

SECTION 2. SYSTEM SUMMARY

2.1 Overview. The Corps/Theater Automatic Data Processing Service Center-Phase II (CTASC-II) is a fixed-site, computer-based information system with the primary purpose of satisfying commanders' requirements for tactical logistical information.

2.1.1 Application Summary. SARSS2AC/B is the corps- and theater-level component of the objective SARSS architecture. When fielded in a theater of operations, SARSS2AC/B and the other components (SARSS2A and SARSS1) become an in-place, integrated retail supply system. This system replaces the various, loosely-coupled logistics Standard Army Management Information Systems (STAMIS) now in use.

a. SARSS2AC/B replaces the Standard Army Intermediate Level Supply System (SAILS) operating at the corps and theater levels, and was originally designed as two subsystems: SARSS2A and SARSS2B.

(1) SARSS2AC assumes the time-sensitive functions of SAILS and the Direct Support Unit Standard Supply System (DS4).

(2) SARSS2B assumes the non-time-sensitive functions of SAILS and DS4.

b. Together, SARSS2AC and SARSS2B shift as much of the logistics data processing burden as possible away from forward-deployed divisional and non-divisional units by performing these data processing operations in the rear areas.

(1) This distributed processing concept and redistribution of the processing burden reduces the need for van-mounted minicomputers in divisional and non-divisional units. It lets these elements accomplish the remaining logistics data processing mission on microcomputer hardware that is easier to transport and conceal.

(2) This redesign provides lower cost logistics automated data processing (ADP) equipment with a negligible target profile and simplified operational procedures.

2.1.2 Performance. SARSS2AC and SARSS2B are both on the same hardware platform and share a common database. This integrated SARSS2AC/B system performs the time-sensitive and non-time-sensitive functions outlined in the following subparagraphs.

a. Time-Sensitive Functions. The system considers functions in this category time-sensitive because they relate to the actual process of releasing assets to customers or replenishing the assets of supply support activities (SSAs). These functions have a direct impact on materiel readiness, so time is of the essence. SARSS2AC/B performs the following time-sensitive functions:

(1) Maintenance of Custodial Availability Balance File (ABF) data.

(2) Directed referral actions to subordinate SARSS1 activities.

(3) Routing of unfilled requests to the appropriate source of supply (SOS) through the Defense Automatic Addressing System (DAAS).

- (4) Management of local procurement actions.
- (5) Identification of requests for issue against controlled lines at subordinate SARSS1 activities and manager approval to release such assets.
- (6) Gross obligation of SSA funds.
- (7) Directed shipment or redistribution of excess materiel.
- (8) Reproduction of corps-tailored Catalog Master Files and other catalog files to subordinate SARSS activities.

b. **Non-Time-Sensitive Functions.** Functions in this category are not time-sensitive because they are predominantly file maintenance and update actions. They are scheduled with a lower priority when time-sensitive functions are not performed or when they execute concurrently. Generally, these functions are large, central processing unit (CPU) intensive jobs. These jobs update files and perform computations on database components used by time-sensitive processes but not tied directly to those processes. SARSS2AC/B performs the following non-time-sensitive functions:

- (1) Maintenance of document history data.
- (2) Maintenance of demand history data.
- (3) Demand levels computations.
- (4) Calculation of stockage levels and retention levels.
- (5) Generation of candidate recommendations for Authorized Stockage List (ASL) and Authorized Retention List (ARL) additions and deletions.
- (6) Generation of candidate recommendations for reparable exchange (RX) items.
- (7) Maintenance of catalog data on the Catalog File and related part number cross-reference files.
- (8) Generation of data and transactions to implement financial systems interfaces.

2.1.3 Communication Paths. Figure 2-1 illustrates the direct connection layer of the network model for SARSS. This model shows the communication paths that connect a corps-level SARSS2AC/B site to STAMIS at higher and lower echelons and elements of the continental United States (CONUS) wholesale supply system.

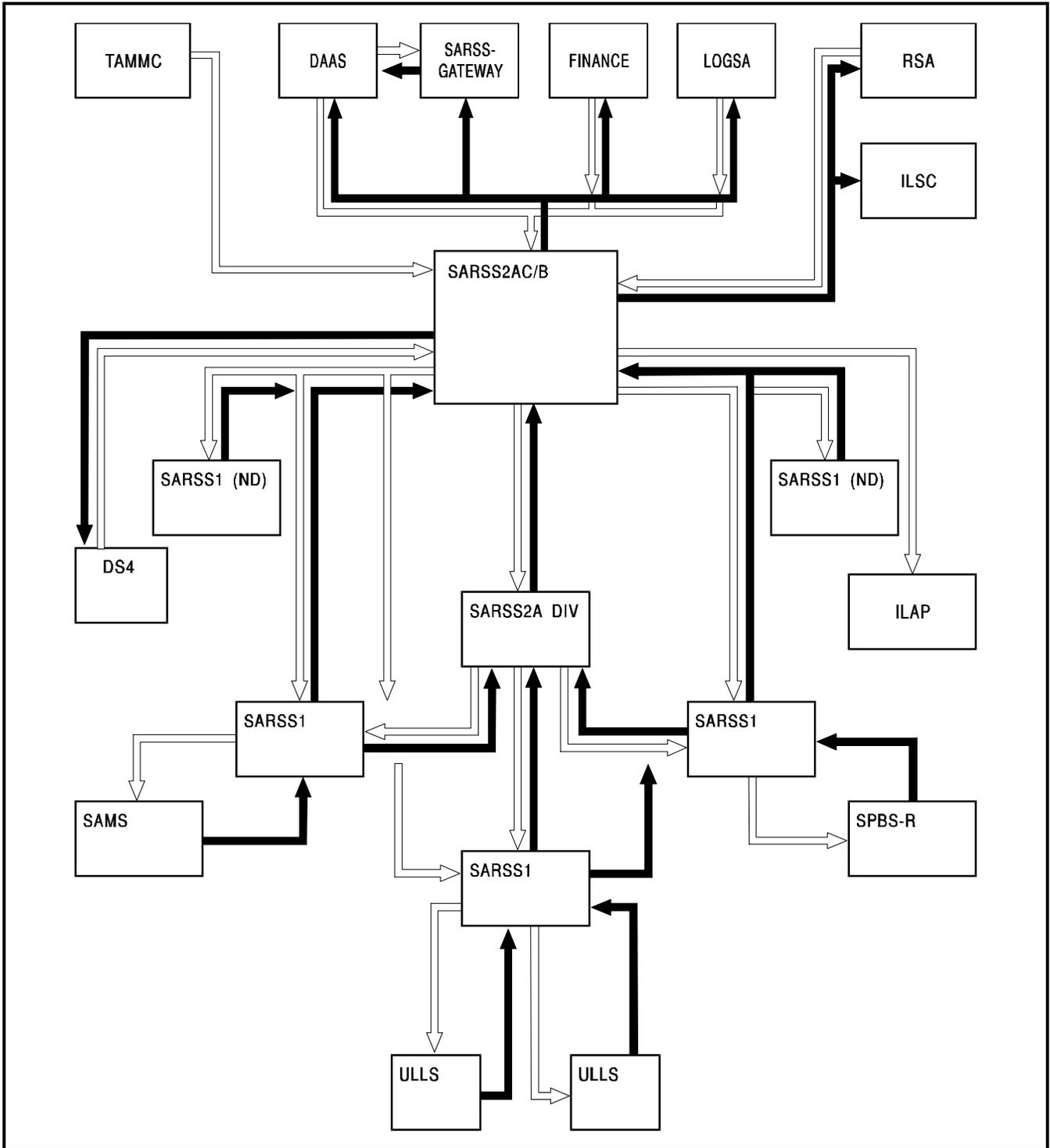


Figure 2-1. SARSS2AC/B Communication Paths

a. Communication Paths to Higher Echelons. SARSS2AC/B exchanges information with the following:

- (1) Theater Army materiel management center (TAMMC).
- (2) DAAS.
- (3) Finance.
- (4) Logistics Support Activity (LOGSA).
- (5) Reserve storage activity (RSA).
- (6) SARSS-Gateway (GW) (formerly known as Objective Supply Capability [OSC]).
- (7) Integrated Logistics Analysis Program (ILAP).

(8) Industrial Logistics Systems Center (ILSC) (formerly Systems Integrated Management Activity [SIMA]).

b. Communication Paths to Other STAMIS. SARSS2AC/B exchanges information with the following:

- (1) DS4.
- (2) SARSS2A.
- (3) SARSS1.

2.1.4 Interfaces with Other Systems. Because SARSS2AC/B is the linchpin between the CONUS elements of the wholesale supply system and the other logistics STAMIS at the theater or corps levels and below, SARSS2AC/B is an interface-intensive automated information system (AIS). As illustrated in figure 2-2, SARSS2AC/B accomplishes these interfaces by means of the following communications techniques:

- a. Defense data network (DDN) transmissions.
- b. Nine-track tape exchanges.
- c. Microsoft-Disk Operating System (MS-DOS) diskette exchanges with subordinate personal computer (PC) based STAMIS.
- d. Tape downloads of catalog data to subordinate SARSS1 and SARSS2A sites on tape cartridges.
- e. Blocked asynchronous serial transmission (BLAST) (asynchronous protocol).
- f. File transfer protocol (FTP).

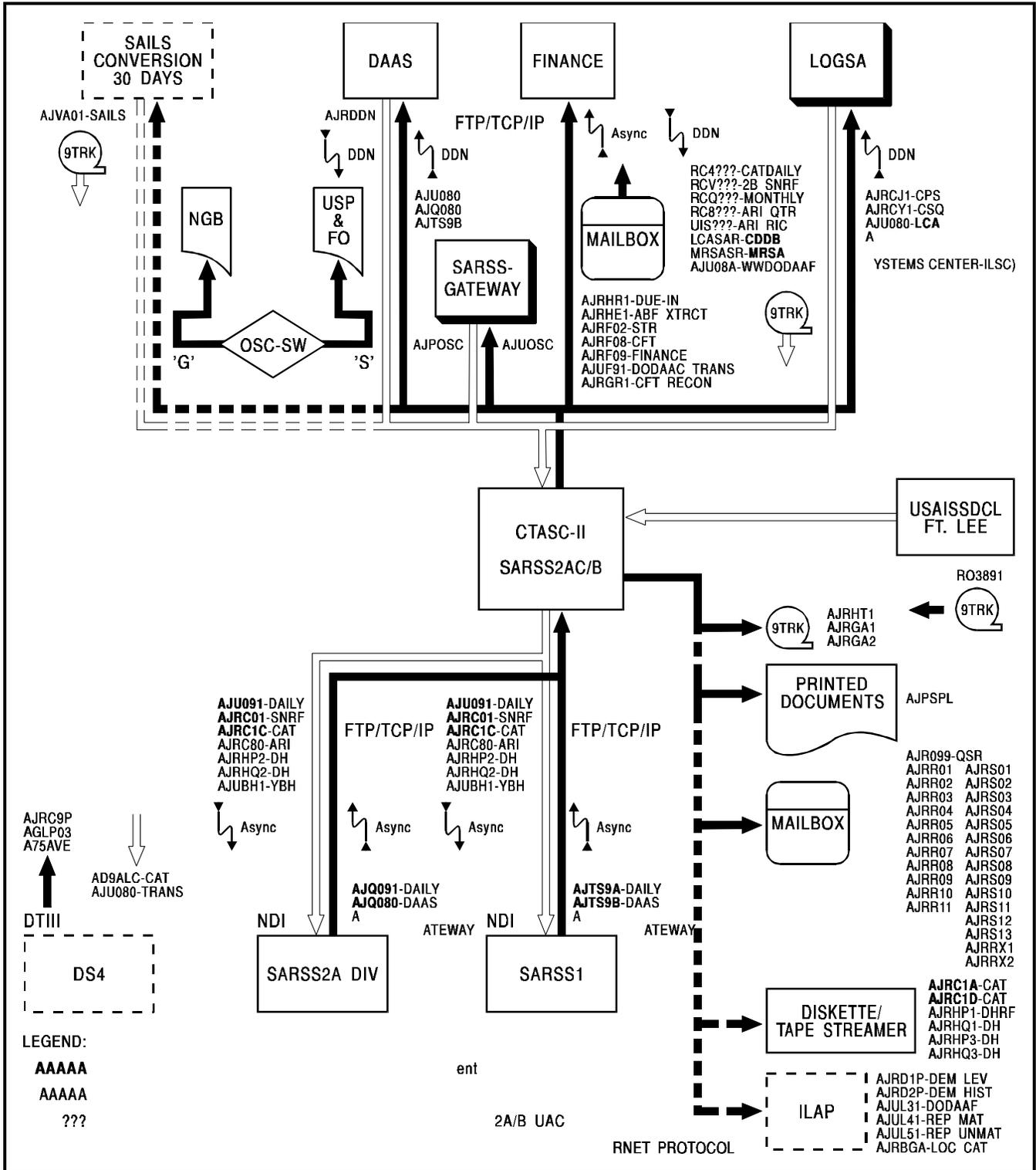


Figure 2-2. SARSS2AC/B Interfaces and Input/Output

2.2 System Environment. This paragraph provides information about the configuration of equipment, logical devices, software, and database components needed to support the operation of the system.

2.2.1 Hardware Required. SARSS2AC/B is on the CTASC-II hardware platform. CTASC-II represents an evolution in the high-end logistics automated data processing equipment (APDE) at the retail supply level. It follows the Interim Theater ADP Service Center (ITASC) and CTASC-I platforms that were configured around IBM mainframe systems. As such, it represents a large cost savings. The system administrator, network administrator, and others who require a comprehensive knowledge of CTASC-II hardware should consult the CTASC-II materiel fielding plan (MFP), CTASC-II operator's manual (OM), and UNIX operating system (OS) documentation.

2.2.1.1 CTASC-II Production Configuration. SARSS2AC/B is on a CTASC-II production system configured as shown in figure 2-3. A typical production CTASC-II system consists of the following equipment:

- a. Two central processing units (CPUs)
- b. Communications subsystem.
- c. Uninterruptible power supply (UPS).
- d. Console.
- e. Alternate console(s).
- f. Input/output (I/O) mini-tower(s).
- g. High-speed printer.

2.2.1.2 CTASC-II ADPE. Figure 2-3 shows the various pieces of ADPE (CPU, peripherals, printers, etc.) that make up the hardware platform that concerns technical personnel. This is the equipment that performs data processing at the CTASC-II.

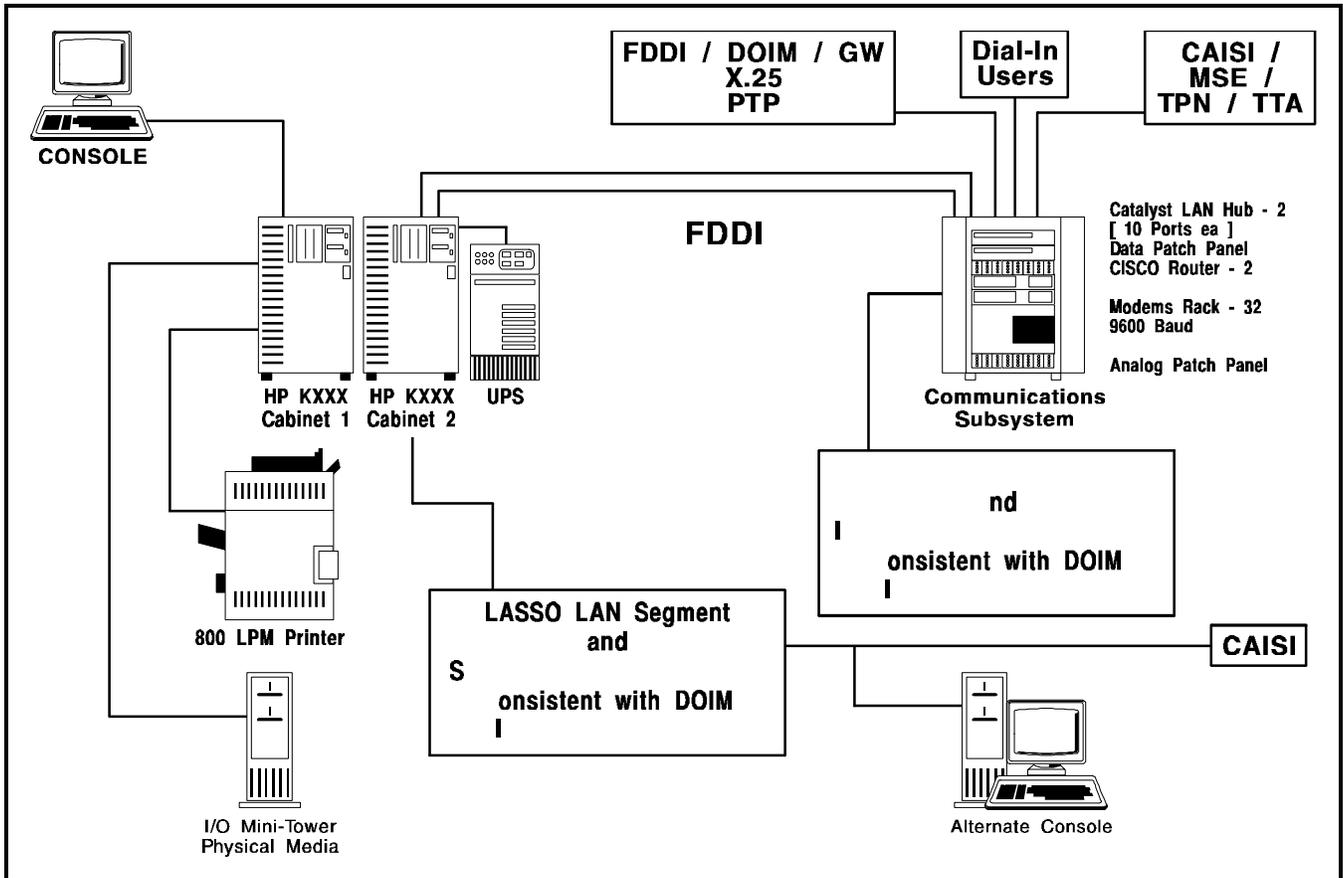


Figure 2-3. CTASC-II (Fielded Configuration)

2.2.2 Software Required. The following paragraphs discuss the relationships that exist between the hardware, logical devices, software units, and database components in the SARSS2AC/B AIS. It also provides a discussion of the AIS software subsystems.

2.2.2.1 Hardware, Logical Devices, and Database Components. Understanding the relationships between the CTASC-II hardware, logical devices, and database components requires general knowledge of how various components interact.

a. The hardware components in this subparagraph focus on the gigabyte direct access storage devices (DASDs) that make up on-line storage for SARSS2AC/B.

(1) In routine UNIX applications, the system initializes all DASDs as UNIX-formatted logical devices. It labels these logical devices according to standard UNIX logical device labeling conventions.

(a) Logical devices formatted using normal UNIX OS format procedures arrange files on the physical DASD medium according to an unoptimized, noncontiguous, hard disk management technique. In this case, the system uses the standard UNIX OS file server to read and write data and provide general hard disk management services. This is typical of a data processing facility that supports a mix of applications. However, in the case of SARSS2AC/B, the system dedicates the environment to on-line transaction processing (OLTP) and database management functions.

(b) In cases where OLTP and database management processes dominate, the standard UNIX file server does not achieve the maximum transaction throughput that the hardware platform could support.

(2) Because of the heavy emphasis on OLTP and the shortcomings of the standard UNIX file server in such applications, SARSS2AC/B uses INFORMIX-4GL and INFORMIX-OnLine.

(a) In this arrangement, the UNIX OS file server controls file allocation and DASD memory management for all AIS components except the SARSS2AC/B database. In order for the UNIX OS file server to access these AIS components, they must be on a UNIX OS-initialized drive.

(b) The INFORMIX-OnLine Database Server (DbS) initializes for access the logical devices that contain the SARSS2AC/B database, not the OS.

b. The components of the SARSS2AC/B database are accessible only by the INFORMIX-OnLine DbS.

2.2.2.2 Software Units. The following discusses the general organization of the software that comprises the SARSS2AC/B AIS:

a. The major components of the SARSS2AC/B AIS are:

(1) Communications. SARSS2AC/B technical support personnel must understand two facets of communications. First, there is the BLAST asynchronous protocol, a commercial off-the-shelf (COTS), general-use asynchronous communications package. Second, there is the body of telecommunications software that is vendor-supplied for use in CTASC-II-based operations, regardless of STAMIS.

(2) Network Router. This software subsystem automates the various data interfaces that SARSS2AC/B must implement to exchange data with other tactical, logistics, and financial STAMIS. It moves and tracks data from tape, diskette, and telecommunications sources and movement on DASDs. It also automates the process of writing data to these various media.

(3) SARSS Master Control System (SMCS). This subsystem automates the interface between the network router and various functional, process-related, batch-mode SARSS2AC/B application system software units. It activates the various SARSS2AC/B jobs according to predetermined scheduling algorithms.

(4) SARSS2AC/B Software Units. This category consists of the functional, interactive process-related software units detailed in other sections of this manual.

(5) INFORMIX-OnLine Relational Database Management System (RDBMS). The RDBMS is a replacement for the standard UNIX OS file server and memory management utilities. It provides an

optimized server customized to meet the needs of OLTP, as well as the specific transaction processing work loads and habits of a given production site. The database administrator should pay particular attention to the information in the INFORMIX-OnLine Administrator's Guide. The RDBMS provides the database administrator a dynamic approach to monitoring, balancing, and controlling the execution of SARSS2AC/B database usage and STAMIS interactivity.

(6) SARSS2AC/B Database. The actual SARSS2AC/B database is on devices initialized and exclusively controlled by INFORMIX-OnLine. The system builds the database according to a schema developed by the United States Army Information Systems Software Development Center, Lee (USAISSDCL) and automated with 4GL.

b. Note that the network router, SMCS, and SARSS2AC/B 4GLs are exclusively USAISSDCL developments. INFORMIX-OnLine is a commercially available, off-the-shelf product of INFORMIX Systems, Inc.

2.2.2.3 Communications. The CTASC-II has a variety of communication options available for sending and receiving information used by SARSS2AC/B. These resources enable the network administrator to establish a complex local terminal network (LTN) and dial-up facilities for local users. It also enables unattended data exchanges with remote STAMIS. Finally, DDN capabilities allow SARSS2AC/B to use the established worldwide military long-haul telecommunications facilities to exchange data with the wholesale logistics components of the CONUS sustaining base.

a. LTN. This network consists of terminals, fiber-optic communications lines, and multiplexed Ethernet hubs.

b. BLAST Asynchronous Protocol. This is a vendor-supplied communications software package that provides a low-speed interface between end user workstation (EUWS) remote PCS and the CTASC-II system through the LTN. Installed on EUWS using the X42 software provided by USAISSDCL, it replaces PCU.

c. DDN. SARSS2AC/B provides a gateway to the DDN. Using software provided by the computer manufacturer. Consult your hardware documentation for more information.

2.2.2.4 Network Router. The AJP Network Router performs queue management functions and interfaces to FTPs.

a. Queue Management. This network router component automatically passes file identification codes (IDs) and other information to the SMCS through entries written to queues. The system uses the same mechanism for the SMCS to pass information to the network router.

b. Interfaces to FTPs. The network router interfaces with automated FTPs that automate the process of converting data between DASDs and external media formats.

2.2.2.5 SMCS. This subsystem automates the tasks associated with interprocess management and job scheduling among the various SARSS2AC/B software units. Unlike a traditional data processing installation (DPI), the majority of SARSS2AC/B jobs are scheduled and initiated automatically by the SMCS without the need for operator or manager intervention. In SARSS2AC/B, the SMCS reads network router queues to obtain file information used to build process-related queues and initiate functional process-related jobs. The SMCS schedules the majority of SARSS2AC/B processes based upon

transactions that accumulate in temporary hold files as a result of network router activity or interactive OLTP.

2.2.2.6 INFORMIX-OnLine. SARSS2AC/B was designed to optimize OLTP. Because of this, the system uses INFORMIX-OnLine DbS instead of the standard UNIX OS utilities that normally handle all buffered I/O and file maintenance actions. This DbS provides enhanced OLTP throughout and a set of options that guard against database corruption. It also provides a monitor facility that the database administrator can use to tune SARSS2AC/B system performance to the unique operational characteristics of a given production site. Background information on INFORMIX-OnLine comes in the INFORMIX-OnLine Administrator's Guide.

2.3 Contingencies and Alternate Modes of Operation. EUWS is the standard remote workstation in peacetime. Remote user workstations (RUWS) provide message trafficking facilities to support logistics operations under contingency scenarios.

2.4 Assistance and Problem Reporting. Procedures for obtaining assistance and advice on how to use this AIS should be developed as part of a local standing operating procedure (SOP). The SOP should include instructions for problem reporting and recommending improvements to the system. It should also include local telephone numbers and the organization that should be contacted to obtain customer assistance through official channels and the chain of command.