Status of Raw Data

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ALICE Offline Week

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Status of Raw Data (C.Cheshkov)

ACORDE

- raw->digits code is in place

- Simulation of raw-data exists (?)

- What is needed:

  - Implementation of ACORDE 'Reconstructor' based on raw->digits

  - Connection with ACORDE geometry (mapping)

  - Filling ESD (coordinates + size of the fired scintillator(s), can ACORDE + tracking detectors provide more precise info?

- Please, lets speed up the development of the requited code, ACORDE data would be quite useful in the forthcoming cosmic run

ITS

- SPD:

  - Clusterization, cosmic vertexer, stand-alone tracking works, first alignment results

  - Congratulations to A. Dainese et al.!

- SDD:

  - Quite a lot of noisy anodes: spoils extrapolation from SPD

  - Code to deal with noisy anodes has been already committed (F. Prino)

  - Raw-data format, mapping is already fine

  - Ready for forthcoming cosmic run

Status of Raw Data (C.Cheshkov)

ITS

- SSD:

  - Problems with readout firmware related to pedestal subtraction and zero-suppression (see talk of E. Fragiacomo)

  - Mapping is in CDB, should be OK

  - New firmware is underway -> hopefully much less problems during forthcoming run

- General issues:

  - We should try to integrate SSD and SDD into tracking as early as the cosmic runs starts -> important both for ITS (alignment etc.) and TPC

  - Still some problems/discrepancies (?) in raw-data visualization in AliEVE (fixes from F. Prino), please lets fix the remaining issues before AliRoot release

Status of Raw Data (C.Cheshkov)

TPC/PHOS/FMD/EMCAL

- Still eagerly waiting new RCU firmware

- TPC reconstruction will take some parameters from the data itself, the corresponding code is in place (thanks to Marian)

- Decoder will be adapted/extended as soon as we get some raw-data sample taken with the new RCU

- We will use that opportunity in order to merge the two present decoders in AliRoot: fast/online one from Per Thomas and slow/offline one by me

- It is not clear, if or when PHOS & FMD will move to the new RCU, should be clarified and planned from offline point of view

TRD

- Quite high raw-data corruption rate. Would it improve? Is it purely hardware-related?

- Recently we got some information about tracks seen in TRD:

  - Could be quite useful not only for TRD, but also for TOF

  - Do we need corrections/additions in AliRoot?

  - Which options do one needs in order to enable properly stand-alone TRD tracking, please have a look at $ALICE_ROOT/test/cosmic/rec.C and let us know

  - As soon as the above is done, we have to plan reprocessing of the interesting runs

Status of Raw Data (C.Cheshkov)

MUON

- Main problems related to partial detector setup

- Recently bunch of changes has been committed in order to deal with this kind of situations

- Do we need to reprocess some Feb/March data? If yes, with which AliRoot release? The changes in the code are quite significant and v4-12-Release seems the better choice...

CTP

- Raw-data code in AliRoot needs minor fix due to missing CDH in real data

- Interactions Records (IRs):

    - Coming through CTP readout, but asynchronously with raw-data events

    - DAQ will merge them in the data stream by writing +/- 2 orbits around the trigger event

    - AliRoot code to decode and store records in ESD is still to be committed (straightforward)

General Remarks

- CPU/memory consumption is more or less OK, but lets try to improve or at least keep it at present level

- As raw-data decoding and reconstruction become more mature, we need now to focus on proper steering:

  - All the options needed should be put in the corresponding Ali<detector>RecoParam classes, which will be stored in OCDB and driven by GRP and event type

  - See the talk of Marco Meoni

Status of Raw Data (C.Cheshkov)

AliMDC

- One case of memory corruption has been identified and corrected during the last cosmic run (did not affect the data successfully migrated to CASTOR)

- Limited resources available on GDCs + big TPC raw-data size in case of missing zero-suppression:

  - Memory consumption was diminished by splitting of data into branches (one per detector, except TPC – 18 branches, HLT – 10 branches)

  - Memory required by ROOT I/O does not exceed now 50-60 MB

  - During the reading raw data is loaded on demand (via TRefs)

- AliMDC API was modified in order to handle properly large file sizes -> DAQ is planning to move very soon from 1 to 5-10 GB/file.

Status of Raw Data (C.Cheshkov)

AliMDC

- Some rare cases of data corruption due to improper migration policy (affected runs with low rate)

    - ROOT tree auto-saving was switched off for sake of performance

    - Some raw-data files were totally 'lost' due to missing auto-save information

- Solution:

    - DAQ deployed new migration system which prevents from this kind of misbehavior (R. Divia)

    - We added a method to the AliMDC API which provides the DAQ raw-data recorder with the possibility to auto-save raw-data tree according to any given policy. Will be tested, validated and deployed for the forthcoming run

My apologies to the detector experts if some of the problems/questions have been already solved/answered!