

Minutes of the 16th Meeting of the SBN Oversight Board (Fermilab, March 11th, 2022)

SBN-OB Attendees:

S. Brice (Chair)
S. Bertolucci (INFN, Italy)
O. Palamara (SBND Co-spokesperson)
A. Ereditato (Switzerland)
C. Rubbia (ICARUS Spokesperson)
M. Shaevitz (US NSF)
A. Guglielmi (ICARUS Deputy Spokesperson)
R. Wilson (US DOE)

Other Attendees:

P. Wilson (SBN Program Head),
J. Saviano (Secretariat)
D. Salmieri (ICARUS Scientific Secretary)
D. Gibin (Universita di Padova and INFN Sezione di Padova)
G. Karagiorgi (Columbia University)
A. Chatterjee (U of Pittsburgh)

Not in Attendance:

M. Nesi (CERN)
J. Evans (UK)
D. Schmitz (SBND Co-spokesperson)

Action Items

None

Introduction and Review of Last Meeting

S. Brice welcomed the members and participants to the Sixteenth Meeting of the SBN Oversight Board. There are the usual agenda items, but we have no special topic to be discussed at this meeting, which is a good thing. Over the course of time, the SBN OB meeting may not be needed any further.

No action items from the last meeting

SBN Spokespersons,

O. Palamara, SBND Spokesperson, provided an overview of the SBN Organization.

SBN Board meetings resumed in December, and several meetings have already taken place. The most important part of the discussion has been about the Rules document. Specific comments from collaboration on rules document have been reported in detail at last SBN IB mtg. Second part of the discussion has been on the use of the SBN data analysis for physics, in particular about the opportunity for collaborators from one experiment to work on data from the other experiment. We

believe this to be a very important piece. Current version of the Rules document doesn't have specific text on how sharing should be done, and we don't have the rules or requirements to do this type of analysis of one person using data from another collaboration.

D. Schmitz and O. Palamara volunteered to work on this and should begin drafting a text sometime next week. After that, there will be another meeting with the SBN Board to discuss.

Comments:

The understanding is that the next step for the rules is to set up a meeting with McFarland, the chair of the Rules Committee or both on how to address these concerns. What is the time scale? It could be anytime starting next week, but most likely it will be the week after next. If the concept is there, Ornella and Dave could outline the points and the committees can be used to write the text. The important point is to agree on how it works and the main point that's been discussed is, if for example, an SBND student wants to do an analysis on ICARUS data, the student will need to satisfy some sort of service work requirements or something. This has not been defined yet. McFarland stated that the part of the service work requirements belongs to the collaborations, not the SBN organization but Palamara said the students need to understand how much service/extra work is needed. Is the work on SBND already enough or is there more work that needs to be done on the ICARUS part? We can't leave it to the collaboration to decide. There should be an agreement that is reasonable to all parties. Brice, said in that sense, it's more of a quid pro quo.

SBN Institutional Board Update, K. McFarland

Slides presented

Current goals: create standing committees to carry out key SBN processes, regular business, as specified in its by-laws (including opportunity for members to bring up other topics and concerns).

Activities since last OB meeting: held one meeting on Feb 17th, learned about plan for comment process for committees to be addressed by the SBN Board, Ketchum presented review of the D3C draft (was not sent to collaborations for comment/vote because of anticipated SBN Board process), report from committee running the SBN IB chair election. Election should be complete before next OB meeting.

Upcoming activities: Rules group to engage SBN Board for revisions, next meeting date is April 29th.

No further conversation/comments

SBN Project Update, P. Wilson

Slides presented

Standard Update:

Fermilab has expanded access to the site to all badged employees, users and contractors. The essential personnel list is no more, so there's no need to contact Peter any further. Masking and

social distancing remain in place, vaccine or negative COVID test (in last 72 hours) still needed. Limited food service has resumed in café for credit card purchases only. Masking requirement will change if local case rates continue to fall.

McFarland mentioned (for people who have not been coming on-site during the pandemic) there has been a high failure rate for getting badges or having proper identification to show at the gates. Spokes may want to mention this to their colleagues.

Travel Guidance and Housing:

Rules are updated as state and/or DOE rules are updated. Onsite housing is limited by COVID occupancy restrictions and housing is set aside for quarantine for international travelers. Contact Housing early re: availability (Housing@fnal.gov)

Onsite Access/User Process (not related to COVID): was updated in 2021.

Can take 4-6 weeks to get approvals, especially for foreign nationals.

Must complete even if you have off-site computing access

Some important pointers:

- *Select “Yes” to the question “Do you need to come on-site to work at Fermilab?”*
- *Affiliation: the experiment you primarily work on and/or the experiment you are coming to the lab to work on (so that training gets set up properly)*
- *Point of Contact: your IB representative or an experiment Co-Spokesperson;*
- *Dates: the start date should be no less than 4 weeks away otherwise we cannot guarantee all steps will be completed in time, if you aren’t certain use earliest possible date*

Note: Process is not complete until you receive an *Informal Invitation* letter with a QR code via email from the Fermilab Service Desk. (Reminder to forward this letter to Peter or Etta Johnson)

You will need a badging appointment to access the site and get a new badge. Must bring: Real ID (e.g., passport or qualifying Driver’s License) and invitation letter with QR Code on paper or phone.

The lab has run into the issue of obtaining chips for new badges. Recommends bringing old ID badge so it can get re-used. Badge with chip will be needed to open doors to buildings.

People are encouraged to request on-site access now, even if they’re not planning to visit immediately (but within next year). User’s Office can help update information when dates are set. Noted it’s taking longer to get accounts renewed, but Steve and Peter have been working with the User’s Office to improve the system.

Use link to get more details <https://get-connected.fnal.gov/accessandbadging/access/>

Conversation:

Many passports have lapsed, and some folks haven’t gotten their REAL ID. It can take up to 8-12 weeks to get a new passport. A REAL ID can be obtained in one day but may take several hours. A valid passport is acceptable as identification for international travelers. People who live in the US (and who don’t have valid passports) are ones who need to be concerned.

Quarantine is only necessary for housing and close proximity work. If you stay outside the lab, you can visit at any time. It's necessary on-site (dorms/houses) due to sharing of personal spaces (kitchen, eating spaces, restrooms, etc.). Can go to work on-site as long as you maintain social distancing and mask requirements.

Program Management News

Slides presented

Director's Mini-Review of SBND scheduled for Monday May 23
SBN MOU signed and in effect

SBND updates

- Light detection systems updates
- TPC Assembly (Dec-Feb)
- Cold electronics installation
- List of remaining assembly tasks
- Electrical installation
- SBND cryostat installation: should take ~5 calendar months
- Membrane cryostat installation: delayed to April
- Protego valve installation: completed
- Detector installation: design completed, upgrading crane size
- Cryogenics: lead time for valves increased due to Covid
- Milestone updates

Conversation:

Last remaining piece of ICARUS is the overburden. Run coordinator has slides.

Question re: director search. How is the procedure/selection going? What is the situation? The selection committee has interviewed a number of candidates. Recommendations have been passed on the to FRA/URA for the top two candidates. FRA will choose their preferred candidate and begin negotiations. Not know when process will be complete.

ICARUS Commissioning and Operations Updates A. Chatterjee

Slides presented

Nominal beginning of run started Nov. 5, 2021. ICARUS collects data Monday-Friday, weekends, and whenever other opportunities arise.

Data being collected using Majority trigger and Minbias triggers.

Slides: POT for BNB beam and POT for NuMI beam

- Icarus Run: shift organization. All shifts are remote, subsystems covered by full-time expert shifters.
- Commissioning/installation activities parallel to data collection
- Top CRT installation complete

- Top CRT commissioning. Hit rates as expected, time signal delay measurements, data taking with whole detector from Feb 26
- ICARUS cryogenics stable but needs some improvements. Condensers performing well. Three LN2 pumps installed/maintained. Spare one on order.
- Status of PMT system: PMTs gain initially measured with Laser. To reduce some gain instabilities, a safer value was adopted as “nominal gain”.
- PMT gain variation The gain of PMTs is monitored, detecting single photoelectrons
- Overburden installation plan to request ~4-6 blocks per day. Draft HA and work plan are in progress. Tentative start date is week of March 21.
- Trigger: commissioning activities and status: improvements are in progress, expected to be done before the completion of the overburden installation.
- Trigger studies: looking at data – ICARUS TPC reconstruction, Improvement on CRT hit reconstruction

Summary – ICARUS remains in installation/commissioning mode, collecting beam data without major issues. Top-CRT commissioning in progress, Top CRT included with standard DAQ system, taking data with full detector system, Trigger updates in process, Analysis of data showing important clues on detector and is helping in tuning the Monte Carlo simulation. Data quality is sufficient for planned physics program.

Conversation:

On slide 13, the work of the overburden will start on March 21. Carlo asked when the end date is. The expectation is that the 1st layer is about 3 weeks (mid-April), stacking the next two layers should take about 5 weeks, so looking at end of May.

There is a lot of time introducing the overburden. Can't introduce overburden and take data at the same time. When will we start data taking with the overburden? Expectation is the overburden will be in place at the end of May. The beam stop date is July 11.

On slide 9, regarding the separation between west and east in the LAr purity issue. Do we have a better story of why it's unequal? No concrete answer yet. The reason should be discussed for difference. It's an ongoing discussion in Claudio's weekly meeting.

SBN Joint Working Groups Update G. Karagiorgi

Slides presented

List of SBN working groups and their goals

SBN DQ and Data Pre-Processing WG - stable and supporting ongoing activities

- SBND DAQ/Trigger News - Timing and trigger connections being installed at SBND
- ICARUS – largely stable and supporting ongoing activities in final detector commissioning. Continued work w/SBND on common elements

SBN Slow Controls WG – Wanwei Wu leading SBND DCS effort, no major ICARUS updates

SBN Cosmic Ray Tagger WG

- ICARUS side CRT - taking data
- ICARUS Ongoing Efforts – studying matching data between CRT and PMT systems

- ICARUS Top CRT Installation – taking data w/whole detector
- SBND CRT – panels for top layer 1 ready for delivery, completed production of 8 LVDS trigger sender

SBN Analysis Trigger WG – next mini-workshop to address strategies for evaluating trigger efficiency. Dates to be defined.

SBN Analysis Infrastructures WG – release/production of “2021C” SBN software successful. Final release/production of “2022A” SBN software starting next week.

SBN Oscillation Analysis WG – listed main activities, SBN OSC Technical Note, currently in circulation for review by WG members

SBN Analysis WG – long-term strategy presented

Conversation:

B. Wilson commented on support for software for SBN, particularly ICARUS. LArSoft is important part of SBN software and there is a LArSoft team which is supporting that. He attends the LArSoft steering group meetings as a representative from ICARUS management. One thing we’ve been asking for is the event display. At the latest steering group meeting we were told one of the key developers has an LDRD and will be distracted from the core LArSoft effort. Things we had on our priority list; being able to set electron lifetime in the 2 cryostats separately and the event display will now be even more difficult. Erica Snider said she will have to escalate to next level (SCD?). Just want everyone to know because we are in a very critical period in needing LArSoft. ICARUS is trying to commission and is now suffering from the lack of tools/expertise.

Proper support for LArSoft has been an ongoing conversation for several years. S. Brice has regular meetings with the head of SCD and will bring up the importance and the need for properly staffing for the LArSoft effort.

The LArSoft team didn’t work on the MicroBooNE event display. Do we know how the event display for MicroBooNE was done? They employed different event displays developed by different groups. One option is to reach out to the collaboration, as they have shown an interest in helping with analysis infrastructure integrations. One event display mainly used by MicroBooNE was developed by Marco Del Tutto and others and has been successful in use by SBND and ICARUS. Are there specific requirements? Only parts not included are the CRTs.

This is not a new conversation with the LArSoft team, which is why other experiments have taken a different approach. The detail is getting in geometry. If we have the infrastructure and put together a good team it should be possible to do the refinement.

Where can information about the SBN software packages be found? There is a website maintained by the SBN Analysis Infrastructure team which has all the information. G. Karagiorgi will put link in the chat and also email link directly to Carlo.

The SBN-OB meeting was adjourned.

Next meeting 3 months from now June 10, 2022