

Procedure on updating of HCAL HLT conditions

This procedure is meant to guarantee some basic level of scrutiny in order to avoid elementary mistakes while installing new conditions into HLT tags. At the same time it should provide fast turn-around time between recognizing a need to update conditions and implementing correct change into DB. It also allows us to keep record on all updates.

1. During the run, as detector conditions change, we may have to change software conditions used in the reconstruction of HCAL energy, such as:
 - a) pedestal offsets
 - b) calibration coefficients
 - c) adc-to-fC conversion factors

2. Change of software conditions in HLT should be done only after review and written agreement from HCAL Run Field Manager.
 - a) Request for update for any software conditions can be generated by either shifters reviewing dqm plots, people working on prompt feedback or offline analysis, or ...).

- b) The request should be filed via savannah from “HCAL Operations” group to “Calibration with Data” group
- c) Once new conditions file (‘gain’, ‘pedestals’, ...) is ready, it will be posted on savannah for discussion and to be reviewed by “HCAL Operations” group
- d) Information on performed sanity checks should be provided:
 - i) List of channels for which changes were applied with indicated new, old and diff values and specific criteria applied to select channels that need a change (eq. $\Delta_{ped} > 0.1 \text{ ADC/TS}$)
 - ii) plots showing distributions of RecoHits using new and old conditions, indicating that new conditions actually lead to proper HCAL energy reconstruction (ave_Reco=0, rms_Reco=200-300 MeV, channel per channel)
 - iii) plots showing comparison of old and new values
- e) Additional sanity checks may be requested, for example phi distribution for new and old calibration coefficients

- f) Files can be loaded into DB after explicit approval by HCAL Run Field Manager via savannah

- 3. Change of HLT conditions have to be documented on the HCAL Hardware Change twiki:
<https://twiki.cern.ch/twiki/bin/view/CMS/HcalHardwareChanges>

- 4. Changes to HLT conditions need to reported to DPG and PVT

- 5. Changes to offline conditions need to be agreed by DPG and PVT.