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# Calibration and Alignment

Complete: 

Note: this page is now outdated, please refer to the AICaDB main page.

## Mission Statement

The CMS Calibration and Alignment (AICa) team coordinates the design and implementation of the CA infrastructure with the needs of the sub-detector groups.

## Organization

### Conveners

- Gianluca Cerminara
- Chiara Rovelli
- Stephanie Beauceron - Focus on trigger aspects

### Alignment & Calibration Software Coordinators

- Alignment: Andreas Mussgiller
- Calibration: To be found...

### Hypernews

- Calibration: <https://hypernews.cern.ch/HyperNews/CMS/get/calibrations.html> [↗](mailto:hn-cms-alca@cern.NOSPAMPLEASE.ch)  
([hn-cms-alca@cern.NOSPAMPLEASE.ch](mailto:hn-cms-alca@cern.NOSPAMPLEASE.ch))
- (Old Alignment hn now **frozen**: <https://hypernews.cern.ch/HyperNews/CMS/get/alignment.html> [↗](mailto:hn-cms-alignment@cern.NOSPAMPLEASE.ch)  
([hn-cms-alignment@cern.NOSPAMPLEASE.ch](mailto:hn-cms-alignment@cern.NOSPAMPLEASE.ch)) )

### Meetings

- Take place every other Tuesday at 16:30 CERN time in 40-2A-01.
- Agendas can be found in under [Weekly Offline Meetings](#) [↗](#)

## DPG and POG Database and HLT Contacts

### Calibration:

Sub-Detector	DPG/POG Contact	Database Contact
Pixel tracker	Viktor Veszpremi, Gavril Giurgiu, Urs Langenegger	Gemma Tinti
Strip tracker	Mario Galanti, Loic Quertenmont	Gabriele Benelli
ECAL	Marat Gataullin, Federico Ferri	Jean Fay, Pierre Depasse
HCAL	Willis Sakumoto Igor Vodopianov	Steve Won
Muon DT	Antonio Vilela Pereira	Paolo Ronchese
Muon CSC	Darin Baumgartel	Igor Vorobiev
Muon RPC	Marcello Maggi, Marcello Abbrescia	Michal Szleper, Marcello Maggi
Beamspot		Kevin Burket, Lenny Spiegel

	Kevin Burket, Lenny Spiegel, Verena Martinez	
L1 conditions	N/A	Werner Sun
JEC	Ricardo Eusebi, Mikko Voutilainen	Kostas Kousoris, Salvatore Rappoccio
Tracker dE/dx templates	Loic quertenmont	Loic Quertenmont
BTag POG	Cristina Ferro	Cristina Ferro
Tau POG	Evan Friis, Christian Veelken	Evan Friis
Muon POG: P scale and resol	Roberto Castello, Javier Santaolalla	Roberto Castello, Javier Santaolalla
Muon POG: MC conditions validation	Andrea Perrotta, Rocio Vilar Cortabitarte	
Muon POG: data conditions validation	Alicia Calderon Tazon	
EGamma POG	Yurii Maravin, Florian Beaudette	
HI Analysis Objects	Edward Wenger, Yetkin Yilmaz	Edward Wenger, Yetkin Yilmaz
Castor	Luiz Martins Mundim Filho	

### Alignment:

Sub-Detector	DPG Contact	Database Contact
Tracker	Roberto Castello, Gero Flucke	Roberto Castello, Gero Flucke
Muon DT	Luca Scodellaro	Luca Scodellaro
Muon CSC	Yuriy Pakhotin	Yuriy Pakhotin

### Trigger Studies Group:

Calibration	Stephanie Beauceron
Alignment	Javier Fernandez

### Heavy Ions:

Contact person: Bolek Wyslouch

Possible differences in calibration procedures between pp and HI are summarized here

## Open tasks in Alignment and Calibration

**Important:** a list of vacant tasks in alignment and calibration that we would like to fill very urgently can be found under CMS.AICaJobs.

## CMSSW Software

### Release Planning

The list of new features planned for upcoming releases can be found here: AICaReleasePlans

### Submission of New Tags

To submit new tags for the release the developers are required to:

Calibration:

- queue the tags on the TagCollector
- send an announcement mail to the Software Coordinators and the conveners
- Add the tags to the wiki pages liste below:
  - ◆ Alignment: SWGuideTrackAlignmentVersions
  - ◆ Calibration: AICaCalibTagCollector

## Release Validation

The list of validation contacts and validation results for each new release can be found here: SWGuideValidationTableAICa NEW

The Matrix of which ReIVals are run for which ReIVal samples can be found here: AICaRecoReIVals

## Release Notes

Release notes relating to calibration and alignment can be found at SWGuideCalAliReleaseNotes31X NEW

The original list of deliverables for 31X is here: AICa31XDeliverables

## Global Tags for Conditions

For information on global tags for conditions data, including how to include conditions in a CMSSW job, see SWGuideFrontierConditions

### Tag collector for the Global-Tag.

The instructions for the Tag collector for the Global-Tag can be found here

### Policy for global tags for data taking

For details see GlobalTagPolicy

### Operations and sign-off procedure for constants updates

The operational procedures for proposing constants updates can be found under AICaConstantsOperations. The protocol of the constants sign-off sessions can be found under <https://twiki.cern.ch/twiki/bin/view/CMS/AlcaSignOff2011> and AICaSignOff

### Mis-calibration and mis-alignment scenarios

Some global tags for MC production apply a smearing of alignment and calibration constants defined through certain mis-calibration and mis-alignment scenarios. Details concerning these scenarios can be found here: AICaScenarios.

## AICaReco

The set of AICaRecos to be run for each primary data set during different phases of data taking is documented here: AICaRecoMatrix.

## Trigger Bits for AICaReco

The set of trigger paths used as input for each AICaReco skim is documented here:  
[SWGGuideAICaRecoTriggerBits](#)

## Tools

- Instructions to use the **Offline Drop Box** can be found [here](#)
- Instructions to upload DQM files to the DQM GUI can be found [here](#)
- Instructions to use the crab/WMBS automation can be found [here](#)

## Documents

- CSA08 Internal Note [↗](#)
- Strategy for alignment and calibration at startup

## Calibration and Alignment Workflows

- X-alignment workshop, CERN 24 May 2011.
- Calibration and Alignment Workflows
- Calibration and Alignment Workplans
- Latency of Calibration and Alignment workflows in CRUZET4
- Automation

## Tutorials/SWGuide

- Database tutorial for Alca contacts [↗](#)
- Tutorial presentations [↗](#)
- Trigger Paths for Alignment and Calibration
- Testing AICaReco production using cmsDriver.py
- SWGuide: Using the CAF for calibration and alignment
- How to apply miscalibration and misalignment on the fly in an analysis job
- SWGuide for track based alignment

## Conditions Database

- [Offline Conditions Database Page](#)

### Tutorials/SWGuide

- How to create new conditions objects
- How to upload constants to the conditions database using the PopCon Dropbox
  - ◆ [Metadata template for the PopCon Dropbox ↗](#)
- Connect strings for accessing ORCON and ORCOFF

### Policies and Conventions

- Tag naming convention for conditions data
- Strategy for integration of new/modified CondFormats
- AICa policy concerning database

## Run-Based MC

\* Please follow the instructions to prepare conditions tag for the run-based MC production test.

## CSA07 and CSA08 Exercises

- Calibration and Alignment in CSA08
- CSA07 Exercises
- Constants description for CSA07 scenario

## Other Links

- ECAL Calibrated RecHit Definition [↗](#)
- Frontier Squid deployment instructions and sites.

## Old Links

- I/O Requirements for DB workflows
- Older meetings: Meetings [↗](#) Minutes
- November 2005 integration and stress test: CalAliDB Stress Test, Meetings.
- Ecal Performance Wiki
- Ecal O2O Performance Wiki
- CMSSW workplan for Calibration: pdf-document
- Software workplan for Alignment: pdf-document
- old wiki [↗](#) of calibration and alignment at FNAL.
- old RoadMap (CA roadmap [↗](#))
- Milestones

## GT Management Tools

here

## Review Status

Editor/Reviewer and Date	Comments
Main.lueking - 05 Oct 2005	Page author
OanaBoeriu - 09 Mar 2007	page content last edited
JennyWilliams - 27 March 2007	transferred page into swguide

Responsible: Gianluca Cerminara

Responsible: ChiaraRovelli

Responsible: Marco De Mattia

Last reviewed by: Reviewer