

January 27, 2008

Excluding a Trigger Tower from the L1 Cal Trig

Use the following steps (**shown in red**) to exclude either the EM, HD, or both sections of a Trigger Tower from participating in the L1 Calorimeter Trigger decision. Once excluded, a Trigger Tower will always appear to the L1 Cal Trig as though it has zero GeV Et of energy in it.

1. Edit the file:

```
/tcc/L1Cal_IIB_Work/Config/Excluded_Trigger_Towers.msg
```

Part of this file is shown below (last lines of this document).

To exclude a Trigger Tower (TT), add lines same as the ones shown in red below (at the end of this document) with the corresponding (*ieta*, *iphi*).

To include back a Trigger Tower, just comment out two lines excluding that TT.

This (Excluded_Trigger_Towers.msg) is an ASCII text file. The top of this file is a full description of the file format. There is syntax for comments so one can explain when and why a given TT (either EM or HD, or both sections) has been excluded.

This file is owned by the D0I1 account and has RW permissions for that group account.

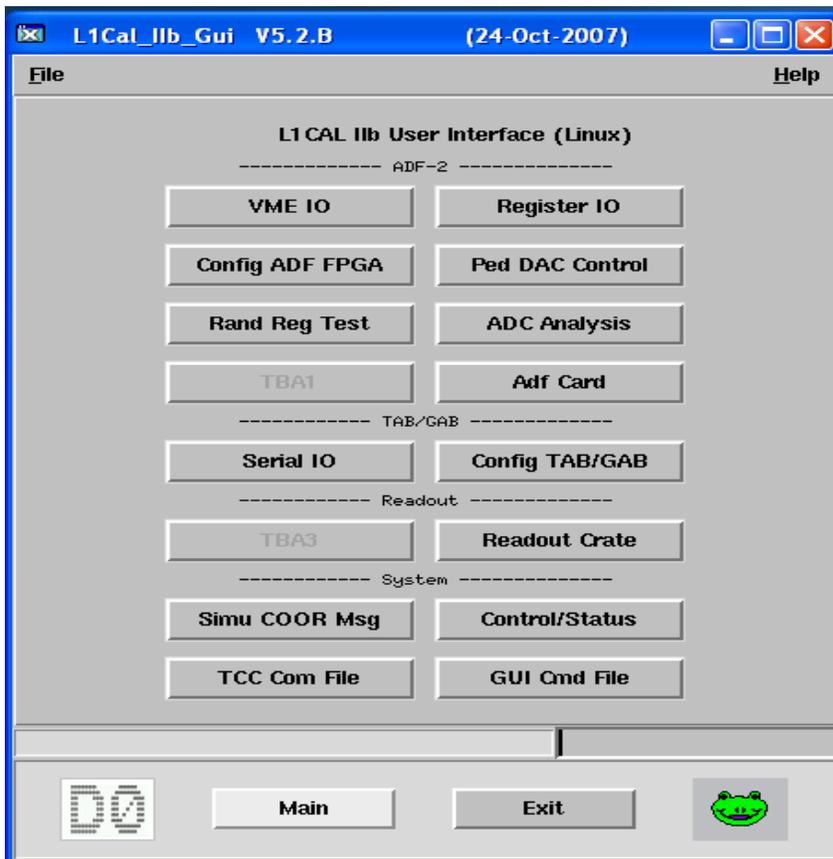
The /tcc directory is mounted only on the d0tcc3 machine, i.e. the L1 Cal Trig TCC. So, you either need to ssh to this machine to edit the file or just walk into the MCH1, push the console select button "L1Cal Trig" on top of rack M102 (Figure 1) to aim the LCD console on the front of rack M102 to the d0tcc3 machine where you will find D0I1 logged in and ready to use.



Figure 1) Box to select to monitor for TCC.

2. Initialize the L1 Cal Trig using the L1Cal_I Ib GUI: (GUI looks like this)

You may use the GUI on the LCD console in front of rack M102 or on any machine. See the procedure L1Cal_Running_L1Cal_I Ib GUI how to start this GUI if the GUI is not already running.



On the Main page click on the following boxes in order:

Simu COOR Msg
(on the next window) Initialize
Send Request

3. Write in the elog book what you have done.

The file Excluded_Trigger_Towers.msg partly looks like this:

```
=====
! Excluded Trigger Tower Channels
!
! This file is %CONFIG%Excluded_Trigger_Towers.msg
! This file is called by Init_Post_Auxi.mcf
!
! This is the list of Trigger Tower Channels
! currently excluded from the L1Cal Coverage.
!
! For each EM or HD Tower channel Excluded, the ADF card involved will
! send to the matching TAB card a fixed value corresponding the zero GeV.
!-----
! Comments start with an exclamation mark ("!") anywhere on a line.
!-----
! Use the lines below as the template to exclude an EM or HD Trigger Tower
!
! Send_Msg_To_Self:"L1Cal_Exclude EM_Tower TT_Eta (-11) TT_Phi (19)"
!
! The example above corresponds to EM Tower at TT_Eta=-11 and TT_Phi=19
! To exclude the HD Tower contribution, use the keyword "HD_Tower"
! To exclude both EM and HD contributions, use two separate messages.
!-----
! There is a known bug in the version of the L1Cal TCC control software
! currently used on d0tcc3 and the above command will not send the correct
! zero energy fixed value to the TAB.
!
! Until new software can be installed on d0tcc3, each "Exclude" message
```

! needs to be followed with another message to reset the proper constant
!value:

!

! Send_Msg_To_Self: "TrgMgr_AdfOut_Const EM_Tower TT_Eta (-11)
TT_Phi (19) Value 8"

!-----

!

! To include a TT back, just comment out or delete the two lines that
! exclude the TT.

!

!=====

! Created : 22-Sep-2005 Empty file

! Updated : 21-Jun-2006 Give a template with current limitations

!=====

! 25-AUG-2006 Exclude +5,9 HD at the request of the captain.

! L1 rate was spiking to 10 kHz. This BLS signal
! was a triangle pulse to 200 or 300 mVolts every
! about 10 usec.

Send_Msg_To_Self: "L1Cal_Exclude HD_Tower TT_Eta (+5) TT_Phi (9)"

!

Send_Msg_To_Self: "TrgMgr_AdfOut_Const HD_Tower TT_Eta (+5)
TT_Phi (9) Value 8"

!

(The last is actually one line. Shown here in two because it is longer than the
Word line)