September 23, 2020 LArSoft Steering Group Meeting Notes

Attendees: Robert Wilson, Erica Snider, Katherine Lato

Erica described the annual planning process for the LArSoft work plan. We try to understand from the Offline Leads and Spokespeople where they see the large-scale issues or where LArSoft can help.
After going through the 2020 LArSoft work plan, we discussed the needs of ICARUS.

Robert Wilson said that ICARUS has high voltage turned on and that the detector is stable. Electronics are mostly working. Usual issues -- understanding purity. Exciting time. Solidly in the commissioning stage. Knowing the plans for the LArSoft team will be a significant part of the Operational Readiness Review. A major topic was the Event Display, in particular the ability to rapidly human-scan for information, and to filter and classify events based on scanner decisions. While we need automated tools, some level of fast event scanning is useful as a crosscheck, particularly in the era of machine learning, when it's harder to get an intuitive grasp of what the algorithms are doing. Having human-based tools in parallel to the automated ones is a high priority for Carlo (though not currently asking for reconstruction via the Event Display).

The current reality of working from home means that they are operating ICARUS from home. They are commissioning and maybe even running with the shifters at home. Can't populate people to be at Fermilab or even their institutions for remote control.
Are there things that LArSoft can help with in this paradigm shift?
1. Packaging a minimal event display without the rest of LArSoft. Make it possible to install and run at home in stand-alone or network modes.
2. Help with architectural changes that might make it more straight-forward to add new features
3. Understanding if there is a way to speed up over-the-network event display for viewing the display at home. The goal would be to allow scanning of hundreds of events at a rate of a few seconds per event.

Could the LArSoft event display be made lightweight, or could LArSoft provide support to Titus or another event display to address the above questions. Which one of the event displays would work best?

Erica noted that each of the event displays has a different underlying technology so makes different choices in how data is transmitted across the network and rendered. How the server communicates with the remote machine is important and is different. That's why the specific choice matters. For home viewing, minimizing network volume is critical.

Please email Katherine Lato or Erica Snider for any corrections or additions to these notes.