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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS TACTICAL AIR COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA 23665



11 APR 1979

REPLY TO
ATTN OF: IN

SUBJECT: Tactical Intelligence Needs

25X1 TO: Intelligence Community Staff
Attention:
Washington, DC 20505

1. In response to several questions raised during your recent visit to TAC, I asked my staff to assemble key references for your use in understanding tactical intelligence needs. Where available, copies of these are provided.
2. We are also forwarding a copy of the brief on "TAC Use of National Reconnaissance Systems" which you received, under separate cover.

CECIL H. BRADEN, Colonel, USAF
Assistant Deputy Chief of Staff, Intelligence

- 2 Atch
- 1 TACM 2-1, 15 Apr 78 (U)
- 2. Background Paper (U),
Tactical Information Needs
- w/4 Atch: 1. (U), 2. (S), 3. (S),
4. (S), 1 cy ea

USAF review(s) completed.

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Readiness is our Profession

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TACTICAL INFORMATION NEEDS

1. The need for intelligence information to support tactical mission execution, i.e., weapons on the target, begins well before weapons release. Assessments of enemy force disposition, determination of which targets must and can be struck, and planning for weapons delivery requires a continuous flow of information. The need for timely continuing updates reflects the mobile nature of opposing forces. Information requirements vary in terms of coverage, frequency, timeliness, locational accuracy, and detail in response to the tasks to be done and the nature and distance to the target or threat. An aggregate relationship between these factors is provided in reference a (attached).
2. An analysis of specific intelligence functions, for which supporting information is required, is provided in reference b (attached). Intelligence requirements at wing/unit level are principle elements within functional areas of "Mission Planning" and "Execution" (airborne assets). This document also includes our perception of the timeliness within which information must be received and available for application. Further detail and specific data needs can be found in reference c and most recently the OSD/C³I DOD Plan for Intelligence Support to Tactical Forces. The application of this information is identified in references d-f (reference d attached). Reference g describes the form and characteristics of the data transferred.
3. Specific unit level tasks vary in accordance with aircraft mix, mission and operating area. In general, intelligence information is required to:
 - a. Provide earliest possible warning of attack against unit resources.
 - b. Advise aircrews and unit commander of current enemy situation, equipment/capabilities, and most likely actions.
 - c. Maintain/utilize orders of battle pertinent to the unit area of operations.
 - d. Support detailed aircrew defense/penetration analysis during mission planning.
 - e. Provide target (mission) materials or updates to existing target materials (primarily imagery based).
 - f. Support target acquisition, aircrew orientation, and weapons release.
 - g. For reconnaissance units, shared intelligence is provided for synergistic exploitation, and where possible, elimination of unnecessarily redundant collection and exploitation.

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4. The source of required information, i.e., national, organic, etc., is a product of sensor (acquisition) capabilities, processing/throughput and our ability to receive necessary data/products at the using force level. The methods by which information is received (i.e., direct receipt in raw form, finished reports, AUTODIN, etc.) is influenced by the availability and vulnerability of tactical communications. The criticism is frequently raised that tactical forces/units cannot use the volume of information currently available. While in fact the expanded application and volume of national and other source intelligence has highlighted tactical communications deficiencies, the fundamental need for that intelligence information remains.

5. Due to the need for analysis, validation, and/or correlation and to reduce the volume of data transmitted and received, information flows through higher tactical C³ echelons prior to receipt by the executing unit, e.g., TACC or COIC. To expedite receipt and application, tactical intelligence analysis/correlation is accomplished at the lowest echelons possible, consistent with available resources.

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1. References (U)
2. TAC/TRADOC Reconnaissance/Surveillance Mission Area Analysis, Mar 78, 1 cy, (S)
3. TAC Mission Area Analysis of Intelligence Support to Tactical Air Operations, Nov 78, 1 cy, (S)
4. TAC Tactical Air Intelligence System Architecture, Jan 79, 1 cy, (S)

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REFERENCES

- a. TAC/TRADOC Reconnaissance/Surveillance Mission Area Analysis, March 1978.
- b. TAC Mission Area Analysis of Intelligence Support to Tactical Air Operations, November 1978.
- c. ISOTOPE, Integrated Intelligence and Operations Information Support for Tactical Air Operations in Europe, May 1975.
- d. TAC Tactical Air Intelligence System Architecture, January 1979.
- e. General Operational Requirement (GOR) for the USAFE TAIS (01-78), 20 June 1978.
- f. Korean Tactical Intelligence System (KTIS) Functional Description, Report R-2240, PRC/Information Sciences Company, March 1978.
- g. TAF Mission, Level, Functions Analysis, Vol I-IV RCA, Government Systems Division, Defense Document Center, AD-C016182 & 3L; BO 32247-56L.

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SECTION V

ESSENTIAL TAIS ARCHITECTURE REQUIREMENTS

A. (U) GENERAL. There is an urgent need, which is documented in the results of the tactical intelligence MAA, for a TAIS which will provide TACS elements with integrated tactical air intelligence management specifically designed to cope with combat operations in any contingency. Such a system must be capable of interfacing with existing and future command and control systems and must be adaptable to the operating conditions peculiar to a particular theater of operations. Additionally, this system must be capable of interaction with data systems of Army, Navy, and National level intelligence organizations. Commonality in basic methods and equipment throughout all US and allied tactical intelligence elements should be sought to the fullest extent feasible. As many functions and procedures as possible, without sacrifice of reliability, should be automated in order to reduce the time lapse between event detection and decision.

B. (S) NEEDS. The following specific needs within the TAC TAIS should be addressed at an early date to increase the capabilities of tactical intelligence to perform its mission in support of tactical air operations. These needs are associated with intelligence organizational entities within the TACS (as illustrated in Fig. V-1) and are not necessarily in any order of priority. Prioritized needs of tactical intelligence may be found in the tactical intelligence MAA. (U)

1. (S) TACC. The TACC, being the focal point for intelligence activities within the TACS, should have the following intelligence-related capabilities. These capabilities should be incorporated into a common data base management system (DBMS) serving all TACC functions (intelligence, operations, logistics, etc.) for information system efficiency and melding of intelligence and operations information. (U)

a. (U) Direction/Collection.

(1) Collection Management. Current capability within the TAC TAIS to satisfactorily perform the collection management function suffers from a lack of defined procedures/automated assistance. The procedural deficiencies will, to a large degree, be resolved by publication of the Tactical Intelligence Collection Requirements Guide in FY 2/79. It was pointed out in the MAA of Intelligence Support to Tactical Air Operations that collection management is deficient insofar as timeliness to perform the function is concerned and the capability to manually reduce redundant/overlapping collection efforts which results in decreased utilization of collection resources. A streamlined, responsive collection management system is required. This system should have the capability to rapidly receive, sort,

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TAC TAIS (DEPLOYED) REQUIRED CAPABILITIES

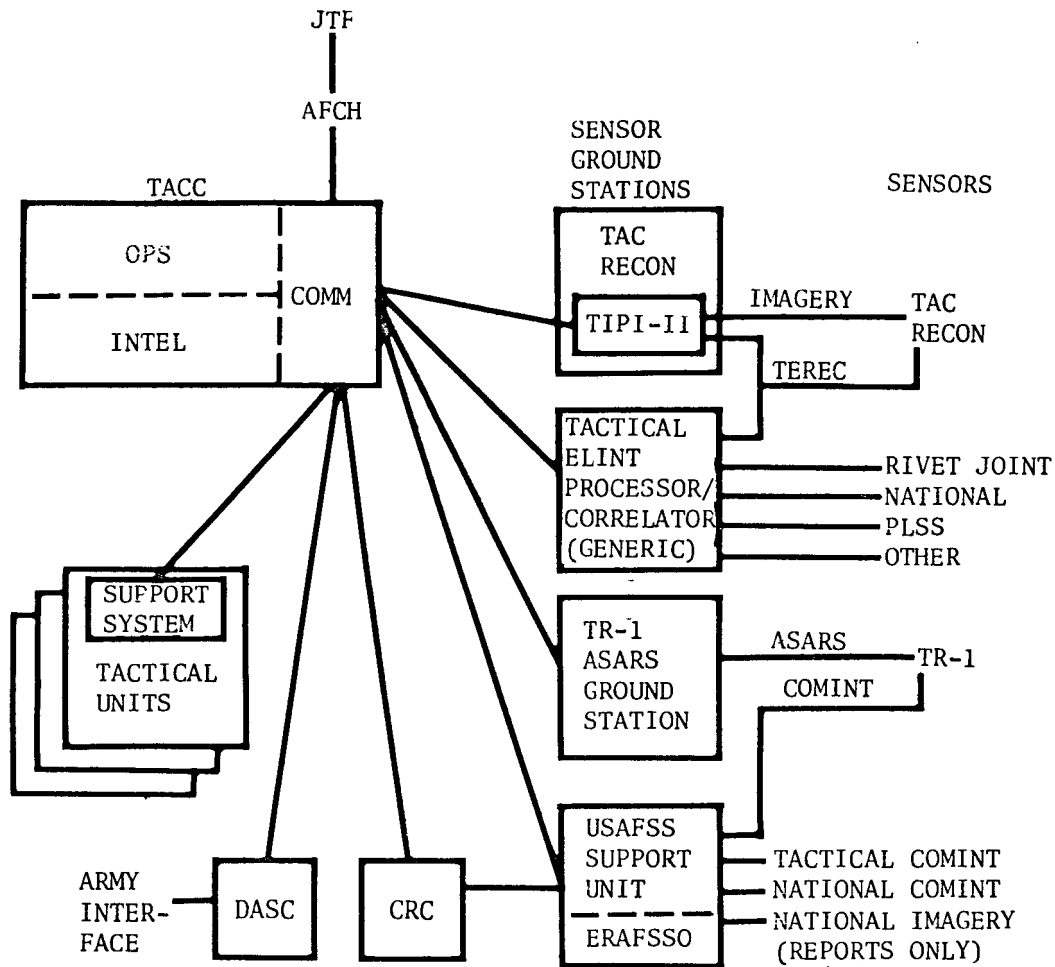


Fig. V-1

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collate, and prioritize all requests for information received at the AFCH/TACC; knowledge of the capabilities and current status of all collection assets available to the AFCH; the capability to rapidly task appropriate sensors; the capability to establish (and change as required) filter criteria for sensor ground processors; and the capability to rapidly receive information from sensor ground stations/processors and disseminate information to requestors. ADP support would be required throughout this process.

(2) Sensors. Although current capability to collect information exceeds the capability to rapidly and efficiently use all of the information, this is not meant to imply that the capability to collect information should remain static. The current and forecast threat dictates that tactical air forces must increase their capability to collect information during all weather and light conditions and provide this information in near real time to tactical users. However, increased capabilities to process/exploit/use collected information must be pursued concurrently with advancements in collection assets.

b. (S) Processing. As previously stated, the capability to collect information is outpacing the capability to correlate, analyze and use the information in an efficient and timely manner. An associated problem is that there is a tendency for each new collection system to require its own, unique ground processor, thus increasing the proliferation of processors and the attendant demand on communications and procedures to use/tie all of these systems together to form a cohesive system. What is required is a more streamlined system with the capability to rapidly receive, process, filter (based upon established criteria), and forward information from the various collection systems to exploitation/production elements. These new requirements/capabilities must not be pursued in isolation, but should be developed with full cognizance of "total system" requirements/capabilities/priorities.

c. (S) Production. Due to the anticipated mobile, dynamic nature of the threat anticipated on a modern battlefield, intelligence production activities in the TACC should revolve, primarily, around near real-time acquisition, correlation, analysis, and dissemination of intelligence information. Fusion requirements/activities need to be more clearly defined and procurement actions initiated to provide fusion analysts with the capability to rapidly correlate and evaluate incoming threat data and recommend appropriate actions to counter the threat. Correlation, in this context, is the combination of significant events from two or more disciplines; e.g., PHOTINT, COMINT, ELINT, HUMINT. A related major concern is the present lack of capability to rapidly correlate ELINT data as a primary information source that subsequently provides an input to

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the multi-discipline correlation done by the fusion analysts. An ELINT correlation capability must be developed and acquired, to reduce the unacceptable volume of uncorrelated ELINT data that will otherwise reach the fusion analysts in the 1980s.

d. (U) Dissemination. The need exists for an increased capability to disseminate intelligence information both within and external to the TACC. Internal dissemination via appropriate visual displays would speed the crossflow of information between intelligence and operations and contribute to functional as well as physical integration of the two disciplines. External dissemination requires secure, responsive communication links between TACC intelligence and intelligence elements in the DASC, TUOC, CRC, etc. to insure that required information reaches these elements in time to be of use. Information flow in the improved TAIS is essentially as depicted in Figure III-2, except that several new sources of information will be added; e.g., TR-1 reconnaissance platform, and precision location and strike system (PLSS). The information collected by the new systems will be processed, and in most cases correlated, by their respective ground stations and then forwarded to the TACC and other consumers as may be determined. Although the information flow will remain essentially as depicted, the flow will be facilitated (increased speed, volume, accuracy) by the addition, or improvement, of automated information handling capabilities at the various nodes of the TAIS.

2. (U) Tactical Units. Results of the tactical intelligence MAA indicated an urgent need to increase the capability to provide current intelligence information to tactical units. This capability can be provided, within current ADP state of the art, via unit remote terminals with access to a central data base resident at the TACC organizational level. These unit terminals would have the capability to rapidly request, receive, manipulate, store and retrieve information to be used for mission planning purposes. Such a system should be highly responsive in order to provide last minute information updates to aircrews prior to takeoff. At this level, the focal point of intelligence activities would be at the wing with the squadrons having access to this central point via their own remote terminals. As with developments at other levels within the TACS, intelligence automated support enhancements at the tactical units should be pursued with cognizance of/in conjunction with other automated capabilities envisioned/planned for tactical units.

3. (S) Sensor Ground Stations. The number and capabilities of sensors and the recent introduction of national sensors to support the tactical commander, necessitates the management of the flow of sensor data through sensor ground stations (SGS) for processing, filtering, and basic correlation of similar data. The SGS, in the current context, are either associated with a particular discipline

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involving several like sensors or are associated with a unique collector. In view of current sensor systems, and available knowledge of future systems, the following SGS capabilities are required for the deployable TAIS:

a. (U) Tactical Reconnaissance. The baseline capability for the tactical reconnaissance support system is the TIPI Imagery Interpretation (II) segment which, with prototype improvements, can process imagery and tactical ESM data (TEREC). Continued improvement of this baseline/prototype capability for integrated interpretation of sensor products and rapid introduction of the reduced data into the TAIS is required.

b. (U) Tactical ELINT/ESM. A requirement exists for a relocatable facility for rapid correlation of ELINT/ESM data from multiple sources and the rapid introduction of the correlated product into the TAIS.

c. (S) TR-1. A requirement exists for a relocatable facility for receiving, processing, exploiting, and disseminating the data-linked Advanced Synthetic Aperture Radar System (ASARS) data from the TR-1 platform (TR-1 COMINT data would be directed to a collocated USAFSS-operated COMINT support unit).

d. (S) COMINT. A requirement exists for a COMINT support facility, with automated information handling capabilities, for receiving, interpreting, and disseminating COMINT data from all available sources. This includes the need for a detailed parametric data base containing signal information (both internal and external information) to assist in target identification, determination of the relative importance to the enemy, and selection of the appropriate response (to assist in the Counter Command and Control (Counter C²) mission). It is also envisioned that this facility would act as the supporting special security communications facility through which other non-COMINT SCI data (e.g., national imagery reports) would be received.

e. (U) Networking. A requirement exists for an integrated communications network for secure voice and high speed digital data transmission between all nodes of the TAIS which would be interoperable with other TACS functional elements, other services, and allies as appropriate.

4. (U) Other. The present uncertainty concerning the configuration of the deployable TACS requires resolution as the TACS configuration directly impacts on the configuration of the supporting TAIS,

C. (U) DOCUMENTATION. Documentation of the TAIS needs exists in various forms (concepts, GORS, DARs, Functional Descriptions, and

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Plans), in various states in the approval process, or remains to be written. Table 1 is a summary of TAIS requirements documentation.

D. (S) COMMUNICATIONS/ADP, (U)

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1. (U) Communications. Specific communications capabilities/ deficiencies applicable to the TAC TACS may be found in the C³ MAA (in draft, however, the TACS portion was completed in April-May 1978 by TAC/XPBA).

2. (S) ADP. As previously discussed, the only current ADP capability within the TAC TAIS is the DC/SR (one currently at 9 TIS, another being procured for 12 TIS) and IDHS access by some elements of the TAIS. Although it is recognized that additional ADP support is required, some of these requirements are not well defined at this time. ADP support for near real-time fusion functions is currently in the definition stage and a GOR for a unit level support system has been drafted. ADP support for penetration analysis activities is being explored and automated assistance for producing radar predictions is being procured under the RAPS program. In order to define requirements, concepts, and procedures for the ELINT processing/correlation problem, the Interim Tactical ELINT Processor (ITEP), a test bed development, is being procured. However, since this will be a test bed utilizing off-the-shelf equipment and contractor support, it will not provide the deployable capability required and will not satisfy the long-term TACS requirement for ELINT processing/correlation.

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TABLE I

SUMMARY OF TAIS REQUIREMENTS DOCUMENTATION

<u>Functional Area</u>	<u>Requirement Status</u>
1. TAIS (general)	- Architectural Concept completed Dec. 1978.
2. Deployable Elements	
a. TACC Intelligence	- Architectural Concept required for integrated intel/ops/log support system.
(1) Coll. Mgmt.	- Collection Requirements Guide in process. - Functional Description required.
(2) Fusion	- TAC ROC 59-67 provides requirement. - Functional capability included in BETA Test Bed. - Restatement of fusion requirement to be incorporated in overall TACC Support System Requirement.
(3) Analysis/Tgting	- New CONOPS and Functional Description required for incorporation in overall TACC Support System Requirement.
b. Tactical Recon. Segment	- TAC ROC 59-67 (TIPI) - II Segments in production; other related prototype equps. being evaluated. - USAF/USA Reconnaissance/Surveillance MAA, March 1978. - Recce/Surv. CONOPS, Dec. 1978.
c. TR-1 Segment	- General Statement of Requirement for TR-1 Ground Station included in draft GOR, Dec. 1978. - Specific functional description req'd.
d. Tactical ELINT Segment	- TAC ROC 59-67 provides statement of requirement which is being revised to reflect current concepts and sources. - CONOPS req'd, due June 1979 or earlier.

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TABLE I (Cont'd)

<u>Functional Area</u>	<u>Requirement Status</u>
e. COMINT Segment	- Tactical SIGINT/ESM Concept published July 1976, requires update, - GOR for advanced capability in process, due Feb. 1979,
f. Tactical Unit Support System	- GOR circulated, Oct. 1978. - Testbed planned March 1979; will provide data for requirement definition and functional description.
g. TAIS Comm. Network	- TAFIIS Master Plan includes overview - Concept for TAIS data flow and comm. support required,
3. Fixed Elements	
a. EW Support (TAWC)	- Functional Description, Dec. 1978, - DAR req'd, due early CY 1979,
b. IDHS Host System (HQ TAC)	- Periodic upgrades projected in General Defense Intelligence Plan (GDIP) for PE 31025F, which is updated annually. - DAR's to be prepared as required,
c. Tactical Information Systems Test Bed (TISTB) TAWC.	- Revision of current implementation plan is required to accommodate expanded role for tactical unit test bed (including penetration analysis) and other software modules for evaluation. - Test Plan req'd for tactical unit/penetration analysis functional def. - DAR in process for added capability. - Plan req'd for replacement by BETA test bed (1981).

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ARMY RECON FORCE STUDY

Battle Management

[The process of analyzing enemy force disposition, movement and intent for the purpose of developing plans to deny the enemy his objectives.] It includes actions preparatory to implementing plans such as alerting forces, moving forces, and tasking forces against potential targets.

Execution

[The process of directing or applying direct or indirect firepower against targets. It includes the commitment to attack a target by either air or ground forces.

TAC/TRADOC STUDY

Battle Management

Battle management information is that data base information supported by limited automatic data processing assets which provide the commander's requirements for planning. Battle management includes:

- (1) Reporting of enemy status. This information is a correlation of all intelligence data leading to the depiction of order of battle.
- (2) Prediction of enemy intent. This information is required to support routine operations, indications and warnings, and future planning.
- (3) Threat warning. Information required by combat decision makers at all levels in near real time to allow implementation of appropriate counter actions. Criteria for information passage is usually pre-determined and does not necessarily require filtering by a higher echelon.

Execution

Execution or targeting information is needed in a timely manner by operational decision makers to facilitate efficient application of resources against stationary, mobile, or fleeting priority targets.