Trigger discussions

We will not have everything at ones!

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My takes from the discussion

- weekly meetings are necessary to get ready for the engineering run, e.g. can use Wednesday DAQ meetings
- need to find someone who will analyze processed data to determine trigger performance
- Ecal clustering algorithm in the trigger provides limited information, e.g. no position matching of clusters within Ecal and with other detectors. If limitation is due to hardware we should think limitted clustering or for hardware upgrades
- DC trigger is very basic, information on the number of tracks or positions (directions) are not available, making it now much useful

Valery's list

- We want to count the number of secondary particles in the Forward Detector, charged and neutrals. Is it possible in the current implementation of the trigger firmware?
- Space correlation between HTCC and PCAL?
- Space correlation between PCAL and ECal?
- Space correlation between FTOF and PCAL?
- What can we get from the DC segments/track reconstruction at the trigger level?
- We want the space correlations between track/segment and FTOF, PCAL. Will it work in the current firmware?

General questions

- is there a prioritized list for trigger group to work
- are all proposed by physics triggers codded or will be coded in the trigger firmware
- how we will start – what is the trigger for run #1, E-sum of Ecal
- how commissioning of the triggers will be organized, is there a plan for fast feedback, on-line/off-line monitoring,
- the hierarchy (order) of triggers that will be commissioned
- efficiency and purity of triggers – so far only physics rates have been presented, the simulated background in the electron trigger has been found incorrect
- is there trigger bank with relevant information to test/check trigger performance

Electron trigger – inclusive electron E>? GeV

- energy threshold
- thresholds in the hardware for Ecal and HTCC, how and when we will have them defined (during KPP we did not have relation between hardware threshold in Ecal and deposited energy in GeV)
- Ecal*HTCC cluster-segment matching, do we need DC-track(segment)
- why Ecal e^- cluster trigger rate is 1.5 times higher than Ecal*Track – can not be due to acceptance differences
- background?
- software for trigger efficiency/performance studies

FT-trigger – MesonX e^- in FT, 3-particiles in CLAS12

- energy range in FT-cal vs. rates
- simulations of different topologies with RG-A setting, N=2/3, are all particles in CLAS12 FD, and in different sectors
- reliable simulation/estimate of the trigger background
- most likely there will be no hadron trigger in CLAS12 if no tracking-trigger