

# Preparation for the Trigger Review

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# Trigger Review

- TSG Trigger Review for ALCa triggers (Feb 4<sup>th</sup>)
  - [https://twiki.cern.ch/twiki/bin/view/CMS/TSG\\_21\\_XI\\_08](https://twiki.cern.ch/twiki/bin/view/CMS/TSG_21_XI_08)
- Summary of requirements  
<http://indico.cern.ch/materialDisplay.py?contribId=10&sessionId=1&materialId=slides&confId=44679>
  - Definition of samples (what statistics are needed for calibration, how often do samples need to be collected, what precision is expected)
  - People/group/institution maintaining, supporting, responding
  - Rates, timing, event size reduction
  - Plans for online, offline trigger DQM, monitoring

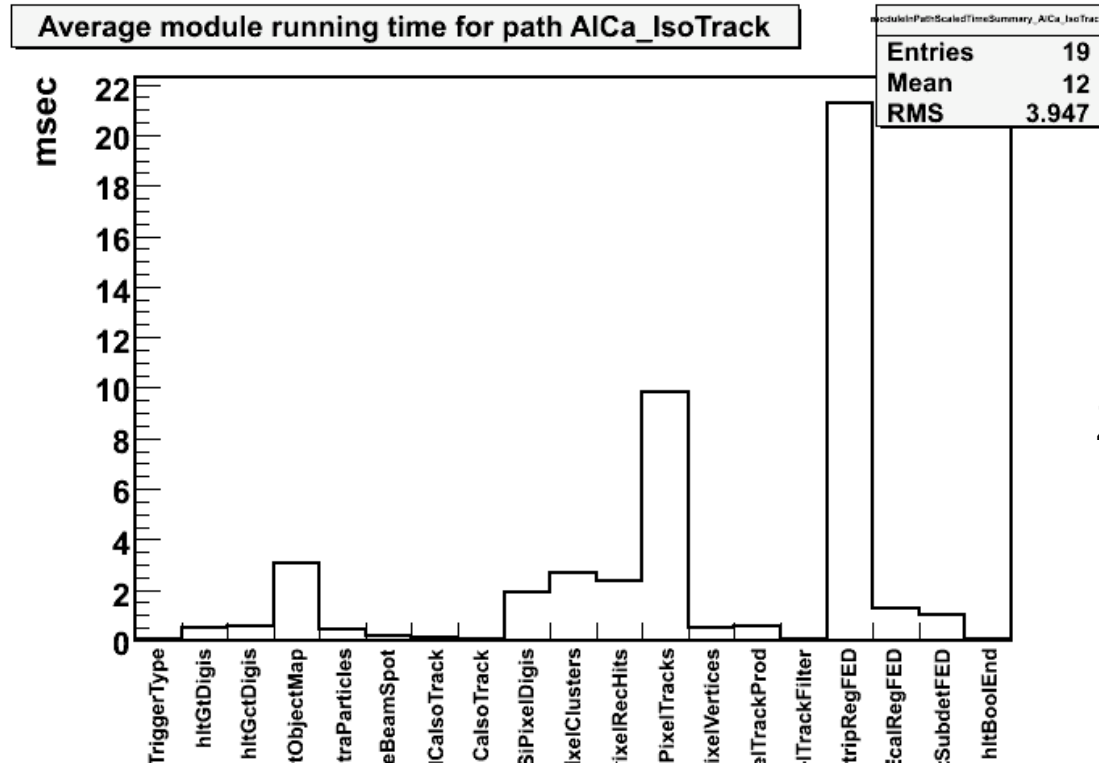
# Preparation for review

- Note on HCAL calibration triggers is being planned (Anton, Grigory, Tulika); to cover
  - Introduction to HCAL calibration strategy
    - Calibration workflows, ALCaRaw workflows
  - HCAL Phi symmetry
    - ALCaRaw, ALCaRECO description, HLT performance numbers
  - IsoTrack
    - ALCaRaw, ALCaRECO description, HLT performance numbers for updated version of IsoTrack
- Some HLT performance numbers shown during the HCAL DPG workshop in December:
  - [Grigory's slides](#)
  - Raised the following issues...

# Issues that need to be resolved

- Large L1 rate for IsoTrack but very small HLT rate
  - Leads to large contribution to timing (Isotrack contributes ~10ms by itself to the total HLT menu)
  - Small samples for calibration
- Question 1: Can the L1/HLT selection be optimized better ?
- Event size reduction is very small (only factor of ~2)
  - This factor (and the small HLT rate) does not justify a separate AlCaRaw stream for IsoTrack
- Question 2: How would the calibration strategy change if IsoTrack is kept in the physics stream (full event content/ RAW) ? (No separate AlCaRaw stream)
  - Separate Primary Dataset could be created for IsoTrack
  - May need to be prescaled if rates increase substantially for higher luminosities ( $\geq 1E32$ ...)

# Issues that need to be resolved



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- Technical problem found recently
  - IsoTrack keeps "EcalListOfFeds" object
  - Results in missing Ecal hits if HLT is run again
- Solution has been provided by Emmanuelle Perez
- IsoTrack needs to be updated

# Outlook

- It would be great if we can have the note ready by Feb. 4<sup>th</sup>
- *Critical/Must-Have item:*
  - *issues in the previous slides addressed*
  - *(and answers for the basic requirements listed in Slide 2)*