

**ESL**

A Subsidiary of TRW

**TRW**

**SYSTEM SPECIFICATION FOR  
FBIS MODERNIZATION PROGRAM**

**30 OCTOBER 1984**

---

**CONTRACT NO. 84X-927700-000**

**495 Java Drive • P.O. Box 3510 • Sunnyvale, CA 94088-3510 • 408.738.2888**

---

**COPY NO. 15**

**SYSTEM SPECIFICATION**

**FOR**

**FBIS MODERNIZATION PROGRAM**

**CONTRACT NO. 84X\*927700\*000**

**30 OCTOBER 1984**

**ESL INCORPORATED  
A SUBSIDIARY OF TRW  
SUNNYVALE, CALIFORNIA**

## TABLE OF CONTENTS

1.0	SCOPE . . . . .	1
2.0	REQUIREMENTS . . . . .	2
2.1	Bureau Segment . . . . .	2
2.1.1	Capabilities . . . . .	2
2.1.1.1	HF Collection . . . . .	2
2.1.1.2	TV Collection . . . . .	6
2.1.1.3	Recording . . . . .	6
2.1.1.4	Automated Cruising . . . . .	7
2.1.1.5	Control . . . . .	8
2.1.1.6	Wire Processing . . . . .	8
2.1.1.7	Communications Processing . . . . .	8
2.1.1.8	Text Processing . . . . .	9
2.1.1.9	Multilingual Text Processing . . . . .	9
2.1.1.10	Data Base Services . . . . .	9
2.1.1.11	Administrative Processing . . . . .	10
2.1.1.12	Output Services . . . . .	11
2.1.1.13	Internal Communications . . . . .	11
2.1.2	Performance . . . . .	11
2.1.2.1	HF Collection . . . . .	11
2.1.2.2	TV Collection . . . . .	11
2.1.2.3	Recording . . . . .	12
2.1.2.4	Automatic Cruising . . . . .	12
2.1.2.5	Control . . . . .	12
2.1.2.6	Wire Processing . . . . .	12
2.1.2.7	Communications Processing . . . . .	12
2.1.2.8	Text Processing . . . . .	13
2.1.2.9	Multilingual Text Processing . . . . .	13
2.1.2.10	Data Base Services . . . . .	13
2.1.2.11	Administrative Processing . . . . .	13
2.1.2.12	Output Services . . . . .	13
2.1.2.13	Internal Communications . . . . .	13
2.1.3	External Interface . . . . .	14
2.1.3.1	AUTODIN . . . . .	14
2.1.3.2	Diplomatic Telecommunications Service . . . . .	14
2.1.3.3	Commercial Telephone (TBD) . . . . .	14
2.1.3.4	Consumers (TBD) . . . . .	14
2.1.3.5	Signal Interfaces (TBD) . . . . .	14
2.1.3.6	Antennas (TBD) . . . . .	14
2.1.4	Design . . . . .	14
2.1.4.1	Electromagnetic Compatibility . . . . .	14
2.1.4.2	System Availability . . . . .	15
2.1.4.3	Maintainability . . . . .	15
2.1.4.4	Environmental Conditions . . . . .	15
2.1.4.5	Transportability . . . . .	16
2.1.4.6	Security . . . . .	16
2.1.4.7	Safety . . . . .	16
2.1.4.8	Operability . . . . .	16
2.1.4.9	Design Implementation . . . . .	16
2.1.4.10	Transition . . . . .	16

## TABLE OF CONTENTS -- Continued

2.2	Headquarters Segment . . . . .	16
2.2.1	Capabilities . . . . .	19
2.2.1.1	External Communication . . . . .	19
2.2.1.2	Editorial . . . . .	19
2.2.1.3	Multilingual Text Processing . . . . .	20
2.2.1.4	Composition . . . . .	20
2.2.1.5	Data Base Services . . . . .	21
2.2.1.6	System Services . . . . .	22
2.2.1.7	Internal Communication . . . . .	23
2.2.1.8	Analyst Support . . . . .	23
2.2.1.9	Data Conversion . . . . .	24
2.2.2	Performance . . . . .	24
2.2.2.1	External Communication . . . . .	24
2.2.2.2	Editorial . . . . .	24
2.2.2.3	Multilingual . . . . .	24
2.2.2.4	Composition . . . . .	25
2.2.2.5	Data Base Services . . . . .	25
2.2.2.6	System Services . . . . .	25
2.2.2.7	Internal Communication . . . . .	25
2.2.2.8	Analyst Support . . . . .	25
2.2.2.9	Data Conversion . . . . .	25
2.2.3	External Interface . . . . .	26
2.2.3.1	AUTODIN . . . . .	26
2.2.3.2	Diplomatic Telecommunications Service . . . . .	26
2.2.3.3	Commercial Telephone (TBD) . . . . .	26
2.2.3.4	Consumers (TBD) . . . . .	26
2.2.3.5	Printing and Photography Division . . . . .	26
2.2.3.6	Commercial Data Bases . . . . .	26
2.2.3.7	Consumer Computer Systems (TBD) . . . . .	26
2.2.4	Headquarters Design . . . . .	26
2.2.4.1	Electromagnetic Compatibility . . . . .	26
2.2.4.2	System Availability . . . . .	26
2.2.4.3	Maintainability . . . . .	27
2.2.4.4	Environmental Condition Facility . . . . .	27
2.2.4.5	Transportability . . . . .	27
2.2.4.6	Security . . . . .	27
2.2.4.7	Safety . . . . .	27
2.2.4.8	Operability . . . . .	28
2.2.4.9	Design Implementation . . . . .	28
2.2.4.10	Transition . . . . .	28
3.0	VERIFICATION MATRIX . . . . .	29

1.0 SCOPE

This specification establishes the functional requirements for the Foreign Broadcast Information Service (FBIS) Modernization Program. The FBIS is an integrated system of personnel, equipment, computer hardware and software, communication, and facilities responsible for the:

- o monitoring of the foreign public media
- o selection and translation from the media  
information responsive to collection requirements
- o dissemination of processed information to interested departments and agencies of the U.S. Government.

## 2.0                    REQUIREMENTS

The FBIS Modernization Program shall consist of a bureau segment and a headquarters segment.

### 2.1                    Bureau Segment

There shall be a collection subsystem and an information processing subsystem at each bureau (Reference Bureau Design Overview, Figure 2-1). The collection subsystem shall consist of HF collection, TV collection, recording, automated cruising, and control sections (Reference Collection Subsystem Functional Block Diagram, Figure 2-2). The information processing subsystem shall consist of wire processing, communications processing, text processing, multilingual text processing, data base services, administrative processing, output services, and internal communications sections (Reference Information Processing Subsystem Functional Block Diagram, Figure 2-3).

#### 2.1.1                Capabilities

##### 2.1.1.1            HF Collection.

There shall be a capability for HF collection in each bureau. The HF collection section shall consist of switch matrices and HF radio receivers.

2.1.1.1.1 The switch matrices shall be capable of transferring coaxial cable feeds from any of the HF antennas to any one of the individual HF receivers or to the Automated Cruising subsystem.

2.1.1.1.2 The switch matrices shall be controllable via an IEEE 488-1978 bus connection.

2.1.1.1.3 The receivers shall be capable of AM signals in the LF, MF, and HF bands (.03-30 MHz) and shall provide an audio baseband signal output.

2.1.1.1.4 Each receiver shall be provided with local headphones and speakers.

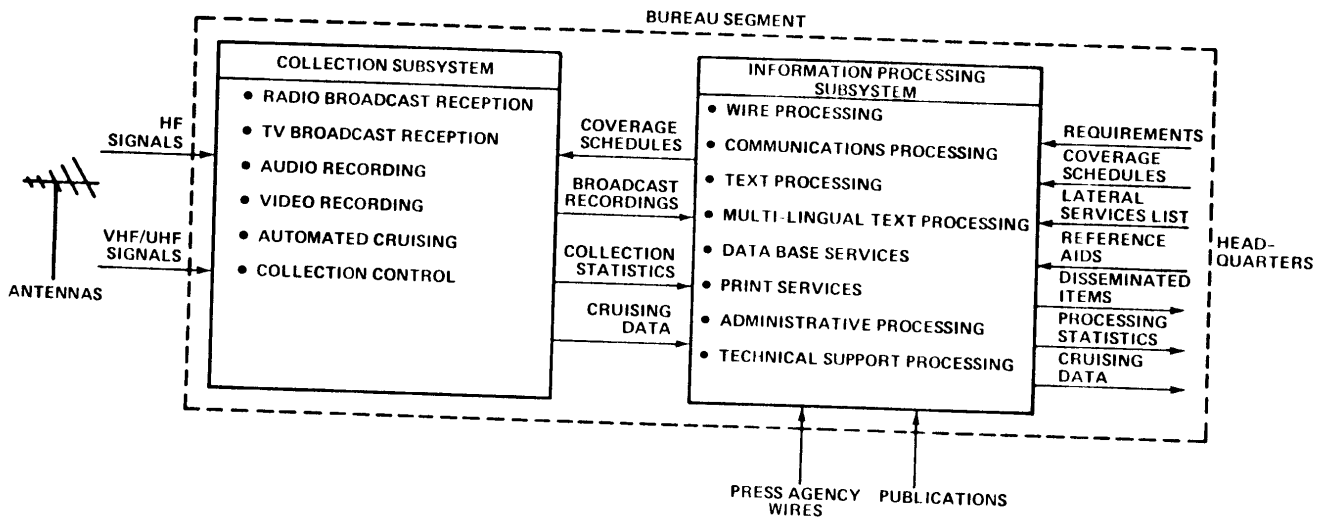
2.1.1.1.5 The radio receivers shall be controllable via an IEEE 488-1978 buss connection.

2.1.1.1.6 The radio receivers shall be capable of local manual operation with override of remote bus control.

ESL  
A Subsidiary of TRW

Figure 2-1.

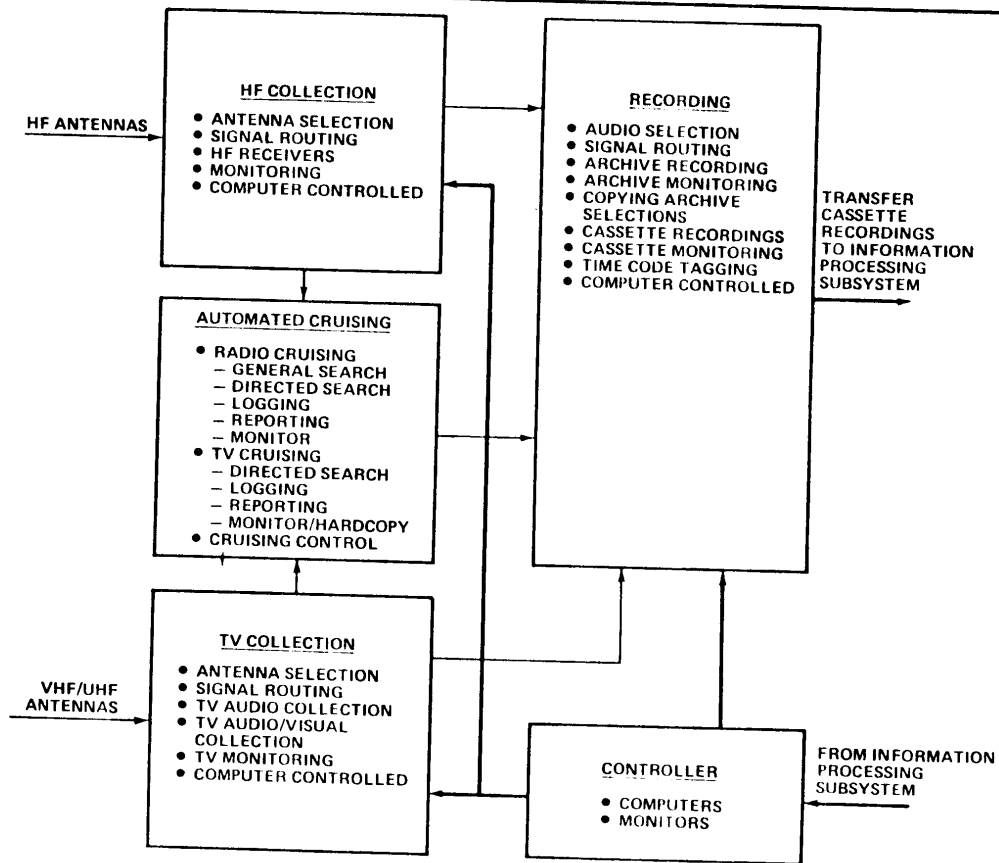
### FBIS-BUREAU DESIGN OVERVIEW



ESL  
A Subsidiary of TRW

Figure 2-2.

### FBIS-COLLECTION SUBSYSTEM FUNCTIONAL BLOCK DIAGRAM



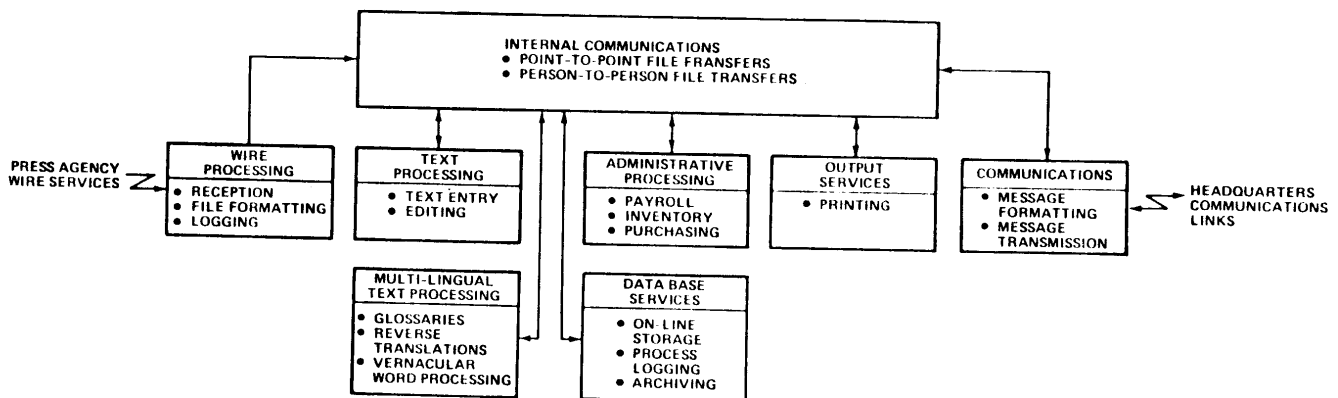
SV00007-4



Figure 2-3.

ESL  
A Subsidiary of TRW

### FBIS—INFORMATION PROCESSING SUBSYSTEM FUNCTIONAL BLOCK DIAGRAM



2.1.1.2 TV Collection.

There shall be a capability for television collection at selected bureaus (TBR). The TV collection section shall consist of switch matrices, VHF/UHF radio receivers, and TV tuner/video cassette recorders.

2.1.1.2.1 The switch matrices shall be capable of transferring coaxial cable feeds from any of the VHF/UHF antennas to any one of the individual VHF/UHF receivers, any one of the individual tuner/cassette recorders, or to the Automated Cruising section.

2.1.1.2.2 The switch matrices shall be controllable via an IEEE 488-1978 bus connection.

2.1.1.2.3 The receivers shall be capable of demodulating the audio portion of television broadcasts in the NTSC, SECAM, or PAL signal formats and shall provide an audio baseband signal output.

2.1.1.2.4 Each receiver shall be provided with local headphones and speakers.

2.1.1.2.5 The radio receivers shall be controllable via an IEEE 488-1978 bus connection.

2.1.1.2.6 The radio receivers shall be capable of local manual operation with override of remote bus control.

2.1.1.2.7 The tuner/cassette recorders shall be capable of demodulating, recording and playing back television broadcasts in NTSC, SECAM or PAL signal formats

2.1.1.2.8 The tuner/cassette recorders shall incorporate time and date coding for retrieval purposes in the recording. At least one color monitor shall be provided for each signal format required at a particular site.

2.1.1.2.9 The tuner/cassette recorders shall be capable of remote operation via switch closure interface.

2.1.1.3 Recording

There shall be a recording section at each bureau.

2.1.1.3.1 The recording section shall be capable of distributing baseband audio outputs from the HF collection subsystem and the TV collection subsystem to one or more archival audio recorders and one or more audio cassette recorders.

2.1.1.3.2 It shall be possible to replay any archived

segment by entering its time/date code and to copy it to cassette.

2.1.1.3.3 It shall be possible to monitor any archive channel by means of speaker or headphones.

2.1.1.3.4 Audio cassette recorders shall mark tape with a time and date code signal.

2.1.1.3.5 Any recorded segment shall be replayable by entering the desired time and date code.

2.1.1.3.6 Each recorder shall be provided with speaker and headphones.

2.1.1.3.7 It shall be possible to control the start and stop of audio cassette recording via an IEEE 488-1978 bus connection.

#### 2.1.1.4 Automated Cruising

There shall be an automated cruising section at each bureau. The automated cruising section shall consist of radio receivers to cover the bands allocated to HF collection and TV collection.

2.1.1.4.1 Each receiver shall have local speaker and headphones.

2.1.1.4.2 Each receiver shall be connected to a dedicated audio cassette recorder.

2.1.1.4.3 The cassette recorders shall generate a recorded time/date code compatible with the retrieval and replay facilities of the recording section.

2.1.1.4.4 The automated cruising subsystem shall also contain equipment to perform the following functions for all broadcast frequencies and modulation types covered by the collection subsystems:

- a. general search
- b. directed search
- c. logging
- d. reporting
- e. monitoring

2.1.1.4.5 This equipment shall be controllable via an IEEE 488-1978 bus connection.

2.1.1.5 Control

The control section shall be capable of monitoring and controlling the HF collection, the TV collection, the cruising, and the recording sections.

2.1.1.5.1 This section shall automatically control antenna selection, receiver tuning, and recorder start/stop times in response to a programmable schedule.

2.1.1.5.2 This section shall be capable of interchanging data such as schedules and logs with the information processing subsystem.

2.1.1.5.3 It shall be possible to interactively control and monitor the collection and recording subsystems through the control subsystem.

2.1.1.6 Wire Processing

There shall be capability for acquiring English and foreign language press agency wire service text.

2.1.1.6.1 The capability shall include

- a. reception
- b. file formatting
- c. logging
- d. storage
- e. retrieval
- f. display

2.1.1.6.2 It shall be possible for wire traffic to be disseminated to bureau users interactively.

2.1.1.6.3 The wire processing section shall generate files compatible with the data base services section.

2.1.1.7 Communications Processing

There shall be a communications processing section which is capable of formatting and handing off messages to and from the AUTODIN network, SKYMUX, and dedicated links when applicable.

2.1.1.7.1 This section shall provide:

- a. complete formatting
- b. header/footer checks
- c. addressee checks
- d. multi-take processing
- e. queueing for messages

2.1.1.7.2 It shall be possible to expand this section in future to interface to INTERNET and other contemplated communications networks.

#### 2.1.1.8 Text Processing

This section shall provide complete text entry and editing facilities to each user.

2.1.1.8.1 The text editor shall be capable of full document interactive editing for characters, words, lines, and groups of lines with at least the functions of:

- a. insert
- b. replace
- c. delete
- d. copy
- e. move

2.1.1.8.2 The text editor shall provide automatic line end carriage return on word boundaries (word wrap).

2.1.1.8.3 The text editor shall provide split screen simultaneous edit of two documents.

2.1.1.8.4 The text editor shall generate and accept files compatible with other sections of the information processing subsystem.

#### 2.1.1.9 Multilingual Text Processing

This section shall be capable of originating and editing text in (TBD) languages and (TBD) alphabets.

2.1.1.9.1 It shall be possible to originate and edit glossaries and full text flow documents in this section.

2.1.1.9.2 This section shall generate and accept files compatible with headquarters multilingual text processing equipment. File exchange will be by means of floppy disk.

#### 2.1.1.10 Data Base Services

There shall be a data base service capable of managing, storing, and retrieving files generated in the information processing subsystem.

2.1.1.10.1 The data base service shall provide the file management functions of:

- a. copy
- b. move
- c. remove
- d. create
- e. directory compilation

2.1.1.10.2 There shall be user access control, each user to have read/modify or read only privilege assignable to each file.

2.1.1.10.3 The data base service shall make it possible for any user to retrieve files based on searches of a directory of attributes including:

- a. time
- b. date
- c. file name
- d. keyword
- e. translator
- f. editor(s)
- g. status
- h. other assignable attribute fields

2.1.1.10.4 The data base services section shall automatically update status attributes as a function of file process status.

#### 2.1.1.11 Administrative Processing

There shall be an administrative processing section capable of performing payroll, inventory, and purchasing process tasks.

2.1.1.11.1 This section shall perform the following functions for administrative users:

- a. spreadsheet calculations
- b. tabular data processing
- c. electronic forms generation

2.1.1.11.2 This section shall generate and accept files compatible with data base services section.

2.1.1.12            Output Services

There shall be an output services section capable of printing any file held in the data base services section on-line storage.

2.1.1.12.1 It shall be possible for any user to send a file to this service for printing.

2.1.1.12.2 Multiple simultaneous print requests shall be spooled and printed in turn.

2.1.1.12.3 All output pages shall be automatically headered with date, time, and file name.

2.1.1.13            Internal Communications

There shall be an internal communications section capable of moving files from workstation to workstation and to and from the data base services on-line store.

2.1.1.13.1 It shall be possible for any user to send any other user a file or a message directed by means of user name or user location (workstation number).

2.1.1.13.2 AUTODIN and other external messages routed to individual users shall also be handled.

2.1.1.13.3 Users not logged on shall have their messages queued in the on-line data base.

2.1.2                Performance

Exhibits referred to herein are contained in SDS-002, FBIS Modernization Requirements, dated 30 May 1984. All subsequent revisions to SDS-002 shall be incorporated when this design specification is implemented.

2.1.2.1            HF Collection

2.1.2.1.1 The HF collection section shall accommodate the radio broadcast traffic shown in Exhibit D, SDS-002.

2.1.2.1.2 The population of switch matrices and radio receivers at each bureau shall be sufficient to support the simultaneous broadcasts shown in Exhibit D.

2.1.2.2            TV Collection

2.1.2.2.1 The TV collection section shall accommodate the television broadcast traffic shown in Exhibit F, SDS-002.

2.1.2.2.2 The population of switch matrices, VHF/UHF receivers, TV tuners and video cassette recorders shall be sufficient at each bureau to support the types of collection and recording times shown in Exhibit E, SDS-002.

#### 2.1.2.3 Recording

2.1.2.3.1 The recording section shall provide sufficient recording equipment at each bureau to accommodate the recording times cited in Exhibits D and F, SDS-002.

2.1.2.3.2 This section shall provide sufficient separate recording channels to accommodate the simultaneous broadcasts cited in Exhibit F, SDS-002.

#### 2.1.2.4 Automatic Cruising

2.1.2.4.1 The automatic cruising section shall provide sufficient equipment at each bureau to perform its function independent of the collection sections without interference.

2.1.2.4.2 This section shall be capable of detecting and logging new signals at least as well as a human cruiser working with a radio receiver.

#### 2.1.2.5 Control

2.1.2.5.1 Sufficient control capacity shall be provided at each bureau to control the collection, cruising, and recording sections.

2.1.2.5.2 The control section shall not degrade or inhibit the other collection subsystem sections or the information processing subsystem in normal operation or in the event of control section failure.

#### 2.1.2.6 Wire Processing

The wire processing section shall be capable of performing its function for the press agency counts, simultaneous transmissions, transmission rates, and transmission types shown in Exhibit E, SDS-002 for each bureau.

#### 2.1.2.7 Communications processing



The communications processing section shall be capable of performing its function for the numbers, types, and data rates of circuits shown in Exhibit J, SDS-002 for each bureau.

#### 2.1.2.8 Text Processing

The text processing section shall provide a number of workstations sufficient to support the workstation count shown in Exhibit C, SDS-002 for each bureau. Text processing response performance shall be independent of the number of workstations in use.

#### 2.1.2.9 Multilingual Text Processing

The multilingual text processing section shall provide a number of workstations sufficient to allow the maintenance and creation of the reference aids files in accordance with the sizing and transaction traffic cited in Exhibit B, SDS-002 for each bureau.

#### 2.1.2.10 Data Base Services

The data base services section shall provide sufficient facilities to perform its function on the sizes, types, and numbers of files shown in Exhibit B, SDS-002 for each bureau, except for foreign language files.

#### 2.1.2.11 Administrative Processing

The administrative processing section shall provide a number of workstations sufficient to support the administrative workstation count shown in Exhibit C, SDS-002 for each bureau.

#### 2.1.2.12 Output Services

The output services section shall provide hard copy output sufficient to support the user population's needs at each bureau for:

- a. proof printing
- b. data base work copy printing
- c. foreign language reference aid printing

#### 2.1.2.13 Internal Communications

2.1.2.13.1 The internal communications section shall perform its function without degrading any other section's performance.

2.1.2.13.2 This section shall transfer files and commands between sections so that no data loss or error is undetected.

2.1.2.13.3 This section shall notify users of any transmission failure.

### 2.1.3 External Interface

The bureau segment of the modernized FBIS shall have the following external interfaces:

#### 2.1.3.1 AUTODIN

AUTODIN communications for each bureau in accordance with Exhibit J of SDS-002.

#### 2.1.3.2 Diplomatic Telecommunications Service

Diplomatic Telecommunications Service for selected bureaus in accordance with Exhibit J of SDS-002.

#### 2.1.3.3 Commercial Telephone (TBD)

#### 2.1.3.4 Consumers (TBD)

#### 2.1.3.5 Signal Interfaces (TBD)

#### 2.1.3.6 Antennas (TBD)

### 2.1.4 Design

#### 2.1.4.1 Electromagnetic Compatibility

The equipment installed at FBIS bureaus shall meet the EMC and grounding requirements specified in the individual site EMC specification (TBD).

#### 2.1.4.2 System Availability

The steady-state, system availability is defined as the probability that those FBIS functions required to access and output products and services are in operating condition and are operable at any instant of time with the exception of planned downtimes.

2.1.4.2.1 Steady-state availability at the Bureau shall be at least .98 (TBR) probability.

2.1.4.2.2 The component hardware procured for use in the system shall have a design life goal of 10 (TBD) years.

2.1.4.2.3 Single point failure is defined to be any equipment or operation error that would preclude the capability of the FBIS to meet its mission.

No single point failure in FBIS shall cause the irretrievable loss or contamination of data.

2.1.4.2.5 Meantime-to-restore is defined as the interval of time required to restore a given function after a malfunction has been detected.

The system shall have a meantime-to-restore of no more than 15 (TBR) minutes.

#### 2.1.4.3 Maintainability

2.1.4.3.1 The system shall provide capability to isolate failures down to the replaceable item level.

2.1.4.3.2 Equipment shall be designed to permit ease of maintenance, inspection, and verification of hardware status.

2.1.4.3.3 Equipment shall be configured such that corrective and preventive maintenance can be performed on redundant equipment while the remainder of the system remains operational.

#### 2.1.4.4 Environmental Conditions

2.1.4.4.1 The system shall operate in the environment specified in the Facility Requirements Document (TBD) for the bureaus.

2.1.4.4.2 The system shall be designed and constructed to withstand service outage without mechanical or electrical damage or degradation of overall performance.

2.1.4.5           Transportability

Equipment design and fabrication shall be such that operational performance will not be degraded or mechanical damage incurred as a result of shipment required to install at its operational location.

2.1.4.6           Security

No unauthorized access to system shall be allowed.

2.1.4.7           Safety

Safety engineering principles shall be applied throughout the design, development, test, installation, checkout, and operation of all equipment.

2.1.4.8           Operability

The system shall be designed such that operational functions require minimal action by personnel.

2.1.4.9           Design Implementation

The system development to implement the requirements of the FBIS system shall be conducted in accordance with the provision of the Program Implementation Directive (A1-002), 30 April 1984.

2.1.4.10          Transition

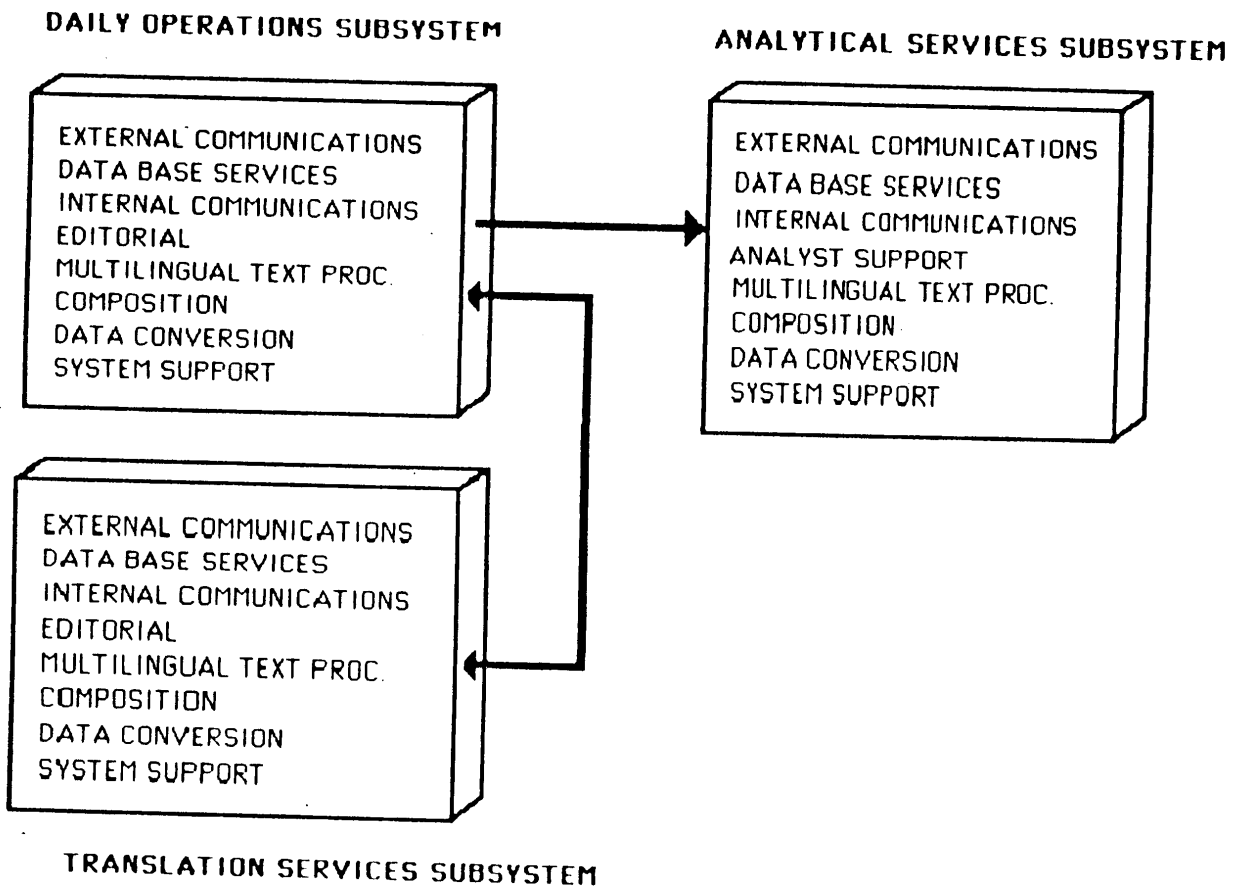
The system shall be designed and implemented in a manner which allows the new/modified capability to be developed, installed, checked out and transitioned to operational status without adversely affecting ongoing operations.

2.2                Headquarters Segment

There shall be a daily operations subsystem, analysis services subsystem, and a translation services subsystem at headquarters (Reference Segment Allocation, Figure 2-4). Each subsystem shall consist of external communication processing, editorial processing, multilingual text processing, composition processing, data base services, system services, internal communication, analysis support, and data conversion sections (Reference Generic Functional Structure, Figure 2-5).

Figure 2-4.

### SUBSYSTEM FUNCTIONAL ALLOCATION

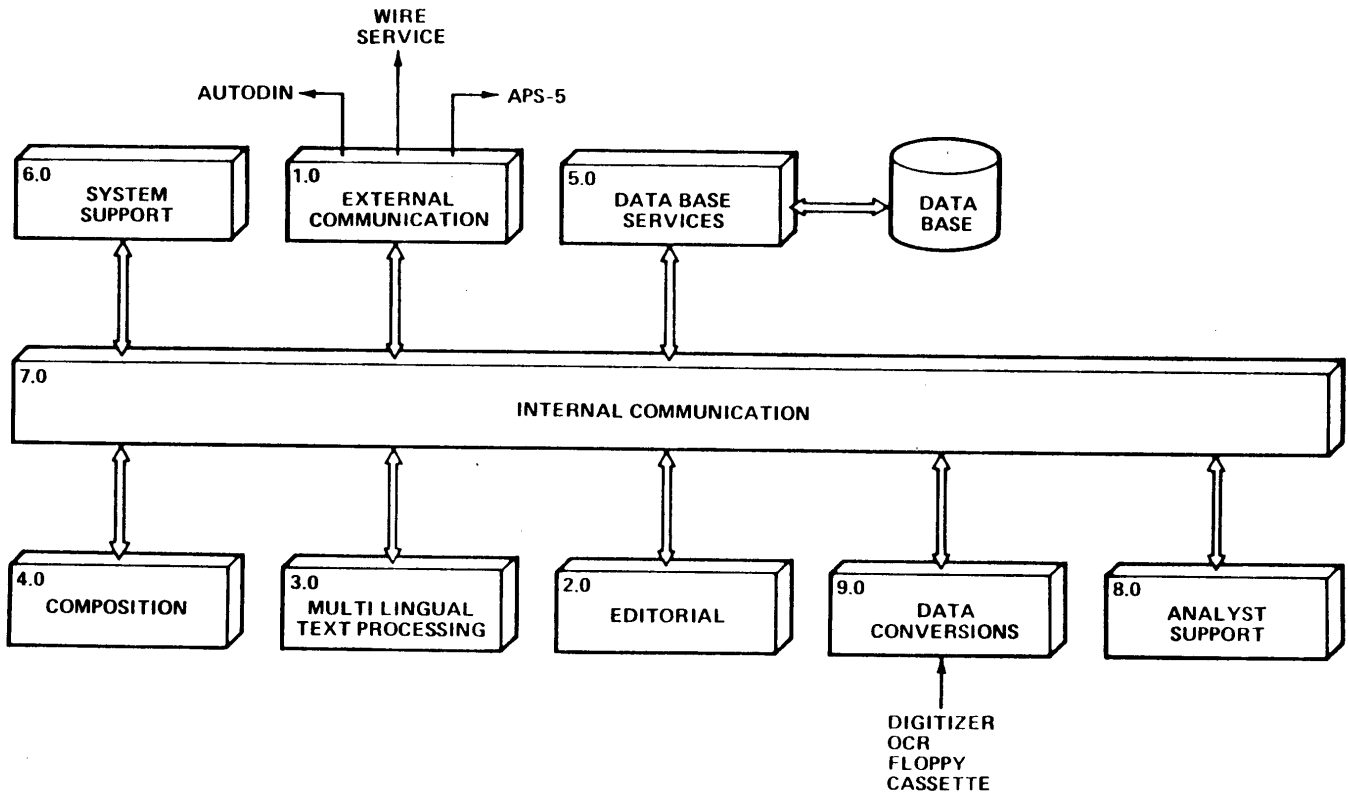


-17-

Figure 2-5.

**ESL**  
A Subsidiary of TRW

**FBIS—GENERIC FUNCTIONAL STRUCTURE**



-8T-

## 2.2.1 Capabilities

### 2.2.1.1 External Communication

2.2.1.1.1 The external communication section shall be capable of receiving messages, data, and text from AUTODIN, Diplomatic Telecommunications Service (SKYMUX), telex, press wire services, dedicated communications links, and APS-5 typesetter coded text files from the data base services section.

2.2.1.1.2 This section shall be capable of logging, routing to queues, multi-take processing, storing status and text, and alert message generation for incoming message traffic.

2.2.1.1.3 This section shall be capable of generating messages in FBIS format for AUTODIN transmission with header validation both from data base services files and prestored communication management files.

2.2.1.1.4 This section shall be capable of transmission of messages, data, and text via AUTODIN and FBIS wire service, typesetter coded text to the APS-5 typesetter, and all data forms to data base services.

### 2.2.1.2 Editorial

The editorial section shall be capable of text manipulation to provide complete text entry and editing facilities to each user.

2.2.1.2.1 The text editor shall be capable of full document interactive editing for characters, words, lines, and groups of lines with at least the following functions:

- a. insert
- b. replace
- c. delete
- d. copy
- e. move

2.2.1.2.2 The text editor shall provide search and replace for specified character strings.

2.2.1.2.3 The text editor shall provide capability to merge and split documents.

2.2.1.2.4 The text editor shall provide automatic line end carriage return on word boundaries (word wrap).

2.2.1.2.5 The text editor shall provide split screen simultaneous edit of two documents.

2.2.1.2.6 The text editor shall generate and accept files compatible with the data base services section.

2.2.1.2.7 The editorial section shall provide means to display the changes made in each edit pass by means of video attributes such as fonts, inverse display, or brightness.

2.2.1.2.8 The editorial section shall provide copy flow transactions to

- a. transfer files to other users for review and further edit
- b. sort and generate directories
- c. predict depth
- d. mail messages to other users.

2.2.1.2.9 The editorial section shall provide hyphenation and justification with a privileged user updatable hyphenation dictionary.

2.2.1.2.10 It shall be possible to justify left, center, or right.

2.2.1.2.11 The editorial section shall provide a spelling, syntax, and vulgarity checker. The dictionary for this checker shall be updatable by a privileged user.

### 2.2.1.3 Multilingual Text Processing

This section shall be capable of originating and editing text in (TBD) languages and (TBD) alphabets.

2.2.1.3.1 It shall be possible to originate and edit glossaries and full text flow documents with multiple languages appearing in the same document in this section.

2.2.1.3.2 This section shall generate and accept files compatible with bureau multilingual text processing equipment. File exchange will be by means of floppy disk.

### 2.2.1.4 Composition

There shall be a full book composition and pagination section.

2.2.1.4.1 The composition section shall be capable of accepting text from the editorial section via data base services.



2.2.1.4.2 The composition section shall be capable of accepting line graphics or half tone photo material from a local scanner.

2.2.1.4.3 This section shall be capable of:

- a. performing editorial changes to text
- b. marking text with generic, object oriented codes for comp
- c. merging graphics files with text
- d. composing whole books with merged files

2.2.1.4.4 This section shall perform:

- a. pagination
- b. widow and orphan control
- c. hyphenation and justification left, center, and right
- d. automatic generation of tables of contents

2.2.1.4.5 This section shall provide batch pagination with interactive intervention for discretionary composition decisions.

2.2.1.4.6 This section shall provide an interactive display of typeset pages using simulated fonts approximating the typeset fonts.

2.2.1.4.7 This section shall provide hard copy proof printing of typeset output.

2.2.1.4.8 This section shall provide output coded compatible with an APS-5 typesetter.

2.2.1.4.9 This section shall provide composed files stripped of composition mark-up as output to the data base services section.

#### 2.2.1.5 Data Base Services

There shall be a data base service capable of coordinating the public data sets of all users.

2.2.1.5.1 The data base service shall provide the file management functions of:

- a. copy
- b. move
- c. remove
- d. create
- e. attribute compilation

2.2.1.5.2 It shall be possible to:

- a. add records or parts of records
- b. delete records or parts of records
- c. modify records or parts of records
- d. restructure files by adding and deleting fields.

2.2.1.5.3 There shall be at least three groups of users for user access control, each group to have read/modify, read only, or no access privilege. User privilege shall be assignable to each file.

2.2.1.5.4 The data base service shall make it possible for any user to retrieve files based on searches of a directory of attributes including:

- a. time
- b. date
- c. file name
- d. keyword
- e. translator
- f. editor(s)
- g. status
- h. other assignable attribute fields

2.2.1.5.5 The data base services section shall automatically update status attributes as a function of file process status.

2.2.1.5.6 The data base service shall be capable of searching free text in files for specified character strings. Free text search shall include:

- a. wild card and near match specifiers for single strings
- b. proximity, boolean, and near match for multiple strings with multiple conditions.

2.2.1.5.6 The data base service shall be capable of generating hard or soft copy reports containing:

- a. selected portions of alpha-numeric data files
- b. graphical representations of alpha-numeric data
- c. images of graphics files

#### 2.2.1.6 System Services

There shall be a system services section to perform system

management functions.

2.2.1.6.1 The system services section shall be capable of performing compilation of system statistics for equipment and software management overview.

2.2.1.6.2 The system services section shall be capable of performing compilation of administrative statistics for copy flow and personnel functional overview.

2.2.1.6.3 This section shall be capable of providing key users with computer system management resources.

2.2.1.6.4 This section shall be capable of supporting physical facilities management tasks.

2.2.1.6.5 This section shall be capable of supporting planning and scheduling tasks.

2.2.1.6.6 This section shall be capable of programming to support simulations and operations research.

2.2.1.6.7 This section shall permit software development at table and shell level code entry.

2.2.1.6.8 This section shall provide for on-line training aids for new users.

#### 2.2.1.7 Internal Communication

2.2.1.7.1 The internal communications section shall be capable of moving files from workstation to workstation and to and from the data base services on-line store.

2.2.1.7.2 It shall be possible for any user to send any other user a file or a message directed by means of user name or user location (workstation number).

2.2.1.7.3 AUTODIN and other external messages routed to individual users shall be handled.

2.2.1.7.4 Users not logged on shall have their messages queued in the on-line data base.

#### 2.2.1.8 Analyst Support

There shall be an analyst support section capable of providing support functions for both classified and unclassified work in Production and Analysis groups.

2.2.1.8.1 This section shall provide text processing

capabilities identical to those of the bureaus (see paragraph 2.1.1.8).

2.2.1.8.2 This section shall provide prompted interactive query generation support for data base services queries.

2.2.1.8.3 This section shall provide prompted interactive forms generation support for data base file formatting.

2.2.1.8.4 This section shall provide for message review and dissemination.

2.2.1.8.5 This section shall provide means to display the changes made in each edit pass by means of video attributes such as fonts, inverse display, or brightness.

2.2.1.8.6 This section shall provide means to scan and recognize characters on English language documents originated in the data base services section.

#### 2.2.1.9 Data Conversion

There shall be a data conversion section capable of reformatting blocks of data for interchange between workstations, input/output devices, and data base services.

#### 2.2.2 Performance

##### 2.2.2.1 External Communication

The external communication section shall perform its function without causing irretrievable data loss or data degradation.

##### 2.2.2.2 Editorial

The editorial section shall provide a number of workstations sufficient to support the daily report processing and the Production Group and JPRS users required to operate translation services.

##### 2.2.2.3 Multilingual

The multilingual text processing section shall provide a number of workstations sufficient to allow the maintenance and creation of the reference aids files sizing and transaction traffic cited in Exhibit A, SDS-002.

2.2.2.4            Composition

The composition section shall perform its function so as to permit the daily production of 2500 typeset pages. No failure in the composition section shall degrade the other sections.

2.2.2.5            Data Base Services

2.2.2.5.1 The data base services section shall provide sufficient facilities to perform its function on the sizes, types, and numbers of files shown in Exhibit A, SDS-002, except for foreign language files.

2.2.2.5.2 The data base services section shall provide search responses in accordance with the following benchmarks: (TBD)

2.2.2.6            System Services

The system services section shall perform its function without degrading the performance of other sections.

2.2.2.7            Internal Communication

2.2.2.7.1 The internal communications section shall perform its function without degrading any other section's performance.

2.2.2.7.2 This section shall transfer files and commands between sections so that no data loss or error is undetected.

2.2.2.7.3 This section shall notify users of any transmission failure.

2.2.2.8            Analyst Support

The analysis support section shall provide a number of workstations sufficient to perform its function for the users concerned in the Production and Analysis groups.

2.2.2.9            Data Conversion

The data conversion section shall perform its function without degrading the data it converts and shall produce data conversions compatible with all target equipment.

2.2.3 External Interface

The Headquarters segment of the modernized FBIS shall have the following external interfaces:

2.2.3.1 AUTODIN

AUTODIN communications for each bureau in accordance with Exhibit J of SDS-002.

2.2.3.2 Diplomatic Telecommunications Service

Diplomatic Telecommunications Service for selected bureaus in accordance with Exhibit J of SDS-002.

2.2.3.3 Commercial Telephone (TBD)

2.2.3.4 Consumers (TBD)

2.2.3.5 Printing and Photography Division

Printing and Photography Division in accordance with the coding and media requirements of the APS-5 phototypesetter.

2.2.3.6 Commercial Data Bases (TBD)

2.2.3.7 Consumer Computer Systems (TBD)

2.2.4 Headquarters Design

2.2.4.1 Electromagnetic Compatibility

The equipment installed at FBIS headquarters shall meet the EMC and grounding requirements specified in the building EMC specification (TBD).

2.2.4.2 System Availability

2.2.4.2.1 Steady-state availability at headquarters shall be at least (TBD) probability.

2.2.4.2.2 The component hardware procured for use in the system shall have a design life goal of 10 (TBR) years.

2.2.4.2.3 Single point failure is defined to be any equipment or operational error that would preclude the capability of the FBIS to meet its mission.

No single point failure in FBIS shall cause the irretrievable loss or contamination of data.

2.2.4.2.4 The system shall have a mean time to restore of no more than (TBD).

#### 2.2.4.3 Maintainability

2.2.4.3.1 The system shall provide capability to isolate failures down to the replaceable item level.

2.2.4.3.2 Equipment shall be designed to permit ease of maintenance, inspection, and verification of hardware status.

#### 2.2.4.4 Environmental Condition Facility

2.2.4.4.1 The system shall operate in the environment specified in the Facility Requirements Document (TBD) for the Headquarters.

2.2.4.4.2 The system shall be designed and constructed to withstand service outage without mechanical or electrical damage or degradation of overall performance.

#### 2.2.4.5 Transportability

Equipment design and fabrication shall be such that operational performance will not be degraded or mechanical damage incurred as a result of shipment required to install at its operational location.

#### 2.2.4.6 Security

Equipment units and cabling shall meet the TEMPEST requirements specified in the FBIS headquarters building EMC specification (TBD).

#### 2.2.4.7 Safety

Safety engineering principles shall be applied throughout the design, development, test, installation, checkout, and operation of all equipment.

2.2.4.8      Operability

The system shall be designed such that operational functions require minimal action by personnel.

2.2.4.9      Design Implementation

The system development to implement the requirements of the FBIS system shall be conducted in accordance with the provisions of the Program Implementation Directive (A1-002), 30 April 1984.

2.2.4.10     Transition

The system shall be designed and implemented in a manner which allows the new/modified capability to be developed, installed, checked out and transitioned to operational status without adversely affecting ongoing operations.



3.0                    VERIFICATION MATRIX

<u>Requirement Paragraph</u>	<u>Title</u>	<u>Verification Method</u>
		A = Analysis D = Demo I = Inspection T = Test
2.1	BUREAU SEGMENT	-
2.1.1	CAPABILITIES	-
2.1.1.1	HF COLLECTION	T
2.1.1.2	TV COLLECTION	T
2.1.1.3	RECORDING	T
2.1.1.4	AUTOMATED CRUISING	T
2.1.1.5	CONTROL	T
2.1.1.7	COMMUNICATIONS PROCESSING	T
2.1.1.8	TEXT PROCESSING	D
2.1.1.9	MULTILINGUAL TEXT PROCESSING	D
2.1.1.10	DATA BASE SERVICES	D
2.1.1.11	ADMINISTRATIVE PROCESSING	D
2.1.1.12	OUTPUT SERVICES	T
2.1.1.13	INTERNAL COMMUNICATIONS	D
2.1.2	PERFORMANCE	-
2.1.2.1	HF COLLECTION	A
2.1.2.2	TV COLLECTION	A
2.1.2.3	RECORDING	A
2.1.2.4	AUTOMATIC CRUISING	A
2.1.2.5	CONTROL	D
2.1.2.6	WIRE PROCESSING	D
2.1.2.7	COMMUNICATIONS PROCESSING	D
2.1.2.8	TEXT PROCESSING	A
2.1.2.9	MULTILINGUAL TEXT PROCESSING	A
2.1.2.10	DATA BASE SERVICES	A
2.1.2.11	ADMINISTRATIVE PROCESSING	A
2.1.2.12	OUTPUT SERVICES	D
2.1.2.13	INTERNAL COMMUNICATIONS	D

<u>Requirement Paragraph</u>	<u>Title</u>	<u>Verification Method</u>
2.1.3	EXTERNAL INTERFACE	-
2.1.3.1	AUTODIN	D
2.1.3.2	DIPLOMATIC TELECOMMUNICATION SERVICE	D
2.1.3.3	COMMERCIAL TELEPHONE	(TBD)
2.1.3.4	CONSUMER	(TBD)
2.1.3.5	SIGNAL INTERFACE	(TBD)
2.1.3.6	ANTENNA	(TBD)
2.1.4	DESIGN	-
2.1.4.1	ELECTROMAGNETIC COMPATIBILITY	A
2.1.4.2	SYSTEM AVAILABILITY	A
2.1.4.3	MAINTAINABILITY	I
2.1.4.4	ENVIRONMENTAL CONDITIONS	A
2.1.4.5	TRANSPORTABILITY	I
2.1.4.6	SECURITY	D
2.1.4.7	SAFETY	I
2.1.4.8	OPERABILITY	I
2.1.4.9	DESIGN IMPLEMENTATION	D
2.1.4.10	TRANSITION	A

<u>Requirement Paragraph</u>	<u>Title</u>	<u>Verification Method</u>
2.2	HEADQUARTERS	-
2.2.1	CAPABILITIES	-
2.2.1.1	EXTERNAL COMMUNICATION	T
2.2.1.2	EDITORIAL	T
2.2.1.3	MULTILINGUAL TEXT PROCESSING	D
2.2.1.4	COMPOSITION	D
2.2.1.5	DATA BASE SERVICES	T
2.2.1.6	SYSTEM SERVICES	D
2.2.1.7	INTERNAL COMMUNICATION	D
2.2.1.8	ANALYST SUPPORT	D
2.2.1.9	DATA CONVERSION	T
2.2.2	PERFORMANCE	-
2.2.2.1	EXTERNAL COMMUNICATION	A
2.2.2.2	EDITORIAL	D
2.2.2.3	MULTILINGUAL	A
2.2.2.4	COMPOSITION	D
2.2.2.5	DATA BASE SERVICES	A
2.2.2.6	SYSTEM SERVICES	A
2.2.2.7	INTERNAL COMMUNICATION	A
2.2.2.8	ANALYST SUPPORT	A
2.2.2.9	DATA CONVERSION	D
2.2.3	EXTERNAL INTERFACE	-
2.2.3.1	AUTODIN	D
2.2.3.2	DIPLOMATIC TELECOMMUNICATIONS SERVICE	D
2.2.3.3	COMMERCIAL TELEPHONE	(TBD)
2.2.3.4	CONSUMER	(TBD)
2.2.3.5	P&PD	D
2.2.3.6	COMMERCIAL DATA BASES	(TBD)
2.2.3.7	CONSUMER COMPUTER SYSTEM	(TBD)
2.2.4	DESIGN	-
2.2.4.1	ELECTROMAGNETIC COMPATIBILITY	A
2.2.4.2	SYSTEM AVAILABILITY	A
2.2.4.3	MAINTAINABILITY	I
2.2.4.4	ENVIRONMENTAL CONDITION	A
2.2.4.5	TRANSPORTABILITY	I
2.2.4.6	SECURITY	A
2.2.4.7	SAFETY	I
2.2.4.8	OPERABILITY	I
2.2.4.9	DESIGN IMPLEMENTATION	D
2.2.4.10	TRANSITION	A