deployed significant tactical ADP capabilities--at least for C^2 and ISTA--provides a significant opportunity to take advantage of recent technology for the design of capabilities well-suited to the Army's unique operational requirements.

ISTA assets and weapons resources need to be directed against the critical vulnerabilities of enemy systems. These vulnerabilities are not delineated. Needed are analyses to identify and describe enemy critical vulnerabilities in sufficient detail to allow focusing of both systems development and operational employment efforts.

5.0 ISSUES AND OPPORTUNITIES

The key issues and opportunities identified by this review are:

- Re-orientation of ISTA employment and equipment concepts toward achieving major battlefield objectives and system attributes which are responsive to the needs of the anticipated European environment. The emphasis is on relating ISTA data to tactical actions. This leads to several suggested activities such as conducting critical tactical action analyses and determining critical vulnerabilities in Soviet systems.

- Development of responsive capabilities for data processing, dissemination, and display of critical data to action centers at division and subordinate echelons. There appears to be a significant opportunity to adopt recent advances in automation and communications technology to the development of systems which directly support many of the Army's typically decentralized battlefield activities.

- Development of an integrated sensor wide-area surveillance capability based initially upon the integration of data from SOTAS (improved version), GSR, and REMS; central data processing in an improved version of the SOTAS ground station; and dissemination of selected data to appropriate intelligence and operations action centers. However, SOTAS is the prime contributor to this capability and the early fielding of an improved SOTAS should be emphasized.

- Development of EW concepts, with emphasis on the offensive use of EW and the closer integration of EW systems with weapons systems. Particular opportunities are seen for the development of expendable jammers and for the design and development of a more streamlined complex of centers for processing EW data and integrating EW data with other data for command use.

- Refinement of the requirements for the design characteristics of a precise communications emitter location system (ELS). This capability would have high tactical value and consideration should be given to the concept of treating ELS primarily as a high volume wide-area surveillance detection system.

- Recognition of the criticality of suppressing enemy forward air defenses (SEAD) and the need for an Army program. This requires definition of an overall concept and systems structure for execution.

- Adequacy of the planned mix of sensor systems for location of non-communications emitters, and of current concepts for employing these sensors.

- Opportunities to provide near-term improvements to European ISTA capabilities. These include the acquisition of a "field evaluation/limited operations" SOTAS capability based on the prototype equipment, the acquisition of Southeast Asia Operational Sensor System (SEAOPSS) REMS, the provision of sensors and sensor platoons to European commands, and the development of a RPV field evaluation capability to determine operational utility and operability of the most significant RPV applications.

Additionally, it is believed that significant gains would accrue from efforts which address:

- Definition of possibilities for increased Army-Air Force interoperability.

- Development of capabilities which can counter the Soviet Radio Electronic Combat (REC) capability and of capabilities which can overcome smoke and fog constraints on visibility.

- Adequacy of current programs for development of Counterbattery/Countermortar (CB/CM) sensors.

- Improvement to current capabilities for target classification and identification of friend, foe, neutral (IFFN).

6.0 RECOMMENDATIONS

The study recommendations are provided in three categories: recommendations for possible near-term improvements to European ISTA capabilities, recommendations for approaches leading to definition of a systems architecture, and recommendations for improvements to a number of specific ISTA capabilities.

6.1 Near Term Improvements to ISTA Capability in Europe

Considering the capabilities of currently fielded European ISTA systems and the nature of the Soviet/Warsaw Pact threat in Europe, it seems especially important to expedite improvements in ISTA for use in Europe. It is recommended that actions be taken to:

- Deploy prototype SOTAS equipments to Europe for field evaluation in order to familiarize combat commanders with SOTAS capabilities and to provide an interim training, exercise, and limited operational capability until an improved SOTAS version can be fielded.
- Similarly, deploy current basic RPV capabilities to Europe for extended field evaluation and as an interim capability.
- Authorize remote sensor platoons and SEAOPSS equipment for U.S. divisions in Europe. If necessary, the remote sensor platoons and associated equipment could be detached from the four CONUS divisions in which they currently operate and be reassigned.
- Procure additional SEAOPSS equipment now rather than wait for REMBASS to be fielded in the early 1980s, in order to provide Army divisions in Europe with remote sensor capability.

6.2 Approaches Leading to a Systems Architecture

Three mutually supporting analytic approaches, discussed in the final report and its supplements, should be undertaken to facilitate

the definition of a coherent ISTA systems architecture. It is recommended that these major efforts be undertaken:

- Analysis of selected tactical actions with the objective of defining a capability which links advanced sensors to the key decision points involved in executing critical time-sensitive tactical actions.

- Analysis of selected Soviet/Warsaw Pact capabilities to determine and describe critical vulnerabilities in sufficient detail to allow focusing of both system development and operational employment efforts.

- Analysis of the integration of ISTA information within the overall structure of command and control capabilities at corps and below to determine the allocation of operational, functional, and processing requirements. This is needed as a context for system design efforts.

In addition, the overall efficiency of ISTA systems and their effectiveness on the battlefield could be improved by efforts to:

- Determine and evaluate sensor performance requirements in the context of the overall sensor-action response mechanism; in particular, the tradeoff between sensor accuracy and weapon capability should be addressed explicitly.

- Develop evaluation methodologies and measures of effectiveness which can be applied to a variety of sensors to determine the relative worth of different sensors and of different sensor mixes.

6.3 Specific ISTA Capability Improvements

It is recommended that actions be taken to:

- Emphasize the early fielding of an improved operational SOTAS capability by concentrating on essential operational requirements and applications; but, because of SOTAS's key role, provide data processing capacity and flexibility to allow incorporation of additional applications and data transfer capabilities.

- Develop an integrated sensor wide-area surveillance capability based initially on netting data from SOTAS, GSR, and REMS; improving the current SOTAS ground processing capability; and developing dissemination means to transmit selected data to designated intelligence and operations action centers. Add additional sensor, processing, display, and dissemination capabilities in separate phases. Initiate action to define important applications, system characteristics, and an overall system implementation plan.

- Establish an effort to define an information dissemination system which can support distributing data directly from sensors to tactical users, including capabilities for flexibly determining/altering data flows and for user reception and display. Consider distributed communications techniques and small-scale automation technology.

- Establish an ADP testbed for experimentation and evaluation of automated information processing and display techniques for ISTA systems. Examine currently available off-the-shelf ADP and display equipment which could materially assist in rapidly assimilating and using ISTA information in the field.

- Emphasize the offensive use of EW and the close integration of EW systems with weapon systems during EW concept and system development activities.

- Assess the utility and feasibility of expendable jammers to determine need for an increased effort.

- Initiate an effort to assess the need for the current structure of CAC, EWIOC, and EW system-specific centers. Establish or confirm the functional relationships between these elements and other corps/division coordinating and analysis centers and determine or confirm the data processing and communications requirements to support operation of this complex of centers.

- Accelerate efforts to determine essential operational performance and system design characteristics of a precise communications emitter location system. Monitor DARPA tests of ELS, and, if appropriate, consider initiating an expedited Army development program.

- Establish, as a high priority item, an Army program for the development of a SEAD system capability.

- Assess the need for the current planned mix of AGTELIS, QUICK LOOK, and TEAMPACK. In particular, consider European terrain characteristics, system capabilities, costs, and schedules to compare a QUICK LOOK/TEAMPACK combination versus AGTELIS, and PELSS versus AGTELIS.

- Emphasize efforts to increase joint operation and inter-operability of Army and Air Force ISTA systems. In particular consider use of Air Force RF-4 PHANTOM equipped with UPD-4 or UPD-6 radar in lieu of or to supplement OV-1D MOHAWK equipped with APS-94D SLAR radar for conduct of radar reconnaissance missions, and the use of PELSS data by the Army.

- Develop capabilities to counter Soviet REC.

- Continue Project AVID GUARDIAN activities emphasizing inter-allied cooperation and coordination.

- Accelerate the development and evaluation process for RPV systems and applications while emphasizing the early fielding of an initial system based on TV-sensors and laser designators.

- Develop short-range (1 to 5 km) target acquisition devices which can overcome night, fog, and smoke conditions.

- Determine suitability of TPQ-36 for adequately performing counterbattery missions under European operational conditions and the need for a passive artillery location capability.

- Accelerate consideration of procedures and equipment for IFFN capabilities, including means for displaying jointly friendly and enemy position data.

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