LArSoft Coordination Meeting

Release and project report

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on behalf of
the SciSoft team
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Today’s agenda and speakers

- Release and project report (Erica)
- Geometry refactoring release candidate (Kyle Knoepfel)
- AOB

Releases

- Since Jan 23 LCM:
  - v09_82_02 released Jan 25
    - New features
      - larbatch#25: Add a script to create a tar ball in bzip2 format
    - Bug fixes
      - LArSoft/larsim#130: Handle extremely large times that have undefined behaviour when being converted from double to int by forcing result to be max int.
      - LArSoft/larsim#129: Adding a check that the TPCID is valid in ISCalcCorrelated to prevent crash simulating light outside TPC volume in DUNE-VD
      - LArSoft/lardataalg#48: add missing header

Releases

- Since Jan 23 LCM:
  - v09_83_00 released Feb 8
    - LArSoft/larpandoracontent#61:
      - Refactor classes to support ongoing DUNE ND development efforts – no functionality is changed.
      - Also fix bug in the way cluster contribution weights are calculated in the vertex refinement algorithm. Only relevant to SBND.
  - v09_83_01 released Feb 12
    - LArSoft/larrecodnn#43:
      - Integration of NuGraph in LArSoft, as presented at Dec 12, 2023 LCM.
      - Notes:
        - *Requires libtorch v2_1_1 and torch_scatter v2_1_2 which are both available in ups now.*
        - *Actual GNN model files are not provided as they are experiment-specific.*
    -

Status of PRs

- Approval in progress
  - larsim#131: Add track ID offsets to handle ancestry of merged MCTruth's
    - See SBNSoftware issue #401 for details

- Under discussion
  - larg4#52: Select separate volumes for dropped and nominal MCParticles
    - Allows tracking of dropped particles for shower particles outside active volume
  - larwirecel#44:
    - LArWireCell update to enable multiple signal response simulation across YZ-plane

Status of coming updates (updated since Dec 12, 2023 LCM)

- **Geometry refactoring**
  - Release candidate v10_00_00rc0 available since Nov 2, 2023
  - Feature branches / PRs needed to update experiment code are available
    - See Release and Project Report, page 6, at Dec 12 LCM
  - Documentation completed. Final presentation today.
  - Will need sign-off from experiments prior to migration
- **Root**
  - Moving to v6.28 series to address dictionary issues, possibly others
  - Requires *art* v3.13+
  - Current target is v6.28.10a

Status of coming updates (no change since Dec 12, 2023 LCM)

- ***art***
  - LArSoft release candidate v09_90_00rc1 based on v3.14.03 + root 6.28.10a
    - Skipping art v3.13 series

- **Geant4**
  - Will build LArSoft release candidate with Geant v4_11_1_p03b + art v3.14.x
  - Experiment sign-off required prior to migration

Status of coming updates (no change since Dec 12, 2023 LCM)

- **The proposed plan**
  - Migrate LArSoft to art v3.14.03 asap, assuming no further issues
    - Will include root 6.28.10a
    - No changes will be needed to experiment code
    - Will migrate as soon as builds of Triton and TensorFlow are ready
  - Build Geant4 RC with Geant 4_11_1_p03 and art v3.14.03
    - Need experiment sign-off to migrate
  - Release LArSoft v10 with refactored geometry after *art* migration
    - Need experiment sign-off prior to release

Please let us know of any problems with this plan

Status of coming updates (updated since Dec 12, 2023 LCM)

- **Spack**
  - Current plan calls for full migration before SL7 EOL
    - SL7 build machines scheduled to shut-down mid-May
    - No plan to support UPS under AL9.
    - Current fallback is to run SL7 in containers
  - Have Spack builds of LArSoft v09.81.00 under AL9 and SL7
    - To set up in AL9

      ```
      source /cvmfs/larsoft.opensciencegrid.org/spack-packages/setup-env.sh
      spack load larsoft/e3ryycs
      ```

    - To set up in SL7:

      ```
      source /cvmfs/larsoft.opensciencegrid.org/spack-packages/setup-env.sh
      spack load larsoft/2vibnrv
      ```

  - More information on model for developing under Spack coming soon.

The end