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**Binary Control Cards:***

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**Entry Points:***

- EVENTCH = 0
- EVENT1 = 13
- GETEVF = 137
- UNHANG = 31
- HANG = 150
- EVHANG = 215
- EVHANGF = 222

**External Symbols:***

- MAKEREJ : EEXEC, UNKNW1, SJOAT, SYSFET, GETCAP, NQCMAN, BIDIX
- PUTCAP : E_INDEX, SJOAT, CLK, WAIT, IWAIT, CHKPTR, CMKSCMD, NEGIX
- CAPAR : T_INDEX, SJOAT, DESCHEN, CAPTY, NQPAR, SUSR61, BIDIX
- SYSRET : SCHED, SJOAT, SLEEP, POUT, DISAS, RIPPAR, DELOGJ, NEQG
EVENT CHANNEL ROUTINES

IDENT     EVENT

* FCS ACTIONS CONTAINED IN THIS DECK
* MKEVCH    CREATE EVENT CHANNEL
* DSECH     DELETE EVENT CHANNEL
* EVENT     SEND EVENT
* EVCNCH    GET EVENT ON HANG
* GETEVF    GET EVENT ON F-RETURN
* MEVHANG   GET EVENT FROM LIST OF CHANNELS OR HANG
* MEVHNSF   GET EVENT FROM LIST OF CHANNELS OR F-RETURN

* EXTERNAL SUBROUTINES CONTAINED HERE:
* EVENTI    SEND EVENT (CALLED BY INTERRUPT CODE)
* EVENTC    REPORT IF PROCESSES WAITING ON CHANNEL
* HANG      GET EVENT (CALLED BY INTERRUPT CODE)
* UNHANG    DECHAIN A PROCESS FROM ANY CHANNELS ITS HUNG ON

* INTERNAL SUBROUTINES CONTAINED HERE:
* EVENTI.S  SEND EVENT FROM FCS SYSTEM
* UNCHAIN   UNDO 1 LINK IN EVENT CHANNEL PROCESS CHAIN
CREATE AN EVENT CHANNEL

PARAMETERS

AP1  C**,ALLOCATION BLOCK
AP2  D**,INDEX IN FULL C-LIST
AP3  D**,LENGTH OF EVENT QUEUE

INTSYS  XTEXT
ERRNUG  XTEXT
ALKROX  XTEXT
PROCSYN  XTEXT
TYPES  XTEXT
OPTIONS  XTEXT
INTSYS  XTEXT

RECS  MACRO  A
  RE  A
  RJ  &=XE,ECS
RECS  ENDM
WECS  MACRO  A
  WE  A
  RJ  &=XE,ECS
WECS  ENDM
ECMAC  XTEXT
CRLOCK  MICRO  \\
  \t  MOV
  EXT  MACROBJ,PUTCAM,CAPA,SYSPRT
  EXT  E.FCS,D.MC7
CREATE AN EVENT CHANNEL

PARAMETERS

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<th>AP1</th>
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ECSCODE | MEVCN |
SA1     | B1+P,PARAM+2  |
NB      | X1,MKEVCH5   |
SA2     | R1+P,CLIST   |
SA3     | B1+X2       |
IX1     | X1=X2       |
NB      | X1,MKEVCH2   |
SA2     | A2+2        |
IX1     | X1=X2       |
PL      | X1,MKEVCH1   |
SA1     | B1+P,PARAM+3  |
NX2     | X1=1        |
NS      | X2+MKEVCH4   |
LK1     | 1           |
SR2     | X1=3        |
AX1     | 1           |
NZ2     | X1,MKEVCH6   |
SA5     | B1+P,PARAM+1  |
SK7     | AT,MKEVCH    |
SR4     | MKEVCH3      |
UP      | NAVEU8J      |
RX0     | X5          |
RX1     | 82          |
RX2     | 2           |
RX3     | X2          |
RX4     | 18          |
RX5     | X6+X2       |
RX6     | 18          |
RX7     | X6+X1       |
SA6     | 81          |
SA5     | CAPAN+1      |
SK5     | X5          |
SR3     | =1          |
LKX     | 30          |
PX6     | B3+X9       |
HX7     | X6          |
LKX     | 30          |
RX6     | X6*X7       |

ECSC ADR OF EVENT CHANNEL
LENGTH OF EVENT CHANNEL
STORE 1ST WORD OF EVENT CHANNEL
MOT INDEX OF EVENT CHANNEL
### EVENT CHANNEL ROUTINES

**CREATE EVENT CHANNEL**

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<td>STORE CHAINING WORD</td>
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<td>WRITE OUT 3 WORD HEADER FOR EVENT CHANNEL</td>
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<td>PUT CAPABILITY FOR EVENT CHANNEL IN FULL CLIST</td>
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DESTROY AN EVENT CHANNEL

PARAMETERS:

AN IMPLEMENTABILITY FOR THE EVENT CHANNEL

IF PROCESSES ARE HANG ON THE EVENT CHANNEL,
THEY ARE SENT SYSTEM YOU LOSE EVENTS BEFORE
THE CHANNEL IS DESTROYED

`ESCODE` `DSCH` `SA6` `A1` `PARAM01`
`SAO` `A1`
`SA1` `X6`
`ARC5` `1`
`SA2` `A4`
`MX1` `30`
`RX4` `X4=A2`
`RX4` `X1=A4`
`NZ` `X4=ERRMOD`
`RX6` `X1=RX2`
`SA6` `B1=TX_TEMP`

SEND EVENTS ON THE CHANNEL UNTIL THE RESPONSE INDICATES THAT
THE EVENT WASN'T GORRLED UP BY A PROCESS

WAIT FOR PENDING INTERRUPTS IF ANY

`DSCH1` `MK6` `0`
`SA6` `x1 banks`
`SB6` `I=PAUSE`
`SR6` `1`

`DSCH2` `SA1` `x1=wait`
`SR8` `A=0`
`EQ` `RX,R6,DISAB`
`NZ` `X1=DSCH2`
`SA6` `I LOCK` `bvalu lock interrupts`
`MX5` `you lose event`
`MK6` `0`
`EQ` `REPLACE UNIQUE NAME FOR SYSTEM`
`EQ` `REPLACE ECS A(EVCH)`
`SB6` `P,TEMP1` `CELL FOR RESPONSE`
`SR7` `DSCH3`
`EQ` `EVENT1 & 5`
`SR7` `R1=TX_TEMP1`
`EQ` `TX=EC,PASS`
`SR1` `X1=EC,PASS`
`ZL` `X1=DSCH1` `loop if event was passed to process

DESTROY THE EVENT CHANNEL

`SA5` `R1=TX PARAM01`
`SR7` `EVENT,5`
`EQ` `X=FREE`
`END` `DSCH`
THESE ROUTINES DISPOSSES OF AN EVENT ON A SPECIFIED EVENT CHANNEL AND RETURNS TO THE CALLER THE PRECISE ACTION TAKEN.

SURROUNES CALLED *UNHANG* AND *UNCHAIN*.

ENTRY FROM USER CALI.
PARAMETERS ARE IN THE ACTUAL PARAMETER AREA.
API = CAPABILITY FOR AN EVENT CHANNEL.
AP = EVENT DATUM.

1 FC:QUI EQU 1
2 FC:PASS EQU 2
3 FC:LOSE EQU 3
4 FC:FULL EQU 4

EXT ENTRY I=LOCK: SCHED: UNHUNG:

EVENT EVENT1

1 I=LOCK

LOCK OUT PPU INTERRUPTS

2 I=LOCK

B1=PARAM+1 GET NOT INDEX AND UNIQ. NAME OF EV CH

3 EQU X2

GET NOT ENTRY OF EVENT CHANNEL

4 X2

RECS 1

5 X2

GET EVENT DATUM

6 X2

GET EVENT INTO X8

7 X2

LOC TO RETURN RESULT OF ACTION

8 X2

RELEASE PPU LOCK OUT

9 X2

10 X2

11 X2

12 X2
EVENT CHANNEL ROUTINES
COMPUTIME TO DISPOSE OF EVENT ON CHANNEL

ENTRY POINT FROM PPU INTERRUPT
REGISTER ALLOCATION EXPECTED FROM PPU
X1 = ECS ADDRESS OF EVENT CHANNEL
X6 = PROCESS MTR
X7 = EVENT DATIM
B1 = ORIG OF SCRATCH AREA
B6 = ADDR REL TO B1 TO RETURN RESULT
B7 = RETURN LINK

EVENT1 SX0 X6 READ NOT ENTRY FOR SENDING PROCESS
SA0 B1
REC5 1
SA2 B1
MX3 30
RX6 X#A3
LX6 30

SETUP PROC UNIQUE NAME IN LOW BITS OF X6
ENTRY POINT FROM DESTROY EVENT CHANNEL. PARAMETERS
SAME AS AT EVENT1 EXPECT X6 UNIQUE NAME OF PROCESS

EVENT1.6 RX0 X1
SA0 B1+1
REC5 3
SA0 B1+1
SA1 A+1
UX1 A+1
UX2
GF
X5.50 EVENT14 A PROCESS IS WAITING FOR AN EVENT
PROCESS QUEUE EMPTY BUT EVENT IN CHANNEL

EVENTA ZR X3 EVENT10
SA6 R1+3
SA6 A+1
SA6 A3
ZK X4 EVENT11
SA6 EC,QUE
X6 JP IF YOU LOSE TIME
RESPONSE TO CALLER

X3 EVENT10
JP IF NO ROOM

ZK X4 EVENT11
JP IF YOU LOSE TIME

EVENTA.7 SA7 R1+4
SA6 A1+86
SA3 R3+2
PLAC EVENT IN QUEUE
RESPONSE TO CALLER
INCR IN POINTER
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<th>EVENT CHANNEL ROUTINES</th>
<th>EVENT CHANNEL ROUTINES</th>
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<tbody>
<tr>
<td>01</td>
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<td>R3, R2, EVENTS</td>
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**Compiler:** COMPASS - Version 2  
**Date:** 11/03/71  
**Time:** 22:44:47  
**Page:** 9
EVENT CHANNEL ROUTINES
SUPPORTIVE TO DISPATCH OF EVENT ON CHANNEL

16753 16722
60 51622216
61 517500157
61 101435
76 10000308
62 71400008
63 4866
64 100111
65 10665
66 617000067
67 5476
70 640000311
71 51620075
72 10160
73 3670
74 5428
75 51210001
76 10635
77 614000001

RX6 RX7 RX8 RX9 RX10 RX11 RX12 RX13
SA6 SA7 SA8 SA9 SA10 SA11 SA12 SA13
SX6 SX7 SX8 SX9 SX10 SX11 SX12 SX13
IX0 IX1 IX2 IX3 IX4 IX5 IX6 IX7
EA0 EA1 EA2 EA3 EA4 EA5 EA6 EA7
LA0 LA1 LA2 LA3 LA4 LA5 LA6 LA7
EC0 EC1 EC2 EC3 EC4 EC5 EC6 EC7

--- ~----:r;_'l_l hlr,,.~.}

11/03/71 22.44.48 PAGE 10

**************
NOTE THIS WONT WORK ON TWO CPU'S

**************
MUST UNCHAIN PSEUDO PROCESS
FROM PROCESS QUEUE

**************
FETCH UP EVENT

**************
SUCCESS
PROGRAM DESCRIPTION

This routine checks the process queue of a specified event channel to see if any processes are hung on it.

PARAMETERS ARE:

- X1 = ECS address of event channel
- A1 = Scratch area
- R7 = Return

RETURNS:

- RP < 0 if no process hung
- RP > 0 if a process hung

USES:

- X0-A4, X2-A2, X3-A4, B2

ENTRY  

EVENTCK  RX0  X1  . ECS address of event channel
          SA0  A1  . Scratch area
          RECS  P  . Read each header to scratch area
          SA2  B1+1  . Fetch chaining word
          UX2  R2, A2  . Get chaining word offset
          GE  R0, 0, EVENTCK1  . Jump if process waiting
          SA0  -R1
          SB2  AN  . Move flag to be
          JP  R7  . Exit
THIS ROUTINE GETS AN EVENT FROM AN EVENT CHANNEL
OR HANGS
IT CALLS *HANG+
ENTRY IS FROM THE USER

EXT SCHARG S OLVIMS SVRTM
EXT SQUANT
EXT CLKWAIT
EXT DESCHED SWAPOUT
ENTRY E VCHANG
SK6 1 SET PPU LOCKOUT
SAA 1 LOCK AG STAYS POS FOR HANG
B1+P ROMEAD PREPARE TO CALL *HANG+
LX1 6+36
SX1 X1 NOT OF PROCESS FOR HANG
SA2 R1+P PANAM =1 MDT AND UNIQUE NAME OF EVENT CHAN
SXN X2
SAN B1
RECS 1
SAS A0
MX0 6O-21
HX2 X2=X3
RX2 X2=X2
NZ X2=ERRMOT ERROR=UNIQUE NAMES DID NOT MATCH
BX2 =X1=X3 ARS ECS ADDRESS OF EVENT CHAN
SRP P PROCRO P PMCUWR CHAINING WORD INDEX
SH7 E VCHNG1 RETURN LINK
JP HANG
X2+EVCHNG2 JP IF NO EVENT
B1+P XPACK=14 PASS EVENT TO USER REGISTERS
B1+P XPACK=15

NO EVENT...MUST HANG

SA1 B1+P ROMEAD
LX1 6+36
SX0 X1
SAX B1
MX6 39
RECS 1 MEAD NOT
SA2 A0
BX0 -X6=X2
MX3 1
LX3 60-PF+R
### EVENT CHANNEL ROUTINES

#### HANG ON EVENT CHANNEL

<table>
<thead>
<tr>
<th>Line</th>
<th>Instruction</th>
<th>Description</th>
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<tbody>
<tr>
<td>124</td>
<td>0110000001</td>
<td>READ PROCESS HEADER WORD</td>
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<tr>
<td>125</td>
<td>5A29</td>
<td>XA=XA</td>
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<tr>
<td></td>
<td>15623</td>
<td>SET HANGING FLAG</td>
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<td></td>
<td>20364</td>
<td>CLEAR SCHEDULED FLAG</td>
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<tr>
<td>126</td>
<td>5A62</td>
<td>RX6=RX6+1</td>
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<td>617000131+</td>
<td>SX1=1</td>
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<td>127</td>
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<td>WICE=1</td>
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#### EVENT ROUTINES

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---

**UPDATE SYSTEM TIME CLOCKS**
GETEVF IS AN ECS ACTION WHICH GETS AN EVENT OR FRE-turns
IF THERE IS AN EVENT, IT IS -QUIVALENT TO *EVCHANG-
PARAMETER: GETEVF
ENTRY: GETEVF
API: C = EVENT CHANNEL
EXT: SYSFRET

R8S 0
S$8 1
SA6 1.LJOCK
S$7 1.LJOCK OUT CPU INTERRUPTS
SA2 RI$ PARAM+1
SA0 1.MO1 AND UNIQUE NAME OF EVCH
SA0 An
SA3 An
SA8 39
RX2 Xp X
AX2 Xp X
N2 X, ERRMODT
X6 X6 -X6
RX7 -Xn X
SR2 P, P, P, CIP OR P, POCR
SR7 #1
ED MANG
PL X2, EVCHANG1
SX6 0
SA6 1.LJOCK
EA SYSFRET

PAGE 14
THIS ROUTINE HANGS IF SPECIFIED PROCESS OR PSEUDO PROCESS ON AN EVENT CHANNEL IF THE EVENT QUEUE OF THE EVENT CHANNEL IS EMPTY OTHERWISE IT RETURNS AN EVENT FROM THE EVENT CHANNEL

PARAMETERS
B1 = ORIG OF SCRATCH AREA
B2 = CHAIN W/ INDEX TO USE WITH PROC
BY = RETURN LINK
X1 = H/P INDEX OF PROCESS
X2 = EMCS ADDR OF EVENT CHAN
X4 = NEGATIVE IF <00 NOT HANG

RETURNS
X2 = NEGATIVE IF PROCESS HUNG
X2 = POSITIVE IF EVENT FOUND
A6 / X7 = EVENT

REGISTERS USED
A0 = -5
A2 = -2
A3 = Y3
A4 = X4
A6 = X6
X7
B6 = A5, BA

ENTRY HANG

150 5191 00000 10922
151 01104 0003
152 5430 63420 03430
153 21720 15670 055000201 +
154 5440 00002 034000201 +
155 0380 00214 +
156 20176 27721
157 2172 1123

SET EVENT CHAN HEADER
READ EVENT CHANNEL HEADER
TEST FOR EVENTS IN QUEUE
LENGTH OF EVENT CHANNEL
IN POINTER
OUT POINTER
JP IF EVENTS AVAILABLE
NUMER OF EMPTY SPACES ON EVENT Q
JP IF FULL QUEUE
DON'T HANG WAS SPECIFIED
MUST HANG PROC ON PROCESS QUEUE
FORM PTR TO NEW PROCESS
CHAIN NEW Proc TO EVENT CHAN
X2 = PTR TO OLD END OF QUEUE
EVENT CHANNEL ROUTINES

RX6   X3 + X7
SA6   A3

WECS  3

WRITE OUT EVENT CHAN HEADER

LXP  30
UX3  85.2X2
AX3  30
SXO  X3
RECS  1
MX6  39
SA3  A0
BXN  = X4 + A3
GB  85.2X + HANG1
SB5  = A5
SX3  35
IX0  X0 + X3
RECS  1
SA3  A0
MX6  30
BX4  X6 + X3
LX2  30
RX2  X2 + X4
RX3  = X4 + X3
LX7  30
BX6  X3 + X7
SA6  A3
WECS  1

WRITE REPAIRER PTR FOR OLD END OF G

WRITE POINTER TO NEW END OF QUEUE

READ NOT ENTRY OF NEW PROCESS

WRITE PTR TO NEW END ON QUEUE

SIGNAL NO EVENT

RETURN

GET EVENT FROM EVENT QUEUE

EMPTY COUNT

INCREMENT OUT POINTER

JP IF NO WRAP AROUND

X3 = NOT OF OLD END OF QUEUE
EVENT CHANNEL ROUTINES

203 43473
    37526
    64626
    73726

204 1333
    76620
    12443
    20622

205 56473
206 1234
207 36653
208 011000008
209 5490

210 647777737

211 27646
    0000001
    14733

212 1322
    27:00000

213 1722
    027:00000

214 1722
    027:00000

HANG3
MNX
IX6
SA6
RX6
SX6
RX3
SX2
RX3
SX2
RX6
SX6
RX6
SX6
RX6
SX2
RX3
SX2
RX6
SX6
RX6
SX6
RX6
SX2
RX3
SX2
RX6
SX6
RX6

mx6 x2=x6
a7
x3=x2
x6+x3
x6+x3
19
a3m4
3
x=x6
a0
x3
a0
x6
a0
x6
a0
x6
a0

x6 = -1 TO INCREMENT EMPTY COUNT
OLD OUT POINTER
WRITE OUT EVENT CHANNEL HEADER
ADDR OF EVENT
READ EVENT
GET EVENT INTO x6, x7
PUT THE CHAINING WORD
INDEX INTO THE EVENT
SET X2 NON-NEGATIVE
RETURN
SET X2 TO $NO EVENTS
THIS ROUTINE GETS AN EVENT FROM ONE OF A LIST OF EVENT CHANNELS. MEVHANG HANGS ON ALL THE CHANNELS IF NONE HAS AN EVENT. MEVHNFRETURNS IF AN EVENT ISN'T AVAILABLE ON AT LEAST ONE OF THE CHANNELS.

HANDLE, UNCHAIN, AND GETCAP ARE CALLED.

AP1 = POINTTO LIST OF INDICES OF CAPABILITIES FOR EVENT CHANNELS.
AP2 = NUMBER OF EVENT CHANNELS IN THE LIST.

ALL CAPABILITIES ARE CHECKED FOR APPROPRIATE TYPE AND OPTION BITS, INDEPENDENT OF THE EXISTENCE OR NON-EXISTENCE OF EVENTS ON ONE OR THE CHANNELS.

I.WAIT, MEVHANG, MEVHNF, GETEV, HANG, FLAG TO R2.
R1.P, PCHAR = LENGTH OF QUEUEING BUFFER+1 TO X1.

X1*%12 ERROR IF NUMBER OF CHANNELS AS LARGE AS

X1+X2 SITE OF QUEUEING BUFFER
X2, MEV1

SOME ERRORS

2, BSET, PAR
1, NERO PAR

F-RETURN ENTRY (SAME PARAS AS ABOVE)

R108, GETEV
R117, PCHAR = ERROR IF CHANNEL COUNT NEGATIVE

X1, ER20
X1, ER20
ERROR = IF CHANNEL COUNT EXCEEDS

BA
BA

P, PARAM-2 = AVAILABLE SCRATCH SPACE = 2).

E0
MYMSKTR
MY SET ABS ADDR, ETC.

CHECK ALL CAPABILITIES FOR TYPE AND OPTIONS. READ THE
ENTRY AND CHECK THAT THE EVENT CHANNEL STILL EXISTS.
SAVE THE ADDRESS OF THE CHANNELS IN THE
PARAMETER R5.

FREE = GIVES THE ADDR OF LIST
INITIAL TALLY
EVENT CHANNEL ROUTINES
HANG ON MULTIPLE EVENT CHANNELS

SR6  MEV2  RETURN LINK
E0  =XGETCAP  RETURNS ADDRESS OF CAP IN AO
SA1  A
SB5  X1  T_EVCH  ERROR IF CAP NOT FOR EVENT CHANNEL
SR6  NE  B4.B5.EV72  ERROR IF OR.OBTEV (OR OB.GTEV) ISN'T ON
SA1  A+1
MX3  A+X1
RX0  X3.X1
SA0  R1
RECS  1  READ NOT ENTRY FOR CHANNEL
SA2  A
RX1  X2.X1
RX1  X1+3A
NZ  X1.ERRMOT1  ERROR IF UNIQUE NAMES DON'T MATCH
SR6  R1.R.P/EKAM+2  SAVE ECS ADDRESS OF EVCH
SB7  R+X2  
SA7  R+X7
SA7  R+1
LT  R7+3,MEV3

CHECK FOR EVENTS WITHOUT HANGING ON THE CHANNELS

SR7  MEV4  RETURN LINK
SX5  R3  SAVE HANG/RETURN FLAG IN XS
SB2  P.PROGRO+P.PROCRO  FETCH TALLY AND ENDTES
SR3  R+X2  SETUP TALLY AND ENDTES
SX6  1  LOCK OUT THE PRU S
SA6  I.LOCK  GLYS4  FETCH ECS ADDR OF CHANNEL
SB4  R1.32  GLYS4  FETCH ECS ADDR OF CHANNEL
SA2  R+P.R.PANAM+2P.PROGRO+P.PROCRO  DO NOT HANG
MXA  1  FETCH ECVMM91 BEFORE AN EVENT
E9  MANG  GO LOOK FOR AN EVENT
SB2  R+X1  ADVANCE COUNT
PL  X4.EVCHNG  CHECK FOR INTERRUPT PENDING
SA2  I.WAIT
SR4  ZR  X7.3MEV5
SB2  0  WAIT
SA6  I.LOCK
SA4  I.PAUSE
SA2  I.WAIT
E0  B+5.80.DISAS  INTERRUPT FAILED TO TUN
SR4  B4+1
NZ  X7.3MEV5
SA6  1  RELOCK INTERRUPTS
LT  R2+X3,MEV3
SA4  XS  RECOVER ENTRY FLAG
SR2  R+O.BTEV+6  IF NO EVENT AND F RETURN CASE, INITIATE F RETURN
E0  R4.B2=xASYSFGET
NO EVENT WAS WAITING AND HE WANTS TO HANG. SIGN. PROCEED WITH THE MESSY BUSINESSES OF HANGING ON THE CHANNELS

R1 + P ROMHEAD

PTR TO PROCESS NOT TO X1

SET INITIAL TALLY

RETURN LINK

GET ECS ADDRESS OF PROCESS INTO TEMP1

FOR LATER CHECKING

R1 + P . TEMP1

ECS ADDR OF EVCH TO X2

R4 + S3

SET HANG FLAG

P, PHCGRD + P, PHCRI + 9 CHAINING WORD INDEX TO B2

HANG: BO TEST FOR EVENT AND HANG

X2, MEVB AN EVENT SNICK IN SINCE WE LOOKED LAST

R3 + 1

R1 + P, PARAM1

X2

R3, H2, EVCHNED: HUNG ON ALL CHANNELS. GO SWAP PROCESS OUT

I, WAIT IF NO INTERRUPT PENDING, PROCEED

TEST MACRO NORMALLY NULL

X2, MEVB TO HANG ON NEXT CHANNEL

I, PAUSE RELEASE FPU LOCKOUT AND WAIT FOR INTERRUPT

0

I, LOCK

I, WAIT

X2, MEV11 JUMP OUT AFTER INTERRUPT OCCURS

R4 + 1

R4, 50, MEV12

R5

R0, 50, MEV12

INTERUPT FAILED TO RUN

RELLOCK INTERRUPTS

I, LOCK

R1 + P, TEMP1

AFTER AN INTERRUPT, READ THE PROCESS

MEANER FORM ECS AND SEE IF IT GOT AN EVENT

ON ONE OF THE CHANNELS IT WAS HUNG ON

EVENT +5

NO EVENT. SO HANG SOME MORE

CAUGHT IN THE ACT -

R1 + P, XPACK+4

STORE EVENT IN USER X6, X7

R1 + P, XPACK + 1 3

UNCHAIN FROM ANY CHANNELS WERE ALREADY HUNG ON

EVENT + 5

R1 + P, XPACK + 1 3

UNCHAIN FROM ANY CHANNELS WERE ALREADY HUNG ON

EVENT + 5

R1 + P, XPACK + 1 3

UNCHAIN FROM ANY CHANNELS WERE ALREADY HUNG ON

EVENT + 5

R1 + P, XPACK + 1 3

UNCHAIN FROM ANY CHANNELS WERE ALREADY HUNG ON
<table>
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<th>Event Channel Routines</th>
<th>Event Channel Options</th>
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<td>207 5147-00001</td>
<td>ERROR 5072</td>
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<tr>
<td>210 6147-00001</td>
<td>ERROR 600101</td>
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CAP TYPE OR OPTIONS BAD ERROR

(97+1) CAPT

(97+1) NCHAN
**EVENT CHANNEL ROUTINES**

**UNHANG PROCESS FROM EVENT CHANNELS**

* This routine unchains a process from any event channels that it
  happens to be hung on (works for all channels)
* At entry:
  * X0 = ECS A (PROCESS)
  * B7 = RETLINK
* Uses A0, X0, X1, A5, X3, X4, X5, A6, X0, A7, X7, R6, R8
* Uses 1 word of scratch at B1

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<tr>
<td>311</td>
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<td>012000001</td>
</tr>
<tr>
<td>317</td>
<td>0313001320 027000000</td>
</tr>
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</table>

* Unhang
  * SX5 = P, P, P, CUR, P, CUR
  * IX5 = X, X, X
  * Get address of chaining words
  * MX7 = 0
  * SX4 = 1
  * S4A = UNHANGE1
  * RETLINK FROM UNCHAIN
  * S5X = X
  * Read one chaining word
  * SA0 = B1
  * RECS = 1
  * SA2 = A, A
  * SA7 = A
  * CLEAR AND REWRITE THE WORD
  * IX5 = X, X
  * ADVANCE TO NEXT CHAIN WORD
  * WEC5 = 1
  * NZ = X, UNCHAIN
  * JP = A, A
  * Exit
  * Continue until zero word
THIS ROUTINE WELINKS A PROCESS CHAINING WD FROM A PROCESS QUEUE

PARAMETERS  X2 = CHAINING WD TO UNCHAIN
             B6 = RETURN LINK

REGISTERS USED  A0-A6, X2, A3-X3, R5, A6-X6

USES CELI AT AN FPO SCRATCH

X5, X2  EXPAND CHAINING WORD ( FORE POINTER )

B5, X2  READ OUT OF NEXT IN CHAIN

R5, R6, UNCHAIN TEST FOR LAST IN QUEUE

B5, R6, UNCHAIN TEST FOR LAST IN QUEUE

A0  READ PROPER CHAINING WD OF NEXT IN Q

X6  PATCH CHAINING WD OF NEXT IN Q

X7  WRITE OUT REPAIRED CHAINING WORD

X6  FIX PROCEEDING ELEMENT IN QUEUE

X2  EXPAND BACK POINTER

X3  GET WDT OF PROCEEDING PROC

X5  GET WDT OF PROCEEDING PROC

A0  CHAINING WD INDEX

A0  PATCH CHAINING WD

A3, X3  WRITE OUT MODIFIED CH WD
EVENT CHANNEL ROUTINES
DELINK ONE LINK OF EVENT CHANNEL PROCESS CHAIN

RETURN
<table>
<thead>
<tr>
<th>EVENT CHANNEL ROUTINES</th>
<th>SYMBOIC REFERENCE TABLE.</th>
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<tbody>
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<td>1. T.POU 1</td>
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CUMPASS - VER 2. 11/03/71 22.44.54. PAGE 28
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22.44.7: ASSEMBLY COMPLETE.
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22.46.9: END
22.47.0: 1176 LINES PRINTED BY PRINTER DRIVER ON LP 2.
22.48.1: END
22.49.2: END
22.50.3: END
22.51.4: END
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