Calibration Questions…

November 12, 2004
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Why talk about Calibration again?

- We need to start delineating the Validation Procedure for the Calibration Process including implementation details

- We discussed with Leon and Hiro prior to this meeting

- We need to discuss with CAL and Joanne before we make a proposal
  - Today we will highlight some issues
  - Next week we will have a continuation of the discussion
Version Control

- To reproduce calibrations we need a version control for the code used to generate the constants
  - Charge injection scripts
    - Get a tag in the online CVS repository
    - Tag works for all scripts bundled together
  - SAS calibrations code
    - calibGenCAL and calibGenTKR have individual tags in the SAS repository

- Question to this group (for next week only...)
  - Do we need to tag the constants themselves with a version?

- Question to ISOC
  - Will the tag procedure change when charge injection occurs with FSW?
Input Data to Calibration Code

• We need to select runs to perform calibrations
  – When the LAT is fully assembled this may imply in hundreds of runs and we want to automate the process

• There 2 ways to handle the problem
  – Get list from the Web, where the output can be tailored to whatever format we need
    – Already exists (see next slide)
  – Log into the farm and producing a list by searching all data
    – Is it needed?

• Where to search? Which keywords to search?
  – Would like ask TKR and CAL to think about this and have a discussion next week
Select all runs with a specific format

New button see next page
The format is ASCII for the moment...

Digi root files
/nfs/farm/g/glast/u01/EM2/rootData/139000041/em_v3r0404p2/040626175242_digi.root

Recon root files

Merit root files

SVAC root files

This could give a list of hundreds of files in an format we (or recon) needs
Policy (or Police?) Discussions

• How will we use the flavor field in SAS database?

• Some thoughts
  – Official version
    – Production/development/old
  – CalibUser (anyone can play there)
    – Whatever name you like

• Question for next week
  – If we want to check the history of calibrations or compare calibrations, is flavor and validity time all we need?
    – We had a 3 hour discussion with TKR and we could not find a solution, so really, next week we will talk about it after we get the usual “nuggets of wisdom” from Joanne
Metadata (it is not half of the data...)

• Will subsystem generate Serial Numbers for their hardware under test?
  – Do we have a coordinated scheme (or schema?) to incorporate subsystem tags into I&T scripts?

• Where does the serial number show up?
  – SVAC is parsing information in LATTE’s rcReport.out and snapshots and if it is there we can get it (see next slides)

• SAS Recon ONLY cares about the Bay location we do the test
  – So if we test outside the grid, which number does recon see? Zero! What was the tower ID when we calibrated outside the grid ...?
    – It comes from the TEM ID (first two towers to be integrated according to the plan is TEM 9 and 8)
Run selection (1)

Select a run
Run selection (2)

- Get run info produced by the online
- Get digitization and reconstruction reports
- Get register configuration info
CAL register configuration directly from online files!

LAT globals

- CAL Zero Suppression is OFF.
- CAL Four Range Readout is ON.

EM2 hardware

(only 5 planes)

TKR GTRC Layer Readout Split Points

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<tr>
<th>Layer</th>
<th>Tower 2 X</th>
<th>Tower 2 Y</th>
<th>Tower 3 X</th>
<th>Tower 3 Y</th>
<th>Tower 4 X</th>
<th>Tower 4 Y</th>
<th>Tower 5 X</th>
<th>Tower 5 Y</th>
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</tbody>
</table>

TKR GTRC Layer Readout Split Points (Left:Dead:Right)
**Instrument Configuration (2)**

The image shows a configuration table for the CAL Low Energy Trigger Discriminator. The table includes multiple layers and crystals for different sides and directions. The code accommodates missing elements (just in case...).
For Next Week

• Would like TKR/CAL and SAS to think about the following
  – If we want to check the history of calibrations and/or compare calibrations, is flavor and validity time all we need?
    – Have we thought about which metadata to include?
      » Database has lots of fields, are we using them?
    – Can we minimize typing to avoid errors?
      » What else can we automate?

  – For calibrations outside the grid during I&T is TEM ID 0 OK?
    – Remember, I&T controls data taking scripts…

  – How are we handling serial numbers?
    – Where do they go?
    – Who needs them? Web and recon?
    – Do we have a coordinated approach from subsystem to I&T testing?