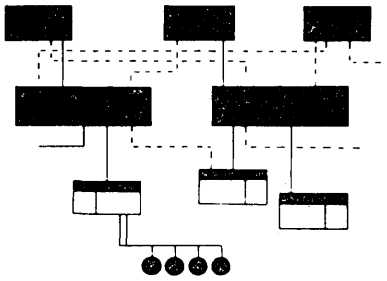
GE-625/635 GECOS-III System Input

Information Systems

Information Systems Equipment

SOFTWARE MAINTENANCE DOCUMENT

GET!



GENERAL ELECTRIC

CPB-1490

CPB-1490

GE-625/635 GECOS-III System Input

SOFTWARE MAINTENANCE DOCUMENT

May 1968

INFORMATION SYSTEMS

GENERAL ELECTRIC

PREFACE

This manual describes the implementation of the system input modules for the GE-625/635 Comprehensive Operating Supervisor (GECOS-III).

Additional software maintenance documents are as follows:

GE-625/635 GECOS-III Introduction and System Tables, CPB-1488

GE-625/635 GECOS-III Startup, CPB-1489

GE-625/635 GECOS-III Dispatcher and Peripheral Allocation, CPB-1491

GE-625/635 GECOS-III Rollcall, Core Allocation, Operator Interface, CPB-1492

GE-625/635 GECOS-III Fault Processing and Service MME's, CPB-1493

GE-625/635 GECOS-III I/O Supervision, CPB-1494

GE-625/635 GECOS-III Exception Processing, CPB-1495

GE-625/635 GECOS-III Termination and System Output, CPB-1496

GE-625/635 GECOS-III File System Maintenance, CPB-1497

GE-625/635 GECOS-III Utility Routines, CPB-1498

GE-625/635 GECOS-III Comprehensive Index and Glossary, CPB-1499

GE-625/635 GECOS-III Flowcharts, CPB-1500

GE-625/635 GECOS-III Time-Sharing System, CPB-1501

This manual was produced using the General Electric Remote Access Editing System (RAES). RAES is a time-shared, disc-resident storage and retrieval system with text-editing and manuscript formatting capabilities. The contents of the manual were entered into RAES from a remote terminal keyboard, edited using the system editing language, and formatted by RAES on reproduction masters.

The index was produced using a computer-assisted remote access indexing system. This system produces an index using source strings delimited at manuscript input time.

Suggestions and criticisms relative to form, content, purpose, or use of this manual are invited. Comments may be sent on the Document Review Sheet in the back of this manual or may be addressed directly to Documentation Standards and Publications, C-78, Processor Equipment Department, General Electric Company, 13430 North Black Canyon Highway, Phoenix, Arizona 85029.

© 1968 by General Electric Company

(1M 5-68)
CPB-1490

CONTENTS

1. INTRODUCTION TO SYSTEM INPUT 1

2. LOCAL SYSTEM INPUT MODULES 3

GEIN Processor (.MGEIN) 5
- Initialization Routine, INICR (EP1) 6
- Check For BCD Input, BCD 8
- Check For NonBCD Input, NOBCD 10
- Check For EOF And Process, EOF 12
- Write Record in Output File, WTREC 13
- Prepare For Next Record, NEXT 15
- Process Next Buffer, NXTBF 16
- Process ENDJOB Accounting, END 17
- Type Typewriter Message, TYPE2 18
- Start to Read Control Cards, START..... 19
- Build PAT Pointers, BDPAT 20

Card Reader Module (.MGENA) 21
- Initialize Card Reader, BEGIN 22
- Initiate Card Read, READ 23
- Courtesy Call From Read, CCALL 24
- Abort Job And Exit, QUIT 25

Disc/Drum Module (.MGENB) 27

IMCV Tape Module (.MGENC) 28

3. Remote GEIN

Remote GEIN Module (.MRGIN) 29
- Entry Routine, ENT 31
- Look For New Job Requests, LOOK 33
- Courtesy Call 1 Routine, CC1 35
- Courtesy Call 2 Routine, CC2 37
- Courtesy Call 3 Routine, CC3 39
- Request Links From Allocator, LINKAL 41
- Build MME GEROUT Call, MMGRT 43
- Release Links, RELS 45
- Build PAT Pointer And Body, RBPAT 47
- Typewriter Message Subroutine, TYME 48

GLOSSARY 51

INDEX 53

1. INTRODUCTION TO SYSTEM INPUT

Input to the GE-625/635 System operating in a GECOS-III environment (exclusive of Time-Sharing) may come from one of three input media:

- Card Reader(s)
- Shared Device (Disc/Drum)
- Input Media Conversion (IMCV) Tape(s)

In addition, inputs from shared devices (disc/drum) may have come from Time-Sharing System directly or from a remote terminal (GE-115, UNIVAC 1004, or any keyboard device) connected to GERTS II-30.

All inputs from the three input media into GECOS-III are controlled by a group of four modules collectively referred to as GEIN:

- .MGEIN GEIN Processor
- .MGENA Card Reader GEIN
- .MGENB Disc/Drum GEIN
- .MGENC IMCV Magnetic Tape GEIN

The combined package (.MGEIN plus either .MGENA, .MGENB or .MGENC) is loaded as one program into core. Communications between the GEIN Processor and one of the three media modules is through a series of static fault vectors.

Remote input from a remote device via a DATANET-30* communications processor is handled by one module referred to as Remote GEIN, specifically:

- .MRGIN Remote GEIN

The descriptions of the various modules that comprise local system input are covered in Chapter 2. Chapter 3 contains a description of remote system input. A Glossary and an Index are included for user convenience following Chapter 3.

---

*Registered Trademark of General Electric Company

2. LOCAL SYSTEM INPUT MODULES

Input into GECOS-III is under control of a group of modules collectively referred to as GEIN. GEIN consists of four modules, each of which is a privileged slave program:

- GEIN Processor (.MGEIN) - initiates and controls all input to core from one of the three input media. It calls in one of the media modules as an overlay, and the combined modules start reading input data.

- Card Reader GEIN (.MGENA) - reads cards from the card reader into its input buffers. Two 270-word input buffers are contained within .MGENA. The 270 words consist of the contents of ten cards of data at a time, using the IOC-C multi-card command. All input is in card image format.

- Disc/Drum GEIN (.MGENB) - reads input from the disc /drum into its two input buffers. The buffers within .MGENB are in standard system format (320-word blocks with logical records of the variable type). The first block contains the proper pointers and control words to the remaining data. Input contained on the disc/drum may have come from Remote GEIN and a remote terminal, or the Time-Sharing System. Remote input of this type is considered remote batch, as opposed to the conversational type of input controlled by the GECOS-III Time-Sharing System which is considered direct access.

- IMCV Magnetic Tape GEIN (.MGENC) - reads input from magnetic tape into its two input buffers in standard system format or in card image format.

As privileged slave programs, the four modules have the following special features:

- No time limit

- May enter master mode by use of an MME .EMM

- Cannot be aborted by GEPR

- Cannot be swapped out of core except in an extreme emergency or at its own request via the setting of the system alarm clock.

The GEIN Processor (.MGEIN) is enabled by GEPOP for any of the following reasons:

- A special interrupt is received from any non-allocated card reader

- An entry is made in GEPOP's queue for jobs on mass storage (disc/drum or other shared device)

- Input is from an IMCV magnetic tape

When enabled, .MGEIN is copied into core and given control. Then .MGEIN calls in .MGENA, .MGENB, or .MGENC as an overlay to itself and proceeds to initiate input from the allocated peripheral. The two modules (.MGEIN and one of the other three media modules) perform two main functions:

- Separate the input into jobs (distinguished by a $ SNUMB card)
- Create two files for each job:

  1. A file designated J* which contains the control cards describing the job and 1-word pointer records pointing to subfiles on the data file. The control card file becomes the beginning of the execution report for the job.

     If errors are encountered, appropriate comment records will be entered in the control card subfile and no additional data subfiles will be constructed. When building of the job file is complete, it is given to SYSOUT for printing and will not become a candidate for allocation.

  2. A file designated *J which contains the data subfiles for that job.

GEIN continues to build two files per job until it encounters an end-of-file condition. If each job is read in without error its files are turned over to the allocator and it becomes a candidate for allocation.

The structure of GEIN is such that the main module (GEIN Processor, .MGEIN) contains the majority of routines that are necessary for system input. These routines can serve all media modules and therefore the code does not have to be repeated. Communication between .MGEIN and the media modules is through static transfer vectors located immediately above the primary SYMDEF entry .GEIN. Within each media module are the subroutines to actually begin the reading of system input and control the two multiplexed input buffers. These routines begin at the same core locations for all three modules, but there are small differences in the routines based on the different input media.

When an end-of-file condition is encountered and all necessary housekeeping functions are complete, control is passed back to GEPOP and the core space occupied by GEIN becomes available to other programs.

Multiple copies of GEIN may be in execution at the same time, while the original resides within the GECOS-III file system, thereby increasing system input.

GEIN PROCESSOR (.MGEIN)

The GEIN Processor (.MGEIN) is the main GEIN module and controls local system input. Local system input is defined as that input originating from a card reader, disc/drum, or IMCV magnetic tape. Input from the disc or drum may have previously originated from a remote device communicating via the GERTS-II/30 program and the Remote GEIN processor module (.MRGIN) or the Time-Sharing System.

Within .MGEIN are a number of subroutines that are called to perform the necessary functions associated with system input, namely:

- BCD Check for BCD Input
- NOBCD Check for NonBCD Input
- EOF Check EOF and Process
- WTREC Write Record in Output File
- NXTBF Process Next Buffer
- NEXT Prepare for Next Record
- END Process ENDJOB Accounting
- TYPE2 Type Typewriter Message
- START Start to Read Control Cards
- BDPAT Build PAT Pointers

These are described on the pages following.

INICR (EP1)
.MGEIN

INITIALIZATION ROUTINE

INICR (EP1 of .MGEIN) initializes .MGEIN, determines input media, and calls the appropriate input module (.MGENA, .MGENB, or .MGENC).

PRECALLING SEQUENCE

Prior to entering INICR, the registers listed must contain the data indicated.

QU Number of the GEIN Processor (.MGEIN)

CALLING SEQUENCE

INICR is called from the .MPOP5 module, as a result of a special interrupt on the card reader, an IMCV typein by the operator, or an entry in GEPOP queue for disc/drum input:

8	16
.CALL	.MCAL1,2

OPERATING SYSTEM INTERACTION

No .STEMP storage is used.

ROUTINE RETURNS

None.

POSTCALLING SEQUENCE

None.

SUPPORTING INFORMATION

Programming Method

INICR is nonreentrant and written in floatable code.

Interrupts are not inhibited.

Storage

No internal temporary storage is used.

INICR occupies approximately 30 core storage locations.

Other Routines Used

.CALL Load Processing DCAL (EP2 of .MCAL1) to call appropriate input module.

BCD
.MGEIN

CHECK FOR BCD INPUT

BCD (.MGEIN) processes cards or card images classified as BCD by .MGENA, .MGENB, or .MGENC modules. If the COPY option is specified on the card, the card image is written directly to the *J file along with all $ control cards following this card. If the COPY option is not set, all $ control cards are checked for the following:

1. Activity defining $ control cards.
2. $ Loader cards to be written to the Loader Input file (R* file).
3. $ Control cards to be written to data files ($ ALTER).
4. $ File cards $ EXECUTE cards which are to be written to the R* file.
5. $ Control cards which need special attention, such as $ DATA, $ SELECT cards.

Any nonBCD cards are passed to the NOBCD (.MGEIN) routine. In addition, the BCD routine provides any transliteration requested by a $ INCODE card by a transfer to the subroutine required:

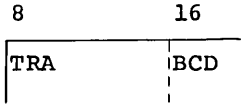
- TRIBF IBM FORTRAN Tranliteration
- TRIBC IBM COBOL Transliteration
- TRIBE IBM Extended Transliteration
- TRGE2 GE-225 Transliteration

PRECALLING SEQUENCE

None.

CALLING SEQUENCE

BCD is called from the .MGENA, .MGENB, or .MGENC (CCALL routine) modules, depending upon input media.



OPERATING SYSTEM INTERACTION

The following .STEMP storage is used: .STEMP+8 and .STEMP+9.

The .CRLAL gate is used when setting the program number in the .CRSNB table.

ROUTINE RETURNS

None.

POSTCALLING SEQUENCE

None.

SUPPORTING INFORMATION

Programming Method

BCD is nonreentrant. It is written in floatable code when in master mode and in nonfloatable code when in slave mode.

Storage

Internal temporary storage is used for scanning fields of $ control cards.

BCD occupies approximately 640 core storage locations.

Other Routines Used

Process Specific Device Request ENTRY (EP1 of .MALC2)
Set Alarm SCK (EP13 of .MDISP)
Process Call From GEIN (EP6 of .MSYOT)
Check For NonBCD Input NOBCD (.MGEIN)

NOBCD
.MGEIN

CHECK FOR NONBCD INPUT

NOBCD (.MGEIN) processes cards or card images classified as nonBCD by .MGENA, .MGENB, or .MGENC modules. Binary cards are passed directly to this routine from these input modules or from the BCD routine in .MGEIN. NOBCD then writes 14- or 27-word records to either the R* file or the *J file, depending upon the R* flag setting.

PRECALLING SEQUENCE

None.

CALLING SEQUENCE

NOBCD is called from BCD (.MGEIN) or from CCALL (.MGENA, .MGENB, or .MGENC, depending upon input media).

8	16
TRA	NOBCD

OPERATING SYSTEM INTERACTION

No .STEMP storage is used.

The .CRLAL gate is used when setting the program number in the .CRSNB table.

ROUTINE RETURNS

None.

POSTCALLING SEQUENCE

None.

SUPPORTING INFORMATION

Programming Method

NOBCD is nonreentrant. It is written in nonfloatable code.

Storage

No internal temporary storage is used.

NOBCD occupies approximately 24 core storage locations.

Other Routines Used

Check for BCD Format BCD (.MGEIN)
Set Alarm SCK (EP13 of .MDISP)
Process Call from GEIN GEIN (EP6 of .MSYOT)

EOF
.MGEIN

CHECK FOR EOF AND PROCESS

EOF (.MGEIN) processes end-of-file conditions encountered on the system input device.

PRECALLING SEQUENCE

None.

CALLING SEQUENCE

EOF is called from the .MGENA, .MGENB, or .MGENC modules.

8	16
TRA	EOF

OPERATING SYSTEM INTERACTION

The courtesy call routines (CCALL) of .MGENA, .MGENB, or .MGENC set control to EOF when an end-of-file condition is encountered on the input device. If a $ ENDJOB card was not encountered since the last $ SNUMB card, the J* and data files are closed. The job is then given to the Allocator.

ROUTINE RETURNS

Control is transferred to FINIS (.MGENA, .MGENB, or .MGENC).

POSTCALLING SEQUENCE

None.

SUPPORTING INFORMATION

Programming Method

EOF is nonreentrant. It is written in floatable code when in master mode and in nonfloatable code when in slave mode.

Storage

No internal temporary storage is used.

EOF occupies approximately 512 core storage locations.

Other Routines Used

Return Links DA01 (EP2 of .MALC5)
MME GEINOS Processor INOS (EP5 of .MIOS)

WRITE RECORD IN OUTPUT FILE

WTREC (.MGEIN) builds all output files in standard system format (logical records in 320-word blocks). When a block is filled, GR200 (.MGEIN) is called to actually do the physical write of the file.

PRECALLING SEQUENCE

None.

CALLING SEQUENCE

WTREC is called from the .MGENA, MGENB, and .MGENC modules.

8	16
TSX1	WTREC
ARG	Location FCB
ARG	Location Record
ZERO	Record Control Word (RCW)

OPERATING SYSTEM INTERACTION

No .STEMP storage is used.

No gates are used.

When a block (320 words) is filled, the GR200 subroutine (.MGEIN) is called to actually do the physical write of the file.

ROUTINE RETURNS

None.

POSTCALLING SEQUENCE

None.

SUPPORTING INFORMATION

Programming Method

WTREC is nonreentrant. It is written in nonfloatable code.

Storage

No internal temporary storage is used.

WTREC occupies approximately 512 core storage locations.

Other Routines Used

Relinquish RLC (EP4 of .MDISP)
MME GEMORE Processor MORE (.MMDRE)
MME GEINOS Processor INOS (EP5 of .MIOS)
Assign an I/O Entry QUEUE (EP4 of .MIOS)
Link I/O To End of QUEUE LINK (EP1 of .MIOS)
Process Call From GEIN GEIN (EP6 of .MSYOT)

PREPARE FOR NEXT RECORD

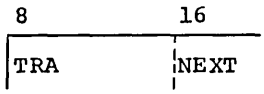
NEXT (.MGEIN) processes the next card in the input buffer.

PRECALLING SEQUENCE

None.

CALLING SEQUENCE

NEXT is called from within the .MGEIN module.



OPERATING SYSTEM INTERACTION

No .STEMP storage is used.

No gates are used.

ROUTINE RETURNS

None.

POSTCALLING SEQUENCE

None.

SUPPORTING INFORMATION

Programming Method

NEXT is nonreentrant. It is written in nonfloatable code.

Storage

No internal temporary storage is used.

NEXT occupies approximately 32 core storage locations.

Other Routines Used

None.

NXTBF
.MGEIN

PROCESS NEXT BUFFER

NXTBF (.MGEIN) processes the next buffer of input cards and issues a Read to the buffer just emptied.

PRECALLING SEQUENCE

None.

CALLING SEQUENCE

NXTBF is called from within the .MGEIN module and from .MGENA, .MGENB, or .MGENC.

8	16
TRA	NXTBF

OPERATING SYSTEM INTERACTION

No .STEMP storage is used.

No gates are used.

ROUTINE RETURNS

None.

POSTCALLING SEQUENCE

None.

SUPPORTING INFORMATION

Programming Method

NXTBF is nonreentrant. It is written in nonfloatable code.

Storage

No internal temporary storage is used.

NXTBF occupies approximately 40 core storage locations.

Other Routines Used

Initiate Card Read READ (.MGENA, .MGENB, or .MGENC)

PROCESS ENDJOB ACCOUNTING

END (.MGEIN) process end-of-job condition as determined by (1) $ ENDJOB, (2) $ SNUMB, or (3) EOF condition. END closes all open files and passes the job to the Allocator, if no error was detected in reading the job.

PRECALLING SEQUENCE

None.

CALLING SEQUENCE

END is called from within the .MGENA, .MGENB, or .MGENC modules.

8	16
TRA	END

OPERATING SYSTEM INTERACTION

No .STEMP storage is used.

No gates are used.

ROUTINE RETURNS

None.

POSTCALLING SEQUENCE

None.

SUPPORTING INFORMATION

Programming Method

END is nonreentrant. It is written in floatable code when in master mode and in nonfloatable code when in slave mode.

Storage

No internal temporary storage is used.

END occupies approximately 448 core storage locations.

Other Routines Used

Return Links DA01 (EP2 of .MALC5)
Process Call from GEIN GEIN (EP6 of .MSYOT)

TYPE2
.MGEIN

TYPE TYPEWRITER MESSAGE

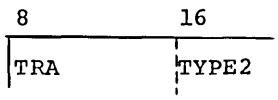
TYPE2 (.MGEIN) initiates a message to the operator on the typewriter and reads his reply. If no reply is required, TYPE4 is entered.

PRECALLING SEQUENCE

None.

CALLING SEQUENCE

TYPE2 is called from within the .MGEIN module.



OPERATING SYSTEM INTERACTION

No .STEMP storage is used.

No gates are used.

ROUTINE RETURNS

None.

POSTCALLING SEQUENCE

None.

SUPPORTING INFORMATION

Programming Method

TYPE2 is nonreentrant. It is written in floatable code when in master mode.

Storage

No internal temporary storage is used.

TYPE2 (and TYPE4) occupy approximately 26 core storage locations.

Other Routines Used

Assign an I/O Entry QUEUE (EP4 of .MIOS)
Master Message Processor ITYM (EP7 of .MIOS)
Roadblock GRD (EP2 of .MDISP)

START TO READ CONTROL CARDS

START (.MGEIN) processes the first job when it is ready to be processed.

PRECALLING SEQUENCE

None.

CALLING SEQUENCE

START is called from the BEGIN (.MGENA, .MGENB, or .MGENC).

8	16
TRA	START

OPERATING SYSTEM INTERACTION

No .STEMP storage is used.

No gates are used.

ROUTINE RETURNS

None.

POSTCALLING SEQUENCE

None.

SUPPORTING INFORMATION

Programming Method

START is nonreentrant. It is written in nonfloatable code.

Storage

No internal temporary storage is used.

START occupies approximately 32 core storage locations.

Other Routines Used

None.

BDPAT
.MGEIN

BUILD PAT POINTERS

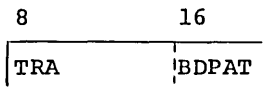
BDPAT (.MGEIN) constructs all Peripheral Assignment Table (PAT) pointers and PAT offsets in the slave service area of .MGEIN. It updates the number of PAT entries (.SNPAT) and the offset to next PAT body (.SPTBE).

PRECALLING SEQUENCE

None.

CALLING SEQUENCE

BDPAT is called from within .MGEIN.



OPERATING SYSTEM INTERACTION

No .STEMP storage is used

No gates are used.

ROUTINE RETURNS

None.

POSTCALLING SEQUENCE

None.

SUPPORTING INFORMATION

Programming Method

BDPAT is nonreentrant and written in floatable code.

Storage

No internal temporary storage is used.

BDPAT occupies approximately 13 core storage locations.

Other Routines Used

Write Record in Output File WTREC (.MGEIN)

CARD READER MODULE (.MGENA)

The .MGENA module is a privileged slave program overlay called by a copy of .MGEIN when the assigned system input device is a card reader. When .MGENA is loaded as an overlay to .MGEIN, it contains the appropriate I/O and error messages associated with the card reader.

Within .MGENA are a number of short subroutines associated with reading the cards from the card reader. The subroutines perform the following functions:

- BEGIN Initialize Card Reader
- READ Initiate Card Read
- CCALL Courtesy Call From READ
- QUIT Abort Job and Exit

Further details of each subroutine are given in the following pages.

BEGIN
.MGENA

INITIALIZE CARD READER

BEGIN (.MGENA) is given control by GECALL after .MGENA is loaded. This routine does the initialization for the assigned card reader such as building its PAT pointer and table, and priming the buffer by issuing the first read.

PRECALLING SEQUENCE

Prior to entering .MGENA, word 37 (octal) of the Slave Program Prefix of .MGEIN must contain an SCT pointer for a card reader.

CALLING SEQUENCE

BEGIN is called from the .MCALl module and is actually the primary SYMDEF entry point.

```
8         16
LDQ       .MGENA,DU
.CALL     .MCALl,2
```

OPERATING SYSTEM INTERACTION

None.

ROUTINE RETURNS

Return is to the START routine in .MGEIN.

POSTCALLING SEQUENCE

None.

SUPPORTING INFORMATION

Programming Method

BEGIN is nonreentrant. It is written in floatable code when in master mode and nonfloatable when in slave mode.

Storage

No internal temporary storage is used.

BEGIN occupies approximately 53 core storage locations.

Other Routines Used

None.

INITIATE CARD READ

READ (.MGENA) is a subroutine which swaps input buffers and issues the select to read n cards using the multirecord command of the IOC model C.

PRECALLING SEQUENCE

None.

CALLINGSEQUENCE

READ is called from within the .MGENA or the .MGEIN module as follows:

```
8       16
TSX1    READ
```

OPERATING SYSTEM INTERACTION

None.

ROUTINE RETURNS

Return (TRA 0,1).

POSTCALLING SEQUENCE

None.

SUPPORTING INFORMATION

Programming Method

READ is nonreentrant and written in nonfloatable code.

Storage

No internal temporary storage is used.

READ occupies approximately 317 core storage locations.

Other Routines Used

MME GEINOS Processor INOS (EP5 of .MIOS)

CCALL
.MGENA

COURTESY CALL FROM READ

CCALL (.MGENA) classifies all cards into the following categories:

1. BCD
2. NOBCD
3. Checksum error
4. EOF
5. QUIT condition
6. Validity check

It is called by .MIOS after each card read is completed.

PRECALLING SEQUENCE

None.

CALLING SEQUENCE

CCALL is called from within DSP(EP1) of the .MDISP module in the same manner as other programs. (See CPB-1491 for the description of how courtesy calls are answered.)

OPERATING SYSTEM INTERACTION

None.

POSTCALLING SEQUENCE

None.

SUPPORTING INFORMATION

Programming Method

CCALL is nonreentrant and written in nonfloatable code.

Storage

No internal temporary storage is used.

CCALL occupies approximately 151 core storage locations.

Other Routines Used

None.

ABORT JOB AND EXIT

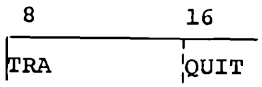
QUIT (.MGENA) releases all files and types a message to the operator telling him to restart the job which was in process when the error occurred.

PRECALLING SEQUENCE

None.

CALLING SEQUENCE

QUIT is called from within the .MGENA or .MGEIN modules.



OPERATING SYSTEM INTERACTION

No .STEMP storage is used.

The .CRLAL gate is shut when zeroing out the SNUMB table for the job which was in progress.

The .CRPOQ gate is used when making an entry into .MPOP5 queue so the assigned card reader will be GESPECed.

ROUTINE RETURNS

No return, job is terminated.

POSTCALLING SEQUENCE

None.

SUPPORTING INFORMATION

Programming Method

QUIT is nonreentrant and is written in floatable code when in master mode and in nonfloatable code when in slave mode.

Interrupts are inhibited when the .CRPOQ gate is shut.

Storage

No internal temporary storage is used.

QUIT occupies approximately 25 core storage locations.

Other Routines Used

Release Files in PAT (.MALC1)
Process Call From GEIN GEIN (EP6 of .MSYOT)
Enable Program ENB (EP6 of .MDISP)
Relinquish Control Until Program Enabled DSCNT (EP11 of .MDISP)

DISC/DRUM MODULE (.MGENB)

The .MGENB module is a privileged slave program called by a copy of .MGEIN when its assigned system input device is a disc or drum. When .MGENB is loaded as an overlay in .MGEIN, it contains the appropriate I/O and error messages associated with shared devices.

Within .MGENB are a number of short subroutines associated with reading from the disc/drum. These subroutines are the same as those within .MGENA but are tailored for shared devices (disc/drum). As such, the descriptions of these routines are included within .MGENA and will not be repeated. The routines are:

- BEGIN Initialize Disc/Drum
- READ Initiate Disc/Drum Read
- CCALL Courtesy Call From READ
- QUIT Abort Job and Exit

IMCV TAPE MODULE (.MGENC)

The .MGENC module is a privileged slave program called by a copy of .MGEIN when its assigned system input device is an IMCV magnetic tape. When .MGENC is loaded as an overlay in .MGEIN it contains the appropriate I/O and error messages associated with magnetic tape.

Within .MGENC are a number of short subroutines associated with reading from magnetic tape. These subroutines are the same as those within .MGENA but are tailored for magnetic tape input. As such, the descriptions of these routines are included within .MGENA and will not be repeated. The routines are:

- BEGIN Initialize IMCV Tape
- READ Initiate IMCV Tape Read
- CCALL Courtesy Call From READ
- QUIT Abort Job and Exit

3. REMOTE GEIN

The purpose of remote GEIN is to enter programs and data files into the batch processing system under control of GECOS-III. This is done from n remote terminals (GE-115, UNIVAC 1004, or other keyboard device) via GERTS-II / 30 and up to three DATANET-30 communications processors.

Remote GEIN is composed of one module (.MRGIN) which is enabled by the Remote Interrupt Handler (.MDNET) whenever a request ("Accept Input") for a new job input is received. A new job request is forwarded to .MRGIN via the Remote GEIN queue (.CRRGQ) which contains n entries of two words each. Each entry request contains the associated station identification, terminal type, DATANET-30 processor index and ICM operation code.

The criteria for accepting a new remote job request is:

- Associated station identification not identical to a current user
- An available user entry in the table T1
- An available program number to assign
- Availability of at least one LINK (disc/drum)
- Availability of PAT pointer and entry into .MRGIN's SSA

If these criteria are satisfied, the PAT entry is initialized with the SCT pointer, initial link strings, and further parameters related to the particular job. When the functions are not satisfied, a "Terminate Input" message is returned to the DATANET-30 communications processor.

REMOTE GEIN MODULE (.MRGIN)

The Remote GEIN module (.MRGIN) is a privileged slave program not normally residing in core memory. It is loaded when needed at the request of .MDNET via an entry in GEPOP's queue. .MRGIN has two main functions.

1. Buffering of data blocks coming in from the DATANET-30 communications processors, and storing them in random access memory (disc/drum). Three 320-word data buffers are included within .MRGIN.

2. Multiplexing job source input from n remote terminals connected to from 1-3 DATANET-30 communications processors.

The primary SYMDEF entry point (.MRGIN) is the only entry point into remote GEIN. However within remote GEIN are a number of important subroutines to perform the functions associated with a remote input. These subroutines are:

- ENT Entry Routine
- LOOK Look for New Job Requests
- CC1 Courtesy Call 1 Routine
- CC2 Courtesy Call 2 Routine

- CC3 Courtesy Call 3 Routine
- LINKAL Request Links from Allocator
- MMRGT Build MME GEROUT Call
- RELS Release Links
- RBPAT Build PAT Pointer and Body
- TYME Typewriter Message Subroutine

Descriptions of these subroutines follow the .MRGIN module description.

ENTRY ROUTINE

ENT (.MRGIN) is the first routine executed in .MRGIN whether .MRGIN is called into memory initially or swapped in by the Dispatcher. ENT starts the chain of courtesy calls that drive .MRGIN after the initiation and execution of the subroutine LOOK. Because it is necessary for the subroutine LOOK to be completed prior to initiating the chain of courtesy calls, the ENT routine sets the courtesy call bit in .STATE of .MRGIN's SSA until LOOK finishes. ENT receives control:

- When enabled by .MDNET to process a new job request
- After every courtesy call ends (MME GEENDC)

PRECALLING SEQUENCE

None.

CALLING SEQUENCE

ENT is called from the .MDNET module by .MDNET placing an entry in GEPOP's queue calling .MRGIN.

OPERATING SYSTEM INTERACTION

No .STEMP storage is used.

The .CRRGQ gate to remote GEIN is used when the ENT looks for the last time in the remote GEIN queue to see if there is a new job request. Shutting the gate prevents .MDNET from disturbing the status of the tally words until .MRGIN is finished, at which time the gate is opened.

ROUTINE RETURNS

Return is to EN2 of .MRGIN

POSTCALLING SEQUENCE

None.

SUPPORTING INFORMATION

Programming Method

ENT is nonreentrant and written in floatable code.

ENT
.MRGIN

Storage

No internal temporary storage is used.

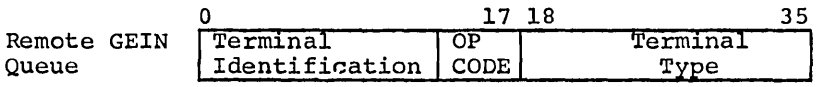
ENT occupies approximately 24 core storage locations.

Other Routines Used

Relinquish Control Until Program Enabled DSCNT (EP11 of .MDISP).

LOOK FOR NEW JOB REQUESTS

LOOK (.MRGIN) looks for new job requests in GEPOP's queue and processes the new requests from the information contained in the queue. When present, this information is formatted as follows:



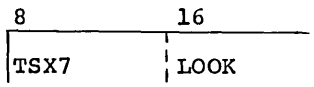
PRECALLING SEQUENCE

Prior to entering LOOK, the registers listed must contain the data indicated:

X0 DATANET-30 Communications Processor Index
X3 Address of T1 entry
X4 Offset to PAT entry

CALLING SEQUENCE

LOOK is called from any one of the following subroutines: ENT, CC1, or CC2.



OPERATING SYSTEM INTERACTION

No .STEMP storage is used.

The following gates are used:

.CRRGQ — This gate is shut when LOOK searches the queue for information on the new job and ensures that the tallys in the queue are not disturbed.

.CRLAL-1 — This gate is shut when the .CRSNB table is being searched for an available program number when a job is turned over to .MRGIN.

ROUTINE RETURNS

Return is to the calling program.

POSTCALLING SEQUENCE

None.

SUPPORTING INFORMATION

Programming Method

LOOK is reentrant and written in floatable code when in Master mode.

Storage

No internal temporary storage is used.

LOOK occupies approximately 226 core storage locations.

Other Routines Used

Process Specific Device Request ENTRY (EP1 of MALC2) to obtain links and an SCT pointer for a new job.

COURTESY CALL 1 ROUTINE

CC1 (.MRGIN) initiates a write to the disc/drum of the associated job source. The write operation is accomplished using a MME GEINOS which also specifies Courtesy Call 2 (CC2). CC1 responds with an "Input Accepted" ICM if there is an available input buffer.

If the job input buffer being processed by CC1 is the first received from the remote terminal, the $SNUMB card image is isolated to confirm its presence, and to assure that the system (.CRSNB) is not processing jobs with identical SNUMB values.

When identical SNUMBs are detected, CC1 rejects the job input with a "Terminate Input" ICM, accompanied with a code (DUP), to be printed at the remote terminal.

CC1 is executed as a result of a MME GEROUT specifying an input buffer address, status return pointer and courtesy call.

PRECALLING SEQUENCE

None.

CALLING SEQUENCE

CC1 is called from within DSP(EP1 of the .MDISP module in the same manner as other programs. (See CPB-1491 for the description of how courtesy calls are answered.)

OPERATING SYSTEM INTERACTION

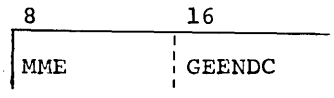
No .STEMP storage is used.

The following gate is used:

The .CRLAL-1 gate is shut when searching the .CRSNB table. The search is made to compare the value of the operand field of the $ SNUMB card, isolated by CC1, with existing SNUMBs in the table.

ROUTINE RETURNS

Return is to .MDISP by:



POSTCALLING SEQUENCE

None.

SUPPORTING INFORMATION

Programming Method

CCl is reentrant and written in floatable code when in master mode.

Storage

No internal temporary storage is used.

CCl occupies approximately 236 core storage locations.

Other Routines Used

None.

COURTESY CALL 2 ROUTINE

CC2 (.MRGIN) confirms normal completion of the I/O operation when the disc/drum terminates, releases the output buffer, and uses the available buffer for any DATANET-30 processor waiting for a response from :MRGIN.

It also examines the last operation code received for the job whose disc/drum I/O terminated. If the operation code is an "Accept Input, Last of Current SNUMB" (26 octal), the output buffer is used to write the PAT entry associated with the job into the first 320-word block of the job source file.

CC2 is executed following termination of a MME GEINOS for writing the last block of job source received from the DATANET-30. Control is received at an entry in table B(TB) where a TSX2 CC2 or TSX2 CC2X is encountered. X2 then contains the relative address of the proper TB entry associated with the write command.

PRECALLING SEQUENCE

None.

CALLING SEQUENCE

CC2/CC2X is called from table TB in the .MRGIN module as a result of a MME GEINOS that specified a courtesy call.

8	16	
TSX2	CC2	Termination of write of all but last block
TSX2	CC2X	Termination of write of last block

OPERATING SYSTEM INTERACTION

No .STEMP storage is used.

No gates are used.

ROUTINE RETURNS

Return is to .MDISP by:

8	16
MME	GEENDC

POSTCALLING SEQUENCE

None.

SUPPORTING INFORMATION

Programming Method

CC2 is nonreentrant and written in floatable code when in master mode.

Storage

No internal temporary storage is used.

CC2 occupies approximately 142 core storage locations.

Other Routines Used

None.

COURTESY CALL 3 ROUTINE

CC3 (.MRGIN) is dispatched when the PAT entry write initiated by CC2 finishes. CC3 requests the enabling of GEIN to process the job source file via a request passed to GEPOP and the GEPOP queue. The job file SCT pointer and starting link number is included in the GEPOP queue. CC3 then re-initializes .MRGIN parameters for the job, and tries to use the buffer (just used to write the PAT entry and released) to respond to any DATANET-30 which may be waiting.

PRECALLING SEQUENCE

Prior to entering CC3 the register listed must contain the data indicated:

X2 Slave relative address of write buffer's associated TB entry

CALLING SEQUENCE

CC3 is called from table TB in the .MRGIN module as a result of a MME GEINOS that specified a courtesy call.

8	16
TSX2 return	CC3

OPERATING SYSTEM INTERACTION

No .STEMP storage is used.

The .CRPOQ gate is shut while .MRGIN places an entry in GEPOP's queue requesting GEPOP to enable GEIN.

ROUTINE RETURNS

Return (TRA CC2A) Return is to the location following the transfer.

8	16
TRA	CC2A

POSTCALLING SEQUENCE

None.

SUPPORTING INFORMATION

Programming Method

CC3 is nonreentrant and written in floatable code when in master mode.

Interrupts are inhibited when an entry is being prepared and inserted in GEPOP's queue to enable GEIN.

Storage

No internal temporary storage is used.

CC3 occupies approximately 113 core storage locations.

Other Routines Used

Enable Program ENB (EP6 of .MDISP)

REQUEST LINKS FROM ALLOCATOR

LINKAL (.MRGIN) requests more links from the Peripheral Allocator.

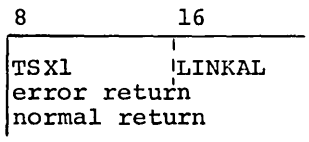
PRECALLING SEQUENCE

Prior to entering LINKAL, the registers listed must contain the data indicated:

X0 Address of T1+1 entry
X1 Return address
X2 Number of link strings in PAT
X3 Number of link strings required
X4 Offset to PAT entry

CALLING SEQUENCE

LINKAL is called from CCl of the .MRGIN module.



OPERATING SYSTEM INTERACTION

.STEMP+8 is used to hold the effective address of the links strings obtained from the allocator.

No gates are used.

ROUTINE RETURNS

Return (TRA 0, 1) Error return to location following the call

Return (TRA 1, 1) Normal return to location +1 following the call.

POSTCALLING SEQUENCE

None.

SUPPORTING INFORMATION

Programming Method

LINKAL is nonreentrant and written in floatable code when in master mode.

Interrupts are not inhibited.

Storage

No internal temporary storage is used.

LINKAL occupies approximately 106 core storage locations.

Other Routines Used

Provide additional Links CQ00 (EP3 of MALC5) to obtain one more link string.

Provide Contiguous Links CA00 (EP4 of .MACL5) to obtain n links in the form of one or two link strings.

BUILD MME GEROUT CALL

MMGRT (.MRGIN) builds the proper calling sequence to a MME GEROUT for an input buffer assignment, if a buffer is requested, and initializes the remaining parameters.

PRECALLING SEQUENCE

Prior to entering MMGRT, the registers listed must contain the data indicated:

X0 DATANET-30 processor index

X5 MME GEROUT operation code, where:
- 10 - Input accepted, last block of current job
- 11 - Terminate input
- 12 - Input accepted

X6 Zero, no input buffer is to be assigned. Nonzero, assign an input buffer to MME GEROUT calling sequence

X7 Calling address plus 1

CALLING SEQUENCE

MMGRT is called from within the .MRGIN module.

8	16
TSX7 return	MMGRT

OPERATING SYSTEM INTERACTION

None.

ROUTINE RETURNS

Return is to calling program after completion of MME GEROUT.

POSTCALLING SEQUENCE

None.

SUPPORTING INFORMATION

Programming Method

MMGRT is reentrant and written in floatable code.

MMGRT
.MRGIN

Storage

No internal temporary storage is used.

MMGRT occupies approximately 41 core storage locations.

Other Routines Used

None.

RELEASE LINKS

RELS (.MRGIN) is a routine to release links for entries in table T1 because of errors that force .MRGIN to terminate input.

PRECALLING SEQUENCE

Prior to entering RELS the registers listed must contain the data indicated:

X1 Return address
X3 Address of T1 entry

CALLING SEQUENCE

RELS is called from within the .MRGIN module.

```
8          16
|TSX1      |RELS
```

OPERATING SYSTEM INTERACTION

The top entry in the stack is the IC and I of the call for the return.

No .STEMP storage is used.

No gates are used.

ROUTINE RETURNS

Return is to calling program.

POSTCALLING SEQUENCE

To restore registers:

```
8      16
|LREG  |REGS
```

OPERATING SYSTEM INTERACTION

RELS is reentrant and written in floatable code.

RELS
.MRGIN

Storage

Internal temporary storage is used to save registers prior to releasing links via a call to .MALC5,2.

RELS occupies 21 octal core storage locations.

Other Routines Used

Return Links DA01 (EP2 of .MALC5)

BUILD PAT POINTER AND BODY

RBPAT (.MRGIN) builds a PAT pointer and PAT body.

PRECALLING SEQUENCE

Prior to entering RBPAT, the registers listed must contain the data indicated:

X1 Return address
X2 SCT address

CALLING SEQUENCE

RBPAT is called from the LOOK subroutine.

```
8          16
TSX1       RBPAT
error return
normal return
```

OPERATING SYSTEM INTERACTION

None.

ROUTINE RETURNS

Return (TMI 1,1) Error return. No room for PAT body and pointer.

Return (TRA 2,1) Normal return when enough room to build PAT body and pointer.

POSTCALLING SEQUENCE

Programming Method

RBPAT is reentrant and written in floatable code.

Storage

No internal temporary storage is used.

RBPAT occupies approximately 23 core storage locations.

Other Routines Used

None.

TYME .MRGIN

TYPEWRITER MESSAGE SUBROUTINE

TYME (.MRGIN) types error messages on the GE-625/635 console to warn the operator of remote input termination.

PRECALLING SEQUENCE

Prior to entering TYME, the registers listed must contain the data indicated:

```
X0  Contains return address
X4  Defines error code, where:
       00 - Disc/Drum errors
       01 - No more links
       02 - Missing $ SNUMB
       03 - Duplicate $ SNUMB
       04 - Program number unavailable
```

CALLING SEQUENCE

TYME is called from various points within .MRGIN where errors are detected.

```
8          16
TSX1       TYME
return
```

OPERATING SYSTEM INTERACTION

None.

ROUTINE RETURNS

Return is to the instruction following the call to TYME.

POSTCALLING SEQUENCE

None.

SUPPORTING INFORMATION

Programming Method

TYME is reentrant and written in floatable code when in master mode.

Storage

Internal temporary storage is used for:

Terminate reason	(four words)
Words for IOS	(two words)
Status return	(two words)
Station I.D. and Terminal Type	(one word)

TYME occupies approximately 80 core storage locations.

Other Routines Used

Relinquish RELC (EP4 of .MDISP)
Assign an I/O Entry QUEUE (EP4 of .MIOS)
Master Message Processor ITYM (EP7 of .MIOS)

GLOSSARY

FCB	File control block
J*	Job control file containing the control cards describing the job and 1-word pointer records pointing to the subfiles on the data file (*J). The J* file becomes the beginning of the execution report for the job.
PAT	Peripheral Assignment Table
R*	Loader (GELOAD) Input file
SCT	System Configuration Table
*J	File containing the data subfiles for a job
.CRRGO	Remote GEIN input queue containing n entries of two words each
.SNPAT	Location containing the number of PAT entries for a job
.SPTBE	Location containing the offset to the next PAT body

INDEX

ABORT
ABORT JOB AND EXIT 24
QUIT Abort Job and Exit 26
QUIT Abort Job and Exit 27

ACCEPTING
accepting a new remote job 28

ACCOUNTING
PROCESS ENDJOB ACCOUNTING 16

ALARM
Set Alarm SCK 8
Set Alarm SCK 10

ALLOCATOR
REQUEST LINKS FROM ALLOCATOR 40

ASSIGN
Assign an I/O Entry QUEUE 13
Assign an I/O Entry QUEUE 17
Assign an I/O Entry QUEUE 48

ASSIGNMENT
Peripheral Assignment Table (PAT) 19

BCD
CHECK FOR BCD INPUT 8
BCD (.MGEIN) 8
Check for BCD Format BCD 10
Check for BCD Format BCD 10
BCD 23

BDPAT
BDPAT (.MGEIN) 19

BEGIN
BEGIN (.MGENA) 21
BEGIN Initialize Disc/Drum 26
BEGIN Initialize IMCV Tape 27

BUFFER
PROCESS NEXT BUFFER 15

BUILD
BUILD PAT POINTERS 19
BUILD MME GEROUT CALL 42
BUILD PAT POINTER AND BODY 46

CA00
Provide Contiguous Links CA00 41

CALL
Process Call From GEIN 8
Process Call from GEIN GEIN 10
Process Call From GEIN GEIN 13
Process Call from GEIN 16
COURTESY CALL FROM READ 23
Process Call From GEIN GEIN 25
CCALL Courtesy Call From READ 26
CCALL Courtesy Call From READ 27
COURTESY CALL 1 ROUTINE 34
COURTESY CALL 2 ROUTINE 36
COURTESY CALL 3 ROUTINE 38
BUILD MME GEROUT CALL 42

CARD
Card Reader GEIN (.MGENA) 3
Initiate Card Read READ 15
CARD READER GEIN (.MGENA) 20
INITIALIZE CARD READER 21
INITIATE CARD READ 22

CARDS
START TO READ CONTROL CARDS 18

CC1
CC1 (.MRGIN) 34

CC2
CC2 (.MRGIN) 36

CC3
CC3 (.MRGIN) 38

CCALL
CCALL (.MGENA) 23
CCALL Courtesy Call From READ 26
CCALL Courtesy Call From READ 27

CHECK
CHECK FOR BCD INPUT 8
Check For NonBCD Input NOBCD 8
CHECK FOR NONBCD INPUT 9
Check for BCD Format BCD 10
CHECK FOR EOF AND PROCESS 11
Validity check 23

CHECKSUM
Checksum error 23

COBOL
TRIBC IBM COBOL Transliteration 8

CONTROL
START TO READ CONTROL CARDS 18
Relinquish Control Until Program Enabled DSCNT 25
Relinquish Control Until Program Enabled DSCNT 31

COPY
COPY option 8

COURTESY
COURTESY CALL FROM READ 23
CCALL Courtesy Call From READ 26
CCALL Courtesy Call From READ 27
COURTESY CALL 1 ROUTINE 34
COURTESY CALL 2 ROUTINE 36
COURTESY CALL 3 ROUTINE 38

CQ00
Provide Additional Links CQ00 41

DA01
Return Links DA01 11
Return Links DA01 16
Return Links DA01 45

DCAL
.CALL Load Processing DCAL 7

DEVICE
Process Specific Device Request ENTRY 8
Process Specific Device Request ENTRY 33

DISC/DRUM
Disc/Drum GEIN (.MGENB) 3
DISC/DRUM GEIN (.MGENB) 26
BEGIN Initialize Disc/Drum 26
READ Initiate Disc/Drum Read 26

DSCNT
Relinquish Control Until Program Enabled DSCNT 25
Relinquish Control Until Program Enabled DSCNT 31

ENABLE
Enable Program ENB 25
Enable Program ENB 39

ENABLED
Relinquish Control Until Program Enabled DSCNT 25
Relinquish Control Until Program Enabled DSCNT 31

ENB
Enable Program ENB 25
Enable Program ENB 39

ENDJOB
PROCESS ENDJOB ACCOUNTING 16

ENT
ENT (.MRGIN) 30

ENTRY
Process Specific Device Request ENTRY 8
Assign an I/O Entry QUEUE 13
Assign an I/O Entry QUEUE 17
ENTRY ROUTINE 30
Process Specific Device Request ENTRY 33
Assign an I/O Entry QUEUE 48

EOF
CHECK FOR EOF AND PROCESS 11
EOF (.MGEIN) 11
EOF 23

ERROR
Checksum error 23

EXIT
ABORT JOB AND EXIT 24
QUIT Abort Job and Exit 26
QUIT Abort Job and Exit 27

FILE
Loader Input file (R* file) 8
Loader Input file (R* file) 8
WRITE RECORD IN OUTPUT FILE 12
Write Record in Output File WTREC 19

FILES
Release Files in PAT RELS 25

FORMAT
Check for BCD Format BCD 10
standard system format 12

FORTRAN
TRIBF IBM FORTRAN Transliteration 8

GATE
.CRLAL gate 24
.CRPOQ gate 24
.CRPOQ gate 25
.CRRGQ gate 30
.CRLAL-1 gate 34
.CRPGQ gate 38

GEIN
GEIN 1
Remote GEIN 1
GEIN Processor (.MGEIN) 3
Card Reader GEIN (.MGENA) 3
Disc/Drum GEIN (.MGENB) 3
IMCV Magnetic Tape GEIN (.MGENC) 3
GEIN PROCESSOR (.MGEIN) 5
Process Call From GEIN 8
Process Call from GEIN GEIN 10
Process Call from GEIN GEIN 10
Process Call From GEIN GEIN 13
Process Call From GEIN GEIN 13
Process Call from GEIN 16
CARD READER GEIN (.MGENA) 20
Process Call From GEIN GEIN 25
DISC/DRUM GEIN (.MGENB) 26
IMCV TAPE GEIN (.MGENC) 27
REMOTE GEIN 28
Remote GEIN queue (.CRRGQ) 28
REMOTE GEIN MODULE (.MRGIN) 28

GEINOS
MME GEINOS Processor INOS 11
MME GEINOS Processor INOS 13
MME GEINOS Processor INOS 22

GEMORE
MME GEMORE Processor MORE 13

GEROUT
BUILD MME GEROUT CALL 42

GE-225
TRGE2 GE-225 Transliteration 8

GRD
Roadblock GRD 17

HANDLER
Remote Interrupt Handler (.MDNET) 28

IMCV
IMCV Magnetic Tape GEIN (.MGENC) 3
IMCV TAPE GEIN (.MGENC) 27
BEGIN Initialize IMCV Tape 27
READ Initiate IMCV Tape Read 27

INICR
INICR (EP1 of .MGEIN) 6

INITIALIZATION
INITIALIZATION ROUTINE 6

INITIALIZE
INITIALIZE CARD READER 21
BEGIN Initialize Disc/Drum 26
BEGIN Initialize IMCV Tape 27

INITIATE
Initiate Card Read READ 15
INITIATE CARD READ 22
READ Initiate Disc/Drum Read 26
READ Initiate IMCV Tape Read 27

INOS
MME GEINOS Processor INOS 11
MME GEINOS Processor INOS 13
MME GEINOS Processor INOS 22

INPUT
INTRODUCTION TO SYSTEM INPUT 1
LOCAL SYSTEM INPUT MODULES 3
CHECK FOR BCD INPUT 8
Loader Input file (R* file) 8
Check For NonBCD Input NOBCD 8
CHECK FOR NONBCD INPUT 9

INTERRUPT
Remote Interrupt Handler (.MDNET) 28

ITYM
Master Message Processor ITYM 17
Master Message Processor ITYM 48

I/O
Assign an I/O Entry QUEUE 13
Link I/O To End of QUEUE LINK 13
Assign an I/O Entry QUEUE 17
Assign an I/O Entry QUEUE 48

LINK
Link I/O To End of QUEUE LINK 13
Link I/O To End of QUEUE LINK 13

LINKAL
LINKAL (.MRGIN) 40

LINKS
Return Links DA01 11
Return Links DA01 16
REQUEST LINKS FROM ALLOCATOR 40
Provide Additional Links CQ00 41
Provide Contiguous Links CA00 41
RELEASE LINKS 44
Return Links DA01 45

LOAD
.CALL Load Processing DCAL 7

LOADER
Loader Input file (R* file) 8

LOCAL
LOCAL SYSTEM INPUT MODULES 3

LOOK
LOOK FOR NEW JOB REQUESTS 32
LOOK (.MRGIN) 32

MAGNETIC
IMCV Magnetic Tape GEIN (.MGENC) 3

MASTER
Master Message Processor ITYM 17
Master Message Processor ITYM 48

MESSAGE
TYPE TYPEWRITER MESSAGE 17
Master Message Processor ITYM 17
TYPEWRITER MESSAGE SUBROUTINE 47
Master Message Processor ITYM 48

MME
MME GEINOS Processor INOS 11
MME GEMORE Processor MORE 13
MME GEINOS Processor INOS 13
MME GEINOS Processor INOS 22
BUILD MME GEROUT CALL 42

MMGRT
MMGRT (.MRGIN) 42

MORE
MME GEMORE Processor MORE 13

NEXT
PREPARE FOR NEXT RECORD 14
NEXT (.MGEIN) 14
PROCESS NEXT BUFFER 15
offset to next PAT body (.SPTBE) 19

NOBCD
NOBCD (.MGEIN) 8
Check For NonBCD Input NOBCD 8
NOBCD (.MGEIN) 9
NOBCD 23

NONBCD
Check For NonBCD Input NOBCD 8
CHECK FOR NONBCD INPUT 9

NXTBF
NXTBF (.MGEIN) 15

OFFSET
offset to next PAT body (.SPTBE) 19

OPTION
COPY option 8

OUTPUT
WRITE RECORD IN OUTPUT FILE 12
Write Record in Output File WTREC 19

PAT
BUILD PAT POINTERS 19
Peripheral Assignmen t Table (PAT) 19
offset to next PAT body (.SPTBE) 19
Release Files in PAT RELS 25
BUILD PAT POINTER AND BODY 46

PERIPHERAL
Peripheral Assignment Table (PAT) 19

POINTER
BUILD PAT POINTER AND BODY 46

POINTERS
BUILD PAT POINTERS 19

PREPARE
PREPARE FOR NEXT RECORD 14

PROCESS
Process Specific Device Request ENTRY 8
Process Call From GEIN 8
Process Call From GEIN GEIN 10
CHECK FOR EOF AND PROCESS 11
Process Call From GEIN GEIN 13
PROCESS NEXT BUFFER 15
PROCESS ENDJOB ACCOUNTING 16
Process Call From GEIN 16
Process Call From GEIN GEIN 25
Process Specific Device Request ENTRY 33

PROCESSOR
GEIN Processor (.MGEIN) 3
GEIN PROCESSOR (.MGEIN) 5
MME GEINOS Processor INOS 11

PROCESSOR (continued)
MME GEMORE Processor MORE 13
MME GEINOS Processor INOS 13
Master Message Processor ITYM 17
MME GEINOS Processor INOS 22
Master Message Processor ITYM 48

PROGRAM
Enable Program ENB 25
Relinquish Control Until Program Enabled DSCNT 25
Relinquish Control Until Program Enabled DSCNT 31
Enable Program ENB 39

PROVIDE
Provide Additional Links CQ00 41
Provide Contiguous Links CA00 41

QUEUE
Assign an I/O Entry QUEUE 13
Link I/O To End of QUEUE LINK 13
Assign an I/O Entry QUEUE 17
Remote GEIN queue (.CRRCQ) 28
Assign an I/O Entry QUEUE 48

QUIT
QUIT condition 23
QUIT (.MGENA) 24
QUIT Abort Job and Exit 26
QUIT Abort Job and Exit 27

RBPAT
RBPAT (.MRGIN) 46

READ
Initiate Card Read READ 15
Initiate Card Read READ 15
START TO READ CONTROL CARDS 18
INITIATL CARD READ 22
READ (.MGENA) 22
COURTESY CALL FROM READ 23
READ Initiate Disc/Drum Read 26
READ Initiate Disc/Drum Read 26
CCALL Courtesy Call From READ 26
READ Initiate IMCV Tape Read 27
READ Initiate IMCV Tape Read 27
CCALL Courtesy Call From READ 27

READER
Card Reader GEIN (.MGENA) 3
CARD READER GEIN (.MGENA) 20
INITIALIZE CARD READER 21

RECORD
WRITE RECORD IN OUTPUT FILE 12
PREPARE FOR NEXT RECORD 14
Write Record in Output File WTREC 19

RELC
Relinquish RELC 48

RELEASE
Release Files in PAT RELS 25
RELEASE LINKS 44

RELINQUISH
Relinquish RLC 13
Relinquish Control Until Program Enabled DSCNT 25
Relinquish Control Until Program Enabled DSCNT 31
Relinquish RELC 48

RELS
Release Files in PAT RELS 25
RELS (.MRGIN) 44

REMOTE
Remote GEIN 1
REMOTE GEIN 28
Remote Interrupt Handler (.MDNET) 28
Remote GEIN queue (.CRRGQ) 28
accepting a new remote job 28
REMOTE GEIN MODULE (.MRGIN) 28

REQUEST
Process Specific Device Request ENTRY 8
Process Specific Device Request ENTRY 33
REQUEST LINKS FROM ALLOCATOR 40

REQUESTS
LOOK FOR NEW JOB REQUESTS 32

RETURN
Return Links DA01 11
Return Links DA01 16
Return Links DA01 45

RLC
Relinquish RLC 13

ROADBLOCK
Roadblock GRD 17

R*
Loader Input file (R* file) 8

SCK
Set Alarm SCK 8
Set Alarm SCK 10

SET
Set Alarm SCK 8
Set Alarm SCK 10

STANDARD
standard system format 12

START
START TO READ CONTROL CARDS 18
START (.MGEIN) 18

TABLE
.CRSNB table 8
.CRSNB table 9
Peripheral Assignment Table (PAT) 19
.CRSNB table 32

TAPE
IMCV Magnetic Tape GEIN (.MGENC) 3
IMCV TAPE GEIN (.MGENC) 27
BEGIN Initialize IMCV Tape 27
READ Initiate IMCV Tape Read 27

TRANSLITERATION
TRIBF IBM FORTRAN Transliteration 8
TRIBC IBM COBOL Transliteration 8
TRIBE IBM Extended Transliteration 8
TRGE2 GE-225 Transliteration 8

TRGE2
TRGE2 GE-225 Transliteration 8

TRIBC
TRIBC IBM COBOL Transliteration 8

TRIBE
TRIBE IBM Extended Transliteration 8

TRIBF
TRIBF IBM FORTRAN Transliteration 8

TYME
TYME (.MRGIN) 47

TYPE
TYPE TYPEWRITER MESSAGE 17

TYPE2
TYPE2 (.MGEIN) 17

TYPEWRITER
TYPE TYPEWRITER MESSAGE 17
TYPEWRITER MESSAGE SUBROUTINE 47

VALIDITY
Validity check 23

WRITE
WRITE RECORD IN OUTPUT FILE 12
Write Record in Output File WTREC 19

WTREC (.MGEIN) 12
Write Record in Output File WTREC 19

.CALL
.CALL Load Processing DCAL 7

.CRLAL
.CRLAL gate 24

.CRLAL-1
.CRLAL-1 gate 24
.CRLAL-1 gate 34

.CRPOQ
.CRPOQ gate 24
.CRPOQ gate 25
.CRPOQ gate 38

.CRRGQ
Remote GEIN queue (.CRRGQ) 28
.CRRGQ gate 30
.CRRGQ gate 32

. CRSNB
.CRSNB table 8
.CRSNB table 9
.CRSNB table 32

.MDNET
Remote Interrupt Handler (.MDNET) 28

.MGEIN
GEIN Processor (.MGEIN) 3
GEIN PROCESSOR (.MGEIN) 5
INICR (EP1 of .MGEIN) 6
BCD (.MGEIN) 8
NOBCD (.MGEIN) 8
NOBCD (.MGEIN) 9
EOF (.MGEIN) 11
WTREC (.MGEIN) 12
NEXT (.MGEIN) 14
NXTBF (.MGEIN) 15
END (.MGEIN) 16
TYPE2 (.MGEIN) 17
START (.MGEIN) 18
BDPAT (.MGEIN) 19

.MGENA
Card Reader GEIN (.MGENA) 3
CARD READER GEIN (.MGENA) 20
BEGIN (.MGENA) 21
READ (.MGENA) 22
CCALL (.MGENA) 23
QUIT (.MGENA) 24

.MGENB
Disc /Drum GEIN (.MGENB) 3
DISC/DRUM GEIN (.MGENB) 26

.MGENC
IMCV Magnetic Tape GEIN (.MGENC) 3
IMCV TAPE GEIN (.MGENC) 27

.MRGIN

REMOTE GEIN MODULE (.MRGIN)	28
ENT (.MRGIN)	30
LOOK (.MRGIN)	32
CC1 (.MRGIN)	34
CC2 (.MRGIN)	36
CC3 (.MRGIN)	38
LINKAL (.MRGIN)	40
MMGRT (.MRGIN)	42
RELS (.MRGIN)	44
RBPAT (.MRGIN)	46
TYME (.MRGIN)	47

.SPTBF

offset to next PAT body	19

Please cut along this line

DOCUMENT REVIEW SHEET

TITLE: GE-625/635 GECOS-III System Input

CPB #: 1490

From:

Name: _____

Position: _____

Address: _____

_____

Comments concerning this publication are solicited for use in improving future editions. Please provide any recommended additions, deletions, corrections, or other information you deem necessary for improving this manual. The following space is provided for your comments.

COMMENTS: _____

NO POSTAGE NECESSARY IF MAILED IN U.S.A.

Fold on two lines shown on reverse side, staple, and mail.

STAPLE

STAPLE

FOLD

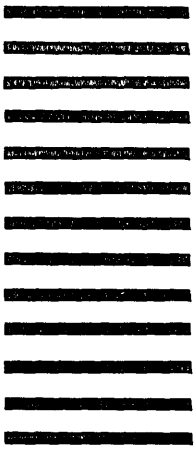
FIRST CLASS
PERMIT, No. 4332
PHOENIX, ARIZONA

BUSINESS REPLY MAIL
NO POSTAGE STAMP NECESSARY IF MAILED IN THE UNITED STATES

POSTAGE WILL BE PAID BY

GENERAL ELECTRIC COMPANY
PROCESSOR EQUIPMENT DEPARTMENT
13430 NORTH BLACK CANYON HIGHWAY
PHOENIX, ARIZONA 85029

ATTENTION: Program Documentation C-78
Systems and Processors Operation



FOLD

INFORMATION SYSTEMS

GENERAL ELECTRIC

LITHO U.S.A.