

OPD Store Map

Appendix 1

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OPD STORE MAP

\$FFFFF	Reserved
\$F8000	32K ROMCAP 2 (original 2-slot Rompack)
\$F0000	32K ROMCAP 1 (original 2-slot Rompack)
\$E8000	144K Xchange + 14K base operating system
\$C0000	64K ROM operating system expansion
\$B0000	64K ROM base operating system
\$A0000	128K reserved for expansion DRAM
\$80000	4-slot Rompak
\$78000	Reserved
\$70000	4-slot Rompak
\$68000	Reserved
\$60000	4-slot Rompak
\$58000	Reserved
\$50000	4-slot Rompak
\$48000	Reserved
\$46000	I/O
\$44800	2K CMOS RAM
\$44000	ULA3 registers
\$40000	96K DRAM
\$28000	32K screen DRAM
\$20000	ULA1 I/O space
\$10000	64K base operating system
\$00000	

This information is provided for assistance in debugging applications. Information about the store map must not be built into applications - the map may change in future hardware environments in which existing applications will still be required to work.

Register of Entries in Permanent Store

Appendix 2

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REGISTER OF ENTRIES IN PERMANENT STOREA2.1 Introduction

The interface to the OPD permanent store is defined in the OPD Kernel Specification (PSD 76.97.3.1). Each entry in this store has an entry identifier, which is a number in the range 0 to \$FFFF.

To help prevent entry identifiers from being accidentally used for more than one purpose, all ICL usage is recorded in this appendix, which is based on the ICL document OPD/ADM/3.

The intending user of permanent store must note that only 2048 bytes are available (including the space required by Kernel and the space required for establishment checks), and that there is an overhead of 3 bytes on each entry. Usage should therefore be as economic as is reasonably practicable.

A2.2 Identifier allocation

The range of entry identifiers is allocated in blocks to ICL and other authorised software suppliers.

External software suppliers can obtain an allocation by arrangement with the OPD Software Support Manager.

Responsibility for suballocation within a block of identifiers rests with the owner of the block. In the case of blocks allocated to ICL, the suballocation is as listed in section A2.3.

The current allocation of entry identifiers is as follows:

0 - \$0FFF	ICL
\$1000 - \$1FFF	Distributors
\$2000 - \$2FFF	Software vendors (tools)
\$3000 - \$3FFF	Software vendors (applications)
\$4000 - \$FFFF	Not allocated

A2.3 Permanent store identifiers used by ICL

N.B. The size data is for information only.

<u>Ident- ifier</u>	<u>Owner</u>	<u>Purpose</u>	<u>Size in bytes</u>
n.a		Establishment checks	16
n.a.	Kernel		24
\$0	Application Handler	Auto-start application	22
\$1	Application Handler	Top Level Menu entry	22
\$2	TLink	Auto-answer modem parameters	4
\$3	Messaging	From name	65
\$4	Messaging	From number	33
\$5	Messaging	Volume name of last save	8
\$6	Messaging	Configuration data	9
\$7	TLink	Default Auto-answer application	12
\$8	Data Record	Save/load pause control	1
\$9	Data Record	Auto-save time	4
\$A	Data Record	Auto-load indicator	1
\$B	Data Record	Volume name of last full save	8
\$C	Data Record	Save/load drive control	1
\$D	Image Print	Colour conversion on printing	2
\$E	Data Record	Volume name of permanent store	8
\$F	TLink	Statistics	32
\$10	Microdrive Utilities	Microdrive cartridge life thresholds	11
\$11	Printer Manager	Printing options	1
\$12	Printer Manager	Operational characteristics	3
\$13	Printer Manager	Control sequences	Variable see note

<u>Ident- ifier</u>	<u>Owner</u>	<u>Purpose</u>	<u>Size in bytes</u>
\$14	Printer Manager	Installed printer name	10
\$15	TLink	Machine identifier	2
\$16	Data Record	Unwanted segment list	Variable up to 100
\$17	Interfile	Configuration data	1
\$18	Bad Number List	Redial rules	Variable up to 36
\$19		Number of discs attached	1
\$1A		Password	8
\$1B	BASIC Interpreter	Country code	3
\$1C	SETC1 Program	Table size control	1
\$1D	Datrec (new)	Last file of last save	24
\$1E	Datrec (new)	Last file of premanent save	24
\$1F	SETC1 Program	Data preserved over reset	13
\$20	Line 1	RECALL operation	3
\$21	Line 2	RECALL operation	3
\$22		Microdrive device assignment	2
\$23-\$2E	Reserved	Kernel use	
\$2F	Tutor	Port configuration	4
\$30	BASIC Interpreter	Default interpreter	2
\$31-\$DF	Reserved		
\$E0-\$EF	Reserved	Telephone Handler	
\$F0-\$FC		Telephone charging	312
\$FD		Telephone flags	1
\$FE		Data Auto-answer protocol application	12

<u>Ident- ifier</u>	<u>Owner</u>	<u>Purpose</u>	<u>Size in bytes</u>
\$FF		Telephone configuration	2

\$100- \$FFF	Reserved
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Note

For the ICL Thermal Printer, the size for the control sequences is 78.

Register of Filename Extensions

Appendix 3

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REGISTER OF FILE EXTENSIONS

Some applications which generate files give a fixed extension of up to 3 letters to files of a particular type. The following list gives the file extensions currently in use by ICL applications.

.aba	Abacus worksheet
.asm	assembler source
.bas	Metacomco BASIC source
.cal	X-Calc worksheet
.c	C source
.cde	linkable machine code
.dbf	Archive database
.doc	Quill document
.exe	executable machine code
.exp	Export from Quill, Abacus or Archive
.grf	Easel file
.h	C include (header) file
.lis	Xchange list file
.mx	S-record (PROM) format
.prg	Archive program
.scn	Archive screen
.tgt	Glass Teletype and Feeding Teletype page
.tok	tokenised BASIC source
.til	ICL-Link page
.tpl	Power-Link page
.ttl	Temilink page
.tvd	Viewdata page
.tvt	VT-Link page

Files of executable machine code may have extensions other than .exe or may have no extension, but any file with an extension .exe should contain executable machine code.

If you wish to use standard file extensions in your software, do not use any of those in this list, except for their stated purpose. If you wish to have any file extensions that you use added to this list, so that other software can avoid them, please contact:

Support Unit	Telephone
PCBC	Bracknell (0344) 486868
ICL	
Avis House	
Station Road	
Bracknell	
Berkshire RG12 1BD	

INCLUDE File Listings

Appendix 4

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INCLUDE FILE LISTINGS

This appendix contains listings of the following INCLUDE files:

<u>Section</u>	<u>Name</u>	<u>Use</u>
A4.1	KERNEL.DVVALUES.DG	Logical device number
A4.2	KERNEL.ERRORS.DG	Error number definitions
A4.3	KERNEL.K9VALUES.DG	Kernel action values
A4.4	KERNEL.T9VALUES.DG	Trap name definitions
A4.5	AH.D9VALUES.DG	} Application Handler
A4.6	AH.TGVALUES.DG	
A4.7	COMSUB.CSVALUES.DG	Common subroutines trap values
A4.8	COMSUB.CSFDEFS.DG	Field Editor
A4.9	COMSUB.CSWDEFS.DG	Waiter
A4.10	TH.THVALUES.DG	} Telephone Handler
A4.11	TH.PHVALUES.DG	
A4.12	TD.TDVALUES.DG	Telephone Directory
A4.13	DATREC.DADEFs.DG	Data Record
A4.14	PM.PMVALUES.DG	Printer Manager
A4.15	CA.CAVALUES.DG	} Computer Access
A4.16	CA.CACBVALS.DG	
A4.17	CA.CASCVALS.DG	
A4.18	CA.CASTVALS	
A4.19	TLINK.L9VALS.DG	
		Layered Communications

A4.1 DVVALUES

* (Kernel Version 68.1) Device Routine Numbers included.
 * NOLIST (c) Copyright ICL 1985
 * The device numbers are offsets into the Global Data Device
 * Routine Tables, and are all multiples of four.

	OFFSET	0	
DV.SCREEN	DS.L	1	Screen Device.
DV.NOTICE	DS.L	1	Noticeboard Device.
DV.KEYBD	DS.L	1	Normal Keyboard Device.
DV.SKEYBD	DS.L	1	System Keyboard Device.
DV.LINE1	DS.L	1	Phone Line 1 Device.
DV.LINE2	DS.L	1	Phone Line 2 Device.
DV.MODEM	DS.L	1	Modem Device.
DV.SYNTH	DS.L	1	Synthesizer Device.
DV.FILES	DS.L	1	File Device Routine.
DV.FILE	EQU	DV.FILES	
DV.TIMER	DS.L	1	Interval Timer 'Device'.
DV.PRINT	DS.L	1	Printer Device.
DV.PIPE	DS.L	1	Pipe Device.
DV.EXT0	DS.L	1	External / Add on Device.
DV.EXT1	DS.L	1	External / Add on Device.
DV.EXT2	DS.L	1	External / Add on Device.
DV.EXT3	DS.L	1	External / Add on Device.
DV.EXT4	DS.L	1	External / Add on Device.
DV.EXT5	DS.L	1	External / Add on Device.
DV.EXT6	DS.L	1	External / Add on Device.
DV.EXT7	DS.L	1	External / Add on Device.
DV.MAXDV	EQU	*-4	Maximum device number.

SECTION 0

LIST

A4.2 ERRORS

```

*           (Kernel Version 68.0)   Error Number Definitions included.
*           NOLIST
* Include file ERRORS               (c) Copyright ICL 1983
* =====
*
* This file defines the error codes returned by various parts of the system
* software.
*
ERR.NC      EQU      -1           operation Not Complete
ERR.NA      EQU      -2           Not a valid Activity
ERR.OM      EQU      -3           Out of Memory
ERR.OR      EQU      -4           Out of Range
ERR.BO      EQU      -5           Buffer Overflow
ERR.NO      EQU      -6           channel Not Open
ERR.NF      EQU      -7           object Not Found
ERR.EX      EQU      -8           object already Exists
ERR.IU      EQU      -9           object In Use
ERR.ND      EQU     -10           Not a valid Database
ERR.TR      EQU     -11           Terminate Review (A.H only)
ERR.NI      EQU     -12           Not Implemented
ERR.NL      EQU     -13           No such lock
ERR.DE      EQU     -14           Device or Data Error
ERR.BP      EQU     -15           Bad Parameter
ERR.NB      EQU     -16           No immediate Byte
ERR.TX      EQU     -17           Transfer Cancelled
ERR.DL      EQU     -18           Data Lost
ERR.SR      EQU     -19           Screen Resolution changed
ERR.UV      EQU     -20           Unexpected or Uncatered-for Event
ERR.CP      EQU     -21           Cmos Ram corrupt.
ERR.DT      EQU     -22           Director Tables.Full.
ERR.NP      EQU     -23           Not a Valid Program.
ERR.BL      EQU     -24           Battery Low
ERR.NT      EQU     -25           Not a Valid Telephone Line
ERR.SO      EQU     -26           Screen Powered Off
ERR.OP      EQU     -27           Out of Parameters
ERR.NS      EQU     -28           Not a Valid Segment
ERR.NV      EQU     -29           No Volume found (Read timeout)
ERR.OS      EQU     -30           Out of Sectors.
ERR.DI      EQU     -31           Data Invalid.
ERR.CO      EQU     -32           Catalogue Open.
ERR.UF      EQU     -33           Cartridge Unformatted.
ERR.US      EQU     -34           Cartride U/S.
ERR.BF      EQU     -35           Block Transfer Failure.
ERR.WP      EQU     -36           Write Protected.
ERR.WF      EQU     -37           Wrong Format.
ERR.PF      EQU     -38           Parity Failure.
ERR.SL      EQU     -39           Save / Load in progress.
ERR.CF      EQU     -40           Modem Channel Failure.
ERR.MD      EQU     -41           Other drive spinning when format.
*
* End of include file ERRORS
* =====
*
LIST

```

A4.3 K9VALUES

```

*          (Kernel Version 68.0)      Kernel Action Values included.
*          NOLIST
* Include file K9VALUES                (c) Copyright ICL 1983
* =====
*
* This file contains Kernel action values
*
*          OFFSET 0
K.XXXVECT DS.B 1      System Exception Redirection.      (4.2)
K.DUMMY0  DS.B 1      !!! no longer used
K.SYSERR  DS.B 1      System Error.                    (4.4)
K.CHECKADD DS.B 1      Check Address Space.              (4.5)

K.NEWACT  DS.B 1      Create New Activity.              (5.10.1)
K.XACT    DS.B 1      Destroy Activity.                 (5.10.2)
K.SUICIDE DS.B 1      Destroy Current Activity.         (5.10.3)
K.MURDER  DS.B 1      Forcibly Destroy Activity.       (5.10.4)
K.EXVECT  DS.B 1      Notify Error/Trap Vector Address. (5.10.5)
K.GIVACT  DS.B 1      Give Activity Status.             (5.10.6)
K.PRIORITY DS.B 1     Change Activity Priority.         (5.10.7)
K.GIVSUBSID DS.B 1    Give Subsidiary Activity Numbers. (5.10.8)

K.ASKEVENT DS.B 1     Request Event notification.       (6.8.1)
K.CLREVENT DS.B 1     Clear Event Requests.             (6.8.2)
K.GLOBEVENT DS.B 1    Signal Global Event(s).           (6.8.3)
K.LOCEVENT DS.B 1     Signal Local Event(s).            (6.8.4)
K.WAIT     DS.B 1     Wait for Event(s) or Time.        (6.8.5)

K.DUMMY1  DS.B 1      !!! TEMP !!!
K.NEWSEM  DS.B 1      Create New Semaphore              (7.4.1)
K.XSEM    DS.B 1      Destroy Semaphore                 (7.4.2)
K.SEMOWN  DS.B 1      Change Semaphore Ownership        (7.4.3)
K.LOCK    DS.B 1      Lock Semaphore.                   (7.4.5)
K.LOCKEVENT DS.B 1    Lock Semaphore + Wait for Events (7.4.6)
K.UNLOCK  DS.B 1      Unlock / Free Semaphore.          (7.4.7)

K.NEWSEG  DS.B 1      Create New Segment.               (8.5.1)
K.CELLTAG DS.B 1      Get Cell Tag                      (8.5.21)
K.XSEG    DS.B 1      Destroy Segment                   (8.5.2)
K.SEGOWNER DS.B 1     Change Segment Ownership          (8.5.3)
K.SEGLIMIT DS.B 1     Set Segment Limits                (8.5.4)
K.SEGEXPAND DS.B 1    Expand Segment                   (8.5.5)
K.SEGREDUCE DS.B 1    Reduce Segment                    (8.5.6)
K.FREEZE  DS.B 1      Freeze Segment                   (8.5.7)
K.THAW    DS.B 1      Thaw Segment                     (8.5.8)
K.GIVSEG  DS.B 1      Give Segment Information          (8.5.9)
K.GIVMEMORY DS.B 1    Give Memory Space Information     (8.5.10)
K.IMMOB   DS.B 1      Immobilise an Address (Private)   (8.5.22)
K.REGCELLS DS.B 1     Register Cells in Segment.

K.NEWCELL DS.B 1      Create New Cell                   (8.5.11)
K.XCELL   DS.B 1      Destroy Cell                      (8.5.12)
K.CELLEXPAND DS.B 1   Expand Cell                      (8.5.13)
K.CELLREDUCE DS.B 1   Reduce Cell                      (8.5.14)
K.GIVCFREE DS.B 1     Give Free Cell Space              (8.5.15)
K.GIVCLEN DS.B 1      Give Cell Length                 (8.5.16)
K.GIVCSEG DS.B 1      Give Segment Identifier of Cell  (8.5.17)
K.XXXCEL  DS.B 1      Reset Cell Allocator             (8.5.18)
K.CELL1   DS.B 1      Get First Cell of Segment        (8.5.19)
K.SQUASH  DS.B 1      Squash Cells Down and Tidy        (8.5.20)

K.READNVM DS.B 1      Read Non-Volatile Memory Entry.  (8.7.1)
K.WRITENVM DS.B 1     Write Non-Volatile Memory Entry. (8.7.2)
K.XNVM    DS.B 1      Destroy Non-Volatile Memory Entry. (8.7.3)

```

K9VALUES continued

K.GIVCHAN	DS.B	1	Give Channel Status.	(9.7.8)
K.OPEN	DS.B	1	Open Channel.	(9.7.1)
K.CLOSE	DS.B	1	Close Channel.	(9.7.2)
K.GETBYTE	DS.B	1	Get Byte Immediate.	(9.7.3)
K.PUTBYTE	DS.B	1	Put Byte Immediate.	(9.7.4)
K.QGETSTR	DS.B	1	Queued Get String.	(9.7.5)
K.QGETTERM	DS.B	1	Queued Get String with Terminator.	(9.7.6)
K.QPUTSTR	DS.B	1	Queued Put String.	(9.7.7)
K.XIO	DS.B	1	Cancel IO.	(9.7.9)
K.DEVIO0	DS.B	1	Extra device routine I/O call 0	
K.DEVIO1	DS.B	1	Extra device routine I/O call 1	
K.DEVIO2	DS.B	1	Extra device routine I/O call 2	
K.DEVIO3	DS.B	1	Extra device routine I/O call 3	
K.DEVIO4	DS.B	1	Extra device routine I/O call 4	
K.DEVIO5	DS.B	1	Extra device routine I/O call 5	
K.DEVIO6	DS.B	1	Extra device routine I/O call 6	
K.FASTLN	EQU	K.DEVIO1	Fast Queued Put Line	(10.9.10)
K.FONT	EQU	K.DEVIO2	Change Character font	(10.9.11)
K.PLOT	EQU	K.DEVIO3	Plot Point Immediate	(10.9.12)
K.DRAW	EQU	K.DEVIO4	Draw Line Immediate	(10.9.13)
K.SETDISP	EQU	K.DEVIO5	Set Display Mode	(10.9.14)
K.GIVWSB	EQU	K.DEVIO6	Give Window Status Block Info	(10.9.15)
K.GIVHDISP	DS.B	1	Read Display Mode	(10.10.2)
K.GIVEDIS	EQU	K.GIVHDISP		
K.ETHDISP	DS.B	1	Set Hardware Display Mode	
K.XXXKBB	EQU	K.DEVIO2	Reset Keyboard buffer	(11.12.5)
K.NOMBRK	EQU	K.DEVIO3	Nominate Breakin Key	(11.12.6)
K.SETKBM	DS.B	1	Change Keyboard Mode	(11.12.3)
K.KEYRPT	DS.B	1	Change Repetition Rate	(11.12.4)
K.INKEY	DS.B	1	Inkey facility.	(11.12.4)
K.MODEMTLR	EQU	K.DEVIO1	Modem : Turn Line Round	(13.5.8)
K.MODEMBRK	EQU	K.DEVIO2	Modem : Send Break	(13.5.9)
K.OPENTIM	DS.B	1	Open Interval Timer Channel	(18.2.1)
K.TIMER	EQU	K.QPUTSTR	Set Interval Timer Channel	(18.2.2)
K.READCLOCK	DS.B	1	Get Real Time Clock Value	(19.6.1)
K.SETCLOCK	DS.B	1	Set Real Time Clock Value	(19.6.2)
K.BATTERY	DS.B	1	Check Battery	(19.6.3)
K.SOUND	DS.B	1	Make Sound	(19.6.4)
K.QBLOCK	DS.B	1	(MDV) Queued Block Access	(15.10.3)
K.LOADFILE	DS.B	1	(MDV) Queued Load File	(15.10.4)
K.SAVEFILE	DS.B	1	(MDV) Queued Save File	(15.10.5)
K.QCFILE	DS.B	1	(MDV) Queued Change File Info	(15.11.2)
K.GIVFILE	DS.B	1	(MDV) Give File Information	(15.11.1)
K.XFILE	DS.B	1	(MDV) Delete File	(15.11.3)
K.XXXVOL	DS.B	1	(MDV) Format Volume	(15.11.4)
K.GIVMDV	DS.B	1	(MDV) Give Drive Information	(15.11.5)
K.CHANOWN	DS.B	1	Change Channel Ownership	(9.7.1)
K.SELNKB	DS.B	1	Select Normal Keyboard Channel	(11.10.2)

* End of include file K9VALUES

* =====

*

SECTION 0
LIST

Return to Section 0.

A4.4 T9VALUES

```

*          (Kernel Version 68.0)      Trap Number Definitions included.
*          NOLIST
*
* Include file T9VALUES                (c) Copyright ICL 1983
* =====
*
* This file defines the trap numbers for entry to the system functions
*
T.GETCELL EQU 11                      Get Cell Address
T.DIRECTOR EQU 12                     Application Handler (Director).
T.KERNEL EQU 13                       Normal Kernel Control Calls.
T.DEBUG EQU 14                        Debug / Tutor Calls.
T.TRACE EQU 15                        Trace Calls.

T.CMNSUBS EQU T.DIRECTOR              Alias Common Subroutines.
T.TDA EQU T.DIRECTOR                  Alias Telephone Directory Application.
T.TLINK EQU T.DIRECTOR                Alias TLINK Manager
T.DATARCH EQU T.DIRECTOR              Alias Data Archive facility (Data Recorder)
T.PRINMN EQU T.DIRECTOR               Alias Print manager
*
* End of include file T9VALUES
* =====
*
LIST

```

A4.5 D9VALUES

* (Application Handler Version 25.0) App Hand Action Values Included

NOLIST

* Include file D9VALUES (C) Copyright ICL 1984

* =====

* This file contains definitions of Action Values for
* calls on Application Handler.

*			
D.STAPP	EQU	1	Start Application
D.LOADPR	EQU	2	Load Program
D.RELPR	EQU	3	Release Program
D.XAPP	EQU	4	Destroy Application
D.INHAPP	EQU	5	Inhibit Application
D.REQFG	EQU	6	Request Foreground
D.RELFG	EQU	7	Release Foreground
D.SUSPFG	EQU	8	Suspend Foreground
D.READMENUKEY	EQU	9	Read Menu Key
D.READREV	EQU	10	Read Review Key
D.EXITREV	EQU	11	Exit Review
D.SEGPROPS	EQU	12	Change Segment Properties
D.XSEG	EQU	13	Destroy Segment
D.NBFLAG	EQU	14	Display Noticeboard Flag
D.NBREPORT	EQU	15	Display Noticeboard Report
D.NBCANCEL	EQU	16	Cancel Noticeboard Report
D.NBTCL	EQU	17	Display Telephony Report
D.DATETIME	EQU	18	Convert Date and Time
D.SOUND	EQU	19	Make Sound
D.TLMENTRY	EQU	20	Declare change to config TLM entry
D.BATCHECK	EQU	21	Perform battery check
D.NBCHDIAL	EQU	22	Change Dial Keys Status
D.WRITESEG	EQU	23	Request Write Access to Segment
D.STACT	EQU	24	Start Activity
D.SEGID	EQU	25	Get Segment Identifier
D.FINALREV	EQU	26	Declare Final Review Screen
D.READSEG	EQU	27	Request Read Access to Segment
D.RELSEG	EQU	28	Release Access to Segment
D.NEWNAME	EQU	29	Register New Name
D.FINDNAME	EQU	30	Find Name
D.XNAME	EQU	31	Destroy Name
D.RELWRITE	EQU	32	Release Write Access to Segment

* D.AVSIZE EQU 32 No of Action Values

* End of Include file D9VALUES

* =====

LIST

A4.6 TGVALUES

```
*          (Application Handler Version 25.0)    Tone Generator Values Included
          NOLIST
* Include file TGVALUES                      (C) Copyright ICL 1984
* =====
*
* This file contains definitions of 'requested sound' values for use in
* calls on the Application Handler procedure MAKE SOUND.
*
*
TG.RING0  EQU    0          Ringing tone off
TG.RING1  EQU    1          Ringing tone for line 1
TG.RING2  EQU    2          Ringing tone for line 2
TG.RING3  EQU    3          Ringing tone for lines 1 and 2
*
TG.BADKEY EQU    4          Invalid key
TG.TYPE   EQU    5          Invitation to type
TG.EVENT  EQU    6          Expected event
TG.ERROR  EQU    7          Unexpected event
TG.CART   EQU    8          Request for microdrive cartridge
TG.HOLD   EQU    9          Telephone line still in hold
TG.SPECIAL EQU   10        Special sound
*
*
* End of Include file TGVALUES
* =====
          LIST
```

A4.7 CSVALUES

```
*          (Common subroutines 19) action values included.
*          NOLIST
* Include file CSVALUES
* =====
*
* (C) Copyright International Computers PLC 1984
* This file contains the action values for Common Subroutines.
*
CS.TEXT    EQU    88          Action value for Text Expander
CS.FIELD   EQU    89          Action value for Field Editor
CS.WAITER  EQU    90          Action value for Waiter
*
*          Sub-action values for Waiter
CS.WMNO    EQU    0          For entry to CS_WMNO
CS.WMNL    EQU    2          For entry to CS_WMNL
CS.WINIT   EQU    4          For entry to CS_WINIT
CS.WKOPEN  EQU    6          For entry to CS_WKOPEN
CS.WDISP   EQU    8          For entry to CS_WDISP
CS.WPUTSTR EQU    10         For entry to CS_WPUTSTR
CS.WREAD   EQU    12         For entry to CS_WREAD
CS.WSUSP   EQU    14         For entry to CS_WSUSP
CS.WLIM    EQU    15         For parameter validity test in CS_WHEAD
*
* End of include file CSVALUES
* =====
*
LIST
```

A4.8 CSFDEFS

```

*          (Field Editor 19) Parameter Block Definitions included.
          NOLIST
* Include file CSFDEFS
* =====
*
*          (C) Copyright International Computers PLC    1984
* 'INCLUDE' file defining the data items held in the parameter block
* used by the field editor. [ This file should be used in all
* applications which use the field editor ].
*
          OFFSET 0
CS.FARRDSP    DS.W  1      Displacement of array down cell
CS.FARRCTG    DS.W  1      Cell tag of cell holding data array
CS.FARRLEN    DS.W  1      Number of data characters in array
CS.FKEYCHAN    DS.L  1      Channel identifier - keyboard
CS.FWINCHAN    DS.L  1      Channel identifier - screen window
CS.FLOCEVENT   DS.W  1      Free local event number
CS.FENMODE     DS.W  1      Entry mode
CS.FAROFF      DS.W  1      Array start offset
CS.FINK        DS.B  1      Ink/foreground colour
CS.FPAPER      DS.B  1      Paper/background colour
CS.FWIDTH      DS.W  1      Field width in characters
CS.FHEIGHT     DS.W  1      Field height in characters
CS.FCURARR     DS.W  1      Cursor posn. in array as index
CS.FCURH       DS.W  1      Cursor posn. in field, horizontally
CS.FCURV       DS.W  1      Cursor posn. in field, vertically
CS.FVAL        DS.W  1      Validation flags
CS.FCFLAGS     DS.L  1      Control flags
CS.FFNKMSK     DS.W  1      Function key validity bit mask
CS.FCALVAL     DS.B  6      Caller-valid characters
CS.FCALTERM    DS.B  3      Caller-terminators ( item may be up
                               to 256 bytes long )
* End of include file CSFDEFS
* =====
*
          LIST

```


A4.9 CSWDEFS

```

*      (Waiter 09) Parameter Block Definitions included.
*      NOLIST
*      Include file CSWDEFS
*      =====
*
*      (C) Copyright International Computers PLC 1984
*      'INCLUDE' file defining the data items held in the parameter block
*      used by Waiter. [ This file should be used in all
*      applications which use Waiter ]. The address of the
*      calling application's data area which contains its parameter
*      block is held in A3 on entry to Waiter.
*      Event no. & bit definitions are also included.
*
*      OFFSET 0
*
CS.WKBCHIDE DS.L 1      Normal keyboard channel identifier
CS.WSCCHIDE DS.L 1      Screen channel identifier
CS.WEVENTS  DS.L 1      Saved user & standard foreground events
CS.WMTLAD   DS.L 1      Addr. of main text library
CS.WCTLAD   DS.L 1      Addr. of common text library
CS.WDBAD    DS.L 1      Text Expander buffer
CS.WDBLEN   DS.L 1      Length of Text Expander buffer (bytes)
CS.WCDR     DS.L 1      Addr. of user supplied line display rtn.
*
CS.WDLINES  DS.W 1      No. of lines(main text lib entries) to
*                        be displayed
CS.WDLNO    DS.W 1      No. of next line to be displayed
CS.WDELAY   DS.W 1      Delay before display of first line
CS.WVFLAG   DS.W 1      Key validation flag
CS.WCDLNO   DS.W 1      Internal copy of CS.WDLNO
CS.WTLEFT   DS.W 1      Internal no. of entries still to display
CS.WTVAR    DS.B 1      Text variant no.
CS.WSMODE   DS.B 1      Screen channel display mode
CS.WRFLAG   DS.B 1      Keyboard read flag
CS.WEFLAG   DS.B 1      Exit flag
CS.WDFLAG   DS.B 1      Internal display flag
CS.WFFLAG   DS.B 1      Internal foreg. alloc'd ev. processed flag
CS.WRMFLAG  DS.B 1      Internal read menu key/normal KB flag
CS.WENTRY   DS.B 1      Entry mode 0=via TRAP to CS_WMNO/1
*                        1=via BSR/JSR to CS_WMNO/1
*                        2=via TRAP to CS_WREAD
*
*      DS.W 0
CS.WDEFSZ   EQU *      Size of Waiter Parameter Block
*
*      * Event no. definitions
CS.WENFA    EQU 2      Foreground allocated
CS.WENSF    EQU 3      Suspend foreground
CS.WENT     EQU 4      Terminate
CS.WENA     EQU 5      Abandon
CS.WENFM    EQU 6      Foreground mode
CS.WENKB    EQU 14     Keyboard I/O
CS.WENSC    EQU 15     Screen I/O
*      * Event bit definitions
CS.WEVFA    EQU 1<<CS.WENFA
CS.WEVSF    EQU 1<<CS.WENSF
CS.WEVT     EQU 1<<CS.WENT
CS.WEVA     EQU 1<<CS.WENA
CS.WEVFM    EQU 1<<CS.WENFM
CS.WEVKB    EQU 1<<CS.WENKB
CS.WEVSC    EQU 1<<CS.WENSC
CS.WEVFK    EQU CS.WEVFA+CS.WEVKB Foreg. alloc'd + keyboard I/O
*
*      End of include file CSWDEFS
*      =====
*
LIST

```

A4.10 THVALUES

* (Telephone Handler Vsn. 6.0) Interface Procedures Action Values.

NOLIST

* Include file THVALUES 18/10/83 (C) Copyright ICL 1984

* =====

*

* This file contains definitions of Action Values for
* calls on Telephone Handler Interface Procedures.

* Amended 2/7/84 to add new interface for VAA

* Amended 11/9/84 to add new interface for messaging CHECKCB

*

*

	OFFSET 42	
TH.AUTOV DS.B	1	Autodial Voice
TH.AUTOD DS.B	1	Autodial Data
TH.DIALV DS.B	1	Manual dial voice
TH.DIALD DS.B	1	Manual dial data
TH.CONFV DS.B	1	Configure voice
TH.CONFD DS.B	1	Configure data
TH.TIMEC DS.B	1	Time call
TH.CALLL DS.B	1	Call details
TH.MONIT DS.B	1	Monitor line
TH.SETDA DS.B	1	Set up line for data AA. Configurator only
TH.ENDC DS.B	1	End call
TH.GETAD DS.B	1	Get TDB addresses. Configurator only.
TH.CTIME DS.B	1	Set call timing
TH.ENQU DS.B	1	Get TH state.
TH.DTAA DS.B	1	Data auto-answer. Messaging system only
TH.UPNB DS.B	1	Update noticeboard line state. System only.
TH.VAANQ DS.B	1	VAA enquiry. VAA only returns message lock
TH.CHKCB DS.B	1	Check CB against CMOS. Messaging only.

*

TH.AVSIZE EQU * Size of Action Value list

*

T.PHONE EQU T.DIRECTOR Alias Telephone Subroutines.

* End of Include file THVALUES

* =====

LIST

A4.11 PHVALUES

* (Telephone Handler Vsn. 3.0) Telephone Device Values Included

NOLIST

* Include file PHVALUES 25/10/83 (C) Copyright ICL 1983/4

* =====

*

* This file contains definitions of Telephone device
* driver control bytes.

*

*

PH.XLED	EQU	\$0A	Switch LED off
PH.END	EQU	\$01	End call
PH.START	EQU	\$00	Start call
PH.LED	EQU	\$09	Switch LED on
PH.HSET	EQU	\$02	Switch handset to line
PH.TALK	EQU	\$03	Connect handset to line
PH.SPKR	EQU	\$04	Connect loudspeaker to line
PH.MUTE	EQU	\$07	Mute line
PH.XMUTE	EQU	\$08	Unmute line
PH.EXTN	EQU	\$06	Connect line to external audio
PH.DIALN	EQU	\$30	Dial digit
PH.DTMFH	EQU	\$20	Dial DTMF digit
PH.RCALL	EQU	\$0B	Recall to line
PH.XRCAL	EQU	\$0C	Cancel recall line
PH.DATA	EQU	\$0F	Switch line to data mode
PH.MONON	EQU	\$0D	Switch Monitor call on
PH.MONOF	EQU	\$0E	Switch Monitor call off
PH.SYNT	EQU	\$05	Connect synthesiser to line
PH.MODEM	EQU	\$13	Start up Modem
PH.XMODEM	EQU	\$14	Stop Modem

*

* End of Include file PHVALUES

* =====

LIST

A4.12 TDVALUES

```
*          (Telephone Directory) Global include file.
*          NOLIST
* Include file TDVALUES
* =====
*
*          Action value definitions
*
TD.VN_SC      EQU      14
TD.VM_GNR     EQU      65
TD.CS_GNR     EQU      66
TD.EXTRACT    EQU      67
TD.CADS       EQU      68
TD.CHKID      EQU      69
TD.MAX_AV     EQU      69

*          Field number definitions:
*
*          If field is present the corresponding
*          bit is set in FBITMAP
*
TD.SHORTCODE   EQU      0      Shortcode Tag
TD.NAME        EQU      1      Name
TD.INITIALS    EQU      2      Initials
TD.TITLE       EQU      3      Title
TD.VOICENO     EQU      4      Voice Dialable Number
TD.VEXT        EQU      5      Voice Extension Number
TD.SERVICENO   EQU      6
TD.DATANO      EQU      7      Data Dialable Number
TD.DEXT        EQU      8      Data Extension Number
TD.CHARGE      EQU      9      Charge Band
TD.DESCRPTION  EQU      10     Description
TD.VACCESS     EQU      11     Voice number access indicator
TD.DACCESS     EQU      12     Data number access indicator
TD.PRIORITY    EQU      13     Priority Directory Entry Indicator
TD.PROFILE     EQU      14     Computer Service Profile
TD.CSACCESS    EQU      15     Computer Service No. Access indicator
*
*
* End of Include file TDVALUES
* =====
*          LIST
```

A4.13 DADEFS

```
*          (Data Record 12) Action values included
          NOLIST
* Include file DADEFS
* =====
*
*          (C) Copyright   International Computers PLC   1984
*
DA.RXREF   EQU   72          For entry to REGISTER CROSS REFERENCE
DA.XXREF   EQU   73          For entry to DEREGISTER CROSS REFERENCE
DA.XAXREF  EQU   74          For entry to DEREGISTER ALL XREFS IN SEG
DA.RSXREF  EQU   75          For entry to REGISTER SPECIAL XREF
DA.XSXREF  EQU   76          For entry to DEREGISTER SPECIAL XREF
DA.SAVE    EQU   77          For entry to INITIATE DATA SAVE
DA.LOAD    EQU   78          For entry to INITIATE DATA LOAD
DA.STATUS  EQU   79          For entry to GIVE DATA STATUS
*
DA.FULL    EQU    4          Full store save or load
DA.DSELECT EQU    0          Selective dual store save or load
DA.SSELECT EQU   -4          Selective single store save
DA.NVM     EQU    8          Permanent store save or load
*
* End of include file DADEFS
* =====
*
          LIST
```


A4.14 PMVALUES

```
*          (Printer Manager V8.0)  Action values included
*          NOLIST
*
* Include file PMVALUES
* =====
*
* (C) Copyright ICL 1984
*
* This file defines the action values for traps into printer manager.
* The value of these traps may be changed but they must be
* contiguous values in the order shown.
*
PM.PRINT EQU 83          * print data
PM.OPEN  EQU 84          * open for printing
PM.CLOSE EQU 85          * close or abandon printing
PM.ENQ   EQU 86          * current page position
*
* End of include file PMVALUES
* =====
*
          LIST
```

A4.15 CAVALUES

```

*      (Computer Access Version 9.0) Computer Access Action Values Included
      NOLIST

* Include file CAVALUES      (C) Copyright ICL 1984
* =====
*
* This file contains definitions of Action Values for
* calls on the Computer Access Environment.
*
*
CA.READMODEM EQU 1      Read Modem
CA.READPAGE  EQU      CA.READMODEM Read Pagestore
CA.PUTBYTE   EQU 2      Put Byte to screen/printer/pagestore
CA.PUTSTRING EQU 3      Put String
CA.FLOW      EQU 4      Control Flow
CA.TLR       EQU 5      Turn Line Round
CA.INTTP     EQU 6      Interrupt Transmit Process
CA.PAGEBEGIN EQU 7      Begin Page
CA.PAGEEND   EQU 8      End Page
CA.STATE     EQU 9      Notify State
CA.FLUSH     EQU 10     Flush Buffer
CA.READKEY   EQU 11     Read Key
CA.PUTMBYTE  EQU 12     Put Byte to Modem
CA.INTRP     EQU 13     Interrupt Receive Process
CA.GETPROFILE EQU 14     Get Profile Field
CA.PUTPROFILE EQU 15     Put Profile Field
CA.NOMBRK    EQU 16     Nominate Break Key
CA.BREAK     EQU 17     Send Break Signal
CA.SETINDEX  EQU 18     Set Index to Page Data
*
* End of Include file CAVALUES
* =====
      SECTION 5
      LIST

```

A4.16 CACBVALS

```
*          (Computer Access Version 9.0)  CA Control Block Values Included
          NOLIST

* Include file CACBVALS          (C) Copyright ICL 1984
* =====
*
* This file contains values of displacements within the
* Computer Access Control Block.
*
*
CA.PROC      OFFSET 0
              DS.W   1          Jump instruction to CA control program
              DS.L   1          Address of CA control program
*
CA.RACT      DS.L   1          Receive process activity identifier
CA.TACT      DS.L   1          Transmit process activity identifier
CA.DACT      DS.L   1          Display process activity identifier
CA.PACT      DS.L   1          Print process activity identifier
*
CA.RSCR      DS.L   1          Receive process screen channel
CA.PPRT      DS.L   1          Print process printer channel
CA.DSCR      DS.L   1          Display process screen channel
*
CA.RTOT      DS.W   1          Data from receive to transmit process
CA.TTOR      DS.W   1          Data from transmit to receive process
*
              DS.W   0
CA.TXOFF     DS.B   1          XOFF OPD to host
CA.TXON      DS.B   1          XON  OPD to host
CA.RXOFF     DS.B   1          XOFF host to OPD
CA.RXON      DS.B   1          XON  host to OPD
CA.SENDK     DS.B   1          Character sent when RETURN typed
*
CA.CBSIZE    EQU    *          Size of control block
*
* End of Include file CACBVALS
* =====
          SECTION 5
          LIST
```

A4.17 CASCVALS

```

*      (Computer Access Version 9.0) Screen Driver Definitions Included
*      NOLIST
*
* Include File CASCVALS      (C) Copyright ICL 1984
* =====
*
* This file contains screen driver values used by Computer Access
*
* Control codes
*
SC.NULL    EQU    0
SC.INK     EQU    1
SC.PAPER   EQU    2
SC.RPT     EQU    4
SC.PAINT   EQU    5
SC.RIGHT   EQU    6
SC.LEFT    EQU    8
SC.BS      EQU    8
SC.STAB    EQU    9
SC.DOWN    EQU   10
SC.LF      EQU   10
SC.UP      EQU   11
SC.CLRW    EQU   12
SC.FF      EQU   12
SC.CR      EQU   13
SC.CURD    EQU   14
SC.CURI    EQU   15
SC.DBLW    EQU   16
SC.DBLH    EQU   17
SC.CPLOT   EQU   18
SC.CDEL    EQU   19
SC.WIND    EQU   20
SC.SCRLU   EQU   21
SC.SCRLD   EQU   22
SC.SCRL    EQU   23
SC.SCRLR   EQU   24
SC.BOUND   EQU   25
SC.INV     EQU   26
SC.ESC     EQU   27
SC.NL      EQU   28
SC.HOME    EQU   30
SC.CPOS    EQU   31
*
* Escape codes
*
SC.CLREL   EQU   65
SC.CLREW   EQU   66
SC.SVCUR   EQU   67
SC.RSCUR   EQU   68
SC.PSCR1   EQU   69
SC.PSCR2   EQU   70
SC.PSCR3   EQU   71
SC.PSCR4   EQU   72
SC.PFL     EQU   73
SC.CLRXX   EQU   74
SC.PFR     EQU   75
SC.ULINE   EQU   76
SC.XULINE  EQU   77
SC.PFLF    EQU   78
SC.PFRF    EQU   79
*
* Display colours
*
SC.BLACK   EQU    0
SC.BLUE    EQU    1
SC.RED     EQU    2
SC.MAGENTA EQU    3
SC.GREEN   EQU    4
SC.CYAN    EQU    5
SC.YELLOW  EQU    6
SC.WHITE   EQU    7
*

```

CASCVALS continued

```
* Character plot modes
*
SC.NORMAL EQU    0
SC.TRANSF EQU    1
SC.EOR    EQU    2
*
* Selected secondary font characters
*
SC.CURLYF EQU    $C0
SC.HASH    EQU    $CA
*
* End of Include file CASCVALS
* =====
*
      LIST
```


A4.18 CASTVALS

```
*          (Computer Access Version 9.0)  CA State Values Included
          NOLIST

* Include file CASTVALS          (C) Copyright ICL 1984
* =====
*
* This file contains values for the states that may be notified
* using NOTIFY STATE.
*
*
CA.FAIL   EQU    2
CA.DONE   EQU    4
CA.SUSP   EQU    6
CA.OWNSCR EQU    8
CA.40COL  EQU   10
CA.80COL  EQU   12
*
* End of Include file CASTVALS
* =====
          SECTION 5
          LIST
```

A4.19 L9VALUES

```
*          (TLink Version 1.0)          TLink Manager action values included.
*          NOLIST
* Include file L9VALUES
* =====
*
*          The GETCELL and FREECELL action values relate to the TLM buffer pool,
*          cell allocation and freeing calls. The CONTROL action value is used
*          to access the routines to police attempts to redial failed numbers.
*
L.GETCELL EQU 80          * The numerical value of these equates ..
L.FREECELL EQU 81         * .. are assumed in the algorithms that ..
L.CONTROL EQU 82          * .. use them. Be warned !
*
* End of include file L9VALUES
* =====
*
          LIST
```