```
UUU        UUU  EEEEEEEEEEEEEEE  TTTTTTTTTTTTTTT   PPPPPPPPPPPP          SSSSSSSSSSSS  YYY              YYY
UUU        UUU  EEEEEEEEEEEEEEE  TTTTTTTTTTTTTTT   PPPPPPPPPPPP          SSSSSSSSSSSS  YYY              YYY
UUU        UUU  EEEEEEEEEEEEEEE  TTTTTTTTTTTTTTT   PPPPPPPPPPPP          SSSSSSSSSSSS  YYY              YYY
UUU        UUU  EEE                     TTT        PPP        PPP  SSS                 YYY              YYY
UUU        UUU  EEE                     TTT        PPP        PPP  SSS                 YYY              YYY
UUU        UUU  EEE                     TTT        PPP        PPP  SSS                 YYY              YYY
UUU        UUU  EEE                     TTT        PPP        PPP  SSS                   YYY        YYY
UUU        UUU  EEE                     TTT        PPP        PPP  SSS                   YYY        YYY
UUU        UUU  EEEEEEEEEEEE            TTT        PPPPPPPPPPPP          SSSSSSSSS         YYY
UUU        UUU  EEEEEEEEEEEE            TTT        PPPPPPPPPPPP          SSSSSSSSS         YYY
UUU        UUU  EEEEEEEEEEEE            TTT        PPPPPPPPPPPP          SSSSSSSSS         YYY
UUU        UUU  EEE                     TTT        PPP                         SSS        YYY
UUU        UUU  EEE                     TTT        PPP                         SSS        YYY
UUU        UUU  EEE                     TTT        PPP                         SSS        YYY
UUU        UUU  EEE                     TTT        PPP                         SSS        YYY
UUUUUUUUUUUUUU  EEEEEEEEEEEEEEE         TTT        PPP          SSSSSSSSSSSS              YYY
UUUUUUUUUUUUUU  EEEEEEEEEEEEEEE         TTT        PPP          SSSSSSSSSSSS              YYY
UUUUUUUUUUUUUU  EEEEEEEEEEEEEEE         TTT        PPP          SSSSSSSSSSSS              YYY
```

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 SSSSSSSS      AAAAAA    TTTTTTTTTT    SSSSSSSS    SSSSSSSS    SSSSSSSS   5555555555    222222
 SSSSSSSS      AAAAAA    TTTTTTTTTT    SSSSSSSS    SSSSSSSS    SSSSSSSS   5555555555    222222
SS            AA    AA       TT       SS          SS          SS          55          22    22
SS            AA    AA       TT       SS          SS          SS          55          22    22
SS            AA    AA       TT       SS          SS          SS          555555            22
SS            AA    AA       TT       SS          SS          SS          555555            22
   SSSSSS     AA    AA       TT          SSSSSS      SSSSSS      SSSSSS        55            22
   SSSSSS     AA    AA       TT          SSSSSS      SSSSSS      SSSSSS        55            22
       SS   AAAAAAAAAA       TT              SS          SS          SS        55            22
       SS   AA    AA         TT              SS          SS          SS    55  55            22
       SS   AA    AA         TT              SS          SS          SS    55  55   22    22
SSSSSSSS    AA    AA         TT       SSSSSSSS    SSSSSSSS    SSSSSSSS      555555   222222222
SSSSSSSS    AA    AA         TT       SSSSSSSS    SSSSSSSS    SSSSSSSS      555555   222222222


LL            IIIIII      SSSSSSSS
LL            IIIIII      SSSSSSSS
LL              II       SS
LL              II       SS
LL              II       SS
LL              II          SSSSSS
LL              II          SSSSSS
LL              II              SS
LL              II              SS
LL              II              SS
LLLLLLLLLL    IIIIII      SSSSSSSS
LLLLLLLLLL    IIIIII      SSSSSSSS
```

```
0000      1                 .TITLE    SATSSS52 SATS SYSTEM SERVICE TESTS   $DLCEFC (SUCC S.C.)
0000      2                 .IDENT   'V04-000'
0000      3
0000      4
0000      5  ;****************************************************************************
0000      6  ;*                                                                          *
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0000     24  ;*                                                                          *
0000     25  ;*                                                                          *
0000     26  ;****************************************************************************
0000     27  ;
0000     28  ;
0000     29  ;++
0000     30  ; FACILITY:      SYSTST (SATS SYSTEM SERVICE TESTS)
0000     31  ;
0000     32  ; ABSTRACT:
0000     33  ;
0000     34  ;          THIS MODULE CONTAINS SUBROUTINES WHICH, WHEN LINKED
0000     35  ; WITH SUCCOMMON.OBJ, FORM TEST MODULE SATSSS52 TO TEST SUCCESSFUL
0000     36  ; OPERATION OF THE $DLCEFC SYSTEM SERVICE. THE SERVICE IS INVOKED
0000     37  ; UNDER VARIOUS INPUT CONDITIONS WITH VARYING INPUT PARAMETERS. ONLY
0000     38  ; SUCCESSFUL STATUS CODES ARE EXPECTED IN THIS TEST MODULE.  CORRECT
0000     39  ; OPERATION OF THE SERVICE FOR EACH OF ITS ISSUANCES IS VERIFIED BY
0000     40  ; CHECKING FOR AN SS$_NORMAL STATUS CODE, EXPECTED RETURN ARGUMENTS
0000     41  ; AND EXPECTED FUNCTIONALITY PERFORMED.
0000     42  ;
0000     43  ; ENVIRONMENT:  USER MODE IMAGE; NEEDS CMKRNL PRIVILEGE,
0000     44  ;               DYNAMICALLY ACQUIRES OTHER PRIVILEGES, AS NEEDED.
0000     45  ;
0000     46  ; AUTHOR: THOMAS L. CAFARELLA,          CREATION DATE: JAN, 1978
0000     47  ;
0000     48  ; MODIFIED BY:
0000     49  ;
0000     50  ;         VERSION 1.5 : 25-MAY-79
0000     51  ;
0000     52  ; 01  LDJ  10/11/79     Fixed bug caused by DIB$K_LENGTH change ACG052.RNO mem
0000     53  ;
0000     54  ;--
```

E 16

SATSSS52   SATS SYSTEM SERVICE TESTS $DLCEFC (SUCC 16-SEP-1984 00:57:11 VAX/VMS Macro V04-00   Page 2
V04-000   DECLARATIONS   5-SEP-1984 04:32:09 [UETPSY.SRC]SATSSS52.MAR;1   (1)

```
0000    56              .SBTTL  DECLARATIONS
0000    57  ;
0000    58  ; INCLUDE FILES:
0000    59  ;
0000    60          $PRVDEF                          ; PRIVILEGE BIT DEFINITIONS
0000    61          $PHDDEF                          ; PROCESS HEADER OFFSETS
0000    62          $PQLDEF                          ; PROCESS QUOTA CODES
0000    63          $DIBDEF                          ; DEVICE INFO BLOCK OFFSETS
0000    64  ;
0000    65  ; MACROS:
0000    66  ;
0000    67  ;
0000    68  ; EQUATED SYMBOLS:
0000    69  ;
0000    70  ;
0000    71  ; OWN STORAGE:
0000    72  ;
```

F 16

SATSSS52
V04-000

SATS SYSTEM SERVICE TESTS $DLCEFC (SUCC 16-SEP-1984 00:57:11   VAX/VMS Macro V04-00   Page   3
DECLARATIONS   5-SEP-1984 04:32:09   [UETPSY.SRC]SATSSS52.MAR;1   (1)

```
00000000      74                  .PSECT  RODATA,RD,NOWRT,NOEXE,LONG
    0000      75  TEST_MOD_NAME::  STRING  C,<SATSSS52>      ; TEST MODULE NAME
    0009      76  TEST_MOD_NAME_D: STRING  I,<SATSSS52>      ; TEST MODULE NAME DESCRIPTOR
    0019      77  MSG1_INP_CTL:    STRING  I,<  SSDEF!4ZW: CONDITIONS:>
    0039      78                                            ; FAO CTL STRING FOR MSG1 IN SUCCOMMON.MAR
    0039      79  MSG3_ERR_CTL::   STRING  I,< *SSDEF!4ZW: !AS>
    0051      80                                            ; FAO CTL STRING FOR MSG3 IN SUCCOMMON.MAR
    0051      81  CREPRN:          STRING  I,<SATSSS52_CRE> ; CREATED PROCESS NAME
    0065      82  CLUS_NAME:       STRING  I,<SATSSS52_CLUS> ; SUBJECT CLUSTER NAME
    007A      83  IMAGNAM:         STRING  I,<SYSTST$RES:SATSUT10.EXE> ; IMAGE NAME FOR CREATED PROC
    0099      84  QUOTALIST:       $QUOTA  CPULM,0          ; INFINITE CPU
    009E      85                   $QUOTA  BYTLM,512        ; BYTE LIMIT FOR BUFFERED I/O
    00A3      86                   $QUOTA  FILLM,2          ; OPEN FILE COUNT LIMIT
    00A8      87                   $QUOTA  PGFLQUOTA,10     ; PAGING FILE QUOTA
    00AD      88                   $QUOTA  PRCLM,2          ; SUBPROCESS QUOTA
    00B2      89                   $QUOTA  TQELM,3          ; TIMER QUEUE ENTRY QUOTA
    00B7      90                   $QUOTA  LISTEND          ; DEFINES END OF LIST
```

G 16

SATSSS52   SATS SYSTEM SERVICE TESTS $DLCEFC (SUCC 16-SEP-1984 00:57:11 VAX/VMS Macro V04-00   Page 4
V04-000   DECLARATIONS   5-SEP-1984 04:32:09 [UETPSY.SRC]SATSSS52.MAR;1   (1)

```
          00000000      92              .PSECT  RWDATA,RD,WRT,NOEXE,LONG
00000008  0000          93 PRIVMASK:    .BLKQ   1                       ; ADDR OF PRIVILEGE MASK (IN PHD)
0000000C  0008          94 MBXCHAN:     .BLKL   1                       ; CHAN NO. FOR MAILBOX FOR CREATED PROCESS
          000C          95 MBXCHANINFO:                                 ; CHANNEL INFO RETURNED BY GETCHN
00000074  000C          96              .LONG   DIB$K_LENGTH
00000014' 0010          97              .ADDRESS .+4
00000088  0014          98              .BLKB   DIB$K_LENGTH
0000008C  0088          99 MBXUNIT:     .BLKL   1                       ; SAVE AREA FOR MAILBOX UNIT NUMBER
          008C         100 MBXBUFF:     STRING  0,120                   ; MAILBOX BUFFER FOR CREATED PROCESS
00000110  010C         101 CLUS_MASK:   .BLKL   1                       ; CLUSTER MASK; USED TO SET SUBJECT CLUSTER
00000114  0110         102 CLUS_STATE:  .BLKL   1                       ; STATE OF SUBJECT CLUSTER
00000118  0114         103 EFN_REFCT1:  .BLKL   1                       ; SAVE AREA FOR EFN WHEN REF CT = 1
```

H 16
SATSSS52   SATS SYSTEM SERVICE TESTS $DLCEFC (SUCC 16-SEP-1984 00:57:11 VAX/VMS Macro V04-00   Page 5
V04-000   CONDITION TABLES   5-SEP-1984 04:32:09 [UETPSY.SRC]SATSSS52.MAR;1   (1)

```
                    0118    105             .SBTTL  CONDITION TABLES
                    0118    106     ;
                    0118    107     ;;      ***** CONDITION TABLES FOR DLCEFC SYSTEM SERVICE *****
                    0118    108     ;
                    0118    109             COND    1,NOTARG,<CLUSTER'S PERM/TEMP SETTING AT TIME OF DLCEFC>,-
                    0118    110                     <TEMPORARY>,-
                    0118    111                     <PERMANENT>,-
                    0118    112
00000001 00000000   0163    113             .LONG       0,1     ; TEMPORARY/PERMANENT
                    016B    114     ;
                    016B    115             COND    2,NOTARG,<CLUSTER'S REFERENCE COUNT AT TIME OF DLCEFC>,-
                    016B    116                     <ZERO>,-
                    016B    117                     <ONE (E.F. GROUP 2)>,-
                    016B    118                     <ONE (E.F. GROUP 3)>,-
                    016B    119                     <TWO (BOTH E.F. GROUPS)>,-
                    016B    120                     <FOUR (BOTH E.F. GROUPS IN TWO PROCESSES)>,-
                    016B    121
                    0217    122             COND    3,NULL
                    0218    123
                    0218    124             COND    4,NULL
                    0219    125
                    0219    126             COND    5,NULL
                    021A    127
00000000            128             .PSECT  SATSSS52,RD,WRT,EXE
```

I 16

SATSSS52   SATS SYSTEM SERVICE TESTS $DLCEFC (SUCC 16-SEP-1984 00:57:11 VAX/VMS Macro V04-00   Page   6
V04-000   TM_SETUP, TM_CLEANUP   5-SEP-1984 04:32:09 [UETPSY.SRC]SATSSS52.MAR;1   (1)

```
                          0000    130                  .SBTTL  TM_SETUP, TM_CLEANUP
                          0000    131    ;++
                          0000    132    ; FUNCTIONAL DESCRIPTION:
                          0000    133    ;
                          0000    134    ;            TM_SETUP AND TM_CLEANUP ARE CALLED TO PERFORM
                          0000    135    ; REQUIRED HOUSEKEEPING AT THE BEGINNING AND END, RESPECTIVELY, OF
                          0000    136    ; TEST MODULE EXECUTION.
                          0000    137    ;
                          0000    138    ; CALLING SEQUENCE:
                          0000    139    ;
                          0000    140    ;        BSBW TM_SETUP    BSBW TM_CLEANUP
                          0000    141    ;
                          0000    142    ; INPUT PARAMETERS:
                          0000    143    ;
                          0000    144    ;        NONE
                          0000    145    ;
                          0000    146    ; IMPLICIT INPUTS:
                          0000    147    ;
                          0000    148    ;        NONE
                          0000    149    ;
                          0000    150    ; OUTPUT PARAMETERS:
                          0000    151    ;
                          0000    152    ;        NONE
                          0000    153    ;
                          0000    154    ; IMPLICIT OUTPUTS:
                          0000    155    ;
                          0000    156    ;        TM_SETUP: COND TABLE INDEX REGISTERS (R2,3,4,5,6) CLEARED;
                          0000    157    ;                  ALL PRIVILEGES ACQUIRED.
                          0000    158    ;
                          0000    159    ; COMPLETION CODES:
                          0000    160    ;
                          0000    161    ;        EFLAG SET TO NON-ZERO IF ERROR ENCOUNTERED.
                          0000    162    ;
                          0000    163    ; SIDE EFFECTS:
                          0000    164    ;
                          0000    165    ;        SS_CHECK AND ERR_EXIT MACROS CAUSE PREMATURE EXIT
                          0000    166    ;        (VIA RSB) IF ERROR ENCOUNTERED.
                          0000    167    ;
                          0000    168    ;--
                          0000    169
                          0000    170
                          0000    171
                          0000    172    TM_SETUP::
                52  D4    0000    173                  CLRL     R2                          ; INITIALIZE
                53  D4    0002    174                  CLRL     R3                          ; .. CONDITION
                54  D4    0004    175                  CLRL     R4                          ; .... TABLE
                55  D4    0006    176                  CLRL     R5                          ; ...... INDEX
                56  D4    0008    177                  CLRL     R6                          ; ........ REGISTERS
             FFF3'  30    000A    178                  BSBW     MOD_MSG_PRINT               ; PRINT TEST MODULE BEGIN MSG
  00000000'EF  00000000'EF  DE   000D    179                  MOVAL    TEST_MOD_SUCC,TMD_ADDR    ; ASSUME END MSG WILL SHOW SUCCESS
     03   00  00000000'8F  F0   0018    180                  INSV     #SUCCESS,#0,#3,MOD_MSG_CODE ; ADJUST STATUS CODE FOR SUCCESS
             00000000'EF        0020
                                0025    181                  MODE     TO,5$,KRNL                  ; KERNEL MODE TO ACCESS PHD
        59  00000000'9F  DO    0048    182                  MOVL     @#CTL$GL_PHD,R9             ; GET PROCESS HEADER ADDRESS
    00000000'EF  69    DE      004F    183                  MOVAL    PHD$Q_PRIVMSK(R9),PRIVMASK ; GET PRIV MASK ADDRESS
                                0056    184                  MODE     FROM,5$ ; BACK TO USER MODE
                                0057    185                  PRIV     ADD,ALL                     ; GET ALL PRIVILEGES
```

```
                         0077   186              $SETPRN_S TEST_MOD_NAME_D          ; SET PROCESS NAME
                         0084   187              SS_CHECK  NORMAL                   ; CHECK STATUS CODE RETURNED FROM SETPRN
                         00B2   188              $CREMBX_S CHAN=MBXCHAN, LOGNAM=CREPRN, - ; GET MAILBOX FOR PROCESS
                         00B2   189                       MAXMSG=#120, PROMSK=#0, BUFQUO=#240
                         00D7   190              SS_CHECK NORMAL                    ; CHECK NORMAL COMPLETION
                         0105   191              $GETCHN_S CHAN=MBXCHAN, -          ; GET CHAN INFO (UNIT NUMBER)
                         0105   192                       PRIBUF=MBXCHANINFO
                         011F   193              SS_CHECK NORMAL                    ; CHECK NORMAL COMPLETION
00000088'EF   00000020'EF  3C   014D   194       MOVZWL  MBXCHANINFO+8+DIB$W_UNIT,MBXUNIT ; SAVE MAILBOX UNIT NUMBER
                         05   0158   195          RSB                              ; RETURN TO MAIN ROUTINE
                         0159   196       TM_CLEANUP::
                         0159   197              $DELMBX_S  MBXCHAN                 ; DELETE TERMINATION MAILBOX
                 FE96'   30   0167   198          BSBW    MOD_MSG_PRINT            ; PRINT TEST MODULE END MSG
                         05   016A   199          RSB                              ; RETURN TO MAIN ROUTINE
```

```
       016B   201                     .SBTTL   CONDITION SUBROUTINES - SETUP AND CLEANUP
       016B   202    ;++
       016B   203    ; FUNCTIONAL DESCRIPTION:
       016B   204    ;
       016B   205    ;                  CONDX AND CONDX_CLEANUP ARE SUBROUTINES WHICH ARE EXECUTED
       016B   206    ; BEFORE AND AFTER THE VERIFY SUBROUTINE, RESPECTIVELY, WHENEVER A NEW
       016B   207    ; CONDITION X VALUE IS SELECTED (SEE FUNCTIONAL DESCRIPTION OF SUCCOMMON
       016B   208    ; ROUTINE IN SUCCOMMON.MAR). ANY SETUP FUNCTION PARTICULAR TO THE
       016B   209    ; CONDITION X TABLE IS INCLUDED IN THE CONDX SUBROUTINE AND CLEANED
       016B   210    ; UP, IF NECESSARY, IN THE CONDX_CLEANUP SUBROUTINE. THIS INCLUDES,
       016B   211    ; ESPECIALLY, CODE TO DETECT CONFLICTS AMONG CURRENT ENTRIES IN TWO
       016B   212    ; OR MORE CONDITION TABLES. IF A CONFLICT IS DETECTED, A NON-ZERO
       016B   213    ; VALUE IS STORED INTO CONFLICT, WHICH CAUSES THE CALLING ROUTINE
       016B   214    ; (SUCCOMMON) TO SKIP THE CURRENT ENTRY IN THE CONDITION X TABLE.
       016B   215    ;
       016B   216    ; CALLING SEQUENCE:
       016B   217    ;
       016B   218    ;      BSBW CONDX   BSBW CONDX_CLEANUP
       016B   219    ;         WHERE X = 1,2,3,4,5
       016B   220    ;
       016B   221    ; INPUT PARAMETERS:
       016B   222    ;
       016B   223    ;      CONFLICT = 0
       016B   224    ;
       016B   225    ; IMPLICIT INPUTS:
       016B   226    ;
       016B   227    ;      R2,3,4,5,6 CONTAIN CURRENT CONDITION TABLE INDEX VALUES
       016B   228    ;         FOR COND TABLES 1,2,3,4,5, RESPECTIVELY.
       016B   229    ;
       016B   230    ; OUTPUT PARAMETERS:
       016B   231    ;
       016B   232    ;      CONFLICT SET TO NON-ZERO IF COND TABLE CONFLICT DETECTED.
       016B   233    ;
       016B   234    ; IMPLICIT OUTPUTS:
       016B   235    ;
       016B   236    ;      R2,3,4,5,6 PRESERVED
       016B   237    ;
       016B   238    ; COMPLETION CODES:
       016B   239    ;
       016B   240    ;      NONE
       016B   241    ;
       016B   242    ; SIDE EFFECTS:
       016B   243    ;
       016B   244    ;      NONE
       016B   245    ;
       016B   246    ;--
       016B   247
       016B   248
       016B   249
       016B   250    COND1::
05     016B   251            RSB                                  ; RETURN TO MAIN ROUTINE
       016C   252    COND1_CLEANUP::
05     016C   253            RSB                                  ; RETURN TO MAIN ROUTINE
       016D   254    COND2::
05     016D   255            RSB                                  ; RETURN TO MAIN ROUTINE
       016E   256    COND2_CLEANUP::
05     016E   257            RSB                                  ; RETURN TO MAIN ROUTINE
```

```
         016F     258 COND3::
   05    016F     259         RSB                                      ; RETURN TO MAIN ROUTINE
         0170     260 COND3_CLEANUP::
   05    0170     261         RSB                                      ; RETURN TO MAIN ROUTINE
         0171     262 COND4::
   05    0171     263         RSB                                      ; RETURN TO MAIN ROUTINE
         0172     264 COND4_CLEANUP::
   05    0172     265         RSB                                      ; RETURN TO MAIN ROUTINE
         0173     266 COND5::
   05    0173     267         RSB                                      ; RETURN TO MAIN ROUTINE
         0174     268 COND5_CLEANUP::
   05    0174     269         RSB                                      ; RETURN TO MAIN ROUTINE
```

M 16
SATSSS52   SATS SYSTEM SERVICE TESTS $DLCEFC (SUCC 16-SEP-1984 00:57:11 VAX/VMS Macro V04-00   Page 10
V04-000   FORM_CONDS   5-SEP-1984 04:32:09 [UETPSY.SRC]SATSSS52.MAR;1   (1)

```
0175   271              .SBTTL  FORM_CONDS
0175   272  ;++
0175   273  ; FUNCTIONAL DESCRIPTION:
0175   274  ;
0175   275  ;               FORM_CONDS FORMATS AND PRINTS INFORMATION ABOUT
0175   276  ;  THE CURRENT ELEMENT IN EACH OF THE CONDITION TABLES.
0175   277  ;
0175   278  ; CALLING SEQUENCE:
0175   279  ;
0175   280  ;       BSBW FORM_CONDS
0175   281  ;
0175   282  ; INPUT PARAMETERS:
0175   283  ;
0175   284  ;       NONE
0175   285  ;
0175   286  ; IMPLICIT INPUTS:
0175   287  ;
0175   288  ;       R2,3,4,5,6 CONTAIN CURRENT CONDITION TABLE INDEX VALUES
0175   289  ;         FOR COND TABLES 1,2,3,4,5, RESPECTIVELY.
0175   290  ;       FOR X = 1,2,3,4,5 :
0175   291  ;               CONDX_T - TITLE TEXT FOR CONDX TABLE
0175   292  ;               CONDX_TAB - ELEMENT TEXT FOR CONDX TABLE
0175   293  ;               CONDX_C - CONTEXT OF THE CONDX TABLE
0175   294  ;               CONDX_E - DATA ELEMENTS OF THE CONDX TABLE
0175   295  ;
0175   296  ; OUTPUT PARAMETERS:
0175   297  ;
0175   298  ;       NONE
0175   299  ;
0175   300  ; IMPLICIT OUTPUTS:
0175   301  ;
0175   302  ;       NONE
0175   303  ;
0175   304  ; COMPLETION CODES:
0175   305  ;
0175   306  ;       NONE
0175   307  ;
0175   308  ; SIDE EFFECTS:
0175   309  ;
0175   310  ;       NONE
0175   311  ;
0175   312  ;--
0175   313
0175   314
0175   315
0175   316  FORM_CONDS::
0175   317          $FAO_S  MSG1_INP_CTL,FAO_LEN,FAO_DESC,TESTNUM
0194   318                                          ; FORMAT CONDITIONS HEADER MSG
                  FE69'  30  0194   319          BSBW    OUTPUT_MSG          ; ... AND PRINT IT
             14   00  91  0197   320          CMPB    #COND1_C,#NULL      ; IS CONDITION 1 NULL ?
                  03  12  019A   321          BNEQU   10$                 ; NO -- CONTINUE
                  00BF  31  019C   322          BRW     FORM_CONDSX         ; YES -- SUBROUTINE IS FINISHED
                          019F   323  10$:
00000000'EF   00000118'EF  DE  019F   324          MOVAL   COND1_T,MSG_A       ; SAVE ADDRESS OF CONDITION 1 TITLE FOR FAO
00000000'EF   00000147'EF42  D0  01AA   325          MOVL    COND1_TAB[R2],MSG_B  ; SAVE ADDR OF COND 1 CURR TEXT ELT FOR FAO
     00000000'EF   00  90  01B6   326          MOVB    #CONDT_C,MSG_CTXT   ; SAVE CONDITION 1 CONTEXT FOR FAO
                          01BD   327          MOV_VAL COND1_C,CONDT_E[R2],MSG_DATA1 ; GIVE COND 1 DATA VALUE TO FAO
```

B 1

SATSSS52   SATS SYSTEM SERVICE TESTS $DLCEFC (SUCC 16-SEP-1984 00:57:11 VAX/VMS Macro V04-00   Page 11
V04-000   FORM_CONDS   5-SEP-1984 04:32:09 [UETPSY.SRC]SATSSS52.MAR;1   (1)

```
                  FE40'   30  01BD   328              BSBW    WRITE_MSG2                  ; FORMAT AND WRITE CONDITION 1 MSG
            14     00   91  01C0   329              CMPB    #COND2_C,#NULL              ; IS CONDITION 2 NULL ?
                   03   12  01C3   330              BNEQU   20$                         ; NO -- CONTINUE
                 0096   31  01C5   331              BRW     FORM_CONDSX                 ; YES -- SUBROUTINE IS FINISHED
                            01C8   332  20$:
  00000000'EF   0000016B'EF   DE  01C8   333              MOVAL   COND2_T,MSG_A               ; SAVE ADDRESS OF CONDITION 2 TITLE FOR FAO
  00000000'EF   00000198'EF43  D0  01D3   334              MOVL    COND2_TAB[R3],MSG_B         ; SAVE ADDR OF COND 2 CURR TEXT ELT FOR FAO
         00000000'EF    00   90  01DF   335              MOVB    #COND2_C,MSG_CTXT           ; SAVE CONDITION 2 CONTEXT FOR FAO
                            01E6   336              MOV_VAL COND2_C,COND2_E[R3],MSG_DATA1 ; GIVE COND 2 DATA VALUE TO FAO
                  FE17'   30  01E6   337              BSBQ    WRITE_MSG2                  ; FORMAT AND WRITE CONDITION 2 MSG
            14     14   91  01E9   338              CMPB    #COND3_C,#NULL              ; IS CONDITION 3 NULL ?
                   03   12  01EC   339              BNEQU   30$                         ; NO -- CONTINUE
                 006D   31  01EE   340              BRW     FORM_CONDSX                 ; YES -- SUBROUTINE IS FINISHED
                            01F1   341  30$:
  00000000'EF   00000217'EF   DE  01F1   342              MOVAL   COND3_T,MSG_A               ; SAVE ADDRESS OF CONDITION 3 TITLE FOR FAO
  00000000'EF   00000217'EF44  D0  01FC   343              MOVL    COND3_TAB[R4],MSG_B         ; SAVE ADDR OF COND 3 CURR TEXT ELT FOR FAO
         00000000'EF    14   90  0208   344              MOVB    #COND3_C,MSG_CTXT           ; SAVE CONDITION 3 CONTEXT FOR FAO
                            020F   345              MOV_VAL COND3_C,COND3_E[R4],MSG_DATA1 ; GIVE COND 3 DATA VALUE TO FAO
                  FDEE'   30  020F   346              BSBQ    WRITE_MSG2                  ; FORMAT AND WRITE CONDITION 3 MSG
            14     14   91  0212   347              CMPB    #COND4_C,#NULL              ; IS CONDITION 4 NULL ?
                   47   13  0215   348              BEQLU   FORM_CONDSX                 ; YES -- SUBROUTINE IS FINISHED
  00000000'EF   00000218'EF   DE  0217   349              MOVAL   COND4_T,MSG_A               ; SAVE ADDRESS OF CONDITION 4 TITLE FOR FAO
  00000000'EF   00000218'EF45  D0  0222   350              MOVL    COND4_TAB[R5],MSG_B         ; SAVE ADDR OF COND 4 CURR TEXT ELT FOR FAO
         00000000'EF    14   90  022E   351              MOVB    #COND4_C,MSG_CTXT           ; SAVE CONDITION 4 CONTEXT FOR FAO
                            0235   352              MOV_VAL COND4_C,COND4_E[R5],MSG_DATA1 ; GIVE COND 4 DATA VALUE TO FAO
                  FDC8'   30  0235   353              BSBQ    WRITE_MSG2                  ; FORMAT AND WRITE CONDITION 4 MSG
            14     14   91  0238   354              CMPB    #COND5_C,#NULL              ; IS CONDITION 5 NULL ?
                   21   13  023B   355              BEQLU   FORM_CONDSX                 ; YES -- SUBROUTINE IS FINISHED
  00000000'EF   00000219'EF   DE  023D   356              MOVAL   COND5_T,MSG_A               ; SAVE ADDRESS OF CONDITION 5 TITLE FOR FAO
  00000000'EF   00000219'EF46  D0  0248   357              MOVL    COND5_TAB[R6],MSG_B         ; SAVE ADDR OF COND 5 CURR TEXT ELT FOR FAO
         00000000'EF    14   90  0254   358              MOVB    #COND5_C,MSG_CTXT           ; SAVE CONDITION 5 CONTEXT FOR FAO
                            025B   359              MOV_VAL COND5_C,COND5_E[R6],MSG_DATA1 ; GIVE COND 5 DATA VALUE TO FAO
                  FDA2'   30  025B   360              BSBQ    WRITE_MSG2                  ; FORMAT AND WRITE CONDITION 5 MSG
                            025E   361  FORM_CONDSX:
                   05  025E   362              RSB                                     ; RETURN TO CALLER
```

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C 1
SATS SYSTEM SERVICE TESTS $DLCEFC (SUCC 16-SEP-1984 00:57:11 VAX/VMS Macro V04-00   Page 12.
VERIFY   5-SEP-1984 04:32:09 [UETPSY.SRC]SATSSS52.MAR;1   (1)

```
025F    364              .SBTTL  VERIFY
025F    365  ;++
025F    366  ; FUNCTIONAL DESCRIPTION:
025F    367  ;
025F    368  ;            VERIFY IS CALLED ONCE FOR EACH COMBINATION OF CONDITION
025F    369  ; TABLE VALUES (AS DETERMINED BY THE INDEX REGISTERS R2,3,4,5,6 FOR
025F    370  ; COND TABLES 1,2,3,4,5, RESPECTIVELY). VERIFY ESTABLISHES THE CONDITIONS
025F    371  ; SPECIFIED BY THE COND TABLES AND ISSUES THE SUBJECT SYSTEM SERVICE
025F    372  ; ($DLCEFC). THEN, THE SUCCESSFUL OPERATION OF THE SERVICE IS VERIFIED
025F    373  ; BY EXAMINING THE STATUS CODE RETURNED, THE VALUES FOR RETURN ARGUMENTS
025F    374  ; AND THE FUNCTIONALITY PERFORMED. THE EXAMINATIONS TAKE THE FORM OF
025F    375  ; COMPARISONS AGAINST EXPECTED VALUES. ANY FAILING COMPARISON CAUSES AN
025F    376  ; ERR_EXIT MACRO TO BE EXECUTED (EITHER DIRECTLY, OR INDIRECTLY,
025F    377  ; THROUGH THE SS_CHECK MACRO); ERR_EXIT SETS EFLAG TO NON-ZERO,
025F    378  ; PRINTS ERROR MESSAGES AND CAUSES AN IMMEDIATE RSB TO CALLER.
025F    379  ; WHEN ERR_EXIT IS EXECUTED, FURTHER CALLS TO VERIFY ARE SUPPRESSED,
025F    380  ; AND, AFTER EXECUTING CLEANUP SUBROUTINES, THE IMAGE EXITS.
025F    381  ;
025F    382  ; CALLING SEQUENCE:
025F    383  ;
025F    384  ;     BSBW VERIFY
025F    385  ;
025F    386  ; INPUT PARAMETERS:
025F    387  ;
025F    388  ;     NONE
025F    389  ;
025F    390  ; IMPLICIT INPUTS:
025F    391  ;
025F    392  ;     R2,3,4,5,6 CONTAIN CURRENT CONDITION TABLE INDEX VALUES
025F    393  ;       FOR COND TABLES 1,2,3,4,5, RESPECTIVELY.
025F    394  ;     FOR X = 1,2,3,4,5 :
025F    395  ;           CONDX_E - ADDRESS OF TABLE OF DATA VALUES FOR CONDX
025F    396  ;             TABLE. IF THE CONTEXT OF TABLE X IS A SYSTEM SERVICE
025F    397  ;             ARGUMENT, THE ARGUMENT NAME MAY BE USED AS A SYNONYM
025F    398  ;             FOR CONDX_E.
025F    399  ;
025F    400  ; OUTPUT PARAMETERS:
025F    401  ;
025F    402  ;     NONE
025F    403  ;
025F    404  ; IMPLICIT OUTPUTS:
025F    405  ;
025F    406  ;     VERIFY HAS NO OUTPUT. SINCE ITS PURPOSE IS TO TEST FOR ERRORS,
025F    407  ;     IT MERELY RETURNS TO CALLER NORMALLY AFTER THE TESTS, PROVIDING
025F    408  ;     ALL WERE SUCCESSFUL; IF AN ERROR IS DISCOVERED, RETURN IS VIA
025F    409  ;     AN ERR_EXIT OR SS_CHECK MACRO, BOTH OF WHICH DOCUMENT DETECTED
025F    410  ;     ERRORS.
025F    411  ;
025F    412  ; COMPLETION CODES:
025F    413  ;
025F    414  ;     EFLAG SET TO NON-ZERO IF ERROR ENCOUNTERED.
025F    415  ;
025F    416  ; SIDE EFFECTS:
025F    417  ;
025F    418  ;     SS_CHECK AND ERR_EXIT MACROS CAUSE PREMATURE EXIT
025F    419  ;     (VIA RSB) IF ERROR ENCOUNTERED.
025F    420  ;
```

```
                        025F    421  ;--
                        025F    422
                        025F    423
                        025F    424
                        025F    425  VERIFY::
        00000000'EF  95 025F    426          TSTB    CFLAG                     ; SHOULD CONDITIONS BE PRINTED ?
                 03  13 0265    427          BEQL    5$                        ; NO -- CONTINUE
               FF0B  30 0267    428          BSBW    FORM_CONDS                ; YES -- FMT & PRINT ALL CONDS FOR THIS T.C.
                        026A    429  5$:
                        026A    430  ;
                        026A    431  ; CREATE A CLUSTER AND GET IT BUILT AT LEAST ONCE, THEN DELETE
                        026A    432  ;   IT WITH A DACEFC.
                        026A    433  ;
                        026A    434          $ASCEFC_S EFN=#64, NAME=CLUS_NAME ; CREATE A NEW CLUSTER
                        0281    435          SS_CHECK NORMAL                   ; CHECK ITS COMPLETION
     5A   40 8F    9A  02AF    436          MOVZBL  #64,R10                   ; IDENTIFY EVENT FLAG GROUP TO BUILD_CLUST
               04EA  30  02B3    437          BSBW    BUILD_CLUST               ; BUILD THE SUBJECT CLUSTER
        00000000'EF  95 02B6    438          TSTB    EFLAG                     ; IS AN ERROR BEING PROCESSED ?
                 03  13 02BC    439          BEQL    10$                       ; NO -- CONTINUE
               04A2  31 02BE    440          BRW     VERIFYX                   ; YES -- RETURN IMMEDIATELY
                        02C1    441  10$:
                        02C1    442          $SETEF_S EFN=#95                  ; ENSURE CLUSTER HAS AT LEAST ONE FLAG ON
                        02CE    443          SS_CHECK WASCLR                   ; FLAG 95 SHOULD HAVE BEEN CLEAR PREVIOUSLY
                        02FC    444          $DACEFC_S EFN=#64                 ; NOW GET RID OF TEMPORARY CLUSTER
                        0309    445          SS_CHECK NORMAL                   ; ... CHECK ITS COMPLETION
                        0337    446  ;
                        0337    447  ; THE FOLLOWING CASE INSTRUCTION AND SUBSEQUENT CODING
                        0337    448  ;   ISSUES AS MANY ASCEFC'S AS NECESSARY TO ACHIEVE THE
                        0337    449  ;   SPECIFIED REFERENCE COUNT FOR THIS TEST CASE.
                        0337    450  ;
 00000114'EF  40 8F    9A  0337    451          MOVZBL  #64,EFN_REFCT1            ; ASSUME EVENT FLAG GROUP 2
   04   00   53  8F  033F    452          CASEB   R3,#0,#4                  ; ISSU CORRECT AS^EFC'S PER COND 2 INDEX REG
                        0343    453  15$:                                     ; START OF CASE WORD DISPLACEMENTS
               000D'  0343    454          .WORD   20$-15$                   ; REF COUNT 0
               0010'  0345    455          .WORD   30$-15$                   ; REF COUNT 1, EVENT FLAG GROUP 2
               005D'  0347    456          .WORD   40$-15$                   ; REF COUNT 1, EVENT FLAG GROUP 3
               00B2'  0349    457          .WORD   50$-15$                   ; REF COUNT 2
               00B2'  034B    458          .WORD   50$-15$                   ; REF COUNT 4
               01A5  31 034D    459          BRW     55$                       ; BRANCH PAST CASE ROUTINES
                        0350    460  20$:
                        0350    461  ;
                        0350    462  ; REF COUNT 0, NO ASCEFC'S TO BE ISSUED
                        0350    463  ;
               01B7  31 0350    464          BRW     60$                       ; GO ON TO ISSUE SUBJECT DLCEFC
                        0353    465  30$:
                        0353    466  ;
                        0353    467  ; REF COUNT 1, EVENT FLAG GROUP 2
                        0353    468  ;
                        0353    469          $ASCEFC_S EFN=EFN_REFCT1, -        ; INCREMENT REF COUNT; EFN SET UP ABOVE
                        0353    470                  NAME=CLUS_NAME, -
                        0353    471                  PERM=CONDT_E[R2]
                        036F    472          SS_CHECK NORMAL                   ; CHECK FOR NORMAL COMPLETION
               0155  31 039D    473          BRQ     55$                       ; GO BUILD THE CLUSTER JUST CREATED
                        03A0    474  40$:
                        03A0    475  ;
                        03A0    476  ; REF COUNT 1, EVENT FLAG GROUP 3
                        03A0    477  ;
```

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E 1
SATS SYSTEM SERVICE TESTS $DLCEFC (SUCC 16-SEP-1984 00:57:11 VAX/VMS Macro V04-00   Page 14
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    00000114'EF    60 8F  9A  03A0  478            MOVZBL   #96,EFN_REFCT1          ; EST EFN FOR E.F. GROUP 3
                               03A8  479            $ASCEFC_S EFN=EFN_REFCT1, -     ; INCREMENT REF COUNT
                               03A8  480                      NAME=CLUS_NAME, -
                               03A8  481                      PERM=CONDT_E[R2]
                               03C4  482            SS_CHECK NORMAL                 ; CHECK FOR NORMAL STATUS CODE
                   0100   31  03F2  483            BRQ      55$                     ; GO BUILD CLUSTER JUST CREATED
                               03F5  484  50$:
                               03F5  485  ;
                               03F5  486  ;   REF COUNT 2 OR 4, BOTH EVENT FLAG GROUPS IN THIS PROCESS
                               03F5  487  ;
                               03F5  488            $ASCEFC_S EFN=#64, -            ; INCREMENT REF COUNT
                               03F5  489                      NAME=CLUS_NAME, -
                               03F5  490                      PERM=CONDT_E[R2]
                               0411  491            SS_CHECK NORMAL                 ; CHECK FOR NORMAL COMPLETION
                               043F  492            $ASCEFC_S EFN=#96, -            ; INCREMENT REF COUNT
                               043F  493                      NAME=CLUS_NAME, -
                               043F  494                      PERM=CONDT_E[R2]
                               045B  495            SS_CHECK NORMAL                 ; CHECK FOR NORMAL COMPLETION
               04   53   D1  0489  496            CMPL     R3,#4                   ; FIFTH COND 2 ELEMENT (REF COUNT 4) ?
               67   12  048C  497            BNEQU    55$                     ; NO -- REF COUNT IS 2 -- NO MORE ASCEFC'S
                               048E  498            ;                               YES -- CREATED PROC ISSUE 2 MORE ASCEFC'S
                               048E  499            $CREPRC_S PRCNAM=CREPRN, IMAGE=IMAGNAM, -
                               048E  500                      MBXUNT=MBXUNIT, QUOTA=QUOTALIST
                               04C0  501            SS_CHECK NORMAL                 ; CHECK CREPRC COMPLETION STATUS
                               04EE  502            $HIBER_S                        ; SLEEP UNTIL CREATED PROCESS DOES ASCEFC'S
                               04F5  503  55$:
                               04F5  504  ;
                               04F5  505  ;   END OF CASE ROUTINES
                               04F5  506  ;
                               04F5  507  ;   AT THIS POINT, AT LEAST ONE ASCEFC HAS BEEN ISSUED; CALL
                               04F5  508  ;       BUILD_CLUST TO GET THE CREATED CLUSTER BUILT.
                               04F5  509  ;
        5A   00000114'EF  D0  04F5  510            MOVL     EFN_REFCT1,R10          ; ESTABLISH EFN FOR BUILD_CLUST
             02A1   30  04FC  511            BSBW     BUILD_CLUST             ; BUILD CLUSTER
        00000000'EF    95  04FF  512            TSTB     EFLAG                   ; IS AN ERROR BEING PROCESSED ?
               03   13  0505  513            BEQL     60$                     ; NO -- CONTINUE
             0259   31  0507  514            BRW      VERIFYX                 ; YES -- RETURN IMMEDIATELY
                               050A  515  60$:
                               050A  516  ;
                               050A  517  ;   ****** SYSTEM SERVICE CALL WHICH IS THE SUBJECT OF THIS TEST CASE ******
                               050A  518  ;
                               050A  519            $DLCEFC_S NAME=CLUS_NAME        ; CLEAR PERMANENT INDICATOR
        00000000'8F    50   D1  0517  520            CMPL     R0,#SS$_NORMAL          ; CODE RECEIVED = CODE EXPECTED ?
                   61   13  051E  521            BEQLU    70$                     ; YES -- CONTINUE
00000000'EF  00000000'8F  D0  0520  522            MOVL     #SS$_NORMAL,EXPV        ; LOAD UP EXPECTED AND ...
    00000000'EF    50   D0  052B  523            MOVL     R0,RECV                 ; ... RECEIVED VALUES, THEN EXIT
                               0532  524            ERR_EXIT LONG,<INCORRECT STATUS CODE RETURNED FROM DLCEFC>
                               0581  525  70$:
                               0581  526  ;
                               0581  527  ;   TO VERIFY THE SUBJECT DLCEFC, THE CLUSTER'S REFERENCE COUNT
                               0581  528  ;       WILL BE DROPPED TO 0 (BY ISSUING DACEFC'S) AND THEN AN
                               0581  529  ;       ADDITIONAL ASCEFC WILL BE ISSUED TO CREATE A NEW CLUSTER
                               0581  530  ;       WHICH WILL BE VERIFIED TO BE ALL 0'S.  BEFORE EACH DACEFC
                               0581  531  ;       IS ISSUED, A READEF OF THE CLUSTER WILL BE DONE TO ENSURE
                               0581  532  ;       THAT THE CLUSTER REMAINS EQUAL TO THE CLUSTER MASK; THIS
                               0581  533  ;       GUARANTEES THAT THE REFERENCE COUNT WAS CORRECT AND, IN
                               0581  534  ;       FACT, THAT THE CLUSTER IS NOT DELETED UNTIL THE COUNT
```

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F 1
SATS SYSTEM SERVICE TESTS $DLCEFC (SUCC 16-SEP-1984 00:57:11 VAX/VMS Macro V04-00   Page 15
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```
                        0581   535 ;    GOES TO 0.
                        0581   536 ;
                        0581   537 ;
                        0581   538 ;    THE FOLLOWING CASE STATEMENT AND SUBSEQUENT CODING
                        0581   539 ;    DECREMENTS THE REFERENCE COUNT BY ISSUING THE CORRECT
                        0581   540 ;    SEQUENCE OF DACEFC'S, BASED ON THE REFERENCE COUNT
                        0581   541 ;    FOR THIS TEST CASE.
                        0581   542 ;
      04   00   53  8F  0581   543         CASEB   R3,#0,#4                 ; ISSU CORRECT DACEFC'S PER COND 2 INDEX REG
                        0585   544 75$:                                     ; CASE INSTRUCTION WORD DISPLACEMENTS
                  000D' 0585   545         .WORD   80$-75$                  ; REF COUNT 0
                  0010' 0587   546         .WORD   90$-75$                  ; REF COUNT 1, EVENT FLAG GROUP 2
                  0010' 0589   547         .WORD   90$-75$                  ; REF COUNT 1, EVENT FLAG GROUP 3
                  0028' 058B   548         .WORD   100$-75$                 ; REF COUNT 2
                  0028' 058D   549         .WORD   100$-75$                 ; REF COUNT 4
            00DB   31  058F   550         BRW     130$                     ; BRANCH PAST CASE ROUTINES
                        0592   551 80$:
                        0592   552 ;
                        0592   553 ;    REF COUNT 0, NO DACEFC NECESSARY
                        0592   554 ;
            00D8   31  0592   555         BRW     130$                     ; GO ON TO CHECK CLUSTER FOR 0'S
                        0595   556 90$:
                        0595   557 ;
                        0595   558 ;    REF COUNT 1, ISSUE ONE DACEFC
                        0595   559 ;
5A   00000114'EF   D0  0595   560         MOVL    EFN_REFCT1,R10           ; SET UP CORRECT EFN FOR READ DACEFC SUBRTN
            02A7   30  059C   561         BSBW    READ_DACEFC              ; CHECK THE CLUSTER AND DISASSOCIATE
     00000000'EF   95  059F   562         TSTB    EFLAG                    ; IS AN ERROR BEING PROCESSED ?
              03   13  05A5   563         BEQL    95$                      ; NO -- CONTINUE
            01B9   31  05A7   564         BRW     VERIFYX                  ; YES -- RETURN IMMEDIATELY
                        05AA   565 95$:
            00C0   31  05AA   566         BRW     130$                     ; GO ON TO CHECK CLUSTER FOR 0'S
                        05AD   567 100$:
                        05AD   568 ;
                        05AD   569 ;    REF COUNT 2 OR 4, ISSUE 2 OR 4 DACEFC'S
                        05AD   570 ;
      04   53  D1  05AD   571         CMPL    R3,#4                    ; FIFTH COND 2 ELEMENT (REF COUNT 4) ?
              03   13  05B0   572         BEQLU   105$                     ; YES -- CONTINUE
            0094   31  05B2   573         BRW     110$                     ; NO -- REF COUNT MUST BE 2
                        05B5   574 105$:
                        05B5   575         $WAKE_S PRCNAM=CREPRN            ; WAKE PROCESS TO GET DACEFC'S ISSUED
                        05C4   576         SS_CHECK NORMAL                  ; CHECK FOR NORMAL STATUS CODE
                        05F2   577         $QIOW_S CHAN=MBXCHAN, FUNC=#IO$_READVBLK, -
                        05F2   578                 P1=MBXBUFF+8, P2=MBXBUFF
                        061B   579                                         ; ... AND WAIT FOR IT TO SEND MAIL
                        061B   580         SS_CHECK NORMAL                  ; CHECK FOR NORMAL STATUS CODE
                        0649   581 110$:
5A   40 8F   9A  0649   582         MOVZBL  #64,R10                  ; SET UP CORRECT EFN FOR READ DACEFC SUBRTN
            01F6   30  064D   583         BSBW    READ_DACEFC              ; CHECK THE CLUSTER AND DISASSOCIATE
     00000000'EF   95  0650   584         TSTB    EFLAG                    ; IS AN ERROR BEING PROCESSED ?
              03   13  0656   585         BEQL    120$                     ; NO -- CONTINUE
            0108   31  0658   586         BRW     VERIFYX                  ; YES -- RETURN IMMEDIATELY
                        065B   587 120$:
5A   60 8F   9A  065B   588         MOVZBL  #96,R10                  ; SET UP CORRECT EFN FOR READ DACEFC SUBRTN
            01E4   30  065F   589         BSBW    READ_DACEFC              ; CHECK THE CLUSTER AND DISASSOCIATE
     00000000'EF   95  0662   590         TSTB    EFLAG                    ; IS AN ERROR BEING PROCESSED ?
              03   13  0668   591         BEQL    130$                     ; NO -- CONTINUE
```

```
                OOF6     31  066A     592            BRW      VERIFYX                        ; YES -- RETURN IMMEDIATELY
                             066D     593  130$:
                             066D     594  ;
                             066D     595  ;    REFERENCE COUNT SHOULD BE DOWN TO 0 AND CLUSTER DELETED.
                             066D     596  ;    DO ONE MORE ASCEFC AND EXPECT A CLUSTER OF 0'S.
                             066D     597  ;
                             066D     598            $ASCEFC_S EFN=#64, NAME=CLUS_NAME ; RE-ASSOCIATE SAME CLUSTER
                             0684     599            SS_CHECK NORMAL                        ; CHECK COMPLETION STATUS
                             06B2     600            $READEF_S EFN=#64, STATE=CLUS_STATE ; READ CLUSTER
               2E 50   E8    06C5     601            BLBS     R0,140$                       ; CONTINUE IF NORMAL COMPLETION
                             06C8     602            SS_CHECK NORMAL                        ; USE SS_CHECK TO TERMINATE TEST MODULE
                             06F6     603  140$:
          00000110'EF   D5   06F6     604            TSTL     CLUS_STATE                    ; IS CLUSTER INITIALIZED TO 0'S ?
                  65   13    06FC     605            BEQLU    VERIFYX                       ; YES -- THIS TEST CASE COMPLETE
          00000000'EF   D4   06FE     606            CLRL     EXPV                          ; NO -- LOAD EXPECTED AND ...
 00000000'EF  00000110'EF   D0  0704  607            MOVL     CLUS_STATE,RECV               ; ... RECEIVED VALUES, THEN EXIT
                             070F     608            ERR_EXIT LONG,<DELETED AND RE-ASSOCIATED CLUSTER NOT RE-INIT'D>
                             0763     609  VERIFYX:
                       05    0763     610            RSB                                    ; RETURN TO CALLER
```

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                                        H 1
SATS SYSTEM SERVICE TESTS $DLCEFC (SUCC 16-SEP-1984 00:57:11   VAX/VMS Macro V04-00   Page 17
VFY_CLEANUP   5-SEP-1984 04:32:09   [UETPSY.SRC]SATSSS52.MAR;1   (1)

```
        0764    612                    .SBTTL  VFY_CLEANUP
        0764    613  ;++
        0764    614  ; FUNCTIONAL DESCRIPTION:
        0764    615  ;
        0764    616  ;            VFY CLEANUP EXECUTES SYSTEM SERVICES TO UNDO THE
        0764    617  ; EFFECT OF THOSE ISSUED IN THE VERIFY SUBROUTINE. VFY CLEANUP MUST
        0764    618  ; ASSUME THAT VERIFY MAY NOT HAVE EXECUTED IN ITS ENTIRETY (IF AN
        0764    619  ; ERROR IS FOUND). ALSO, VFY_CLEANUP MAY ISSUE SS CHECK OR ERR_EXIT
        0764    620  ; ONLY AFTER PERFORMING ALL OF ITS CLEANUP OPERATIONS; THIS IS REQUIRED
        0764    621  ; IN THE EVENT THAT VFY CLEANUP IS CALLED DURING ERROR PROCESSING,
        0764    622  ; WHEN PERFORMING THE REQUIRED CLEANUP IS MORE IMPORTANT THAN
        0764    623  ; POSSIBLY DISCOVERING A SECOND ERROR.
        0764    624  ;
        0764    625  ; CALLING SEQUENCE:
        0764    626  ;
        0764    627  ;     BSBW VFY_CLEANUP
        0764    628  ;
        0764    629  ; INPUT PARAMETERS:
        0764    630  ;
        0764    631  ;     NONE
        0764    632  ;
        0764    633  ; IMPLICIT INPUTS:
        0764    634  ;
        0764    635  ;     R2,3,4,5,6 CONTAIN CURRENT CONDITION TABLE INDEX VALUES
        0764    636  ;        FOR COND TABLES 1,2,3,4,5, RESPECTIVELY.
        0764    637  ;     FOR X = 1,2,3,4,5 :
        0764    638  ;            CONDX E - ADDRESS OF TABLE OF DATA VALUES FOR CONDX
        0764    639  ;              TABLE. IF THE CONTEXT OF TABLE X IS A SYSTEM SERVICE
        0764    640  ;              ARGUMENT, THE ARGUMENT NAME MAY BE USED AS A SYNONYM
        0764    641  ;              FOR CONDX_E.
        0764    642  ;
        0764    643  ; OUTPUT PARAMETERS:
        0764    644  ;
        0764    645  ;     NONE
        0764    646  ;
        0764    647  ; IMPLICIT OUTPUTS:
        0764    648  ;
        0764    649  ;     NONE
        0764    650  ;
        0764    651  ; COMPLETION CODES:
        0764    652  ;
        0764    653  ;     EFLAG SET TO NON-ZERO IF ERROR ENCOUNTERED.
        0764    654  ;
        0764    655  ; SIDE EFFECTS:
        0764    656  ;
        0764    657  ;     SS CHECK AND ERR EXIT MACROS CAUSE PREMATURE EXIT
        0764    658  ;     (VIA RSB) IF ERROR ENCOUNTERED.
        0764    659  ;
        0764    660  ;--
        0764    661
        0764    662
        0764    663
        0764    664  VFY_CLEANUP::
        0764    665          $DLCEFC S NAME=CLUS_NAME          ; CLEAR PERM INDICATOR IF PRESENT ...
        0771    666          SS CHECK NORMAL                   ; ... AND CHECK COMPLETION
  05    079F    667          RSB                              ; RETURN TO CALLER
```

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I 1
SATS SYSTEM SERVICE TESTS $DLCEFC (SUCC 16-SEP-1984 00:57:11   VAX/VMS Macro V04-00   Page 18
BUILD_CLUST SUBROUTINE   5-SEP-1984 04:32:09   [UETPSY.SRC]SATSSS52.MAR;1   (1)

```
                              07A0    669                   .SBTTL  BUILD_CLUST SUBROUTINE
                              07A0    670 ;
                              07A0    671 ; ****************************************************************
                              07A0    672 ; *
                              07A0    673 ; *           BUILD_CLUST SUBROUTINE
                              07A0    674 ; *
                              07A0    675 ; *   THIS SUBROUTINE CREATES A 32-BIT CLUSTER MASK BY
                              07A0    676 ; *     CONCATENATING THE LOW-ORDER BYTES OF REGS R2-R5.
                              07A0    677 ; *     IT THEN SETS CLUSTER A EQUAL TO THE MASK BY
                              07A0    678 ; *     ISSUING THE PROPER COMBINATION OF 32 SETEF/CLREF'S.
                              07A0    679 ; *
                              07A0    680 ; *   INPUTS:
                              07A0    681 ; *
                              07A0    682 ; *           R2,R3,R4,R5  -  CONDITION TABLE INDEX VALUES
                              07A0    683 ; *
                              07A0    684 ; *           R10      -        ANY EFN IN CLUSTER A
                              07A0    685 ; *
                              07A0    686 ; *   OUTPUTS:
                              07A0    687 ; *
                              07A0    688 ; *           CLUS_MASK  -   LONGWORD CONTAINING THE CREATED
                              07A0    689 ; *                            CLUSTER MASK.
                              07A0    690 ; *
                              07A0    691 ; *           SUBJECT CLUSTER - UPDATED TO LOOK LIKE CLUS_MASK.
                              07A0    692 ; *
                              07A0    693 ; *   VOLATILE REGISTERS:
                              07A0    694 ; *
                              07A0    695 ; *           R0, R1, R8, R9
                              07A0    696 ; *
                              07A0    697 ; ****************************************************************
                              07A0    698 ;
                              07A0    699 BUILD_CLUST:
     0000010C'EF   55   90   07A0    700           MOVB    R5,CLUS_MASK            ; BUILD
     0000010D'EF   54   90   07A7    701           MOVB    R4,CLUS_MASK+1          ; .. CLUSTER
     0000010E'EF   53   90   07AE    702           MOVB    R3,CLUS_MASK+2          ; ...... MASK
     0000010F'EF   52   90   07B5    703           MOVB    R2,CLUS_MASK+3          ; ..............
                              07BC    704 ;
                              07BC    705 ; THE FOLLOWING CODE SETS SUBJECT CLUSTER EQUAL TO CLUS_MASK
                              07BC    706 ;
              58   5A   D0   07BC    707           MOVL    R10,R8                  ; ESTABLISH FIRST EFN (EVENT FLAG NO.)
                   59   D4   07BF    708           CLRL    R9                      ; INIT OFFSET INTO CLUS_MASK
                              07C1    709 20$:
  3A 0000010C'EF   59   E0   07C1    710           BBS     R9,CLUS_MASK,30$        ; ISSUE $SETEF IF BIT FOR THIS FLAG IS SET
                              07C9    711           $CLREF_S EFN=R8                 ; ... OTHERWISE, ISSUE $CLREF
              68   50   E8   07D2    712           BLBS    R0,40$                  ; IF NORMAL STATUS, PROCESS NEXT EVENT FLAG
                              07D5    713           SS_CHECK NORMAL                 ; USE SS_CHECK TO TERMINATE TEST MODULE
                              0803    714 30$:
                              0803    715           $SETEF_S EFN=R8                 ; SET CURRENT EVENT FLAG
              2E   50   E8   080C    716           BLBS    R0,40$                  ; IF NORMAL STATUS, PROCESS NEXT EVENT FLAG
                              080F    717           SS_CHECK NORMAL                 ; USE SS_CHECK TO TERMINATE TEST MODULE
                              083D    718 40$:
              58   B6   083D    719                 INCW    R8                      ; GET NEXT EFN
 FF7C 59  01  1F   9D   083F   720                 ACBB    #31,#1,R9,20$           ; GO DO NEXT EVENT FLAG
                   05   0845   721                 RSB                             ; RETURN TO CALLER
```

```
                        0846   723              .SBTTL   READ_DACEFC SUBROUTINE
                        0846   724
                        0846   725      ;*******************************************************************
                        0846   726      ;  *
                        0846   727      ;  *      READ_DACEFC SUBROUTINE
                        0846   728      ;  *
                        0846   729      ;  *      THIS SUBROUTINE COMPARES THE CLUSTER AGAINST THE MASK
                        0846   730      ;  *        AND THEN DISASSOCIATES THE EVENT FLAG GROUP SPECIFIED
                        0846   731      ;  *        BY R10 FROM THE CLUSTER.
                        0846   732      ;  *
                        0846   733      ;  *      INPUTS:
                        0846   734      ;  *
                        0846   735      ;  *              R10       -       ANY EFN IN THE EVENT FLAG GROUP
                        0846   736      ;  *                                  TO BE DISASSOCIATED.
                        0846   737      ;  *
                        0846   738      ;  *              CLUS_MASK  -      LONGWORD CONTAINING THE IMAGE
                        0846   739      ;  *                                  OF THE SUBJECT CLUSTER.
                        0846   740      ;  *      OUTPUTS:
                        0846   741      ;  *
                        0846   742      ;  *              NONE.
                        0846   743      ;  *
                        0846   744      ;  *      EXITS:
                        0846   745      ;  *
                        0846   746      ;  *              NORMAL     -      RSB TO CALLER IF CLUSTER EQUALS
                        0846   747      ;  *                                  MASK AND SYSTEM SERVICES
                        0846   748      ;  *                                  FINISH NORMALLY.
                        0846   749      ;  *
                        0846   750      ;  *              ERROR      -      ERR_EXIT MACRO EXECUTED IF ABOVE
                        0846   751      ;  *                                  NORMAL CONDITIONS ARE NOT MET.
                        0846   752      ;  *
                        0846   753      ;  *      VOLATILE REGISTERS, AREAS:
                        0846   754      ;  *
                        0846   755      ;  *              R0, R1, R8, R9, CLUS_STATE, EXPV, RECV
                        0846   756      ;  *
                        0846   757      ;*******************************************************************
                        0846   758      ;
                        0846   759      READ_DACEFC:
                        0846   760              $READEF_S EFN=R10, STATE=CLUS_STATE ; READ CLUSTER
            2E 50   E8  0855   761              BLBS    R0,10$                      ; CONTINUE IF NORMAL COMPLETION
                        0858   762              SS_CHECK NORMAL                     ; USE SS_CHECK TO TERMINATE TEST MODULE
                        0886   763      10$:
0000010C'EF 00000110'EF D1  0886   764              CMPL    CLUS_STATE,CLUS_MASK    ; DOES CLUSTER STILL = MASK ?
                  6F   13  0891   765              BEQLU   20$                     ; YES -- ISSUE DACEFC AND GET OUT
00000000'EF 0000010C'EF D0  0893   766              MOVL    CLUS_MASK,EXPV          ; NO -- LOAD EXPECTED AND ...
00000000'EF 00000110'EF D0  089E   767              MOVL    CLUS_STATE,RECV         ; ... RECEIVED VALUES, THEN EXIT
                        08A9   768              ERR_EXIT LONG,<CLUSTER STATE NOT MAINTAINED ACROSS DLCEFC OR DACEFC>
                        0902   769      20$:
                        0902   770              $DACEFC_S EFN=R10                   ; DISASSOCIATE (DECR REF CT BY 1)
                        090B   771              SS_CHECK NORMAL                     ; CHECK FOR NORMAL COMPLETION
                        0939   772      READ_DACEFCX:
                  05  0939   773              RSB                                 ; RETURN TO CALLER
                        093A   774              .END
```

```
$$$$                       = 000008B3 R    04      DIB$W_UNIT                 = 0000000C
$$$CHARS                   = 00000034               EFLAG                      ********    X    04
$$$CHARS1                  = 00000004               EFN_REFCT1                 00000114 R       03
$$$CHARS2                  = 00000012               EXPV                       ********    X    04
$$$CHARS3                  = 00000012               FAO_DESC                   ********    X    04
$$$CHARS4                  = 00000016               FAO_LEN                    ********    X    04
$$$CHARS5                  = 00000028               FORM_CONDS                 00000175 RG      04
$$$COND_A                  = 00000004               FORM_CONDSX                0000025E R       04
$$$STRINGS                 = 00000001               IMAGNAM                    0000007A R       02
$$$STRINGS2                = 00000005               IO$_READVBLK               ********    X    04
$$T1                       = 00000000               LONG                       = 00000004   G
$$T2                       = 00000004               MBXBUFF                    0000008C         03
BUILD_CLUST                000007A0 R    04          MBXCHAN                    00000008 R       03
BYTE                       = 00000001   G            MBXCHANINFO                0000000C R       03
CFLAG                      ********    X    04       MBXUNIT                    00000088 R       03
CHMRTN                     ********    X    04       MOD_MSG_CODE               ********    X    04
CHM_CONT                   ********    X    04       MOD_MSG_PRINT              ********    X    04
CLUS_MASK                  0000010C R    03          MSGT_INP_CTL               00000019 R       02
CLUS_NAME                  00000065 R    02          MSG3_ERR_CTL               00000039 RG      02
CLUS_STATE                 00000110 R    03          MSG_A                      ********    X    04
COMP_SC                    ********    X    04       MSG_B                      ********    X    04
CONDT                      0000016B RG   04          MSG_CTXT                   ********    X    04
COND1_C                    = 00000000               NOTARG                     = 00000000   G
COND1_CLEANUP              0000016C RG   04          NULL                       = 00000014   G
COND1_E                    00000163 R    03          OUTPUT_MSG                 ********    X    04
COND1_H                    00000146 RG   03          PCV                        ********    X    04
COND1_T                    00000118 R    03          PHD$Q_PRIVMSK              = 00000000
COND1_TAB                  00000147 R    03          PQL$_BYTLM                 = 00000003
COND2                      0000016D RG   04          PQL$_CPULM                 = 00000004
COND2_C                    = 00000000               PQL$_FILLM                 = 00000006
COND2_CLEANUP              0000016E RG   04          PQL$_LISTEND               = 00000000
COND2_E                    00000217 R    03          PQL$_PGFLQUOTA             = 00000007
COND2_H                    00000197 RG   03          PQL$_PRCLM                 = 00000008
COND2_T                    0000016B R    03          PQL$_TQELM                 = 00000009
COND2_TAB                  00000198 R    03          PRIVMASK                   00000000 R       03
COND3                      0000016F RG   04          PRIV_ARGS                  = 00000002
COND3_C                    = 00000014               PROCESS_ERR                ********    X    04
COND3_CLEANUP              00000170 RG   04          QUAD                       = 00000008   G
COND3_H                    00000217 RG   03          QUOTALIST                  00000099 R       02
COND3_T                    00000217 R    03          READ_DACEFC                00000846 R       04
COND3_TAB                  00000217 R    03          READ_DACEFCX               00000939 R       04
COND4                      00000171 RG   04          RECV                       ********    X    04
COND4_C                    = 00000014               REST_REGS                  ********    X    04
COND4_CLEANUP              00000172 RG   04          SAVE_REGS                  ********    X    04
COND4_H                    00000218 RG   03          SS$_NORMAL                 ********    X    04
COND4_T                    00000218 R    03          SS$_WASCLR                 ********    X    04
COND4_TAB                  00000218 R    03          SUCCESS                    ********    X    04
COND5                      00000173 RG   04          SYS$ASCEFC                 ********    GX   04
COND5_C                    = 00000014               SYS$CLREF                  ********    GX   04
COND5_CLEANUP              00000174 RG   04          SYS$CMKRNL                 ********    GX   04
COND5_H                    00000219 RG   03          SYS$CREMBX                 ********    GX   04
COND5_T                    00000219 R    03          SYS$CREPRC                 ********    GX   04
COND5_TAB                  00000219 R    03          SYS$DACEFC                 ********    GX   04
CREPRN                     00000051 R    02          SYS$DELMBX                 ********    GX   04
CTL$GL_PHD                 ********    X    04       SYS$DLCEFC                 ********    GX   04
DESC                       = 00000010   G            SYS$FAO                    ********    X    04
DIB$K_LENGTH               = 00000074               SYS$GETCHN                 ********    GX   04
```

```
SYS$HIBER                        ********  GX    04
SYS$QIOW                         ********  GX    04
SYS$READEF                       ********  GX    04
SYS$SETEF                        ********  GX    04
SYS$SETPRN                       ********  GX    04
SYS$SETPRV                       ********  GX    04
SYS$WAKE                         ********  GX    04
TESTNUM                          ********  X     04
TEST_MOD_NAME                    00000000  RG    02
TEST_MOD_NAME_D                  00000009  R     02
TEST_MOD_SUCC                    ********  X     04
TMD_ADDR                         ********  X     04
TM_CLEANUP                       00000159  RG    04
TM_SETUP                         00000000  RG    04
VERIFY                           0000025F  RG    04
VERIFYX                          00000763  R     04
VFY_CLEANUP                      00000764  RG    04
WORD                           = 00000002  G
WRITE_MSG2                        ********  X     04
```

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

PSECT name	Allocation		PSECT No.	Attributes									
. ABS .	00000000	(0.)	00 (0.)	NOPIC	USR	CON	ABS	LCL	NOSHR	NOEXE	NORD	NOWRT NOVEC BYTE
ABS	00000000	(0.)	01 (1.)	NOPIC	USR	CON	ABS	LCL	NOSHR	EXE	RD	WRT NOVEC BYTE
RODATA	000000BC	(188.)	02 (2.)	NOPIC	USR	CON	REL	LCL	NOSHR	NOEXE	RD	NOWRT NOVEC LONG
RWDATA	0000021A	(538.)	03 (3.)	NOPIC	USR	CON	REL	LCL	NOSHR	NOEXE	RD	WRT NOVEC LONG
SATSSS52	0000093A	(2362.)	04 (4.)	NOPIC	USR	CON	REL	LCL	NOSHR	EXE	RD	WRT NOVEC BYTE

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

Phase	Page faults	CPU Time	Elapsed Time
Initialization	35	00:00:00.07	00:00:00.31
Command processing	140	00:00:00.68	00:00:02.93
Pass 1	292	00:00:08.83	00:00:16.59
Symbol table sort	0	00:00:00.60	00:00:00.63
Pass 2	158	00:00:02.39	00:00:03.13
Symbol table output	16	00:00:00.10	00:00:00.13
Psect synopsis output	2	00:00:00.03	00:00:00.03
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	645	00:00:12.70	00:00:23.76

The working set limit was 1650 pages.
47530 bytes (93 pages) of virtual memory were used to buffer the intermediate code.
There were 30 pages of symbol table space allocated to hold 357 non-local and 80 local symbols.
774 source lines were read in Pass 1, producing 28 object records in Pass 2.
50 pages of virtual memory were used to define 40 macros.

M 1

SATSSS52   SATS SYSTEM SERVICE TESTS $DLCEFC (SUCC 16-SEP-1984 00:57:11 VAX/VMS Macro V04-00   Page 22
VAX-11 Macro Run Statistics   5-SEP-1984 04:32:09 [UETPSY.SRC]SATSSS52.MAR;1   (1)

```
                              +-------------------------------+
                              ! Macro library statistics !
                              +-------------------------------+

Macro library name                         Macros defined
------------------                         --------------
-$255$DUA28:[SHRLIB]UETP.MLB;1                    9
-$255$DUA28:[SYS.OBJ]LIB.MLB;1                    1
-$255$DUA28:[SYSLIB]STARLET.MLB;2                27
TOTALS (all libraries)                           37
```
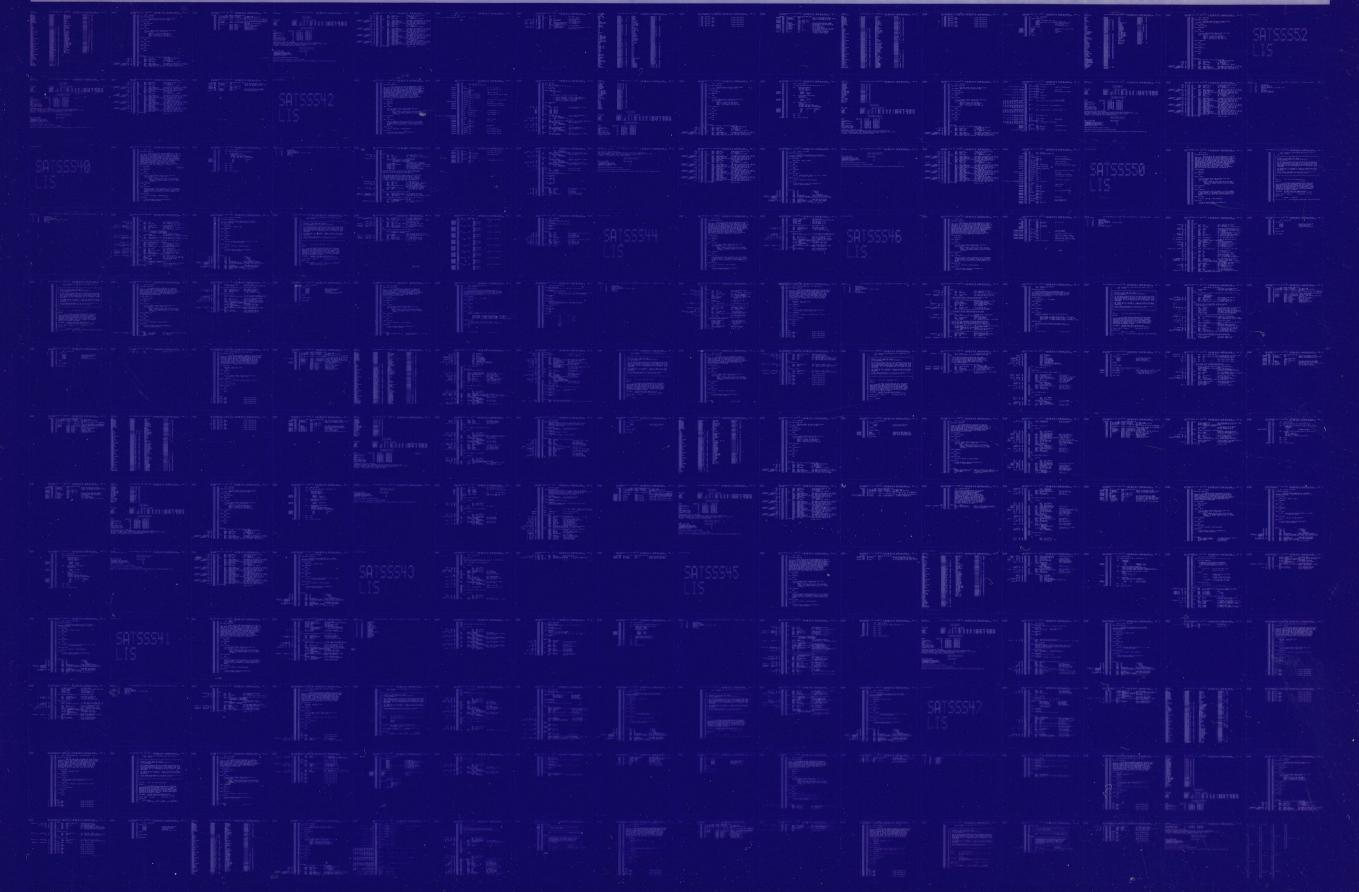
775 GETS were required to define 37 macros.

There were no errors, warnings or information messages.

MACRO/LIS=LIS$:SATSSS52/OBJ=OBJ$:SATSSS52 MSRC$:SATSSS52/UPDATE=(ENH$:SATSSS52)+EXECML$/LIB+SHRLIB$:UETP/LIB

SATS5556
LIS

SATS5571
LIS

SATS5560
LIS

SATS5554
LIS

SATS5573
LIS

SATS5570
LIS

SATS5572
LIS

SATS5555
LIS

SATS5553
LIS

SATS5561
LIS