Title: RC3600 System Generation with DOMUS GEN User's Guide

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Abstract: This manual describes how to generate program magnetic tapes, flexible discs, paper tapes and card decks with the DOMUS utility system GEN.

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1. INTRODUCTION

System GEN is used to generate program magnetic tapes, DOMUS magnetic tapes, card decks, program flexible discs and program paper tapes.

GEN is running as a DOMUS utility.

GEN consists of 5 program modules:
One input and control module and four device dependent output modules. Those five programs must be installed on the DOMUS disc in the files:

			Process name
GEN:	RC36-00663	input and control module	GEN
GENOM:	RC36-00664	output module magnetic tape	GENO
GENOF:	RC36-00665	output module flexible disc	
GENOP:	RC36-00666	output module paper tape	
GENOR:	RC36-00667	output module punched cards	

2. REQUIREMENTS 2

2.1 Core 2.1

GEN and one of the output modules require approx. 12 KB memory. If output on magnetic tape, memory must be available to get a core item as big as the biggest abs.bin module (autoload and basis) to be put on the tape.

2.2 Drivers 2.2

For all output devices except flexible discs, the latest version (at present: MT006, PP002, RP001) must be used. For flexible discs FD200 must be used.

If a LOG is produced, the relevant driver for the LOG device as well as the program TIME must be loaded to get the creation date.

2.3 Disc Files 2.3

A work file (GENL) is created in which the LOG is written. When it has been written on the LOG device or another disc file, GENL is removed before program termination.

3. CALL

GEN OUT.<device> OCOPY.<number> CONTR.<file>
LOG.<devicedescriptor> LCOPY.<number> MARG.<number>

OUT: The output device:
MT ~ magnetic tape
FD ~ flexible disc
PTP ~ paper tape punch
RDP ~ card reader punch
(Default is MT)

OCOPY: Number of copies of the output.
(If 2 identical program tapes should be generated, the control file will be syntax checked twice, if the program is called twice. This is avoided by using this parameter).
(Default is 1)

CONTR: The control file:
A disc file generated by the text editor containing the commands to GEN.
Syntax for this file, see section 4.
(No default - must be specified)

LOG: A file descriptor describing the device where the LOG should be written. If the name does not exist, a disc file is created, and the LOG is written in a format that can be printed with the text editor or the DOMUS utility PRINT.
(Default no LOG)

LCOPY: Number of copies of the LOG. Only relevant if not loging in disc file.
(Default is 1)

MARG: Margin on the LOG (number of spaces max. 10 to be printed before each line).
(Default is 0)

4. CONTROL FILE 4.

The control file is a disc file written with the text editor. The file contains all information needed for system generation.
Before any output is made, a complete syntax check of the control file and a lookup on all disc files is performed. The syntax is as follows (Appendix A shows a complete example):

4.1 Head Function 4.1

This function is used to write the head of the LOG. The syntax is:

/HEAD	initials
IDEN(T)	P: xxx-xxx
CUST(OMER)	customer name
ADDR(ESS)	city and country of customer
DENS(ITY)	nnnn BPI (only magnetic tape)
PREV(IOUS)	P: xxx-xxx

4.2 Autoload Function 4.2

This function is used to write an autoload file on the output device.
The syntax is:

/AUTO(LOAD) <loadfile> <comment>

<loadfile>	is the name of the disc file in which the basic system is in abs.bin format.
<comment>	is a text string written on the log as comment, e.g. BTM08: RCSL: 43-GL3160. From the <comment> max. 47 characters is used. TAB (CNTRL I) is interpreted as one space.

4.3 Command function

This function is used to write a command file on the output device.
The syntax is:

```
/COMM(AND)    <ident>
command 1
command 2
.
.
.
command n
end
```

<ident> is the file ident on the output device (ordinarily not used on paper tape and punched cards).

In each command a maximum of 511 characters is allowed. Only when generating DOMUS tapes it may be more than 80 characters (not checked by GEN).

If a LOG is produced, and a command line is too long for 1 line, the command is divided into more lines on the LOG to avoid any loss of documentation.

The command end must be the last in the command file, and it must be placed on a seperate line, because GEN uses end as terminator for the command function.

4.4 Program Function

This function is used to write a program file on the output device.
The syntax is:

```
/PROG(RAM)
<loadfile> <ident> <comment>
<loadfile> <ident> <comment>
```

<loadfile>	is the name of the disc file in which the program is in rel. binary format
<ident>	is the file ident on the output device
<comment>	is a text string written on the LOG, e.g. PR006 RCSL: 43-GL2400. From the comment max. 47 characters are used. TAB (CNTRL I) is interpreted as one space.

If no <ident> is wanted on the output device, but a <comment> should be written on the LOG, put a <-> instead of <ident>.

This function can be used to copy anything from the disc, because no check of the data is performed (e.g. to copy a code procedure library to a program tape).

The program function is not terminated until the next /FUNCTION is read.

4.5 Note Function 4.5

This function is used to put comments on the LOG.
The syntax is:

```
/NOTE
line 1
line 2
.
.
.
.
.
line n
```

The function is not terminated until the next /FUNCTION is read. Also empty lines and formfeeds are copied to the LOG, so when using this function it is possible to divide the LOG into logically parts and pages.

4.6 Basis Function 4.6

This function is only relevant, when the output device is magnetic tape. If not, it will be the same as the program function.

The basis function is used to make a core image from an abs.binary file like the autoload function, but the autoload function writes the core image in one big block on the magnetic tape. The basis function divides the core image into blocks of the current used block-size (see block function).
The syntax is:

```
/BASI(S)
<loadfile> <ident> <comment>
```

(Description of the parameters, see program function).

4.7 Block Function 4.7

This function is only relevant when output device is magnetic tape. If not, it will be ignored.

Block function is used to change the block size (default is 80 bytes).
The syntax is:

```
/BLOC(K)      <size>
<size>        is the new block size (1 - 512 bytes)
```

4.8 End Function 4.8

This function is used to terminate the GEN program.
The syntax is:

```
/END
```

4.9 General Syntax

Each line in the control file must be terminated by a carriage return. As seperator between <loadfile>, <ident> and <comment> all characters less than or equal to space (decimal value = 32) are legal (i.e. LF, CR, space). If <loadfile> is more than 5 characters, the first 5 are used, and the rest is skipped.

For <ident> the first 5 characters are transferred to the output device, the first 11 to the LOG, and the rest is skipped.

5. SYSTEM MESSAGES 5

If an error occurs on the disc, a message is written on the console and the program execution is terminated.

If an error occurs on the output device, a message is written on the console and the output operation is repeated each second. To stop the execution, type 'STOP'.

If an error occurs while writing the LOG to a device different from disc, a message is written on the console, and the operation is repeated each second. To stop the execution, type 'STOP'.

When execution is terminated the disc file (GENL) is removed, and the programs GEN, GENO and all area processes used by GEN are removed from memory.

The system messages are divided into 4 groups:

1. Program messages
2. Messages concerning the disc and the catalog
3. Messages concerning the devices
4. System messages

5.1 Program messages 5.1

Following messages will cause stop of the execution:

ILLEGAL OUT DEVICE
Syntax error in the call

NO CONTROL FILE
Syntax error in the call

SYNTAX ERROR IN <file>

The disc file <file>, which is specified to be control file, contains something that does not correspond to the description in section 4.

SUM ERROR

NOT ENOUGH CORE

Appears when loading an abs.binary module (only when output is magnetic tape and function is /AUTO or /BASIS).

EXECUTION STOPPED BY OPERATOR

Appears after device message and operator reply 'STOP'.

ILLEGAL MESSAGE TO OUTPUT MODULE

Should not appear (Software malfunction).

GEN READY

LOAD OUTPUT DEVICE TO GET COPY

The OCOPY parameter has been set greater than 1, a generation is ended and GEN is ready for the next.
To continue, make the output device ready and press return.
To stop and get the LOG (if specified), type 'STOP'.

5.2 Disc messages 5.2

All disc messages will cause stop of the execution. The messages are fetched from the DOMUS error text file (SSYSE) and are described in DOMUS User's Guide.

5.3 Device messages 5.3

Device messages are from the log device or the output device. To continue, make the device ready (the output operation is automatically repeated each second). To stop execution, type 'STOP'.

The messages appear in the following format:

<device> STATUS
<error text>

<device> indicates the device, and <error text> explains what is wrong.

5.4 System messages

System messages cause stop of the execution. System messages may appear when GEN asks S to GET or FREE core items or to LOAD or KILL processes. The messages are fetched from the DOMUS error text file (SSYSE) and are described in DOMUS User's Guide.

Appendix A

This is an example of a control file:

```
/HEAD     TGR
IDEN      P: 600-007
CUST      RC-TUG
ADDR      GLOSTRUP, COPENHAGEN
PREV      P: 600-006
DENS      1600 BPI

/AUTO     BTM09     BTM09          RCSL: 43-GL4326

/COMM     DRIVERS
CLEAR
LOAD PTR LPT PTP CLTAB
END

/COMM     EDITOR
CLEAR
LOAD PTR LPT PTP CLTAB P16
END

/NOTE
Here any comments that is wanted on the log could be written.
Anything from here to the next "slash" is interpreted as comment.

/PROG
PR006     PTR       PR006          RCSL: 43-GL2400
LP010     LPT       LP010          RCSL: 43-GL3762
PP002     PTP       PP002          RCSL: 43-GL3272
CLTAB     CLTAB     RC36-00222     RCSL: 43-GL2949
EDIT      P16       RC36-00016     RCSL: 43-GL1661

/END
```

Appendix B

This is an example of a LOG (generated by the control file in Appendix A):

```
RC3600 MUS PROGRAM TAPE :    P: 600-007
DENSITY                 :    1600 BPI
CUSTOMERNAME            :    RC-TUG
COUNTRY, TOWN           :    GLOSTRUP, COPENHAGEN
CREATING DATE           :    77.10.10
CREATED BY              :    TGR
REPLACING               :    P: 600-006

FILE 001  AUTOLOAD    BTM09          RCSL: 43-GL4326

FILE 002* DRIVERS     CLEAR
                      LOAD PTR LPT PTP CLTAB
                      END

FILE 003* EDITOR      CLEAR
                      LOAD PTR LPT PTP CLTAB P16
                      END

Here any comments that is wanted on the log could be written.
Anything from here to the next "slash" is interpreted as comment.

FILE 004  PTR         PR006          RCSL: 43-GL2400
FILE 005  LPT         LP010          RCSL: 43-GL3762
FILE 006  PTP         PP002          RCSL: 43-GL3272
FILE 007  CLTAB       RC36-00222     RCSL: 43-GL2949
FILE 008  P16         RC36-00016     RCSL: 43-GL1661
```

Appendix C

Valid for Punching Cards only

When punching cards (each card is one module) are numbered in succession starting with 1, the number is printed in column 68 - 72.

When function is /AUTO or /PROG the <comment> is also printed on each card in the module from column 1.

When function is /COMM each command is printed on the card over the punch of the command.