LArSoft Steering Group June 2022 quarterly status

As agreed last month, the June quarterly LArSoft Steering Group meeting will be handled via a status report. The updated 2022 LArSoft workplan is available at: https://indico.fnal.gov/event/55022/
A summary of the status is included below. Please let us know if you have any questions or comments.

LArSoft status

- The project team has been focused on four items over the past quarter

  - Phase 1 of the Spack migration, the transition to cetmodules, a spack / CMake based build system that is compatible with UPS and the legacy build system
    - As of this time, Phase 1 is nearly completed, with a single package remaining to be converted. (Completion is pending an update an important external dependency.)
    - Planning for Phase 2, the elimination of UPS and a complete conversion to Spack and CMake, has started. The required timescale to complete Phase 2 is not yet known.

  - Thread safety and multi-threading in al DUNE production workflow
    - There has been steady progress in making a DUNE supernova workflow thread safe, starting with a simplified, low-level data-prep version. After successful validation, the work was expanded to include more of the original workflow elements, which includes some intra-event multi-threading. An effort to understand some initial validation anomalies is progressing.

  - Management of pull requests, releases and issue tickets. This work is on-going

  - Migration of the LArSoft wiki to github. The wiki is now at https://larsoft.github.io/. One of the promised benefits was to reinstate search engine access to the pages. We find that Google searches do not work, but Bing and DuckDuckGo searches do. The issue with Google is under investigation.

- The integration of pixel-based readout geometries into LArSoft has been a long-standing goal. With the assistance of DUNE collaborators, the work to accomplish this integration has recently started with two complementary and parallel efforts.
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  - We are refactoring the Geometry system to accommodate arbitrary readout geometries. The goal will be to provide three such geometries: a multi-plane wire-based readout, a single-planne strip based readout, and a single-plane pixel-based readout.

  - Work led by DUNE collaborators to integrate the ND-LAr simulation into the LArSoft simulation frame has begun, starting with the integration of edep-sim into LArG4. The updated geometry will be needed for the full simulation workflow, after completion of the edep-sim integration.

Please let us know if you have any questions or comments. Thank you.
Erica & Katherine