TOF Offline Status

Paola Pagano
for ALICE TOF Offline Group

Offline Detector Review and planning tool status

Pin	Log	P	Work	Task Name	Task Owner	Assigned Users	Start Date	Done Date	Expected Finish Date	Last Update
✎ ●	Log		✔	└ Material Budget (2358)	Annalisa.DeCaro	Annalisa.DeCaro (100%)	-	27/06/2008	18/02/2009	-
✎ ●	Log		✔	└▽ *Calibration* (906)	chiara.zampolli	-	01/01/2006	18/06/2009	30/05/2009	-
✎ ●	Log		✔	└ Implementation of a new calibration object for HV to be used in Reco (2448)	chiara.zampolli	chiara.zampolli (100%)	16/03/2009	18/06/2009	30/05/2009	-
✎ ●	Log	»		└▽ *Raw Data* (942)	Annalisa.DeCaro	-	01/01/2006	-	30/09/2009	-
✎ ●	Log	»		└ Write TOF CTTM inputs in the raw data (2636)	Annalisa.DeCaro	alessandro.silenzi (100%)	18/06/2009	-	30/09/2009	-
✎ ●	Log	»		└ Simulation of the TOF CTTM inputs from raw data (2637)	Annalisa.DeCaro	alessandro.silenzi (100%)	18/06/2009	-	30/09/2009	-
✎ ●	Log	!		└▽ *Quality Assurance* (1395)	Silvia.Arcelli	Silvia.Arcelli (100%)	01/01/2006	-	30/05/2009	-
✎ ●	Log	!		└ Reference distribution (2324)	Silvia.Arcelli	Silvia.Arcelli (100%)	23/05/2008	-	21/06/2008	-
✎ ●	Log	!		└ Implementation of run type (2450)	Silvia.Arcelli	Silvia.Arcelli (100%)	16/03/2009	-	30/05/2009	-
✎ ●	Log	!		└ Implementation of simulation in QA checker (2451)	Silvia.Arcelli	Silvia.Arcelli (100%)	16/03/2009	-	30/05/2009	-
✎ ●	Log	!		└ Implementation of reconstruction in QA checker (2452)	Silvia.Arcelli	Silvia.Arcelli (100%)	16/03/2009	-	30/05/2009	-
✎ ●	Log	!		└ Implementation of reference data (2453)	Silvia.Arcelli	Silvia.Arcelli (100%)	16/03/2009	-	30/05/2009	-
✎ ●	Log		✔	└ Geometry (1407)	Annalisa.DeCaro	-	01/01/2006	27/06/2008	29/02/2008	-
✎ ●	Log	»		└▽ *Simulation* (1412)	Annalisa.DeCaro	-	01/01/2006	-	30/09/2009	-
✎ ●	Log		✔	└ Verification of time window value in simulation (2444)	Annalisa.DeCaro	Annalisa.DeCaro (100%)	16/03/2009	06/03/2009	30/05/2009	-
✎ ●	Log		✔	└ Verification of the event merging procedures (2445)	Annalisa.DeCaro	Annalisa.DeCaro (100%)	16/03/2009	22/05/2009	30/05/2009	-
✎ ●	Log		✔	└ Verification of the embedding procedures (2446)	Annalisa.DeCaro	Annalisa.DeCaro (100%)	16/03/2009	06/03/2009	30/05/2009	-
✎ ●	Log	»		└ TOF CTTM inputs map (2638)	Annalisa.DeCaro	alessandro.silenzi (100%)	18/06/2009	-	30/09/2009	-
✎ ●	Log		✔	└▽ *Reconstruction* (1413)	Silvia.Arcelli	Silvia.Arcelli (100%)	01/01/2006	18/06/2009	30/05/2009	-
✎ ●	Log		✔	└ Implementation of a new parameter (AliTOFClusterFinderV1) in Reco Param objects (2447)	Silvia.Arcelli	Annalisa.DeCaro (100%)	16/03/2009	18/06/2009	30/05/2009	-
✎ ●	Log	!		└▽ *Trigger* (2374)	Annalisa.DeCaro	Annalisa.DeCaro (100%)	16/03/2009	-	30/09/2009	-
✎ ●	Log	!		└ Implementation of the code for trigger parameters for the simulation of the trigger input to the CTP (2449)	Annalisa.DeCaro	alessandro.silenzi (100%)	16/03/2009	-	30/05/2009	-
✎ ●	Log	»		└ Simulation of TOFtrigger starting from LTM outputs/TOF CTTM inputs (2639)	Annalisa.DeCaro	alessandro.silenzi (100%)	18/06/2009	-	30/09/2009	-
✎ ●	Log	»		└ Reduced TOF CTTM inputs for TRD (2640)	Annalisa.DeCaro	alessandro.silenzi (100%)	18/06/2009	-	30/09/2009	-

Key: ▮=Started and on time ▮=Overdue ▮=Done but with delay ▮=Done

Calibration Task # 2448 : Implementation of a new calibration object for HV to be used in Reco

➢ According to the TOF test beam results, the TOF MRPC detector efficiency is weakly dependent on HV.
We plan to have the HV values as reference data.

Paola Pagano
University of Salerno & INFN

Calibration I

➤ Online Calibration: Any news/updates on the procedures? Is everything properly integrated in the Shuttle framework?

We are trying to integrate the results obtained with the 2008 cosmic data analysis.

The DA algorithm for online calibration procedure is valid for collision runs.

It foresees a time_zero measurement as reference time to calibrate the TOF time measurements. In cosmic runs, we have not a T0 measurement.

By the way, via an offline analysis on cosmic runs (it combines together two TOF measurements), we had obtained preliminary and mutually dependent calibration parameteres for some TOF channels (~40000→maybe more after next cosmic runs) so that we shall be able to have a TOF time resolution of ~130ps at first collision run (at least for these channels).

So the calibration parameters for one TOF channel are dependent on another TOF channel.

Final approach foreseen for next Aliroot release.

Calibration II

➢ For which run type would you need the GRP object (in order to be able to reconstruct the run)?
  Just for Physics

➢ Are any updates necessary in the Shuttle code running at P2?
R.Preghenella is implementing a procedure in order to make as much as possible independent the TOF DA/Shuttle code from the changes in an electronics database containing -among other- the TDC matching windows

Calibration III

Calibration offline procedures:

➢ Does your procedure comply with the Framework?

  Yes.

In case of filtering the ESD friends:

  ➢ What is the size of the fraction you would need to store (compared to the present size/ to the ESDs size; depending on the type of collision, energy...)?

  Now, we don't store nothing in the ESDfriends.

  In the ESDfriends file we will store an object that is an array of variable sizes arrays of floats (max 300) (under development, to be committed, maybe generalizable to other detectors)

  There is no more TTree and so it's a smaller object. It derives from TObject and use a TArrayF of TArrayF. We will study a least squares minimization procedures as alternative, as discussed during the Offline Calibration Strategy meeting in May.

Calibration IV

➢ Is the AnalysisTask to compute the calibration constants already defined? **There is a procedure but it still has to be implemented as task.**

➢ Would you need manual intervention before writing the object in the OCDB? **Yes, for the first time .**

➢ Do you foresee to have it automatic? **Yes**.

Paola Pagano
University of Salerno & INFN

Calibration V

➢ Online/Offline Calibration Objects:

- What is the status of your calibration objects? *Completely fixed.*

- Any new objects needed? *No.*

Paola Pagano
University of Salerno & INFN

Alignment: is the AnalysisTask to compute the alignment constants already defined?

➢ **Until now, we have tested the alignment procedure by using a macro that uses the AliAlignmentTracks object.**

This macro has been tested up to Aliroot v4-13-Release (B.Guerzoni Thesis).

Different performance were found depending on used reference layers →→ New tests needed with the latest Aliroot release

B.Guerzoni (PhD Student) is taking care of these tests and is working to the definition of an AnalysisTask for the TOF alignment procedure to comply with the framework.

QA

➢ R.Preghenella is producing the reference histograms for the QA procedure.

➢ After this, he will test the checker that compare these histograms with the QA ones that are produced during reconstruction.

TOF trigger simulation: status

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✎ ● Log » ⌐▽ *Raw Data* (942)	Annalisa.DeCaro	-	01/01/2006	-	30/09/2009	-
✎ ● Log » ⌐ Write TOF CTTM inputs in the raw data (2636)	Annalisa.DeCaro	alessandro.silenzi (100%)	18/06/2009	-	30/09/2009	-
✎ ● Log » ⌐ Simulation of the TOF CTTM inputs from raw data (2637)	Annalisa.DeCaro	alessandro.silenzi (100%)	18/06/2009	-	30/09/2009	-
✎ ● Log » ⌐▽ *Simulation* (1412)	Annalisa.DeCaro	-	01/01/2006	-	30/09/2009	-
✎ ● Log » ⌐ TOF CTTM inputs map (2638)	Annalisa.DeCaro	alessandro.silenzi (100%)	18/06/2009	-	30/09/2009	-
✎ ● Log ! ⌐▽ *Trigger* (2374)	Annalisa.DeCaro	Annalisa.DeCaro (100%)	16/03/2009	-	30/09/2009	-
✎ ● Log ! ⌐ Implementation of the code for trigger parameters for the simulation of the trigger input to the CTP (2449)	Annalisa.DeCaro	alessandro.silenzi (100%)	16/03/2009	-	30/05/2009	-
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✎ ● Log » ⌐ Reduced TOF CTTM inputs for TRD (2640)	Annalisa.DeCaro	alessandro.silenzi (100%)	18/06/2009	-	30/09/2009	-

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A. Silenzi is working on this item.
He is in 'daily' contact with E. Scapparone, responsible for the TOF trigger schema.
Alessandro is implementing the necessary code according to the schema described by Chiara during the 05/06/2009 trigger meeting (see next slide for more details).
The estimated deadline is 30/09/2009.

TOF trigger simulation: to be done

What is still missing

- Writing of the CTTM inputs to the raw data
- Include 1728 CTTM inputs in TOFDigitization procedure
- Creating the reduced-CTTM (576) inputs in the TOFTrigger class to be kept in memory for what comes afterwards
- Simulation of the CTTM inputs starting from raw data
- Simulation of the TOF trigger starting from the 1728 inputs directly
- Simulation of L1 trigger (not urgent...)

Savannah

bug #50930

Low track matching efficiency with TOF

The bug was resolved but it have been reopened.

A. De Caro is preparing an 'ad hoc' production to repeat the acceptance/matching studies with a more recent aliroot release, she will reply asap…

➢ What are your detector's Special Plans for first data?

We will accumulate statistics in order to calibrate as much channels as possible and to have more data to check alignment procedure and TOF performance.

➢ Performance issues

Is your detector affecting the overall CPU and memory (resident and virtual) consumption in the simulation / reconstruction (including the expert QA mode)?

No, on january we did an update in order to optimize the memory consumption.

The end

Paola Pagano
University of Salerno & INFN

BACK UP

Paola Pagano
University of Salerno & INFN

Savannah

AliRoot - Bugs: bug #50930, Low track matching efficiency with...

from Iouri Belikov

1) If we take out the TRD, does the track matching efficiency with the TOF become higher ? By how much ?

2) In pp events, with the TRD taken out, at what level does this efficiency saturate (as the function of pt) ?
Is this level consistent with the TOF acceptance (dead zones between the modules and like) ?

Annalisa is preparing an 'ad hoc' production to repeat the acceptance/matching studies with a more recent aliroot release, she will reply asap…