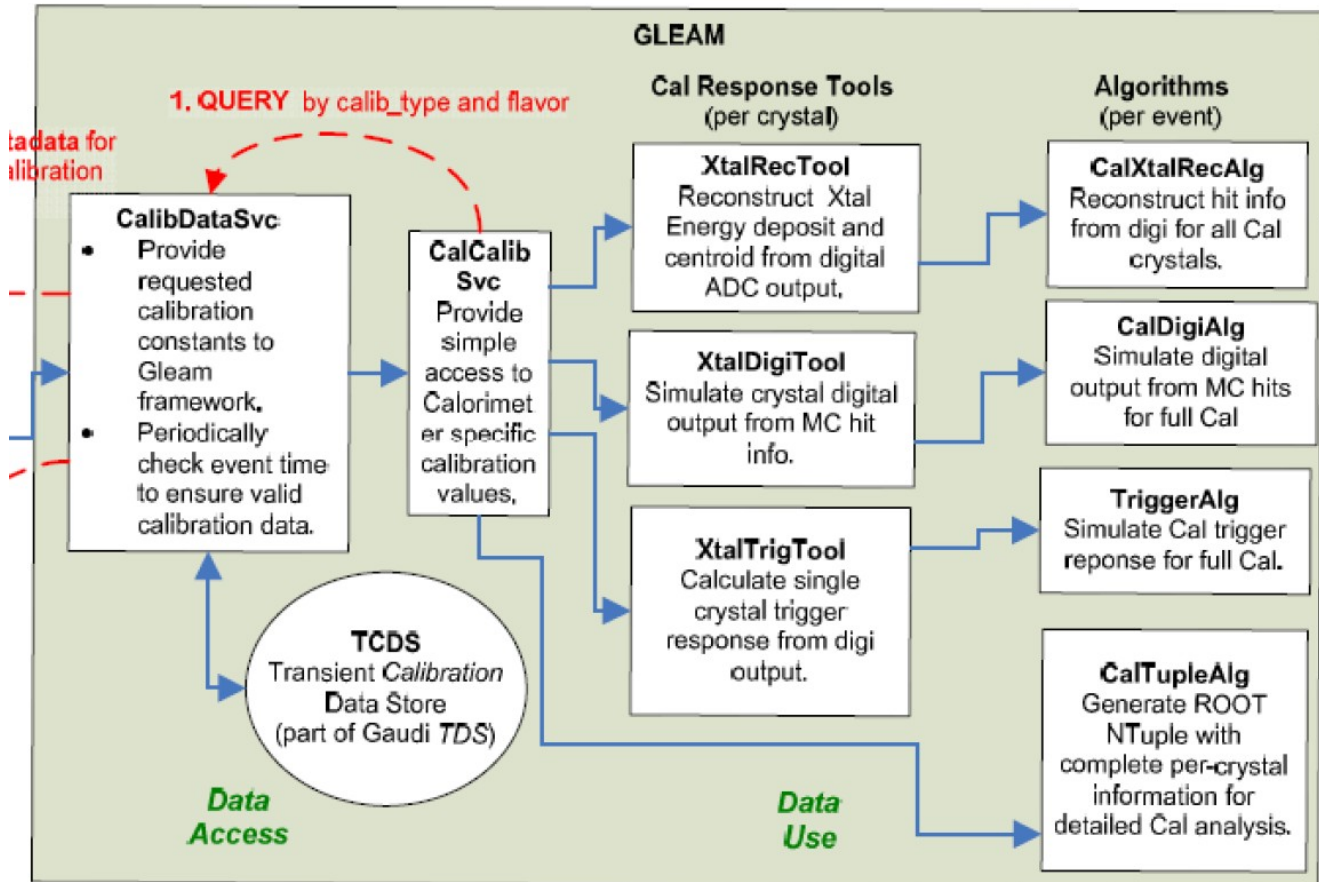


Running Multiple Simultaneous Cal Calibrations in Gleam

Zach Fewtrell, October 2006

General Code Structure:



1. CalCalibSvc

(a) purpose

- i. provide 1 full 'set' of calibrations to clients (i.e. One *flavor* for each *calib_type*)
- (b) in order to make more than one *flavor* available, simply instantiate 2 copies of CalCalibSvc via jobOptions.

2. Quick Cal Calibration Types Overview

- (a) All of these *calibtypes* together make a full *calibset*.

(b) Pedestals

- i. adc pedestal levels

(c) IntNonlin

- i. adc2cidac (cidac is more linear scale)
- ii. represents electronic gain curves.

(d) Asym

- i. light asymmetry

(e) MeVPerDAC

- i. optical efficiency/gain coefficients

(f) tholdCI

- i. trigger/LAC/ULD thresholds expressed in ADC units

3. CalCalibSvc Clients

(a) Once the multiple *CalCalibSvc* instances have been enabled, you must ensure that you have each client pointing to the proper instance.

(b) known clients

i. XtalDigiTool

- A. simulate digital out from MC for single crystal
 - used by to *CalDigiAlg*

ii. XtalTrigTool

- A. simulate Cal Trigger response
 - used by to *TriggerAlg*

iii. XtalRecTool

- A. single crystal hit energy & position reconstruction
 - used by CaXtalRecAlg

iv. CalTupleAlg

- A. generate CalTuple

4. JobOptions Example

(a) based on default Glean jobOptions.txt file.

```
// turn off output
Output.Members = {"FhSetAlg",
"CalTupleAlg"};
//=====
//
// End of job options file
//
//#####
//-- instantiate 2nd CalCalibSvc
ApplicationMgr.ExtSvc += {"CalCalibSvc/CalCalibSvcVanilla"};
CalCalibSvcVanilla.DefaultFlavor = "vanilla";
//-- optionally override flavor for a particular calibration type
// CalCalibSvcVanilla.FlavorPed = "ideal"
//-- point appropriate clients to new CalCalibSvc
ToolSvc/XtalRecTool.CalCalibSvc = "CalCalibSvcVanilla";
//ToolSvc/XtalTrigTool.CalCalibSvc =
//ToolSvc/XtalDigiTool.CalCalibSvc =
CalTupleAlg.CalCalibSvc = "CalCalibSvcVanilla";
// The following can be used to tell CalibDataSvc to use a fake clock
// to generate event times (for its own purposes only; does not write
// them to the event)
CalibDataSvc.CalibTimeSource = "clock";
CalibDataSvc.startTime = "2006-9-01 00:20";
CalibDataSvc.delayTime = 900;
```

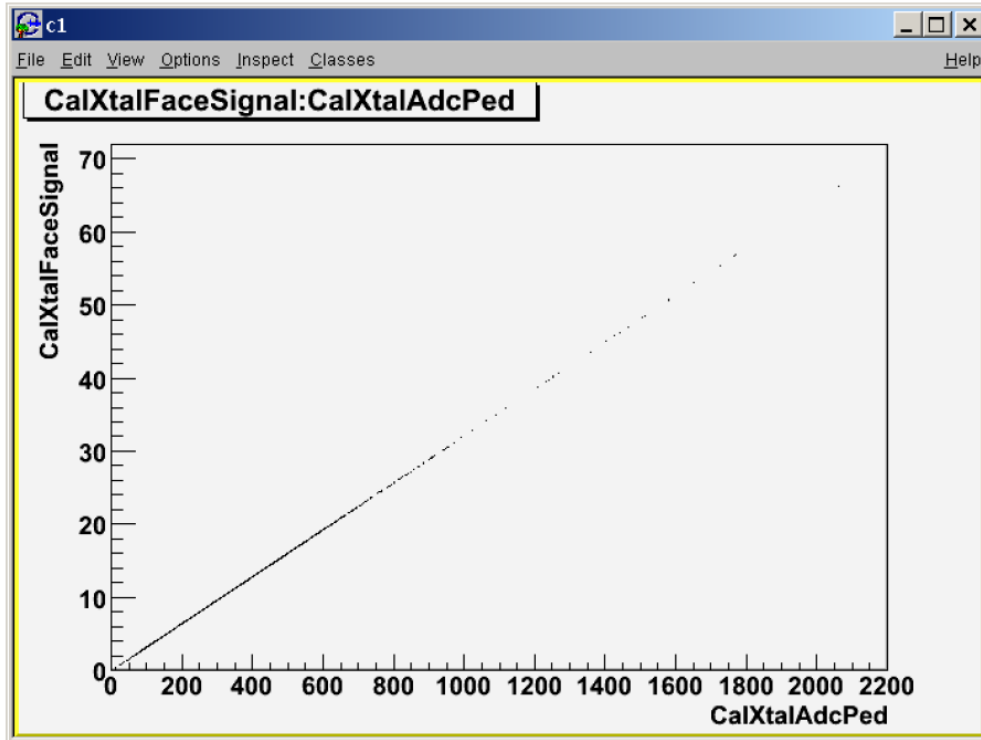


Illustration 1: results from matching 'ideal' calibrations

Illustration 2: result from mismatched 'ideal' vs 'vanilla' calibrations

