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# Tasks for the 2016 HLT commissioning

Task	People	Status
Memory profiling	Roel, ....	First results at HLT ops 8/1/2015?
Monitoring	Kevin and Roel	First results at HLT ops 8/1/2015?
L0 BW division	Conor, Eric, Miriam, Alvaro	Preliminary results shown at PPG on 17/12/2015
HLT timing and farm loading studies	Sascha, ...	
HLT bandwidth division	....	
Fix all the nightly tests	Rosen, Roel, ....	
Add downstream tracking in HLT1	...	
Speed up the muon lines	...	
HLT emulation for MC	...	
HLT standard particles	...	
TCKsh, and documentation	Anton, Albert, ...	
Resurrection of FEST, and pit installation procedure	..	
Make Ghost probability available in Hlt1	..	
Make ProbNN variables available in Hlt2	Kevin, Johannes	

## Memory profiling

- See Roel's slides [?](#) from the HLT parallel session in the December 2015 LHCb week.
- We can currently only load the farm to 70-80% because we can't fit enough Moores into the available memory on the nodes
- It is critical that we try to reduce the memory footprint of Moore

## Monitoring (Kevin)

\* See Roel's slides [?](#) from the HLT parallel session in the December 2015 LHCb week. \* One area that can be improved is the flexibility, by decoupling some of the monitoring from the TCK. \* Roel suggests that in the routing bits, we should separate what is needed for "streams" and what is needed for monitoring.

## L0 Bandwidth division

- See the discussion [?](#) on the 27th November 2015.
- We now migrate to an tuple based BW division
  - ◆ The latest results [?](#) were shown by Conor at the PPG on the 17th December 2016

## HLT bandwidth division

- See the HLT output rates here [?](#)
- We need to reduce the HLT1 output rate to 150 kHz
- And we need to reduce the HLT2 output rate to the equivalent of (10+2.5) kHz

## Overall timing of the HLT sequence

- We should have two people responsible for the timing tests
- And should follow
  - ◆ Tracking activities listed here.
  - ◆ Activities in the RICH reconstruction. One possible time saving could come from using a faster photon reconstruction option.
  - ◆ Activities in the CALO reconstruction.

## Improving the HLT/Moore/TCK release procedure

- Automating the procedure as much as possible, including tests
- Clear definition of the emergency release protocol.

!

- We shouldn't have every HLT line doing its own filtering on pT, IP etc...
- Should have stripping style StdLooseXXX

## TCKsh improvements, and auto generation of TCK web pages

- Like these [☞](#) for the stripping

## New tools for the turbo stream

- See this [☞](#) meeting.

## Trigger emulation for MC

- For Run-II, this should be straightforward
- For Run-I, we need something to work with pGun productions (no PV) and fast MC productions without all sub-detectors.

## Speed up Muon lines

- Use the momentum estimate from MatchVeloMuonTT in the Forward tracking to make it faster.
- Contact Sascha if interested.

## Testing

- Currently most of the nightly tests are failing
- Should also add more tests to the PR framework (independence, memory profile etc...)

## Add Downstream tracks in Hlt1.

- An upfront Seeding seems impossible but the Seeding has an option to search in a region of interest. This could be provided e.g. by a muon candidate.
- Contact Manuel and or Sascha if interested.

## Resurrection of FEST

## Make Ghost probability available in Hlt1

## Make the variables available in Hlt2

-- MikaVesterinen - 2015-09-24

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This topic: LHCb > Hlt2016WinterTasks

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