DQM/Validation Status and Plans

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New L1T DQM development workflow

- Fork of CMSSW was made into my private github repository:

  https://github.com/joaopela/cmssw

- New code to be included/test on L1T DQM should be submitted to branch:

  CMSSW_7_0_X_L1TDQM

- An email should be sent to me (and L1 DPG contacts) requesting testing and merge into main CMSSW repository.

GriN setup

- Will use same setup as 2012 running
- L1T DQM central tools will mostly not be useful
  - Rates and Synchronization monitoring will not work (no beam...)
  - Occupancy monitoring tools will report “asymmetries” in eta! (cosmics mostly come from the shaft!)
  - BPTX monitoring will report system in error. (no BPTX firing!)
- All usual L1T subsystem tools will be available.

Current and future work

Underway:

- Offline Rates monitoring (F. Nguyen)
- Offline Synchronization monitoring (P. Vischia)
- Offline Efficiency (muon) monitoring (C. Battlilana)
- 2012 Historical rates study (C. Silva)
- New release validation tools (S. Wilbur)

Future:

- New data formats to access relevant variables offline. (F. Nguyen)
- Offline Efficiency (calo) monitoring (J. Pela)
- Data versus MC comparison
- Move to CMSSW_7_X_Y (central and subsystem tools)
- Upgrade trigger system monitoring
- Current vs upgrade trigger systems monitoring

Current status

- **Offline rates monitoring (F. Nguyen)**
  - Development finished (without DB interface)
  - Effort moving to data formats for offline DB access
- **Offline synchronization monitoring (P. Vischia)**
  - Development underway
- **Offline Efficiency (muon) monitoring (C. Battlilana)**
  - Code finished and preparation underway to include it in normal monitoring/certification worflows
- **2012 Historical rates studies (C. Silva)**
  - Target end of 2013 work well underway
  - Will bridge will WbM and offline tools
- **New release validation tools (C. Wilbur)**
  - First set of tools being prepared for test deployment

Future Work I

- New data formats to access relevant variables offline.
  - Necessary to have access to relevant variables from DB offine
- Move to CMSSW_7_X_Y (central and subsystem tools)
  - Porting to multi-thread environment
  - All systems need to review their code
  - Call for DQM contacts for each L1 subsystem.
- Upgrade trigger system monitoring
  - New dedicated tools for new system
  - Different tools than current system necessary?
    - If yes, which variables/objects to monitor?

Future Work II

- Data versus MC comparison (F. Nguyen)
  - New system being developed for release validation, some ideas over how to use this for L1T being looked at.
- Offline Efficiency (calo) monitoring (J. Pela)
  - Will look over calo objects and calculate resolutions and other variables against offline objects.
- Current vs upgrade trigger systems monitoring:
  - Will both systems information be available in the event payload?
  - If yes, what tests would we like to preform on online and offline DQM?
    - Object Matching?
    - Resolution comparison?
    - <Put your idea here!>
  - What amount of work vs parallel system working time is reasonable versus utility of developed monitoring?

Conclusion

- Current tasks progressing and soon making transition to develop new tools for upgrade system
  - Need some more details about how DQM will run to make some decisions
- Need to prepare current tools to run in new multi-threaded environment.
  - Requires effort from all subsystems.