

CCCCCCCCCCCC	DDDDDDDDDDDD	UUU	UUU
CCCCCCCCCCCC	DDDDDDDDDDDD	UUU	UUU
CCCCCCCCCCCC	DDDDDDDDDDDD	UUU	UUU
CCC	DDD	UUU	UUU
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CCCCCCCCCCCC	DDDDDDDDDDDD	UUUUUUUUUUUUUUUU	UUUUUUUUUUUUUUUU
CCCCCCCCCCCC	DDDDDDDDDDDD	UUUUUUUUUUUUUUUU	UUUUUUUUUUUUUUUU
CCCCCCCCCCCC	DDDDDDDDDDDD	UUUUUUUUUUUUUUUU	UUUUUUUUUUUUUUUU

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CCCCCCCC LL      IIIIII 5555555555 DDDDDDDD EEEEEEEEEEE FFFFFFFFFF
CCCCCCCC LL      IIIIII 5555555555 DDDDDDDD EEEEEEEEEEE FFFFFFFFFF
CC        LL      II      55          DD        DD EE          FF
CC        LL      II      55          DD        DD EE          FF
CC        LL      II      555555     DD        DD EE          FF
CC        LL      II      555555     DD        DD EE          FF
CC        LL      II      55          DD        DD EEEEEEEEE FFFFFFFF
CC        LL      II      55          DD        DD EEEEEEEEE FFFFFFFF
CC        LL      II      55          DD        DD EE          FF
CC        LL      II      55          DD        DD EE          FF
CC        LL      II      55          DD        DD EE          FF
CC        LL      II      55          DD        DD EE          FF
CCCCCCCC LLLLLLLLLL IIIIII 555555 DDDDDDDD EEEEEEEEEEE FF          FF
CCCCCCCC LLLLLLLLLL IIIIII 555555 DDDDDDDD EEEEEEEEEEE FF          FF

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RRRRRRRR 333333 222222
RRRRRRRR 333333 222222
RR        RR 33    33 22    22
RR        RR 33    33 22    22
RR        RR 33    33 22    22
RRRRRRRR 33    22
RRRRRRRR 33    22
RR  RR    33    22
RR  RR    33    22
RR  RR    33    22
RR  RR    33    22
RR  RR    333333 2222222222
RR  RR    333333 2222222222

```

Command language interpreter command table structures  
These definitions are now obsolete (see below)

IDENT V04-000

```

*****
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++ FACILITY: DCL & MCR Command language interpreters

ABSTRACT:

These are the command table structure definitions  
which describe the generic command table format used  
by the DCL and MCR command interpreters.

ENVIRONMENT:

VAX/VMS operating system. supervisor mode.

AUTHOR: Tim Halvorsen, Feb 1980

Modified by:

V04-000 PCA0000 Paul C. Anagnostopoulos 8-Mar-1983  
 These definitions are now obsolete. However, they are still  
 needed to upgrade format level 5 CLI tables to the latest  
 format level. They are used only by the UPGRADE module of  
 the CDU facility.

V03-003 PCG0005 Peter George 22-Nov-1982

| Add INT W PMPTLEN and INT\_L\_PMPTADDR and remove  
| INT\_L\_PROMPT.

V03-002 PCG0004 Peter George 18-Oct-1982  
| Add VEC\_C\_PROMPTMAX, INT\_L\_PROMPT, and ENT\_V\_SPELL.

V03-001 PCG0003 Peter George 15-Jul-1982  
Add INT data structure for CLIS\$INTERFACE routines.

.....  
Note that the term "SRO" stands for self-relative offset.  
The actual address is computed by adding the signed contents  
of the field to the address of the structure.

.....  
If the offset is zero, then there is no associated data.  
.....

```

!
! DEFINE VECTOR AT FRONT OF COMMAND TABLES DESCRIBING
! OFFSETS INTO THE SECTION FOR VARIOUS TABLES.
!

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!...$VECSDEF
MACRO      VEC5_L_IMAGETBL = 0,0,32,0%;      ! OFFSET TO IMAGE TABLE
MACRO      VEC5_L_PROMPTBL = 4,0,32,0%;      ! OFFSET TO PROMPT TABLE
MACRO      VEC5_L_QUALTBL  = 8,0,32,0%;      ! OFFSET TO QUALIFIER TABLE
MACRO      VEC5_L_VERBTBL  = 12,0,32,0%;     ! OFFSET TO BUILT-IN VERB TABLE
MACRO      VEC5_L_VERBEND  = 16,0,32,0%;     ! OFFSET TO END OF VERBTBL
MACRO      VEC5_L_USRCMD   = 20,0,32,0%;     ! OFFSET TO USER VERB TABLE
MACRO      VEC5_L_USREND   = 24,0,32,0%;     ! OFFSET TO END OF USER VERB TABLE
MACRO      VEC5_L_COMDPTR  = 28,0,32,0%;     ! OFFSET TO BUILT-IN POINTER TABLE
MACRO      VEC5_L_USERPTR  = 32,0,32,0%;     ! OFFSET TO USER POINTER TABLE
MACRO      VEC5_L_FREE     = 36,0,32,0%;     ! OFFSET TO NEXT FREE BYTE
MACRO      VEC5_B_STRLVL   = 40,0,8,0%;      ! TABLE STRUCTURE LEVEL
LITERAL
$EQUATE (VEC5_C_GBL,0,1
, (STRLVL,5)
);
MACRO      VEC5_B_PROMPTMAX = 41,0,8,0%;      ! MAXIMUM SIZE OF ANY PROMPT STRING
LITERAL   VEC5_C_LENGTH3   = 42;
LITERAL   VEC5_K_LENGTH3   = 42;           ! LENGTH OF STR LEVEL 3 AND BEFORE VEC
MACRO      VEC5_B_CLI      = 42,0,8,0%;      ! CLI TYPE
LITERAL
$EQUATE (VEC5_C_GBL,0,1
, (DCL,0)
, (MCR,1)
);
MACRO      VEC5_W_SIZE     = 44,0,16,0%;      ! SIZE IN BYTES OF VECTOR AREA
LITERAL   VEC5_C_LENGTH   = 60;
LITERAL   VEC5_K_LENGTH   = 60;           ! LENGTH OF VECTOR AREA
LITERAL   VEC5_C_PROMPTMAX = 32;           ! MAXIMUM SIZE OF ANY PROMPT STRING

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:
: DEFINE COMMAND DESCRIPTOR BLOCK
:

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:.....$CMD5DEF
MACRO      CMD5_B_SIZE      = 0,0,8,0%;           ! SIZE OF COMMAND DESCRIPTOR BLOCK
MACRO      CMD5_B_VERBTYP   = 1,0,8,0%;           ! VERB GENERIC TYPE
MACRO      CMD5_B_PARMCNT   = 2,0,8,0%;           ! MIN/MAX PARAMETER COUNTS

MACRO      CMD5_V_MINPARM   = 2,0,4,0%;           ! MINIMUM NUMBER OF PARAMETERS REQUIRED
MACRO      CMD5_V_MAXPARM   = 2,4,4,0%;           ! MAXIMUM NUMBER OF PARAMETERS ALLOWED

MACRO      CMD5_B_FLAGS     = 3,0,8,0%;           ! COMMAND FLAGS

MACRO      CMD5_V_ABREV     = 3,0,1,0%;           ! COMMAND MAY BE ABBREVIATED NON-UNIQUELY
LITERAL    CMD5_M_ABREV     = 1^1 - 1^0;         ! TO A SINGLE CHARACTER

MACRO      CMD5_V_NOSTAT    = 3,1,1,0%;           ! COMMAND DOES NOT RETURN VALID STATUS
LITERAL    CMD5_M_NOSTAT    = 1^2 - 1^1;

MACRO      CMD5_V_FOREIGN   = 3,2,1,0%;           ! FOREIGN COMMAND - NO PARSING IS DONE
LITERAL    CMD5_M_FOREIGN   = 1^3 - 1^2;

MACRO      CMD5_V_IMMED     = 3,3,1,0%;           ! COMMAND IS IMMEDIATELY DISPATCHED W/O PARSING
LITERAL    CMD5_M_IMMED     = 1^4 - 1^3;

MACRO      CMD5_V_MCRPARSE  = 3,4,1,0%;           ! COMMAND IS MCR STYLE COMMAND (OUT=IN)
LITERAL    CMD5_M_MCRPARSE  = 1^5 - 1^4;         ! (THIS FLAG ONLY EXAMINED BY MCR CLI)

MACRO      CMD5_W_IMAGE     = 4,0,16,1%;         ! SRO TO ASCIC IMAGE NAME
MACRO      CMD5_W_QUALS     = 6,0,16,1%;         ! SRO TO FIRST NONPOSITIONAL ENTITY
MACRO      CMD5_W_PARMS     = 8,0,16,1%;         ! SRO TO FIRST POSITIONAL ENTITY
MACRO      CMD5_W_OUTPUTS   = 10,0,16,1%;        ! SRO TO LIST OF "OUTPUT" ENTITIES
MACRO      CMD5_W_MUTEXSET  = 12,0,16,1%;        ! SRO TO MUTUAL EXCLUSION SET
MACRO      CMD5_W_IMPSET    = 14,0,16,1%;        ! SRO TO IMPLICATION SET
LITERAL    CMD5_C_LENGTH   = 16;
LITERAL    CMD5_K_LENGTH   = 16;                 ! LENGTH OF FIXED PORTION

: OUTPUT LIST FORMAT:
: FIRST BYTE CONTAINS COUNT OF ENTRIES IN LIST EACH ENTRY IS ONE BYTE,
: SIGNED, DESCRIBING THAT "OUTPUT NUMBER". NEGATIVE VALUES INDICATE THE
: OUTPUT IS A PARAMETER AND THE ABS(VALUE) IS THE PARAMETER NUMBER.
: POSITIVE VALUES INDICATE THE OUTPUT IS A QUALIFIER AND THE VALUE IS A
: QUALIFIER NUMBER.
: QUAL IS (0:MAXQUALS-1),PARM IS (MAXQUALS:255)

LITERAL    CMD5_C_MAXPARMS = 8;                 ! MAXIMUM POSSIBLE PARAMETERS
LITERAL    CMD5_C_MAXQUALS = 248;               ! MAXIMUM POSSIBLE QUALIFIERS (256-8)

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:
: DEFINE ENTITY DESCRIPTOR BLOCK
:

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!...SENTSDEF
MACRO      ENTS_B_NEXT      = 0,0,8,0%:      ! OFFSET TO NEXT BLOCK IN CHAIN
MACRO      ENTS_B_SIZE      = 1,0,8,0%:      ! SIZE OF THIS BLOCK IN BYTES
MACRO      ENTS_B_TYPE      = 2,0,8,0%:
LITERAL
SEQULST (ENTS C , GBL, 0, 1
, (PARAMETER,)
, (QUALIFIER,)
);
MACRO      ENTS_B_VALTYPE    = 3,0,8,0%:      ! TYPE OF VALUE
LITERAL
SEQULST (ENTS C , GBL, 1, 1
, (INFILE,)
, (OUTFILE,)
, (NUMBER,)
, (PRIVILEGE,)
, (DATETIME,)
, (PROTECTION,)
, (PROCESS,)
, (INLOG,)
, (OUTLOG,)
, (INSYM,)
, (OUTSYM,)
, (NODE,)
, (DEVICE,)
, (DIR,)
, (UIC,)
, (RESTOFLINE,)
);
MACRO      ENTS_W_NAME      = 4,0,16,1%:      ! SRO TO ASCIC ENTITY NAME (USER SPELLING)
MACRO      ENTS_W_NUMBER    = 4,0,16,0%:      ! OR, PARAMETER NUMBER (POSITIONAL)
MACRO      ENTS_W_LABEL     = 6,0,16,1%:      ! SRO TO ASCIC ENTITY LABEL (FOR PGM USE)
MACRO      ENTS_W_DEFVAL    = 8,0,16,1%:      ! SRO TO ASCIC DEFAULT VALUE
MACRO      ENTS_W_SYNTAX    = 10,0,16,1%:     ! SRO TO SYNTAX LIST
MACRO      ENTS_W_KEYWORDS  = 12,0,16,1%:     ! SRO TO VALUE KEYWORD LIST
! IF ZERO, ALL VALUES ARE LEGAL
MACRO      ENTS_W_PROMPT    = 14,0,16,1%:     ! SRO TO VALUE PROMPT
MACRO      ENTS_L_FLAGS     = 16,0,32,0%:     ! ENTITY FLAGS

MACRO      ENTS_V_FILE      = 16,0,1,0%:      ! VALUE IS FILE SPECIFICATION
LITERAL
MACRO      ENTS_M_FILE      = 1^1 - 1^0:
MACRO      ENTS_V_VAL       = 16,1,1,0%:      ! CAN HAVE A VALUE
LITERAL
MACRO      ENTS_M_VAL       = 1^2 - 1^1:
MACRO      ENTS_V_NEG       = 16,2,1,0%:      ! VALUE CAN BE NEGATED
LITERAL
MACRO      ENTS_M_NEG       = 1^3 - 1^2:
MACRO      ENTS_V_DEFTRUE   = 16,3,1,0%:      ! TRUE BY DEFAULT
LITERAL
MACRO      ENTS_M_DEFTRUE   = 1^4 - 1^3:
MACRO      ENTS_V_BATDEF    = 16,4,1,0%:      ! PRESENT BY DEFAULT IF BATCH JOB
LITERAL
MACRO      ENTS_M_BATDEF    = 1^5 - 1^4:

```



MACRO	ENTS_V_VALREQ	= 16,5,1,0%:	! VALUE IS REQUIRED
LITERAL	ENTS_M_VALREQ	= 1^6 - 1^5:	
MACRO	ENTS_V_LIST	= 16,6,1,0%:	! COMMA-SEPARATED LIST OF VALUES ALLOWED
LITERAL	ENTS_M_LIST	= 1^7 - 1^6:	
MACRO	ENTS_V_CONCAT	= 16,7,1,0%:	! CONCATENATED VALUES ALLOWED
LITERAL	ENTS_M_CONCAT	= 1^8 - 1^7:	
MACRO	ENTS_V_IMPCAT	= 16,8,1,0%:	! VALUES ARE IMPLICITLY CONCATENATED
LITERAL	ENTS_M_IMPCAT	= 1^9 - 1^8:	
MACRO	ENTS_V_VERB	= 16,9,1,0%:	! QUALIFIER CAN APPEAR ON COMMAND VERB
LITERAL	ENTS_M_VERB	= 1^10 - 1^9:	
MACRO	ENTS_V_PARM	= 16,10,1,0%:	! QUALIFIER CAN APPEAR ON PARAMETER
LITERAL	ENTS_M_PARM	= 1^11 - 1^10:	
MACRO	ENTS_V_MCROPTDLM	= 16,11,1,0%:	! VALUE DELIMITER IS OPTIONAL (MCR)
LITERAL	ENTS_M_MCROPTDLM	= 1^12 - 1^11:	
MACRO	ENTS_V_MCRIGNORE	= 16,12,1,0%:	! IGNORE THIS ENTITY BLOCK (MCR)
LITERAL	ENTS_M_MCRIGNORE	= 1^13 - 1^12:	
MACRO	ENTS_V_SPELL	= 16,13,1,0%:	! ONLY CHECK FIRST FOUR CHARS OF KEYWORD VALUES
LITERAL	ENTS_M_SPELL	= 1^14 - 1^13:	
LITERAL	ENTS_C_LENGTH	= 20:	
LITERAL	ENTS_K_LENGTH	= 20:	! LENGTH OF FIXED LENGTH PORTION

```

!
! DEFINE CHANGE LIST STRUCTURE
!
!....$CHG5DEF
MACRO      CHG5_B_SIZE      = 0,0,8,0%;      ! SIZE OF CHANGE LIST BLOCK
MACRO      CHG5_B_FLAGS    = 1,0,8,0%;      ! FLAGS
MACRO      CHG5_V_IMAGE    = 1,0,1,0%;      ! IMAGE CHANGE
LITERAL   CHG5_M_IMAGE    = 1^1 - 1^0;
MACRO      CHG5_V_PARM    = 1,1,1,0%;      ! PARAMETER(S) CHANGE
LITERAL   CHG5_M_PARM    = 1^2 - 1^1;
MACRO      CHG5_V_QUALS    = 1,2,1,0%;      ! QUALIFIER(S) CHANGE
LITERAL   CHG5_M_QUALS    = 1^3 - 1^2;
MACRO      CHG5_V_MCRIGNORE = 1,3,1,0%;      ! IGNORE IF CLI IS MCR
LITERAL   CHG5_M_MCRIGNORE = 1^4 - 1^3;

MACRO      CHG5_W_IMAGE    = 2,0,16,1%;     ! SRO TO NEW IMAGE
MACRO      CHG5_B_PARMCNT  = 4,0,8,0%;     ! MIN/MAX PARAMETER COUNTS

MACRO      CHG5_V_MINPARG  = 4,0,4,0%;     ! MINIMUM NUMBER OF PARAMETERS REQUIRED
MACRO      CHG5_V_MAXPARG  = 4,4,4,0%;     ! MAXIMUM NUMBER OF PARAMETERS ALLOWED

MACRO      CHG5_W_PARM    = 5,0,16,1%;     ! SRO TO FIRST PARAMETER DESCRIPTOR
MACRO      CHG5_W_QUALS   = 7,0,16,1%;     ! SRO TO FIRST QUALIFIER DESCRIPTOR
LITERAL   CHG5_C_LENGTH  = 9;
LITERAL   CHG5_K_LENGTH  = 9;

```

GENRAL REQ R32	EXTCAL LIS
CLISDEF R32	GENCODE4 LIS
CDUMSGS LIS	GENCODE1 LIS
CDU	GENCODE2 LIS
CDU MAP	GENCODE3 LIS
CDUREQ R32	GENCODE2 LIS
CDUTPODEF LIS	