MVS/Extended Architecture System Logic Library: Functional Subsystem Interface

Program Product

MVS/System Product:

JES3 Version 2   **5665-291**
JES2 Version 2   **5740-XC6**

IBM

This publication supports MVS/System Product
Version 2 Release 2.0, and contains information
that was formerly presented in
MVS/Extended Architecture System Logic Library
Volume 7, LY28-1227-3, which applies to
MVS/System Product Version 2 Release 1.7.
See the Summary of Amendments for more information.

First Edition (June, 1987)

PREFACE

The <u>MVS/Extended Architecture System Logic Library</u> is intended
for people who debug or modify the MVS control program. It
describes the logic of most MVS control program functions that
are performed after master scheduler initialization completes.
For detailed information about the MVS control program prior to
this point, refer to <u>MVS/Extended Architecture System
Initialization Logic</u>. For general information about the MVS
control program and the relationships among the components that
make up the MVS control program, refer to the <u>MVS/Extended
Architecture Overview</u>. To obtain the names of publications that
describe some of the components not in the <u>System Logic Library</u>,
refer to the section Corequisite Reading in the Master Preface
in <u>MVS/Extended Architecture System Logic Library: Master Table
of Contents and Index</u>.

HOW THE LIBRARY IS ORGANIZED

SET OF BOOKS

The <u>System Logic Library</u> consists of a set of books. Two of the
books provide information that is relevant to the entire set of
books:

1. The <u>MVS/Extended Architecture System Logic Library: Master
    Table of Contents and Index</u> contains the master preface, the
    master table of contents, and the master index for the other
    books in the set.

2. The <u>MVS/Extended Architecture System Logic Library: Module
    Descriptions</u> contains module descriptions for all of the
    modules in the components documented in the <u>System Logic
    Library</u> and an index.

Each of the other books (referred to as component books) in the
set contains its own table of contents and index, and describes
the logic of one of the components in the MVS control program.

ORGANIZATION OF THE COMPONENTS

Most component books contain information about one component in
the MVS control program. However, some component books (such as
<u>System Logic Library: Initiator/Terminator</u>) contain more than
one component if the components are closely related, frequently
referenced at the same time, and not so large that they require
a book of their own.

A three or four character mnemonic is associated with each
component book and is used in all diagram and page numbers in
that book. For example, the mnemonic ASM is associated with the
book <u>MVS/Extended Architecture System Logic Library: Auxiliary
Storage Management</u>. All diagrams in this book are identified as
Diagram ASM-n, and all pages as ASM-n, where n represents the
specific diagram or page number. Whenever possible, the
existing component acronym is used as the mnemonic for the
component book. The Table of Book Titles in the Master Preface
in <u>MVS/Extended Architecture System Logic Library: Master Table
of Contents and Index</u> lists the book titles, the components
included in each book (if a book contains more than one
component), the mnemonics for the books, and the order number
for each book.

HOW TO USE THE LIBRARY

To help you use this library efficiently, the following topics cover

* How to find information using book titles and the master index
* What types of information are provided for each component
* How to obtain further information about other books in the System Logic Library

FINDING INFORMATION USING THE BOOK TITLES

As you become familiar with the book titles, MVS component names and mnemonics, and the book contents, you will be able to use the System Logic Library as you would an encyclopedia and go directly to the book that you need. We recommend that you group the books in alphabetical order for easy reference, or, if you are familiar with MVS, that you to group the books by related functions.

The Table of Book Titles in the Master Preface in MVS/Extended Architecture System Logic Library: Master Table of Contents and Index contains a list of book titles and mnemonics. It provides a quick reference to all the books, and their corresponding components, in the System Logic Library.

FINDING INFORMATION USING THE MASTER INDEX

If you are not sure which book contains the information you are looking for, you can locate the book and the page on which the information appears by using the master index in System Logic Library: Master Table of Contents and Index. For the component books, the page number in an index entry consists of the mnemonic for the component and the page number; for System Logic Library: Module Descriptions, the page number consists of the mnemonic "MOD" and the page number.

For example:

ASM-12   refers to MVS/Extended Architecture System Logic Library: Auxiliary Storage Management, page ASM-12.

MOD-245   refers to MVS/Extended Architecture System Logic Library: Module Descriptions, page MOD-245.

INFORMATION PROVIDED FOR MOST COMPONENTS

The following information is provided for most of the components described in the System Logic Library.

1. An introduction that summarizes the component's function

2. Control block overview figures that show significant fields and the chaining structure of the component's control blocks

3. Process flow figures that show control flow between the component's object modules

4. Module information that describes the functional organization of a program. This information can be in the form of:

   * Method-of-Operation diagrams and extended descriptions.

   * Automatically-generated prose. The automated module information is generated from the module prologue and the code itself. It consists of three parts: module description, module operation summary, and diagnostic aids.

5. Module descriptions that describe the operation of the modules (the module descriptions are contained in <u>System Logic Library: Module Descriptions</u>)

Some component books also include diagnostic techniques information following the Introduction.

FURTHER INFORMATION

For more information about the <u>System Logic Library,</u> including the order numbers of the books in the <u>System Logic Library,</u> see the Master Preface in <u>MVS/Extended Architecture System Logic Library: Master Table of Contents and Index</u>.

CONTENTS

FIGURES

SUMMARY OF AMENDMENTS

**Summary of Amendments
for LY28-1690-0
for MVS/System Product Version 2 Release 2.0**

This publication is new for MVS System Product Version 2 Release
2.0. It contains information that was reorganized from the FSI
section in MVS/XA System Logic Library Volume 7, LY28-1230-4,
which applies to MVS/XA System Product Version 2 Release 1.7.

Minor technical and editorial changes were made throughout this
publication, to support MVS/System Product Version 2 Release 2.0.

INTRODUCTION

The functional subsystem interface (FSI) provides an interface between the JESs (JES2 and JES3) and a functional subsystem address space and its functional subsystem application (FSA).

The functional subsystem (FSS) performs such JES functions as device-dependent functions. Thus, FSS processing is an extension of JES processing. FSS processing takes place in its own address space, separate from the JES address space. With the FSS, specific functional processing that JES would have had to perform in its own address space (such as device processing) can instead be isolated from JES and performed by a set of function-specific programs, called the functional subsystem application (FSA). These programs reside in an FSS address space.

The FSA operates under control of a standard task control block (TCB) dispatching structure for an MVS address space. More than one FSS address space can be defined in the system, each of which has its own unique FSS identifier (FSID). At least one FSA exists in each FSS address space (except for the JES3 converter/interpreter FSS address space); an FSA can represent, for example, a single printing subsystem. JES can communicate with each FSS address space and with each FSA.

The functional subsystem interface (FSI) provides two-way communication between JES, and the FSS or the FSA. The FSI is a collection of generalized functions, or services, that JES and the FSS/FSA can request by issuing the FSIREQ macro instruction. The FSI services also allow the FSS/FSA to access JES-controlled spool data sets.

JES uses FSI services to create the FSS address space and the FSA. JES initiates the FSS in response to a specific request, such as an operator command. JES initialization statements and parameters define the FSS. JES:

- Controls its own resources (for example, SYSOUT data sets), even though they are used by the FSS.

- Controls the scheduling of input and output.

- Manages operator communication with the FSS/FSA function.

- Coordinates the termination and restart of the FSS address space.

Figure 1 on page FSI-4 shows the structure of the MVS, JES, and FSS address spaces, the FSA, and the FSI.
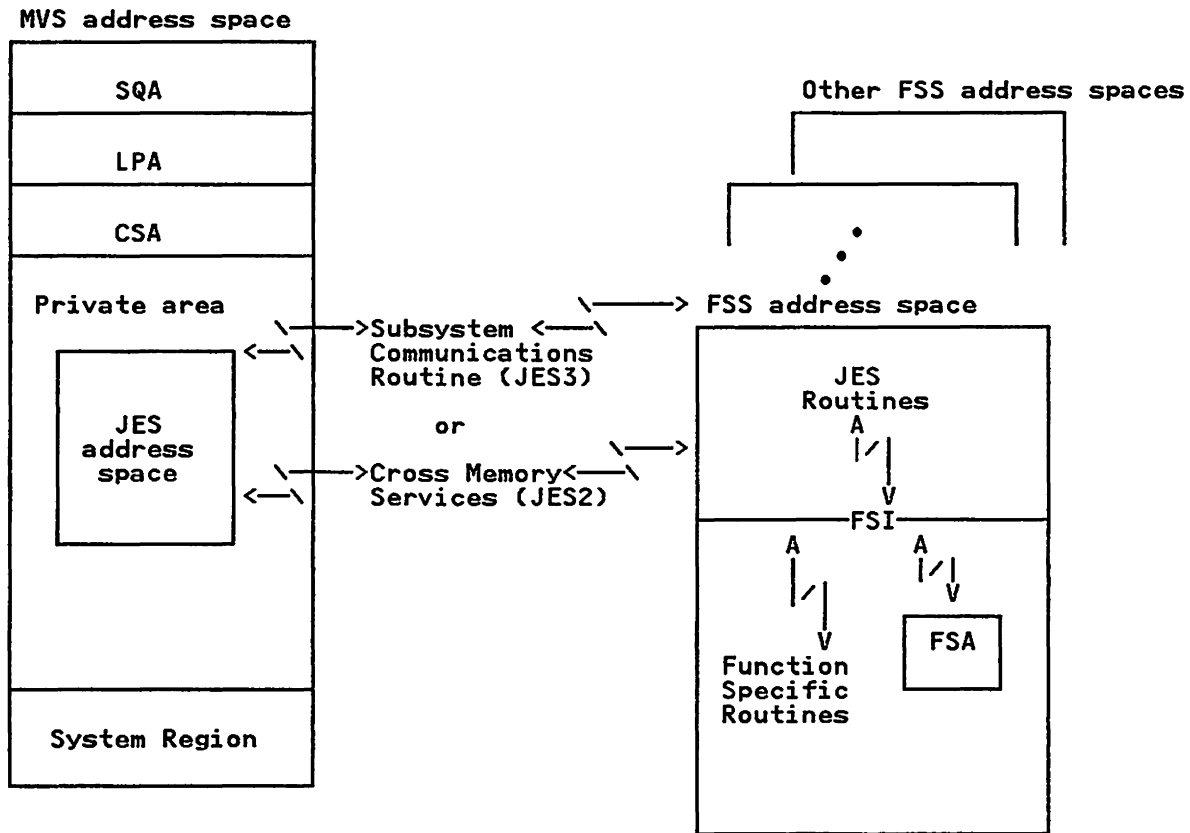
Figure 1. Relationships Between the MVS, JES, and FSS Address Spaces, the FSA, and the FSI

INITIALIZING A FUNCTIONAL SUBSYSTEM (FSS)

An installation defines a functional subsystem (FSS) during JES initialization. It defines the FSS for a specific device or other component and associates this device with the FSS being defined. After JES is initialized and the FSS is started, a functional subsystem application (FSA) becomes directly associated with this specific device or component. Therefore, an FSA is associated with one and only one peripheral device or component.

Once initialization has completed, JES and the FSS/FSA can communicate with each other by using the FSI. For information about how JES2 initializes the FSS and the FSI, see JES2 Logic. For information about how JES3 initializes the FSS and the FSI, see the JES3 Logic Library.

FUNCTIONAL SUBSYSTEM INTERFACE SERVICES

The FSI services allow JES and the FSS and FSA to communicate with each other. The FSI services are requested when JES or the FSA issues the FSIREQ macro instruction. This section describes the FSI services that the FSS, JES, and the FSA can request.

CONNECT/DISCONNECT SERVICES

The CONNECT service informs JES that the FSS or the FSA is initialized and ready to be used. The DISCONNECT service informs JES that the FSS or the FSA is terminated and is no longer ready for work.

COMMUNICATIONS SERVICES

There are three communications services provided by the functional subsystem interface (FSI).

ORDER: JES communicates with the the FSS and the FSA mainly through the ORDER service. For example, an operator device control command generates orders. When JES issues an order, the FSA performs the required processing.

SEND: The SEND service sends responses to JES that describe the outcome of the asynchronous order processing.

POST: The POST service prompts the FSA to issue a new request for a data set.

Note: Because the JES3 converter/interpreter FSS address space does not have an FSA, it does not use the POST service.

DATA SET ACCESS SERVICES

The FSA uses the data set access services to obtain access to an existing JES spool data set and to the spool data set's characteristics. After obtaining access to a spool data set, the FSA can get and free records on the data set.

Note: Because the JES3 converter/interpreter FSS address space does not have an FSA, it does not use these data set access services.

GETDS: The GETDS service gets a particular spool data set (similar to allocating and opening the data set).

RELDS: The RELDS service releases the data set (similar to closing and unallocating the data set).

GETREC: The GETREC service gets records from the spool data set.

FREEREC: The FREEREC service frees the storage occupied by these records.

CHKPT: The CHKPT service saves the environment of the data set currently being processed.

SERVICES USED BY THE FSS

The FSS requests FSI services to inform JES that the FSS or the FSA has been initialized and is ready for work. The FSS issues the FSIREQ macro instruction to request these FSI services. The FSIREQ macro instruction expands to an SSI call (SSI function code 53) for the following services.

CONNECT: JES activates the FSS and the FSA upon receipt of an operator command to start the FSS functions. JES first issues the MVS START command to activate the FSS, and the FSS responds with a request for the connect service. The connect service establishes the FSI to JES. JES then activates the FSA by issuing the START FSA order, and the FSA also responds with a request for the connect service.

The connect process occurs at two levels: the FSS connect and the FSA connect.

- The FSS connect service informs JES that FSS initialization has completed and the FSS is ready to be used.

- The FSA connect service informs JES that the FSA is ready to process work on behalf of JES requests.

DISCONNECT: JES deactivates the FSS and the FSA through the disconnect service. JES first issues the STOP FSA order to deactivate the FSA, and the FSA responds with a request for the disconnect service. JES then deactivates the FSS by issuing the STOP FSS order the disconnect service. If the FSS address space abnormally terminates or is cancelled, the FSS cannot respond to JES with the disconnect service. In this case, JES assumes that the FSS address space has failed.

The disconnect process is the reverse of the connect process.

- The FSA disconnect service informs JES that the FSA is no longer available to process work. If the FSS abnormally terminates without disconnecting the FSA, JES disconnects the FSA.

- The FSS disconnect service informs JES that the FSS address space is terminating, and that further use of the FSI for that FSS address space is not permitted.

SERVICES USED BY JES

JES requests FSI services to affect how the FSS and the FSA interact with the peripheral device or component that the FSA supports. JES issues the FSIREQ macro instruction to request these FSI services. The FSIREQ macro instruction expands to a branch and link register (BALR) instruction for these services. The FSS or the FSA satisfies these requests.

JES requests the following FSI services:

ORDER: JES uses the ORDER service to communicate with the FSS and the FSA. The ORDER services are:

- Start FSA: Causes the FSA to request the connect service. This order starts the FSA to interact with the function or device associated with it. This order also causes the FSI to be initialized at the FSA level.

  Note: JES must have already issued the MVS START command to activate the FSS prior to issuing the Start FSA order.

- Stop FSA: Causes the FSA to request the disconnect service, which terminates the FSA.

- Stop FSS: Causes the FSS to request the disconnect service, which terminates the FSS address space.

- Start device: Initializes the device associated with the FSA and allows the FSA to request spool data sets for processing.

- Stop device: Causes the FSA to complete the processing of the current data set and to terminate processing for the device.

- Query: Tells the FSA to obtain information about the current data set and to immediately inform JES.

- Set: Tells the FSA to set or change certain device characteristics.

- Synch: Requests that FSA processing be synchronized to the point of actual processing. JES issues the synch order for repositioning or interruption of this processing. For buffered devices, the synch order results in the FSA issuing the RELDS service against data sets that are in the buffer,

but are not yet visible to the operator. The FSA performs four actions (in the following order) against the data set that is currently visible to the operator:

1. Synchronizes the device to some specified point in the data set that is currently visible to the operator.

2. Repositions the data set from the point of synchronization.

3. Updates certain data set or device characteristics.

4. Interrupts processing of the data set.

• Operator intervention: Informs the FSA that a change to the device setup (such as a change in forms) that involves operator intervention is required. The FSA prepares the device for the change.

POST: When the FSA issues a GETDS request that JES cannot immediately satisfy (for example, because of a change in forms), JES informs the FSA that a spool data set is not available and that the GETDS request was not satisfied. When a spool data set becomes available, JES uses the post service to prompt the FSA to reissue the GETDS request. Until the POST is issued, the FSA effectively waits. However, any spool data sets that were already processing in the FSA continue to process.

SERVICES USED BY THE FSA

The FSA requests FSI services to obtain work for processing. The FSA issues the FSIREQ macro instruction to make requests known to JES. (The FSIREQ macro instruction expands to a branch and link register (BALR) instruction for these services.) JES then satisfies the request.

JES Address Space Processing

The FSA requests the following FSI services that are performed within the JES address space:

GETDS: The FSA uses the GETDS request to access a spool data set. JES satisfies this request by selecting a spool data set according to the selection criteria specified by an installation. This criteria is usually the characteristics matching the current device setup. When responding to a GETDS request, JES releases control of the spool data set to the FSA.

Note: When the FSA issues a GETDS request, JES2 satisfies the request by selecting a group of spool data sets from the JES2 address space and keeps the group in the JES2 portion of the FSS address space. (This group can consist of one or more than one data set.) The next time the FSA issues a GETDS request against a data set in this group, JES2 selects a data set from the group stored within the FSS address space. Therefore, not all JES2 GETDS requests are processed through the JES2 address space. (JES3, however, satisfies a GETDS request by selecting only one data set at a time from the JES3 address space.)

RELDS: The FSA uses the RELDS request to terminate or discontinue FSA processing for an output data set that was originally obtained through a GETDS request. This returns control of the data set to JES. When issuing a RELDS request, the FSA indicates one of the following conditions:

• Complete - The data set has been successfully processed and can be deleted by JES.

• Incomplete - The data set has been only partially printed and JES should requeue the data set to complete its processing.

Note: As with the GETDS request, when the FSA issues a RELDS request, JES2 keeps the data set in the JES2 portion of the FSS address space. When a RELDS request has been issued against every data set in a particular group (obtained through a GETDS request), JES2 returns the group of data sets to the JES2 address space. Therefore, not all JES2 RELDS requests are processed through the JES2 address space.

SEND: The FSA uses the SEND request to respond asynchronously to orders that are issued by JES. (When issuing an order, JES informs the FSA to respond with a SEND request.) For example, when JES issues the START DEVICE order, the FSA uses a SEND request to inform JES that the device has been started. JES determines how the information obtained through the SEND service will be used.

The FSA can also issue an unsolicited SEND request. The JES3 converter/interpreter FSS is the principal user of the unsolicited SEND request.

FSA Address Space Processing

The FSA requests certain FSI services that can be performed within the FSS address space. The FSA requests these services for a data set that has already been obtained through the GETDS service. These requests are:

GETREC: The FSA uses the GETREC service to obtain records from the output data set that it is processing. Unless otherwise indicated by the FSA, JES accesses these records sequentially from the beginning of the data set. The FSA can also use the GETREC service to re-access a data set from the beginning or from a specified CHKPT position within the data set. JES cannot reuse storage buffers associated with these records until the buffers are freed by the FSA through the FREEREC service.

FREEREC: The FSA uses the FREEREC service to release the storage buffers associated with the records that were obtained through the GETREC service.

CHKPT: An FSA periodically uses the CHKPT request to save the status of the output data set that is currently being printed. JES saves this information on the JES spool. The FSA can restart processing at a previously recorded CHKPT.

DIAGNOSTIC TECHNIQUES

The following information can be used to diagnose problems in the functional subsystem interface (FSI).

FSI PARAMETER LIST (FSIP)

The FSI parameter list (FSIP) is the common parameter list used by all FSI services. It contains a header section and a request section.

The header section which describes the FSI service that is being requested contains:

- The identifier of the FSS/FSA involved in the request

- The return code from the FSI request processing

The request section describes one or more of the FSI services. These requests are:

```
CONNECT
DISCONNECT
ORDER
GETDS
RELDS
GETREC
FREEREC
CHKPT
POST
SEND
```

Note: Each of these sections contains information required or supplied by the processing routines. Refer to the **Control Block Section** of this publication.

For related information on FSI control blocks, see MVS Diagnostic Techniques.

FUNCTIONAL SUBSYSTEM VECTOR TABLE (FSVT)

During the address space creation for an FSS address space, an address space control block (ASCB) is created in the system queue area (SQA), and an address space extension block (ASXB) is created in the private area. FSS connect processing sets the ASXB field, ASXBJSVT, to point to the functional subsystem vector table (FSVT). The FSS connect processing creates the FSVT, and therefore, the FSS must be connected first.

The FSVT contains paired pointers to the functional subsystem control tables (FSCTs). These FSCTs contain the addresses of the FSI service routines. The FSVT and the FSCTs reside in the FSS address space private area.

There is one functional subsystem vector table (FSVT) for every FSS address space. The first entry in the FSVT contains the identifier, 'FSVT'. The remaining entries in the FSVT are organized in pairs. Each pair points to two FSCTs. The first pair of entries point to the two FSCTs that support FSIREQ requests that are made on the FSS level. The second pair of entries in the FSVT point to the two FSCTs that support FSIREQ requests that are made on the FSA level. This FSVT/FSCT structure resides in a single FSS address space.

FUNCTIONAL SUBSYSTEM CONTROL TABLE (FSCT)

There are two functional subsystem control tables (FSCTs) for
the FSS level services, and two FSCTs for the FSA level
services. The first entry of each FSCT contains the identifier,
'FSCT'; the second entry is reserved for use by JES. These four
FSCTs reside in a single FSS address space.

FSS level FSCTs: For the pair of FSCTs on the FSS level:

* The first FSCT contains the address of the JES routine that
  processes requests made by the FSS through the FSIREQ macro
  instruction with TARGET=JES specified. This JES routine
  processes the SEND service.

* The second FSCT contains the address of the FSS routine that
  processes requests made by JES through the FSIREQ macro
  instruction with TARGET=FSS specified. This FSS routine
  processes the ORDER service.

FSA level FSCTs: For the pair of FSCTs on the FSA level:

* The first FSCT contains the addresses of the JES routines
  that process requests made by the FSA through the FSIREQ
  macro instruction with TARGET=JES specified. These JES
  routines process the GETDS, GETREC, FREEREC, RELDS, CHKPT,
  and SEND services. The addresses of these services reside
  in the FSCT in this order.

* The second FSCT contains the addresses of the FSA routines
  that process requests made by JES through the FSIREQ macro
  instruction with TARGET=FSS specified. These FSA routines
  process the ORDER and POST services. The addresses of these
  services reside in the FSCT in this order.

JES issues the FSIREQ macro instruction from the FSS address
space. See Figure 2 on page FSI-11 for a detailed control block
overview of the FSIREQ macro instruction.

FUNCTIONAL SUBSYSTEM RECOVERY

When an error occurs in the functional subsystem, the FSS/FSA
recovery routines generally attempt to stop the FSS, depending
on whether the error occurred in the FSS address space, the FSA,
or the FSI. If the functional subsystem recovers, the FSS can
be restarted by issuing JES commands. If the functional
subsystem abnormally terminates, JES ensures that the FSI is
terminated so that JES cannot access the functional subsystem
address space. If necessary, JES forces a disconnect of the
functional subsystem. JES also issues a RELDS request for all
outstanding data sets and cleans up any resources related to the
terminated functional subsystem.

If the JES address space fails, active FSS address spaces
continue processing any work already assigned. If there has not
been an intervening IPL, JES reestablishes communication with
active FSS address spaces when JES is restarted by a hot start.
If there has been an intervening IPL on a particular system,
JES3 can still reestablish communication with active FSS address
spaces, provided that the FSS address space does not reside in
the IPLed system. If the JES support in the FSS address space
fails and the failure cannot be resolved, JES issues an error
message, takes an SVC dump, and terminates the FSS address
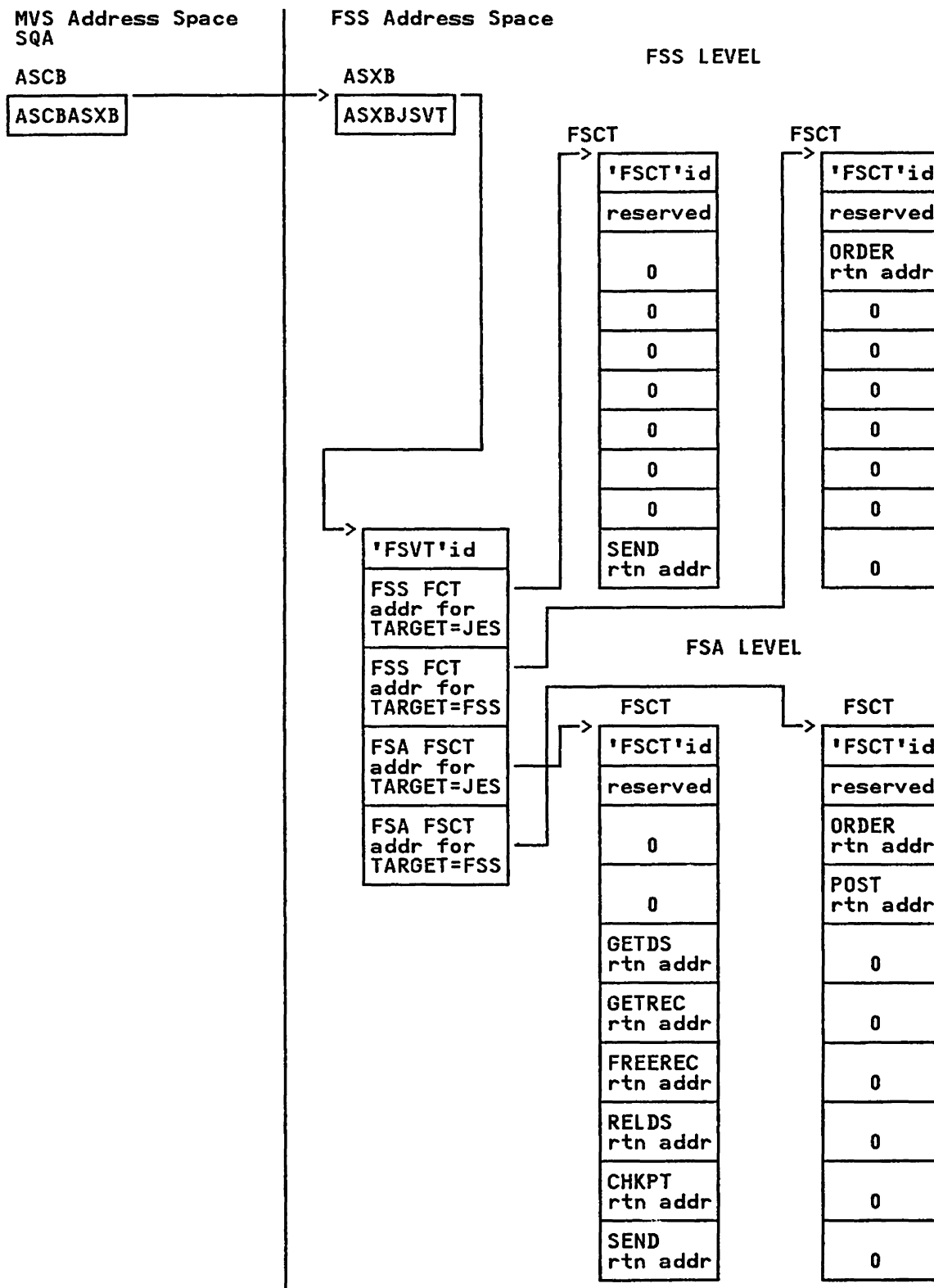space.

CONTROL BLOCK OVERVIEW

MVS Address Space
SQA

FSS Address Space

FSS LEVEL

```
ASCB                          ASXB
┌──────────┐              ──> ┌──────────┐
│ ASCBASXB │                  │ ASXBJSVT │
└──────────┘                  └──────────┘
```

```
              FSCT                      FSCT
           ┌──────────┐             ┌──────────┐
        ──>│ 'FSCT'id │          ──>│ 'FSCT'id │
           ├──────────┤             ├──────────┤
           │ reserved │             │ reserved │
           ├──────────┤             ├──────────┤
           │          │             │ ORDER    │
           │    0     │             │ rtn addr │
           ├──────────┤             ├──────────┤
           │    0     │             │    0     │
           ├──────────┤             ├──────────┤
           │    0     │             │    0     │
           ├──────────┤             ├──────────┤
           │    0     │             │    0     │
           ├──────────┤             ├──────────┤
           │    0     │             │    0     │
           ├──────────┤             ├──────────┤
           │    0     │             │    0     │
           ├──────────┤             ├──────────┤
           │ SEND     │             │    0     │
           │ rtn addr │             │          │
           └──────────┘             └──────────┘
```

```
   ┌──────────────┐
──>│ 'FSVT'id     │
   ├──────────────┤
   │ FSS FCT      │
   │ addr for     │
   │ TARGET=JES   │
   ├──────────────┤
   │ FSS FCT      │
   │ addr for     │
   │ TARGET=FSS   │
   ├──────────────┤
   │ FSA FSCT     │
   │ addr for     │
   │ TARGET=JES   │
   ├──────────────┤
   │ FSA FSCT     │
   │ addr for     │
   │ TARGET=FSS   │
   └──────────────┘
```

FSA LEVEL

```
              FSCT                      FSCT
           ┌──────────┐             ┌──────────┐
        ──>│ 'FSCT'id │          ──>│ 'FSCT'id │
           ├──────────┤             ├──────────┤
           │ reserved │             │ reserved │
           ├──────────┤             ├──────────┤
           │          │             │ ORDER    │
           │    0     │             │ rtn addr │
           ├──────────┤             ├──────────┤
           │          │             │ POST     │
           │    0     │             │ rtn addr │
           ├──────────┤             ├──────────┤
           │ GETDS    │             │          │
           │ rtn addr │             │    0     │
           ├──────────┤             ├──────────┤
           │ GETREC   │             │          │
           │ rtn addr │             │    0     │
           ├──────────┤             ├──────────┤
           │ FREEREC  │             │          │
           │ rtn addr │             │    0     │
           ├──────────┤             ├──────────┤
           │ RELDS    │             │          │
           │ rtn addr │             │    0     │
           ├──────────┤             ├──────────┤
           │ CHKPT    │             │          │
           │ rtn addr │             │    0     │
           ├──────────┤             ├──────────┤
           │ SEND     │             │          │
           │ rtn addr │             │    0     │
           └──────────┘             └──────────┘
```

Figure 2. FSIREQ Control Block Structure

METHOD OF OPERATION

There are no Method of Operation diagrams for this component.
However, the FSIREQ macro instruction has been included in this
section.

FSIREQ - JES FSI REQUEST MACRO INSTRUCTION

The functional subsystem (FSS) requests that the functional
subsystem interface (FSI) notifies JES that it, or the
functional subsystem application (FSA) is initialized and ready.
The FSIREQ macro instruction expands to an SSI call (code 53)
for the CONNECT/DISCONNECT services. The FSIREQ macro
instruction expands to a branch and link register (BALR)
instruction for all other services.

INPUT

The FSIREQ macro instruction is written as follows:

```
FSIREQ
     [REQUEST=requested service]
     [,TARGET=JES or FSS]
     [,PARM=address of the FSI parameter list (FSIP)]
     [,FSID=functional subsystem identifier]
     [,MODE=PC]
```

All of the parameters on the FSIREQ macro instruction are
optional. However, if none of the parameters are specified, the
address of the FSIP must be provided in register 1, and other
information must be provided in the FSIP. The parameters are:

REQUEST The requested service, specified as a register value or
         as one of the symbolic names listed below. If REQUEST
         is not specified, one of the equated values for the
         requested service must previously have been stored in
         the FSIFUNC field in the FSI parameter list. The
         REQUEST parameter must be specified, however, for
         connect and disconnect services. The valid REQUEST
         values are:

   FSICON   CONNECT communicates the initiated status of
              the FSS/FSA to JES and identifies the FSIREQ
              routines.

   FSIDCON   DISCONNECT communicates the terminated status
              of the FSS/FSA to JES.

   FSIGDS   GETDS gets an existing data set.

   FSIRDS   RELDS releases a data set.

   FSIGREC   GETREC gets logical records.

   FSIFREC   FREEREC frees logical records.

   FSICKPT   CHKPT writes spool data set checkpoint
              information.

   FSISEND   SEND sends a response to JES.

   FSIORDER   ORDER sends an order to the FSS/FSA.

   FSIPOST   POST notifies the FSA that JES is ready to
              accept a GETDS request.

TARGET   The subsystem to receive control, either JES or FSS.
          If TARGET is not specified, JES is the default.

PARM   Address of the FSI parameter list (FSIP), which
          contains the data to be used by the requested service.
          If PARM is not specified, the address of FSIP must
          previously have been stored in register 1.

FSID   Value that uniquely identifies the FSS/FSA. If FSID is
          not specified, it must previously have been stored in
          the FSIFSID field in the FSI parameter list.

MODE   PC, if the expanded code runs under a cross memory PC
          routine. If MODE is not specified, FSIREQ does not run
          in cross memory mode. This parameter is only valid for
          JES2.

JES issues only the order and post requests. The FSS/FSA issues
all other requests.

OUTPUT

For a connect or a disconnect request, the FSIREQ macro
generates a code that invokes an SSI request. For all other
requests, FSIREQ invokes the FSI routine whose address is in an
FSCT field.

ASSOCIATED CONTROL BLOCKS

Common name	Macro name	Description
ASCB	IHAASCB	Address space control block
ASVT	IHAASVT	Address space vector table
ASXB	IHAASXB	Address space extension block
CHK	IAZCHK	JES checkpoint record area
CVT	CVT	Communications vector table
FSCT	IAZFSCT	Functional subsystem control table
FSIP	IAZFSIP	FSI parameter list
FSVT	IAZFSVT	Functional subsystem vector table
IDX	IAZIDX	Index table
JESCT	IEFJESCT	JES communication table
JSPA	IAZJSPA	JES job separator page data area
PSA	IHAPSA	Prefixed save area
RESPA	IAZRESPA	Response area
SSIB	IEFJSSIB	Subsystem identification block
SSOB	IEFJSSOB	Subsystem options block

For connect and disconnect requests, the caller must have access
to CVT, the FSIP, the JESCT, the SSIB, and the SSOB.

Note: The caller must also have obtained storage for the SSIB
and the SSOB prior to issuing the FSIREQ macro instruction.

For all other requests, the caller must have access to the ASCB,
the ASXB, the FSCT, the FSVT, and the FSIP. If PC mode is
specified, the caller must have access to the ASVT; if PC mode
is not specified, the caller must have access to the PSA.

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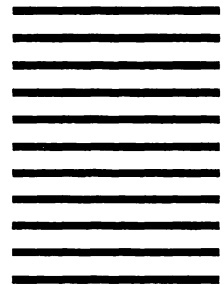Reader's Comment Form

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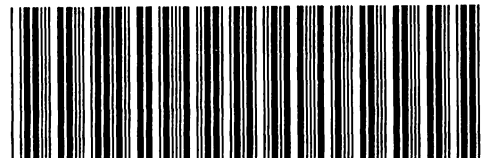Poughkeepsie, New York 12602

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