ID Software Feedback for Reprocessing Postmortem

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LBNL

Pixels

- Improvement in alignment due to Pixel distortions
  - Happened very close to the end of reprocessing preparation
  - New calibrations need to be produced
  - Bug fix both in the code and in the conditions DB content
  - **Very positive experience**: flexibility shown by the reprocessing team (letting improvements to go in) together with a dedicated effort of the alignment group
- Broken optical link on a B-layer module
  - Discovered close to the end of data taking
  - change in the DAQ software needed to cope with a broken optical link on a B-layer module
  - It was fixed in the tag used for the October reprocessing
- Updating conditions
  - sub-detector asked to provide conditions for runs up to September, than to add IOV for September, then to add the IOV for October
  - The procedure itself is fine, but advance warning about the scheduling for conditions update should be given
    - Tasks require considerable time for proper validation and an expert availability

SCT

- One ROD errors in run 160954, resulting in 46 missing modules in one endcap
  - Minor issue, which should have minimal effect on tracking because tracking can take into account the missing modules, but in this case a bug in conditions services meant that the missing modules were not made known to tracking for the Tier0 processing
  - Fix was made for the reprocessing
    - for reasons which are not clear, we failed to get the fix into the release used to reprocess the express stream
    - the fix was put into the cache used for bulk reprocessing, but it did not to work
  - Conclusions:
    - DQ status for tracking will have to remain red after reprocessing, for this one run
    - Tests in express stream are important and would help to avoid this problem

TRT

- **Loss of efficiency for straws in the endcups**
  - Long standing issue
  - Solution was found only after re-processing has already started
  - Fix did not go into the reprocessing release

- **Software updates last minute**
  - Bugs introduced because of last minute rush
    - TRT_Monitoring not compatible with InDetRecExample
    - new drift circle creation tool needing to have parameters for both cosmics and collisions
  - Mostly minor issues, which could have been avoided

Concluding Remarks

- Mostly positive experience
  - Flexibility of the reprocessing release coordinators was greatly appreciated and eventually paid off (great improvements in alignment!)

- Getting everything ready for express stream reprocessing is really important for avoiding unexpected problems or bugs introduced due to last minute fixes

- Advanced notice for updating conditions is needed in the future
  - When preparing for next reprocessing, discussion with sub-group leaders and identifying a list of tasks and projects requiring advanced notice will be helpful for better coordination and for avoiding last minute rush