University of Kent at Canterbury Computing Laboratory

EMAS 2900 Information Card

1st Edition   December 1979

N.B.   The information in this card relates specifically to the implementation of EMAS 2900 on the UKC 2960. However, most of it also applies to other EMAS 2900 installations.

DESCRIPTION OF STANDARD COMMANDS

NOTES

* underlined parameters are obligatory, others optional.
* parameters are separated by commas.
* the comma following an omitted parameter must be given if parameters are given thereafter.
* lists consist of one or more items separated by commas; e.g. *ownfilelist* is a list of files belonging to self.
* / is used to separate alternatives.
* commonly used parameters are described in the following table, others with the individual commands:

file	any file.
ownfile	*file* belonging to self.
objectfile	*file* of type object (compiled).
outdev	code for output device: .LP for the line printer, .OUT for current primary output. Default .OUT unless otherwise stated.
out	*outdev* or *ownfile* to be used for command output. Default .OUT.
source	input for compilers — can be one *file*, or more than one concatenated by +; for example SPECS+SRCE3+ROUTS_A
clist	listing produced by compiler — default is *ownfile* T#LIST. Alternatives *ownfile, outdev* or .NULL.
chan	I/O channel number, in the range 1-80.

LIST OF COMMANDS

ACCEPT (*file,newname*)
Accept *file* OFFERed by another user; optionally rename it to
newname.
ALERT (*out*)
List information on System faults, new facilities, etc.
ALGOL (*source,object*/.NULL,*clist,outdev*)
Compile ALGOL 60 program from file *source* into file *object* (or
.NULL), with listing in *clist,* and optionally produce an extra list of
fault messages on *outdev.*
ALIAS (*command,newname*)
Give *command* the alias *newname.* If *newname* is omitted, remove
all existing aliases for *command.*
ANALYSE (*file,option,out*)
Give information about *file* according to *option,* which can be null,
*, a letter or a combination of letters; letters inappropriate to type
of *file* are ignored:

null   *file* type and length, and date last altered. This informa-
             tion is always given.
*   all available information relevant to type of *file.*
A   (directory) aliases and aliased commands.
E   (object or directory) entry point names and, if
             directory file, associated inserted files.
F   (directory) files inserted.
H   (object) history of file, e.g. source file used and
             components of linked files.
P   (any type) access permissions.
R   (object) ext. entry pts and data areas referenced.
S   (object and directory) structure.

ARCHIVE (*ownfilelist*)
Mark file(s) for archiving.
BASIC
Enter BASIC — K.
BCPL (*source,object*/.NULL,*clist,outdev*)
Compile BCPL program from file *source* into file *object* (or .NULL),
with listing in *clist,* and optionally produce an extra list of fault
messages on *outdev.*
CHERISH (*ownfilelist*)
Mark file(s) for backing-up and automatic archiving after a period of
non-use (3-4 weeks on UKC 2960).
CLEAR (*chanlist*)
Clear channel definition(s) set up by DEFINE. All definitions are
cleared if no parameter is given.
CONCAT
Read from .IN, one to a line, the names of files to be concatenated;
list terminates with .END. Followed on the next line by the name
of the output file.
CONVERT (*file,ownfile*)
Convert *file*, a data file, into *ownfile,* a character file.
COPY (*file,ownfile*)
Copy *file* into *ownfile.* This is the standard method for adding a
member to a pd file or copying a member out, i.e. *file* and/or
ownfile may be a member of an existing pd file.
CPULIMIT (*time*/?)
Set appropriate time limit for each subsequent command to *time*
(mins,secs). At least one of mins and secs must be specified. The
precise time allowed depends on the particular instructions executed.
CPULIMIT (?) gives the current setting.
DEFINE (*chan,file/outdev*/.IN/.TEMP/.NULL,*size,format*)
or DEFINE (?)
Set up file definition: associate *chan* with *file* or an output device
or .IN or .TEMP or .NULL; *file* need not currently exist if to be
used for output.
size   (output files only) integer in range 1-1023 (Kybtes) giving
           maximum allowed size of *file* for duration of DEFINE.
           Default 255.

format   (output files only) of the form C or rn:

       C   character file to be written (FORTRAN only).

       r   record format, F or V. Default V.

       n   logical record length in bytes. With V, the
maximum number of data bytes available per
record; with F, the actual number.

A pd file member may be specified for input.

An output file can be specified as *file*-MOD if it currently exists:
the output is appended to the existing contents.

DEFINE (?) gives current file definitions.

DELIVER (*nameandaddress/?*)

Set delivery information to *nameandaddress*; max. 31 chars; spaces
are ignored.

DELIVER (?) prints current delivery information.

DESTROY (*ownfilelist*)

Destroy file(s) or member(s) of pd file(s).

DETACH (*jobfile,cpuseconds*)

Detach *jobfile* into the background job queue.

jobfile   character file (or files concatenated with + operator)
containing commands and data.

cpuseconds   time limit in seconds for the whole job. default
currently 120 seconds.

DISCARD (*controlfile*)

Delete files from the archive store. The names and archive dates of
the files are read from *controlfile* or (by default) from .IN. If .IN is
used, the list must be terminated with .END.

DISCONNECT (*filelist/.ALL*)

Disconnect file(s) from virtual memory and copy to disc store. .ALL
disconnects all but essential process files.

EM (*file*)

Invoke the VME/K and Unix compatible Editor to edit *file*.

FILES (*mask,group,out*)

List the names of the ownfiles from the specified *group* which also
fit the *mask*.

mask   up to three fields, where a field is either a set of explicit
characters or the symbol * (representing any set of
characters).

group   A ARCHIVEd files

        C CHERISHed disc store files

        E causes extra information to be printed

        H HAZARDed disc store files

        I disc store files (the default)

        P print information about file index

        S specifies single spacing of file names

Any combination of these letter codes may be given.

FORTE (*source,object/.NULL,clist*)

Compile FORTRAN IV program from file *source* into file *object*
(or .NULL) with listing in *clist.*

HAZARD (*ownfilelist*)

Un-CHERISH: file(s) will not be backed up and may be destroyed
if unused for some time (3-4 weeks on UKC 2960).

HELP (*keyword,out*)

Give information about Subsystem facilities. *keyword* can be:
omitted for general information; name of command or subject, for
information about that command or subject, e.g. HELP (RENAME);
or .ALL for complete HELP information.

IMP (*source,object/.NULL,clist,outdev*)

Compile IMP program from file *source* into file *object* (or .NULL),
with listing in *clist,* and optionally produce an extra list of fault
messages on *outdev.*

'NSERT (*objectfilelist*)

Put information about object file(s) into the active directory (see
OPTION).

JOBBER (*file,option*)

Submit a job to be run in the Jobber

file   file containing Jobber commands

option   S   short Jobber run (the default)
             M medium Jobber run
             L long Jobber run
See notice board opposite Reception for *option* details.
LINK
Read from .IN, one to a line, names of object files to be linked.
List terminated with .END. Followed by name of output file.
LIST (*file,outdev,copies,forms,option*)
List character file or data file on *outdev*.
copies   default 1, max 15.
forms   no. in range 0-255. Specifies special forms for output
           (details from Advisory Service).
option   FE to specify that file contains format effectors.
Files may be concatenated using the + operator,
e.g. A+HOLD_V2+BC.
LK (*file*)
Invoke EM editor to examine but not alter *file*. Default for *file* is
T#LIST.
MAN (*subject,out*)
Give information about local facilities. MAN with no parameters
gives further details.
MESSAGES (OFF/ON)
Inhibit or re-enable output of messages from operator, System
processes or other users (see TELL).
METER
Print date, time and, for this session, cpu time used, connect time
and page turns.
NEWDIRECTORY (*newownfile,num1,num2*)
Create a new, empty, directory file.
num1   max. no. of entry names and aliases to be held; default
        160.
num2   plist size: about 5x*num1*; default 856.
NEWPDFILE (*newownfile*)
Create a new, empty, partitioned file.
NEWSMFILE (*newownfile,size*)
Create *newownfile* of *size* bytes for use for direct mapping.
OBEY (*file,out*)
Obey *file* containing sequence of commands and data, optionally
putting output in *out*.
OFFER (*ownfile,user*)
Offer *ownfile* to another user. If *user* is omitted then revoke
outstanding offer on *ownfile*.
OPTION (*optionlist/?*)
Set option(s) for own process. Takes effect immediately and
remains in effect until changed via OPTION.
optionlist consists of one or more of the following (settings for a
new process on UKC 2960 are marked *):

	ACTIVEDIR=*ownfile*	directory file to be modified by INSERT and REMOVE, and examined before the SEARCHIDIR files (see below) when seeking an entry point not currently loaded. Default *ownfile*
*		SS#DIR.
	SEARCHDIR=*file*	directory file to be inserted at the head of the list of directory files searched during the loading process.
	REMOVEDIR=*file*	directory file to be removed from the list of directory files searched during the loading process.
*	BRACKETS	command parameters to be enclosed in brackets.
	NOBRACKETS	command parameters to be separated from the command name by a space and terminated with newline.
*	BLANKLINES	blanklines intended for output on the interactive terminal are not suppressed.

	NOBLANKLINES	blanklines intended for output on the interactive terminal are suppressed.
*	NORECALL	do not store terminal I/O.
	TEMPRECALL	store terminal I/O for use by RCL later in current session.
	PERMRECALL	store terminal I/O for use by RCL.
	ITWIDTH=n	set maximum width (in characters) of output from FILES and ANALYSE.
*		Default 72.
	FSTARTFILE=*file*	file to be executed by OBEY on foreground process start-up.
*	NOFSTARTFILE	no file is OBEYed on foreground process start-up.
	BSTARTFILE=*file*	*file* to be executed by OBEY on background process start-up.
*	NOBSTARTFILE	no file is OBEYed on background process start-up.
	INITPARMS	record current setting of PARM and automatically select this value at start of every session.
	ARRAYDIAG=n	the values of the first n elements of each array involved in diagnostics are printed.
*		Default 10.
	ITINSIZE=n	set the buffer size (in Kbytes) for interactive terminal input.
	ITOUTSIZE=n	set the buffer size (in Kbytes) for interactive terminal output.
	USERSTACKSIZE=n	set the user stack size (in Kbytes).
	AUXSTACKSIZE=n	set the aux stack size (in Kbytes).
	INITWORKSIZE=n	set the initial size of any workfile used by the Subsystem (in Kbytes).
	NOECHO	do not echo commands or data during OBEY.
*	PARTECHO	echo commands but not data during OBEY.
	FULLECHO	echo commands and data during OBEY.
	CFAULTS=*file*	specify default for *outdev* parameter to ALGOL, BCPL and IMP commands. (i.e. compiler fault messages).

OPTION (?) gives list of options currently in effect.
PARM (*parmlist*/?)
Set compile time parameter(s). Remains in effect until next call or
log off. PARM with no parameter resets the default options. Consult
the language manuals for details. PARM (?) gives a list of the current
compile time options. Default options are R8, QUOTES.
PASSWORD (*foreground,background*)
Set *foreground* and/or *background* passwords; each must be four
printable characters other than comma. At least one must be given.
PERMIT (*ownfile*/.ALL,*user,permission*)
Set access permission for *ownfile*. If .ALL is used *permission* applies
to all user's ownfiles.

user   can be a six-character username, or null (meaning
                 everybody else), or can include up to five ?
                 characters to specify a group of users.

permission   R Read and execute (default)
                 W Write
                 A All modes
                 N No access
                 C Cancel existing individual or group access

RCL
Call EM Editor to look at stored terminal I/O.
REMOVE (*objectfilelist*)
Remove information about file(s) from the active directory (see
OPTION).
RENAME (*ownfile,newname*)
Change name of *ownfile* to *newname*.

RESTORE (*ownfile,date*)
Transfer *ownfile* from archive store to disc store. *date,* the
archiving date of *ownfile,* has format dd/mm/yy; if it is omitted,
most recently archived copy of *ownfile* is restored.
RUN (*objectfile*)
Run program which has been compiled into *objectfile.*
SEND (*ownfile,outdev*)
List and destroy *ownfile* (default T#LIST) on *outdev* (default .LP).
outdev cannot be .OUT.
STOP
Call METER and log out.
SUGGESTION
Send a suggestion about EMAS 2900 to the System Manager. The
user's name and address and text of suggestion are prompted for.
Text is terminated with newline * newline.
TELL (*user*)
Send message to *user,* immediately if he is logged on or at his next
log-on. Message is input via .IN, and is terminated with newline *
newline.
TIDYDIR (*file,percentage*)
Remove redundant entries from the *file* directory file, and make it
percentage percent full (Default is 70%).
USERS
Print number of active users.

PARTITIONED FILES
Pdfiles may contain any number of individual members. A member
is referenced as *pdfile_member,* e.g. HOLD_A, HOLD_MEMB2,
PROJECT_TESTDATA. Members are added to the pdfile using
COPY, LK, RCL or EM, renamed using RENAME and removed
using DESTROY. They may be written to only by COPY, LK, RCL
or EM but can be used as input files in the following commands:
ALGOL, ANALYSE, CONCAT, COPY, DEFINE, DETACH, EM,
FORTE, IMP, INSERT, LINK, LIST, LK, OBEY, REMOVE,
RENAME, RUN.

SCIENTIFIC JOBBER COMMANDS

//JOB (*user,*T=*time,*L=*lines*)
Start new job, for max. T secs and L lines.
//ENDJOB
Terminate a job.
//ALGOL (*source*)
Compile ALGOL program from following lines or *source.*
//FORTRAN (*source*)
Compile FORTRAN program from following lines or *source.*
//RUN
Run compiled program.
//DFF (*chan,file*)
Assign data file to channel; if *file* is * then data follows // DFF
statement. (input files only).

NOTES

DEVICE CODES CURRENTLY DEFINED

.IN   current primary input — for foreground session normally
          the interactive terminal.
.OUT   current primary output — for foreground session normally
          the interactive terminal.
.LP   main line printer.
.LPCL   line printer, Computing Lab Console Room.
.LPCLT   line printer, Computing Lab Teaching Room.
.LPSS   line printer, Social Sciences.
.LPEL   line printer, Electronics.
.GP   main graph plotter.
.PP   main paper tape punch.
.BPP   main binary paper tape punch.
.M66J3J6 J3 and J6 input to ULCC CDC 6000 computers and
          METRONET input.
.M66J9J12 J9, J12 and J15 input to ULCC 6000 computers
.M76J3J6 J3 and J6 input to ULCC CDC 7600
.M76J9J12 J9, J12 and J15 input to ULCC 7600

CONSOLE INTERRUPTS

INT:A   abort current command.
INT:C   abort current command and ignore any input typed.
INT:Q   abort current command and give diagnostics.
INT:T   print no. of users, and time and page turns used by
          current command, without affecting command.

CONSOLE CONTROL

The following control characters have special effects when typed on
interactive terminals:

CAN   (Ctrl+X)   cancel the current line
DC2   (Ctrl+R)   repeat the current input line, removing deleted
                  characters
DEL   (Rubout)   cancel previous character
DLE   (Ctrl+P)   treat next character typed as binary
EM   (Ctrl+Y)   terminate input
ESC   escape to INT: (see CONSOLE INTERRUPTS)
HT   (Ctrl+I)   tab to next tab position; see T (below)
SOH   (Ctrl+A)   enter SET mode — SET [printed

The reply to SET [is a command letter followed optionally by a
space and one or more parameters, or CR to terminate the SET, or
a space then another command letter (except after T). The
command letters are:

C   Replace the current CANCEL character with the parameter
      (default CAN).
D   Replace the current DELETE character with the parameter
      (default DEL).
G   Enter GRAPH mode. No parameter. See also U.
H   Set PAGE HEIGHT to the parameter x. After x lines of
      output, no further I/O is allowed until DC1 (Ctrl+Q) is
      typed. The default (or x=0) is no paging.
I   Replace the current INT character with the parameter
      (default ESC).
L   Enter LOWER mode. No parameter. UPPER mode (see U)
      is the default.
P   Set number of PADS required to the value of the parameter.
R   Replace the current RETURN character with the parameter
      (default CR).
T   Set TAB vector. Up to seven parameters may be given
      separated by spaces or commas. A * instead of a number
      terminates the list and sets remaining tabs to the LINE
      WIDTH (see W).
      Default: 6, 9, 12, 15, 18, 40, 80.
U   Set UPPER mode, which is the default (see L). No
      parameter. Also terminates GRAPH mode.
V   Enter VIDEO mode. No parameter.
W   Set LINE WIDTH, min 15, max 160 (default 72).
EOT   (Ctrl+D) Send EOT — logs off terminal immediately.

EMAS INTERNAL CHARACTER CODE

0	NUL	32	SPACE	64	@	96	`
1	SOH	33	!	65	A	97	a
2	STX	34	"	66	B	98	b
3	EXT	35	#(£)	67	C	99	c
4	EOT	36	$	68	D	100	d
5	ENQ	37	%	69	E	101	e
6	ACK	38	&	70	F	102	f
7	BEL	39	'	71	G	103	g
8	BS	40	(	72	H	104	h
9	HT	41	)	73	I	105	i
10	LF(NL)	42	*	74	J	106	j
11	VT	43	+	75	K	107	k
12	FF	44	,	76	L	108	l
13	CR	45	-	77	M	109	m
14	SO	46	.	78	N	110	n
15	SI	47	/	79	O	111	o
16	DLE	48	0	80	P	112	p
17	DC1	49	1	81	Q	113	q
18	DC2	50	2	82	R	114	r
19	DC3	51	3	83	S	115	s
20	DC4	52	4	84	T	116	t
21	NAK	53	5	85	U	117	u
22	SYN	54	6	86	V	118	v
23	ETB	55	7	87	W	119	w
24	CAN	56	8	88	X	120	x
25	EM	57	9	89	Y	121	y
26	SUB	58	:	90	Z	122	z
27	ESC	59	;	91	[	123	{
28	FS	60	<	92	\	124	¦
29	GS	61	=	93	]	125	}
30	RS	62	>	94	^	126	-
31	US	63	?	95	_	127	DEL

USEFUL TELEPHONE NUMBERS (STD CODE 0227)

Computer State	66822 ext. 626
Computer Room/ Operations Supervisor/ Job Reception	66822 ext. 626 0900 — 1700 hrs.
Requests for job numbers	Computing Lab Reception (66822 ext. 626)
UKC documentation	66822 ext. 7591 or 626

ADVISORY SERVICE

The duty programmer may be consulted on weekdays at the following times:

0915 — 1215	(except Monday)
1345 — 1600	(except Wednesday)

FURTHER INFORMATION

See EMAS 2900 Users Guide, available from Dillons Bookshop.