LArSoft Coordination Meeting

Release and project report

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on behalf of
the SciSoft team
Fermilab

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Today’s agenda and speakers

- Release and project report (Erica)
- Physics validation of optimization changes to PDFastSimPAR (Marc Paterno)
- AOB

Releases

- Since Feb 20 LCM:
  - v09_84_00 released Feb 28
    - Built with *art* v3.12.01
    - New features
      - LArSoft/larsim#131: Added track ID offset to handle ancestry of merged MCTruth collections
        - *Further discussion in SBNSoftware issue 401*
    - Bug fixes
      - Fix for issue identified in fhiclcpp. See fhicl-cpp issue #14 for details
- This week
  - Approved PRs

Status of PRs

- Approval in progress
  - larg4#52: Select separate volumes for dropped and nominal MCParticles
    - Allows tracking of dropped particles for shower particles outside active volume
  - larsim#132:
    - Fix a call to Geometry service in ElectronDrift module that unnecessarily expects an exception when point is outside a cryostat
    - Fixes a crash when this happens

Status of PRs

- Under discussion
  - larreco#63: A change for v09_17_05-based ICARUS production release
    - Met with ICARUS authors yesterday to discuss details of how to do this
  - larwirecel#44:
    - LArWireCell update to enable multiple signal response simulation across YZ-plane

Status of coming updates (updated since Feb 20, 2024 LCM)

- ***art v3.14.04***
  - LArSoft release candidate v09_90_00rc1 available since Dec 19, 2023
    - Uses art 3.14.03 and root 6.28.10a (addresses dictionary issues, possibly others)
    - Final release candidate v09_90_00rc2 uses art 3.14.04 and root 6.28.10b
  - **Plan to migrate** LArSoft to art 3.14.04 **this week**
  - Notes
    - Migrates to root 6.28.10b
    - No changes to experiment code needed up to this point
    - Includes new Triton (v2_25_0d), TensorFlow (v2_15_0), libtorch (v2_1_1b)
    - New eigen (v23_08_01_66e8f)
    - New version of clang-format
      - Expect small differences in many files due to version change
      - LArSoft clang-format configuration is unchanged
    - Upgrade to **cetmodules 3.24.01 is required**

Status of coming updates (updated since Feb 20, 2024 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
  - Final presentation on the new system at the Feb 20 LCM

  - Experiments formally asked on Feb 27 to validate new geometry system
  - **Requested sign-off or validation plans by Tues, March 12.**

Status of coming updates (updated since Feb 20, 2024 LCM)

- **Geant4**
  - Plan to build LArSoft release candidate with Geant v4_11_2_p01
    - The most recent production version recommended by Geant4 group
  - Will require experiment sign-off prior to migration

Please email scisoft-team@fnal.gov with any problems or concerns

Status of coming updates (updated since Feb 20, 2024 LCM)

- **Spack**
  - Current plan:
    - Migration to spack-based builds and development before SL7 EOL
    - SL7 build machines scheduled to shut-down mid-May
    - Decided: Containers can be used for code that requires UPS under SL7
    - Firm: No plan to support UPS under AL9.
  - 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