LArSoft Offline Leads June 26, 2024 Meeting Notes

Attendees: Angela Fava, Thomas Junk, Steven Gardiner, Erica Snider, Katherine Lato

LArSoft report:

Discussion of major items (one of which is beyond the scope of the work plan).

- Change in support model for POMS and CI. [outside work plan scope]
  - Budget shortfalls required pullback support in some areas to ensure the lab delivers high-priority items. (Such as storage.)
  - Experiments (collectively) will need to provide their own workflow support for both POMS and CI. Note, if there isn't adequate documentation, that is something we can fix.
  - Question: What are the permissions required to add new workflow and features to CI system?
    - All tests are user configurable within the code repositories. It should be a matter of adding a test to an existing test-suite, or creating a new test suite. Just need to change the configuration file(s). The documentation describes how to do this, and how to trigger the resulting tests in the case of a new test suite.
  - Question: All these changes have tremendous impact for us [the experiments] who are in operation. On POMS, we were told the decision was made to try and keep it up and running, but the end date isn't clear. Need to know that as soon as possible. If we need to do our own service, it takes time to commission that to be usable to process data.
    - Erica: An end date has not been decided – there is not currently a plan within DSSL to turn it off. The new support model requires minimal effort to maintain – we just need to keep the service running. We know it is a vital resource for those who use it, and DSSL has been a strong advocate for keeping it up and running.

      Noted that there is an alternative system that DUNE is looking at, justIN. It has a similar feature set to POMS, with some notable exceptions, but has Rucio integration, which is important. There may be funding in the UK to support it. Not sure of the details here, or whether there is institutional commitment to support it, for instance.
  - Angela: Most of the tickets we are submitting are from the production team. Discouraging tickets from outside the production team.
    - Erica: That is consistent with DSSL priority to support production use of POMS
    - AF: That said, we don't know where expertise for POMS lies within experiments. It is not in ICARUS.
    - Erica: Suggest talking to MicroBooNE to start with. They have been using it for a long time. More generally, we do not know exactly what "community support model" for POMS looks like, even though we will rely on that moving forward. Need to have a discussion about that and whether we can gather a pool of people to be available.
  - Angela: You mentioned Vito is pulled off CI support. Is Vito still our liaison even though his support of CI no longer exists?
    - Erica: Yes, Vito will continue his liaison role. The computing liaison program is not changing. In the case of Vito, it's just the CI system he is withdrawing from.

- ○ Anglea: That also has an impact. We've just started validating. Vito was playing a key role in CI validation development. If there is any community based expertise at least to train someone inside our collaboration, that would be helpful.
    - ■ Erica: Will follow up on this.
- ● Migration to SPACK [in workplan scope]
    - ○ Changing in a radical way how we build software. Affects experiments. There are two distinct areas of work
    - ○ First: Multi-package development tool - solves the problem of how to develop code under SPACK.
        - ■ This work is still in progress. There are still issues (e.g., controlling the things that Spack wants to build), but unlike before, there are clear avenues to explore for solutions.
    - ○ Second: how to create releases of software.
        - ■ At least two technical solutions in hand, so just need to decide how to proceed.
        - ■ We are expecting a document in another week or two that will describe the agreed upon solution.
    - ○ Question: Is the goal to create relocatable code with SPACK?
        - ■ Erica: Don't know the answer to that. They want common buildcaches to work, which will have the effect of creating locally relocatable code. And there are technical tricks that might work to create semi-relocatable libraries.

Otherwork plan items
- ● Thread safe and multi-threading.
    - ○ Marc Paterno had been working on optimizing a workflow used in DUNE. He got pulled away while working on the 2nd of the three steps needed. He'll pick this back up when his other work (Spack) allows.
    - ○ A summer student, supervised by Giuseppe Cerati, is working toward incorporating Graph NNs into LArSoft via the NuSONIC client with the assistance of Mike Wang.

Roundtable
DUNE - Tom Junk:

1) SPACK is our main concern.
   Worried about when we might be forced to move away from containers. I think rebuilds are inevitable, so can't rely on a static solution.
   Have a frameworks workshop Thursday and Friday. The way we build frameworks may not work well with SPACK. Have to rebuild all possible programs that include your program.
   Erica: This is understood to be a problem with Spack. That is what the on-going Spack development work is meant to solve.
2) UPS trick was to assume the ABI didn't change. If it did, it was on you.
   In the old days, the compile would fail but they didn't fix the error. And they wondered why their program got the old version. I suspect a lot of Spack newbies will come with such issues and require a lot of support. Suspect the support call volume will go up with SPACK.
3) Geometry refactoring testing. Kyle has been responsive. Fixed 3 bugs so far.
   Found another bit of strange behavior recently. Not sure what is causing it yet, so not ready to give it to Kyle.
4) US-DUNE organization is getting started.
   Would like to hang out carrots for people to do work. If there's money for postdocs, that would be nice.

Erica: That is one reason they have pushed on creating / organizing US-DUNE. Want to enable a US-based DUNE software project to get dedicated funds.
Tom: Lot of volunteers at the moment. It would be nice to pay people.
Erica: No argument here!

ICARUS - Angela Fava: No specific items to bring up beyond previous discussion

SBN - Steven Gardiner
Main issue for SBN is ongoing support for POMS and CI.
Erica: short answer is we're going to keep the services running. CSAID support will deal with day-to-day problems with the services themselves. Noted that most "POMS" problems that get reported aren't actually related to the POMS service itself. Job submission will continue to be supported, so just submit service desk tickets for that.

If you have any comments or changes, please let us know.
Erica & Katherine