

L1T DQM News

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- Central DQM pointed out some issues on the L1 DQM
- New CVS L1 DQM tags finished and soon to be deployed.
- RCT Request for a new DQM alarms based on a Quality Test
- Noticed some problems on L1TRate and L1TSync

Central DQM Requests

Contacted by Marco Rovere (Central DQM) he found issues that need to be addressed found while validating the new DQMIO format:

- 1. **Duplicate producers** are run: CSCTFTrackProducer
 - once in the sequence deDttf and another time in deCsctf.
 - Same label so hopefully the FWK will run it once, but it would be nice to have this fixed.
- 2. Big mess in CSCTFPtLUT module.
 - Not a FWK module but treated as if it were.
 - Several **bugs/memory leaks** that need to be fixed.
- 3. Again the CSCTFPtLUT module
 - Called several times in CMSSW but because it uses a static pointer to a LUT when one instance is deleted, all lose access to the LU, which generates **segmentation violations**

New L1 DQM Tags

Vasile Ghete reviewed and corrected the problems presented by the central DQM and implemented a new L1 DQM Tag that will be deployed soon (next week?). The main changes:

- The event client part was rewritten to allow the consideration of ***Quality Tests results*** on histograms **from multiple directories**.
- The **HardwareValidation Module** was also **clean-up**, especially in the muon part, based on the comments from Marco and the DTTF and CSCTF answers; system not supported were removed.
- For the first time **enabled also the L1 systems in L1T summary plot**, based mainly on the dead channels and hot channels QTs.
- A new event client replaced the previous one. It will need the **new render plugin** to look also online and offline.

Request from RCT I

Contacted by Pamela Klabbbers (RCT) after problem spotted with the RCT board last Friday. Discussion started about implementing a DQM test for this type of situations. Initial idea:

- Create a 2-bin histogram that is the number used for the quality tests applied to RCTErrorFlag and GCTErrorFlag
- Sound an alarm if a problem occurs with the data emulation.
 - when it reaches 0.95 for RCT and 0.95 for GCT we sound an alarm.
- To keep the alarms to a minimum collect the information over about 40 LS (~15 minutes)
- And only showing values on the histogram again after 40 LS.
- Add histogram it to the error folder.

Request from RCT II

Vasile Ghete proposal:

- Couple the alarms to the summary plot:
 - If a system go red (ERROR) in the summary plot, it triggers also the alarm.
 - **Consistent ERROR / WARNING /etc in summary plot and audio alarms**
- Need to Create a 1D histogram with:
 - Status (y-axis) vs system/trigger object (x-axis) for all the entries in summary plot,
 - Having an entry for the system/object if the they are is in ERROR.
 - If the histogram is not empty, it triggers an audio alarm.
- New L1 DQM Tag will allow to consider histograms from arbitrary directories and make also L1T and L1TEMU event client consistent (where the summary plot is produced).
 - **Same code is used**, driven by parameters.

NOTE: One can think of including also the WARNING state, or better to include an entry if more or some system combination are in WARNING: if RCT and GCT are in WARNING, it could trigger an alarm.

I Agree with this proposal and will start implementation asap.

Status Online Tools

Noticed some issues:

- **L1TRate**: estimations seem consistently over the values seen on data while in WbM. (luminosity still increasing?) (example run 196774)
- **L1TRate**: HTM trigger is reported as “undefined”. (Why?)
- **L1TRate**: Cross section histograms Xaxis needs to be updated to the current fill range of instant luminosity.
- **L1TSync**: Module did not run any tests.
 - Error: ERROR_TRIGGERALIAS_NOTVALID
 - This happens when the module does not find a trigger to monitor in a given category of objects... but the certification plots report (except for HTT) the correct Trigger Alias name!?