

Experience with tracking and alignment monitoring

To FEST or not to FEST...

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Motivation

- *Test full experiment chain from DAQ up until reprocessing on Tier-1's*
- *Online detector monitoring*
- *Online track reconstruction*
- *Online track monitoring*
- *Offline event reconstruction*
- *Offline detector & track monitoring*
- *running two data streams in parallel*



Conditions

- *trigger not tested*
- *'injector' needed*
- *simulated RAW data needed*

"Work flow":

- 1 'inject' RAW data into DAQ
- 2 decode raw data, send to OnlineBrunel processes
- 3 decode raw data, send to Tier 1's for offline reconstruction
- 4 decode raw data, monitor detector response
- 5 reconstruct tracks online
- 6 view track monitoring plots online
- 7 inspect monitoring plots offline (from T1 reconstruction)
- 8 generate alarms/ok signal from analyses of on/off-line monitoring

...



Before things run smoothly... many problems occur

- creating two streams proved difficult
- RICH1 only data in bottom detector
- decoding OT raw data also (!)
- no online track monitoring if monitoring sequence is off...

More on OT decoding...

- OT detector plots indicate problem with OT banks
- inspection of RAW & digitized data:
 - OT banks with no hits removed... (Ultra Zero Suppression)
 - OT banks contain wrong version number
 - 'regular' interspersed with OT banks with version number=0
- hack in injector: add OT banks with zero hits
- set version number in OT banks correctly



Results:

- OT banks wrongly simulated (encoded only non-empty banks)
- first hacks not entirely correct
- problems were fixed already last December
- Offline: offline monitoring ok!

To do:

- Added some (not all) tr. & a. histograms to histoDB
- Presenter shows $n \times$ nr. of histograms/process
- Need to program histo-adder
- Need to program analyses to set alarms...
 - : perform monitoring...

Conclusion: for next FEST week, newly simulated RAW data will be used

