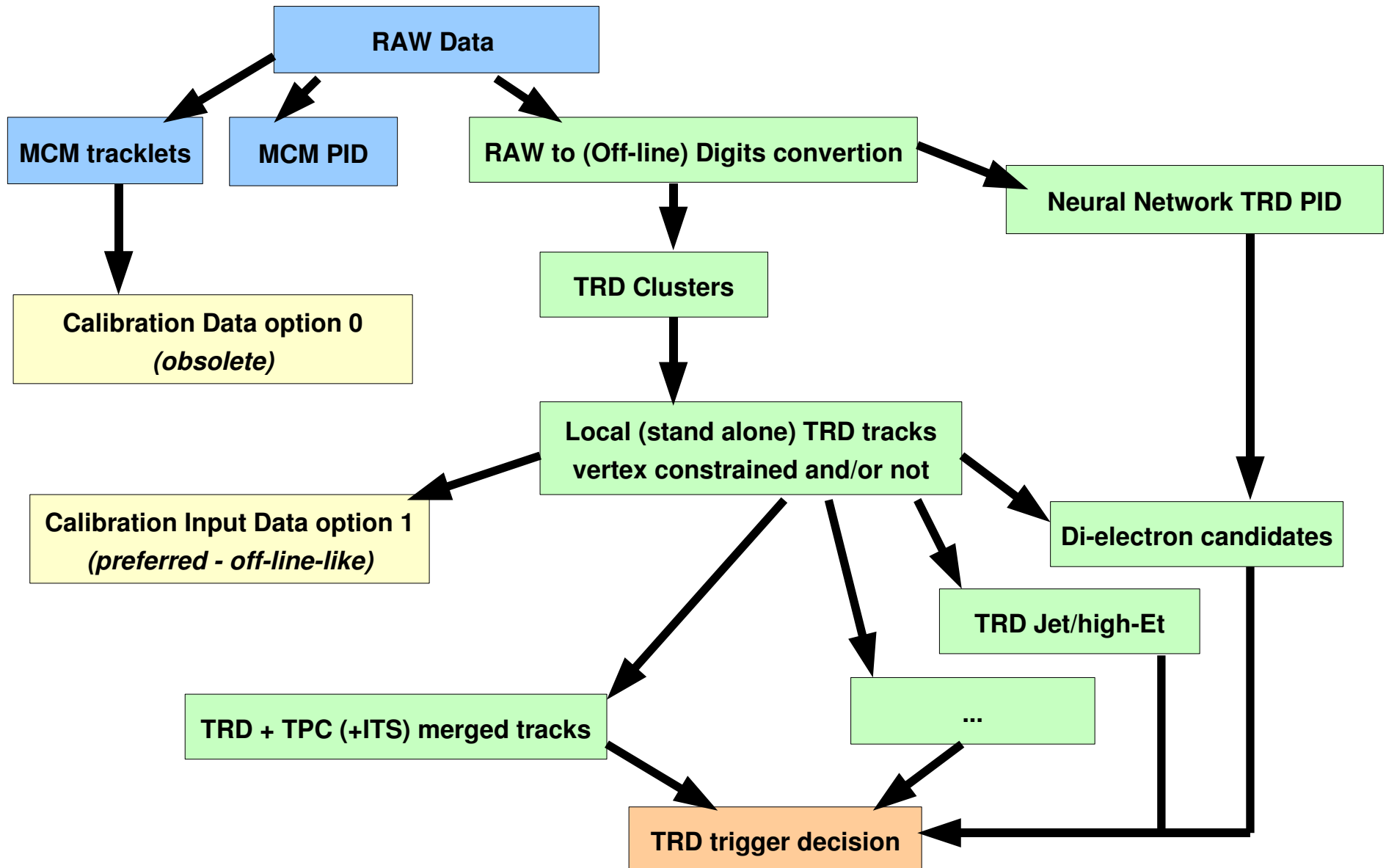


TRD on HLT

Status and outlook

Processing flow



HLT components

BLACK = default (color)

GREEN = done & ready

BLUE = on going / testing

RED = starting / foreseen

- Input: DDL [RawReader->Digits->...] - **1 per Super Module** -> 18 parallel components (per analysis step)
- **Processing components:**
 - **AliHLTTRDRawDataMonitorComponent**
 - **AliHLTTRDClusterizerComponent** [AliTRDclusterizerHLT]
 - **AliHLTTRDTrackerComponent** [AliTRDtracker, AliTRDCalibraFillHisto]
 - **AliHLTTRDCalibrationComponent**
 - **AliHLTTRDPIDComponent**
 - [TRD PID (Offline with AliTRDtracks) + PID with Neural Nets]
 - **AliHLTTRDEsdWriterComponent**
 - **AliHLTCombinedTrackerComponent** [TPC +TRD merger/matching]
 - **AliHLTTRDPhysicsComponent(s)**
 - [physics analysis (J/psi, Y, general high-pT...)]
 - **AliHLTTRDTriggerComponent** [Trigger output]

Ongoing/Upcoming developments

Slide from Off-line week in July '07

- Raw data
 - Zero suppressed version to be expected within next weeks (raw data size reduction by factor 5 up to 6)
- Digits management
 - AliTRDdigitsManager and AliTRDarrayI/F replaced by much faster (2-4 x) AliTRDSignalStorage and AliTRDChamberSignal
- Tracklets management
 - Tracklet (produced by TRD-MCM) processing has to be implemented within the reconstruction
- Clusterfinder
 - Loops over the digits optimized (using the new container classes) – high performance even w/o zero suppression (2-4 x the standard)
- Tracker
 - Stand-alone tracking with tracklets
 - Algorithm on a “stack-level” (smallest tracking segment of TRD)

Completed/Ongoing/Upcoming developments

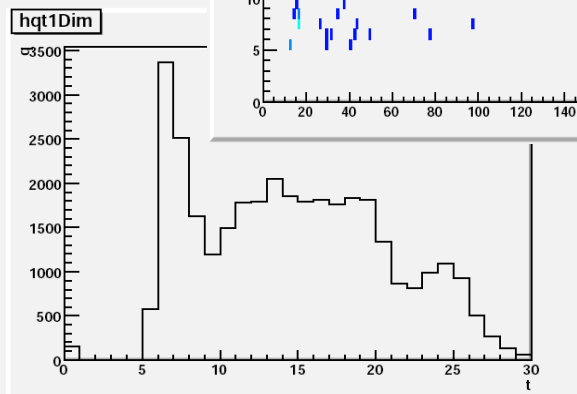
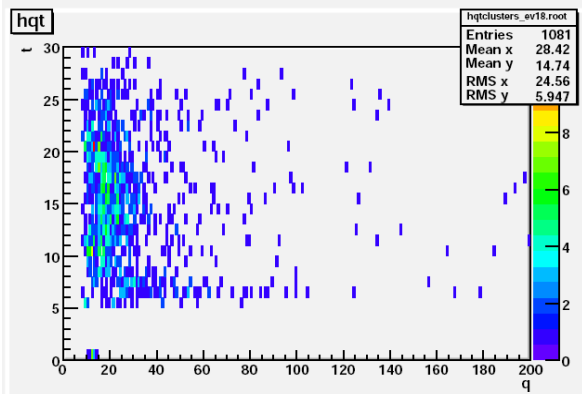
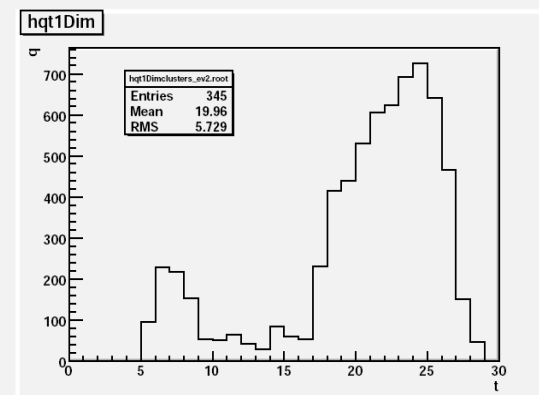
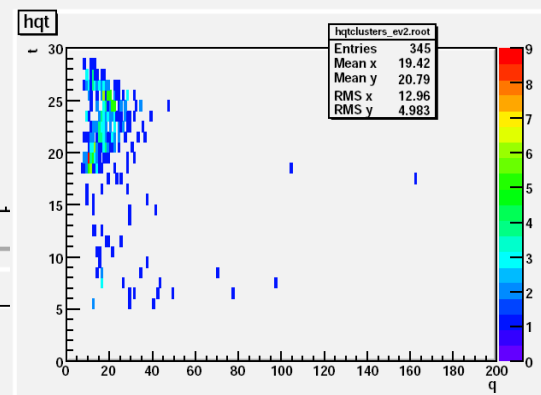
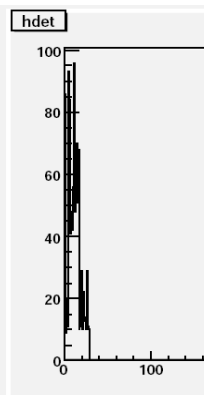
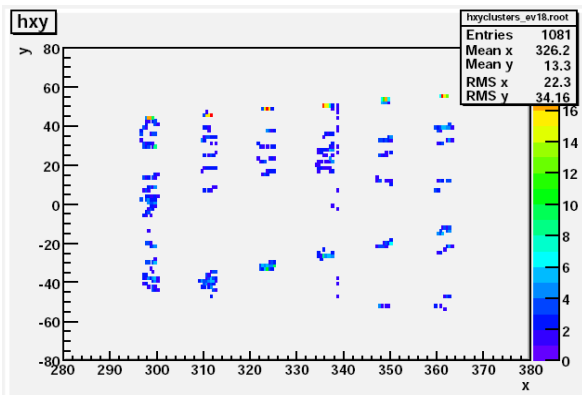
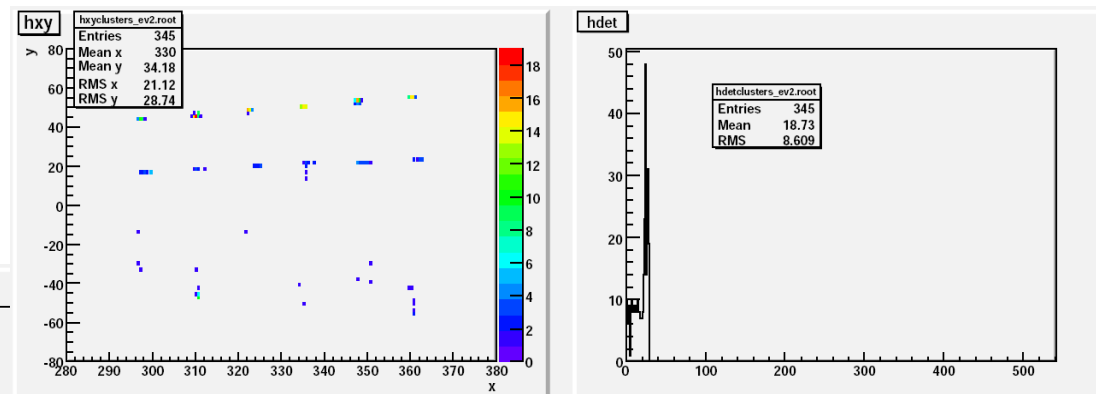
- Raw data - Done/Ongoing
 - Zero suppressed version ready
 - Final format to be fixed/implemented
- Digits management - Done
 - New: AliTRDSignalIndex
- Tracklets management - Pending
 - Tracklet (produced by TRD-MCM) processing has to be implemented within the reconstruction – no tracklets yet – no action taken
- Clusterfinder - Done
 - Faster, lower mem. consumption (CF on a chamber level) - digits management with AliTRDSignalIndex = performance gain - done.
- Tracker – Ongoing
 - Stand-alone tracking with tracklets
 - Algorithm on a “stack-level” (smallest tracking segment of TRD)

Monitoring

- Monitoring
 - TRD follows TPC strategy...
 - TGMainFrame as a main GUI widget
 - To be integrated with AliEve
 - External ROOT session / program reading from HLT (TCP dump subscriber – via HOMER)
 - Processes the HLT outputs
 - Creates (pre-)defined TTrees
 - Processes selection queries from GUI
 - Delivers/sends histograms

Near Future Plans

- We will run **On-line** HLT-TRD during the test beam at PS end of October!



September 2007:
 Cosmic Events (reco. Offline)
 SM 3 at Muenster (no HLT)
 AliTRDclusterizerHLT at work
 = Offline algorithm(!) on HLT