



```

CCCCCCCC 000000 MM MM UU UU SSSSSSSS EEEEEEEEE EEEEEEEEE RRRRRRRR EEEEEEEEE XX XX
CCCCCCCC 000000 MM MM UU UU SSSSSSSS EEEEEEEEE EEEEEEEEE RRRRRRRR EEEEEEEEE XX XX
CC 00 00 MMMM MMMM UU UU SS SSSSSSS EEEEEEEEE RR RR EE EEEEEEEEE XX XX
CC 00 00 MMMM MMMM UU UU SS SSSSSSS EEEEEEEEE RR RR EE EEEEEEEEE XX XX
CC 00 00 MM MM MM UU UU SS SSSSSSS EEEEEEEEE RR RR EE EEEEEEEEE XX XX
CC 00 00 MM MM MM UU UU SS SSSSSSS EEEEEEEEE RR RR EE EEEEEEEEE XX XX
CC 00 00 MM MM MM UU UU SS SSSSSSS EEEEEEEEE RR RR EE EEEEEEEEE XX XX
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LL I11111 SSSSSSSS
LL I11111 SSSSSSSS
LL II SS
LL II SS
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LL II SSSSSS
LL II SSSSSS
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LL I11111 SSSSSSSS
LL I11111 SSSSSSSS

```

(2) 53  
(3) 67  
(4) 99

HISTORY ; Detailed Current Edit History  
DECLARATIONS  
USEREX - Main Entry Point

```
0000 1 .TITLE COM$USEREX : F4P COMPATIBILITY - USER EXIT PROCEDURE SPECIFICAT
0000 2 .IDENT /1-004/ : File: COMUSEREX.MAR Edit: SBL1004
0000 3
0000 4
0000 5 :*****
0000 6 :*
0000 7 :* COPYRIGHT (c) 1978, 1980, 1982, 1984 BY *
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0000 24 :*
0000 25 :*
0000 26 :*****
0000 27
0000 28
0000 29 FACILITY: FORTRAN COMPATIBILITY LIBRARY
0000 30 ++
0000 31 ABSTRACT:
0000 32
0000 33 USEREX allows specification of a user procedure to be called at
0000 34 image exit
0000 35
0000 36 ENVIRONMENT:
0000 37 User access mode, AST re-entrant
0000 38
0000 39 --
0000 40
0000 41 VERSION: 0
0000 42
0000 43 HISTORY:
0000 44
0000 45 AUTHOR:
0000 46 Peter Yuo, 7-Sep-77: Version 0
0000 47
0000 48 MODIFIED BY:
0000 49
0000 50
0000 51 :
```

```
0000 53      .SBTTL HISTORY          ; Detailed Current Edit History
0000 54
0000 55
0000 56 ; Edit History for Version 01 of USEREX
0000 57 ;
0000 58
0000 59 ; 0-3  - Push address.  TNH 19-Dec-77
0000 60 ; 0-5  - Change name to COMUSEREX.MAR.  JMT 5-Jan-78
0000 61 ; 0-6  - Rewrote entire routine so it will work.  JMT 29-Jan-78
0000 62 ; 1-001 - Update version number and copyright notice.  JBS 16-NOV-78
0000 63 ; 1-002 - Add "" to the PSECT directive.  JBS 22-DEC-78
0000 64 ; 1-003 - Explicitly declare externals.  SBL 17-May-1979
0000 65 ; 1-004 - Use general mode addressing.  SBL 30-Nov-1981
```

```
0000 67      .SBTTL  DECLARATIONS
0000 68
0000 69      :
0000 70      : INCLUDE FILES:
0000 71      :
0000 72      :
0000 73      :
0000 74      : EXTERNAL SYMBOLS:
0000 75      :
0000 76      :
0000 77      .DSABL  GBL
0000 78      .EXTRN  FOR$$GET_VM
0000 79      .EXTRN  FOR$$SIG_FATINT
0000 80
0000 81      :
0000 82      : MACROS:
0000 83      :
0000 84      :
0000 85      :
0000 86      : PSECT DECLARATIONS:
0000 87      :
00000000 88      .PSECT  _F4PCOMPAT$CODE PIC,USR,CON,REL,LCL,SHR,EXE,RD,NOWRT
0000 89
0000 90      :
0000 91      : EQUATED SYMBOLS:
0000 92      :
00000004 93      proc_entry_pt    = 4                : procedure_entry_point.rla.r
0000 94
0000 95      :
0000 96      : OWN STORAGE:
0000 97      :
```

```

0000 99          .SBTTL  USEREX - Main Entry Point
0000 100
0000 101      :++
0000 102      : FUNCTIONAL DESCRIPTION:
0000 103      :
0000 104      : 1) Call FOR$GET_VM to get the address of a termination control
0000 105      :    block of length 5 longwords (20 bytes) from virtual memory.
0000 106      : 2) Insert the address of user specified termination procedure
0000 107      :    into second longword of the termination control block and the
0000 108      :    number of termination arguments (1) into low byte of its
0000 109      :    third longword. Point the fourth word at the fifth word.
0000 110      : 3) Call $DCLTRM to declare termination handler.
0000 111      :
0000 112      : CALLING SEQUENCE:
0000 113      :
0000 114      : CALL USEREX (procedure_entry_point.rla.r)
0000 115      :
0000 116      : INPUT PARAMETERS:
0000 117      :
0000 118      : procedure_entry_point.rla.r
0000 119      :
0000 120      : IMPLICIT INPUTS:
0000 121      : NONE
0000 122      :
0000 123      : OUTPUT PARAMETERS:
0000 124      : NONE
0000 125      :
0000 126      : IMPLICIT OUTPUTS:
0000 127      : NONE
0000 128      :
0000 129      : COMPLETION CODES:
0000 130      :
0000 131      : NONE
0000 132      :
0000 133      : SIDE EFFECTS:
0000 134      :
0000 135      : SIGNAL STOPS insufficient virtual memory,
0000 136      : and fatal internal error if can't establish exit handler.
0000 137      :
0000 138      :--
0000 139
0000 140
0000 141
0000 142      .ENTRY  USEREX, ^M<>
0002 143
0002 144      :
0002 145      : Call FOR$$GET_VM
0002 146      :
0002 147      :
0002 148      : PUSHL  #20          ; get 20 bytes
0004 149      : CALLS  #1, G^FOR$$GET_VM ; from virtual memory
000B 150      : MOVL  R0, R1        ; R0=R1 -> allocated memory
000E 151
000E 152      :
000E 153      : Insert address of user specified procedure and number of termination
000E 154      : argument (=1) into TCB
000E 155      :

```

0000

00000000'GF 14 DD 0002 148  
 51 50 FB 0004 149  
 DO 000B 150

```

      000E 156
81 04 AC DS 000E 157          TSTL   (R1)+          ; skip over first entry
      0010 158          MOVL   proc_entry_pt(AP), (R1)+ ; insert address of users exit
      0014 159          ; handler
61 81 01 DO 0014 160          MOVL   #1, (R1)+      ; which will be called with one argument
      0017 161          DE 0017 161          MOVAL  4(R1), (R1)   ; namely, the address of a word con-
      001B 162          ; taining reason for termination
      001B 163          ;
      001B 164          ; Call DCLEXH to declare termination handler
      001B 165          ;
      001B 166          ;
      001B 167          $DCLEXH_S      (R0)      ; R0 = return code
00000000'GF 07 50 E8 0024 168          BLBS   -R0, 10$      ; branch if success
      0027 169          FB 0027 169          CALLS  #0, G^FOR$$$SIG_FATINT ; signal, never to return
      002E 170          ;
      04 002E 171 10$: RET          ; R0 = completion status
      002F 172          ;
      002F 173          .END
  
```



```
FOR$$GET_VM ***** X 00
FOR$$SIG_FATINT ***** X 00
PROC_ENTRY_PT = 00000004
SYS$DCLEXH ***** G 01
USEREX 00000000 RG 01
```

-----  
 ! Psect synopsis !  
 -----

PSECT name	Allocation	PSECT No.	Attributes
ABS	00000000 ( 0.)	00 ( 0.)	NOPIC USR CON ABS LCL NOSHR NOEXE NORD NOWRT NOVEC BYTE
_F4PCOMPAT\$CODE	0000002F ( 47.)	01 ( 1.)	PIC USR CON REL LCL SHR EXE RD NOWRT NOVEC BYTE

-----  
 ! Performance indicators !  
 -----

Phase	Page faults	CPU Time	Elapsed Time
Initialization	32	00:00:00.08	00:00:00.90
Command processing	117	00:00:00.52	00:00:04.36
Pass 1	99	00:00:00.56	00:00:03.09
Symbol table sort	0	00:00:00.01	00:00:00.01
Pass 2	44	00:00:00.37	00:00:01.16
Symbol table output	2	00:00:00.01	00:00:00.01
Psect synopsis output	2	00:00:00.02	00:00:00.02
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	298	00:00:01.58	00:00:09.55

The working set limit was 1050 pages.  
 1915 bytes (4 pages) of virtual memory were used to buffer the intermediate code.  
 There were 10 pages of symbol table space allocated to hold 5 non-local and 1 local symbols.  
 173 source lines were read in Pass 1, producing 11 object records in Pass 2.  
 2 pages of virtual memory were used to define 2 macros.

-----  
 ! Macro library statistics !  
 -----

Macro library name	Macros defined
_\$255\$DUA28:[SYSLIB]STARLET.MLB;2	2

12 CITS were required to define 2 macros.

There were no errors, warnings or information messages.

MACRO/ENABLE=SUPPRESSION/DISABLE=(GLOBAL,TRACEBACK)/LIS=LIS\$:COMUSEREX/OBJ=OBJ\$:COMUSEREX MSRC\$:COMUSEREX/UPDATE=(ENH\$:COMUSEREX)



COMR50WD  
LIS

FORDATEDS  
LIS

FORDECOMO  
LIS

FORB  
LIS

COMSETST  
LIS

FORASSOC  
LIS

FORCLOSEF  
LIS

FORDATE  
LIS

FORCLOSE  
LIS

FORDECOMP  
LIS

FORDELETE  
LIS

COMRAD50  
LIS

COMUSEREX  
LIS

FORBITOPS  
LIS

FORDEFINE  
LIS

FORBACKSP  
LIS

FORCUTR  
LIS

FORDISPA  
LIS