software quality shift 19-26/11/2015

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Developers meeting,
nowhere, 26 November 2015

Nightly build:

nothing new, # warnings stable,

Cpp check errors for testbeam (1) and tracking (13). Likely false positive.

Integration build:

stable with warnings

memory check:

stable, mostly from Root and Geant4

Validation plot:

some differences for PXD, traking, and validation

much appreciated the reduction of # of plots wrt my previous shift in june

Redmine

8 new tickets open - 0 closed

next shifter

Thomas Keck

```
testbeam/top/tools/Fall2015/src/analyzer.cxx:76:
  error: Dangerous usage of 'runChar' (strncpy doesn't always null-terminate it).
```

followed by `strtok` so should be ok

```
tracking/modules/pxdClusterRescue/tools/NeuroBayesTrainer/NeuroBayesTrainer.cc:218: error:
  Return value of allocation function freopen is not stored.
```

condition for a B2FATAL so does not really matter

```
include/tracking/trackFindingCDC/legendre/quadtree/AxialHitQuadTreeProcessor.h:78:
  error: Array 'dist_1[1][1]' index dist_1[2][2] out of bounds.
...
```

code seems correct, maybe it an issue with double indexes

trivial

unused parameters, typedef not used

Root

```
IsA/ShowMembers/Streamer overrides a member
function but is not marked 'override'
[-Winconsistent-missing-override]
```

stack usage might be unbounded

many cases, related to dynamic range array. No obvious
problem seem present.

ambiguous conversion

> ISO C++ says that these are ambiguous, even
> though the worst conversion for the first is
> better than the worst conversion for the second
> in case of assignemt to element of a double array: eg:
> `f[j1][j] = ShaperDSP(t / 0.881944444);` No obvious
> solution AFAIU

wrong index in ECL code

> looks like a typo (`it` vs `id`) open redmine ticket. An actual
> true warning among many "false positive": not easy to spot!

use of std::move

reported by `clang` only (mostly for traking)

`moving a local object in a return statement`
`prevents copy elision [-Wpessimizing-move]`
AFAIU, this is due to the explcit call to `std::move()` in a
return statement, which prevent the compiler to apply copy
elision optimization. In all the cases I saw, I don't see any
specific reason for calling
`return std::move(whatever);` vs `return whatever;`

Validation plots

PXD

- cluster size differs a bit
- hValidDigitSignalToNoise_Layer0_Region0_PixSize55/60/70 peak at 0
- pull differs from reference (but less biased, small statistics)
- hValidEtaDistU_Layer0_Region1_PixSize60 peak moved from 0.5 (reference) to 0.42 (rev 23238)
- hValidRecoDepositEnergy/hValidRecoSeed now peak at 0 (was 6000)
- hValidSimEnergyDepositPerMicron stable among differente rev, different from reference

Traking

- eff vs pt differs at pt¡200 MeV
- pt (and d0) resolution is worse than reference

Validation

- BabayagaNLOBhabhaSimRecTiming varies by a factor 2 among last revisions

RedMine

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✔	#	Tracker	Status ⌃	Priority	Subject	Assignee	Updated	Category	% Done
☐	1848	Bug	New	Normal	possible wrong index in loop	Kenkichi Miyabayashi	11/26/2015 08:03 pm	ecl	
☐	1847	Review	New	Normal	Softwareshifter review: analysis/ContinuumSuppression/include/FuncPtr.h complex code which is not used	Pablo Goldenzweig	11/26/2015 07:23 pm	analysis	
☐	1844	Feature	New	Normal	Remove Hits from Tracks originating from a V0	Markus Prim	11/25/2015 06:30 pm	tracking	
☐	1843	Feature	New	Normal	Track Set Key	Martin Heck	11/25/2015 12:00 am	tracking	
☐	1842	Feature	New	Normal	Event Level Tracking Quality Estimation	Martin Heck	11/24/2015 11:50 pm	tracking	
☐	1841	Feature	New	Normal	Improved Track Quality estimation	Martin Heck	11/24/2015 11:48 pm	tracking	
☐	1840	Bug	New	Normal	Red frames in validation also for "improvements"	Thomas Hauth	11/20/2015 06:29 pm	validation	
☐	1845	Feature	In Progress	Normal	Grid in validation plots	Thomas Hauth	11/26/2015 01:32 am	validation	

(1-8/8)