

Events Data Logging

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Architecture

Open Access Client, EVENTS

EVENTS is a Java Open Access Client front-end running on the Data Acquisition Engine DAE05. Its function is data log Tevatron clock and software state transition events.

EVENTS monitors all Tevatron clock events and tracks the time since each event was last seen. EVENTS supports devices of the form G:ExxSNC where xx represents a clock event from 00 to FF. The devices are scaled for readback to represent the number of seconds since the event was last detected. The integer raw data represents milliseconds since last seen.

EVENTS also supports devices of the form G:ExxSCT where xx represents a clock event from 00 to FF. The integer raw data represents microseconds into the supercycle where the event was seen.

EVENTS also supports devices of the form G:ExxNUM where xx represents a clock event from 00 to FF. The integer raw data represents the count of events in the last multicast update containing this event. EVENTS datalogs all G:ExxSCT and every G:ExxNUM changes from the value one.

EVENTS also supports devices of the form G:ExxSUM where xx represents a clock event from 00 to FF. The integer raw data represents the sum of events in the current supercycle containing this event. EVENTS datalogs all G:ExxSUM at each supercycle reset.

EVENTS also supports the device of the form G:E00ERR which is a measurement of the timing error as the absolute difference of time reported by the UCD multicast and the engine's time of day. EVENTS datalogs G:E00ERR at each supercycle reset.

An parameter page view of Tevatron Clock events 0x02 and 0x00:

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PC:S2  EXTRACTION PARAMS<NoSets>
S2  17  FAST EXT COLLIMATOR      SET      D/A  A/D  Com-U  ♦COPIES♦
-<SNP>+ *SA♦ Once  X=TIME      Y=I:BLMON ,C CQ9      ,B BLMS03,B BLMS04
COMMAND ---- Eng-U  I= 0      I= 0      , 0      , 0      , 0
-< 3>+ EV02 AUTO  F= 10      F= 30      , 250     , .1      , .12
a0/fast a0loss  d0loss  d0loss  a0motr  d0motr  septa  TARGETS

G: E02SNC      Since TEV Clock Event      2.018      secs
G: E02SCT      Time in supercycle      16.91427   secs
G: E02NUM      Multicast event count      1          num
G: E02SUM      Event sum in supercyc      4          num

G: E00SNC      Since TEV Clock Event      18.932     secs
G: E00SCT      Time in supercycle      -.000001    secs
G: E00NUM      Multicast event count      1          num
G: E00SUM      Event sum in supercyc      1          num
G: E00ERR      MCast clock error (ms     25         mSec

```

Data Logger

The data logger associated with EVENTS is EVNTS.

Using EVENTS Information

Plotting the Collider state transition event over the last week:

PB:D44 LUMBERJACK PLOTTER<NoSets>

D44 Lumberjack Datalogger

Plot Title = CHL, MAKARA

X=TIME

Y=	,V:CLDRST	,T:		
I=-10	, 0	, -10	, -10	
F= 10	, 24	, 10	, 10	
.CHL_A	.Evnts	.CHL_A	.Cryo2	
NONE	NONE	NONE	NONE	
	209			Read
	209			Plotted

Y=	,	,	,	
I=-10	, -10	, -10	, -10	
F= 10	, 10	, 10	, 10	
.CHL_B	.CHL_B	.CHL_B	.Mau	
NONE	NONE	NONE	NONE	
				Read
				Plotted

T1= Wed 12-SEP-2001 07:51 T2= Wed 19-SEP-2001 07:51

◆Skip◆	◆X Divs 8◆	◆Interpolation◆	◆Inc◆	◆T2 Now◆	◆Interval◆
◆Trace◆	◆Y Divs 4◆	◆Previous◆	◆Next◆	◆Integrate◆	◆Editor◆
◆Symbol◆	◆Overwrite◆	◆Recall◆	◆Save◆	◆Average◆	◆Fold◆
		◆List Data◆	◆Copy◆	◆StdDev◆	◆LJScanJob◆
		◆Export Data◆	◆Enable◆	◆Fit Equations◆	
				◆Min/Max◆	
				◆Calc Points◆	

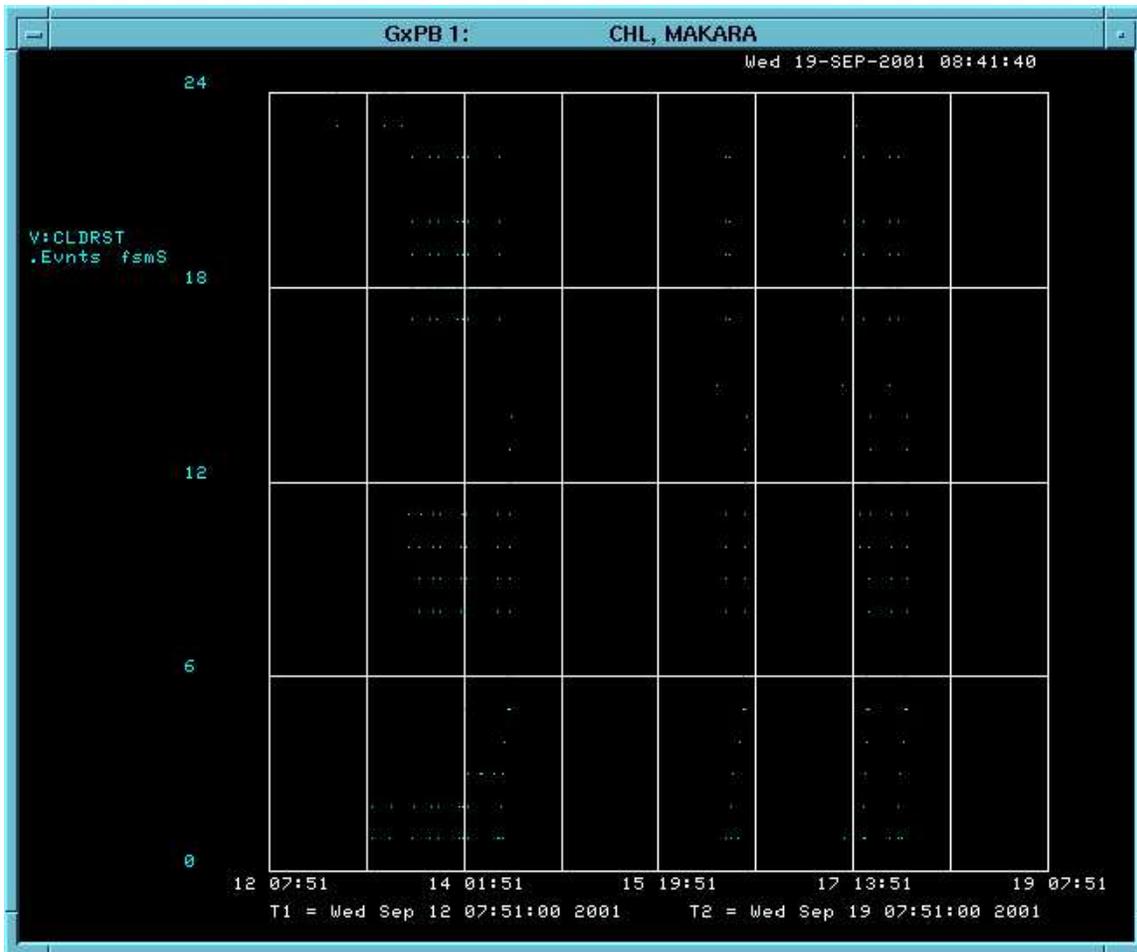
Data Source ◆Evnts (DAE05)◆

◆All Device Plot◆List = ◆6◆

Messages

```
CNS 140, node=53, record # 26 - saved
CNS 140, node=53, record # 25 - saved
CNS 140, node=53, record # 24 - saved
```

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Plotting time in the supercycle of Tevatron Clock event 0x02 over the last 10 minutes:

PB:D44 LUMBERJACK PLOTTER<NoSets>

D44 Lumberjack Datalogger

Plot Title = CHL, MAKARA

X=TIME Y= ,G: E02SCT ,T: ,

I= 0 , 0 , 0 , -10 ,

F= 100 , 60 , 10 , 10 ,

.CHL_A .Evnts .CHL_A .CryoZ

NONE NONE NONE NONE

120 Read

120 Plotted

Y= ,

I= -10 , -10 , -10 , -10

F= 10 , 10 , 10 , 10

.CHL_B .CHL_B .CHL_B .Mau

NONE NONE NONE NONE

Read

Plotted

T1= Wed 19-SEP-2001 07:39 T2= Wed 19-SEP-2001 07:49

◆Inc◆ ◆T2 Now◆ ◆Interval◆

◆Skip◆ ◆X Divs 8◆ ◆Interpolation◆ ◆Integrate◆ ◆Editor◆

◆Trace◆ ◆Y Divs 4◆ ◆Average◆ ◆Fold◆

◆Symbol◆ ◆Overwrite◆ ◆Previous◆ ◆Next◆ ◆StdDev◆ ◆LJScanJob◆

◆Recall◆ ◆Save◆ ◆Fit Equations◆

Data Source ◆Evnts (DAE05)◆ ◆List Data◆ ◆Copy◆ ◆Min/Max◆

◆All Device Plot◆ ◆List = 6◆ ◆Export Data◆ ◆Enable◆ ◆Calc Points◆

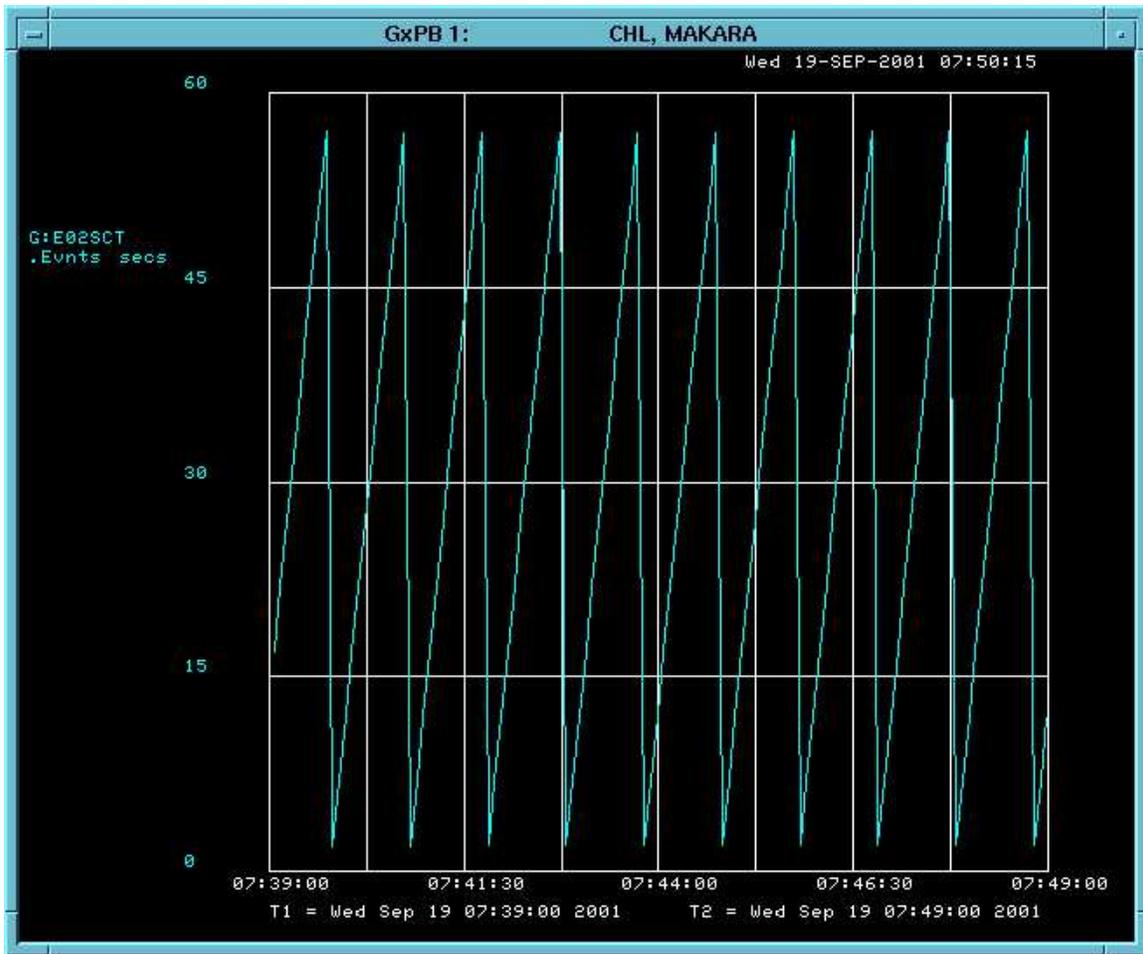
Messages

CNS 140, node=53, record # 18 - saved

CNS 140, node=53, record # 17 - saved

CNS 140, node=53, record # 16 - saved

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Plotting time in the number of Tevatron Clock event 0x02 over the last week:

PB:D44 LUMBERJACK PLOTTER<NoSets>

D44 Lumberjack Datalogger

Plot Title = CHL, MAKARA

X=TIME Y= G: E02SUM T: Stop Pause Pgm_Tools
 I= 0 , 0 , 0 , -10 GxPB1 Units Status
 F= 100 , 60 , 10 , 10
 .CHL_A .Evnts .CHL_A .Cryo2
 NONE NONE NONE NONE
 10057 Read
 10057 Plotted

Y= I=-10 , -10 , -10 , -10
 F= 10 , 10 , 10 , 10
 .CHL_B .CHL_B .CHL_B .Mau
 NONE NONE NONE NONE
 Read
 Plotted

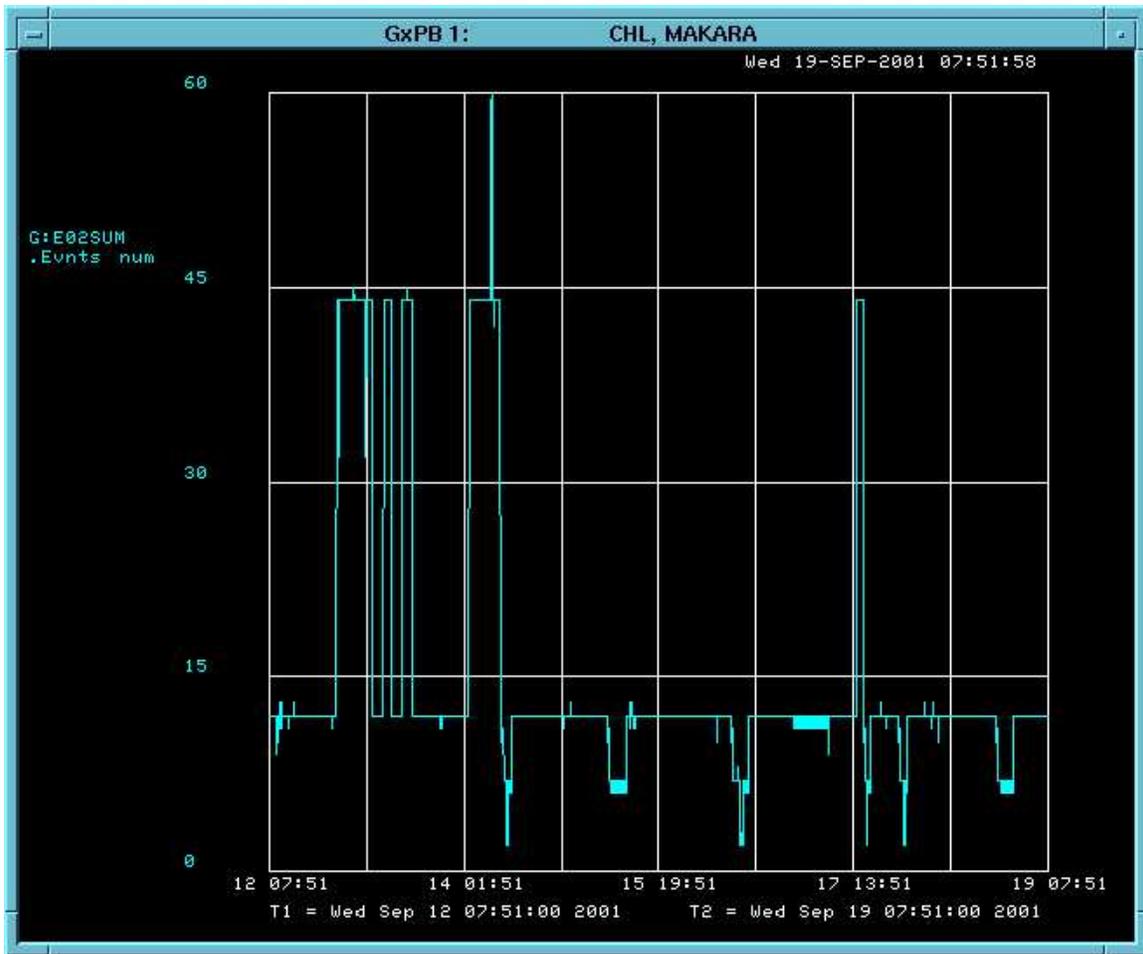
T1= Wed 12-SEP-2001 07:51 T2= Wed 19-SEP-2001 07:51 Inc T2 Now Interval
 Skip X Divs 8 Interpolation Integrate Editor
 Trace Y Divs 4 Average Fold
 Symbol Overwrite Previous Next StdDev LJScanJob
 Recall Save Fit Equations

Data Source Evnts (DAE05) List Data Copy Min/Max
 All Device Plot List = 6 Export Data Enable Calc Points

Messages

CNS 140, node=53, record # 19 - saved
 CNS 140, node=53, record # 18 - saved
 CNS 140, node=53, record # 17 - saved

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Plotting the supercycle error (timestamp difference of UCD and DAE) over the last week:



