

**Minutes of the 9th Meeting of the SBN Oversight Board
(Virtual meeting, Fermilab, June 12, 2020)**

SBN-OB Attendees:

C. Rubbia (ICARUS Spokesperson)
M. Shaevitz (US NSF)
A. Guglielmi (ICARUS)
D. Schmitz (SBND Co-spokesperson)
R. Wilson (US DOE)
S. Brice (Chair)
O. Palamara (SBND Co-spokesperson)

Other Attendees:

P. Wilson (SBN Program Head),
J. Saviano (Secretariat)
K. McFarland (IB Chair)

Action Items

Invite Wes Ketchum and Joseph Zennamo to attend next meeting to discuss SBN analysis infrastructure.

Introduction and Review of Last Meeting

Steve Brice, SBN Oversight Board Chair, welcomed the members and participants to the Ninth Meeting of the SBN Oversight Board

Action items from 13 March 2020 meeting:

At SBN level do we want to allow limited authorship papers? ICARUS will take this offline to discuss. Results will be sent out via email.

SBN Project Update, P. Wilson

P. Wilson, SBN Program Deputy Coordinator, provided an SBN project update.

Slides were presented that covered updates on COVID 19-Closure, ICARUS, Far Detector Cosmic Tagger, Near Detector, SBND Cryostat, TPC, PMT and DAQ.

There has been a coordination of plans across Fermilab organizations that is synced with the State of Illinois and Argonne National Laboratory. All plans still need to be approved by DOE. Peter is the representative for the Neutrino Division.

Fermilab announced a 6-stage reopening plan, beginning with adding essential personnel in rounds of 65 people. Round 4 was just completed and now there will be a pause to evaluate how systems are working before moving to the 5th round. Weekly planning meetings are held to determine priorities for upcoming week. Each group has a person who determines which employees are needed onsite and what tasks will be worked on.

Carlo Rubbia and Alberto Guglielmi discussed the need to establish a link between Fermilab and INFN to prepare for when travel will be possible. We need to be prepared to move as soon as travel bans are lifted.

ICARUS Tech Progress – Cryogenics commissioning. In April, the LAr fill and ullage pressurization test were completed, and the LAr circulation pumps were turned on. Three out of four gas re-condensers are complete and functioning. The SE condenser is still problematic and startup remains in progress. In the process of designing a modification to address a vapor lock in gooseneck between heat exchange and filter.

The cryogenics commissioning team has been meeting daily to try to solve problems. There are also weekly planning meetings to review task lists and schedule them. There is no schedule projection for completion of commissioning tasks, but the goal is to be ready for beam when it returns in the Fall. Geoff Savage, Donatella Torretta and Linda Bagby almost exclusively working on ICARUS.

Top CRT Modules are ready to ship from Frascati to CERN (and then CERN to Fermilab) but they're waiting for some customs paperwork to be completed. Should be set within a few days.

SBND – work has continued by collaborators and engineers on designs and assembly plans for connecting pieces and support structures. Contract in place for fabrication of CPA support beam. Delivery is expected in early July. Design of connections between APA and support beam is being finalized. Completed first iteration of all procedures on how to assemble the detector in D0. Next is to come up with a detailed configuration of the workspace for each of the staff.

Technicians have been working at D0 almost daily. Machine Shop is almost back to full strength. Planning for collaborators who are already residents in the area to start onsite at the end of June/early July.

SBND Installation – no work is being done inside the building, but outside work is continuing (decking, stairs, railings, etc.). Contract in place to do a scan of the steel structure. Possibly starting work inside bldg. at the beginning of July.

SBND Cryostat – CERN placed order for the membrane materials at the end of March. Delivery to Fermilab from vendor is expected at the end of November. CERN working on the top caps which form the top of the cryostat. They'll be transported in 3 pieces to Fermilab where they'll be welded. Fabrication in CERN was paused in February and they don't expect to start again until late summer because Techs live in other parts of Europe and won't be returning until then. Cryostat is on the critical path.

SBND DAQ – Electronics can be left on unsupervised because they passed safety reviews. Have had a lot of progress on data acquisition. SBND schedule re-plan is completed. Ready to fill date is mid-October 2021

Dates for Operational Readiness Review for ICARUS and Director's mini review of SBND are under discussion. Director's review will be sometime in September or October 2020.

SBND, O. Palamara

Ornella Palamara, SBND co-Spokesperson, provided an update on the SBN Joint Working Groups.

Slides were presented that reviewed status of the SBN five Working Groups;

1. SBND DAQ & Data Pre-Processing (continued work & support for ICARUS Commissioning. First SBND-ND DAQ run a success)
2. SBND Slow Controls (successful readout of part of the PMT system with high voltage controlled via slow control system)
3. SBND Cosmic Ray Tagger (starting commissioning of side ICARUS CRT)
4. SBND Analysis Working Group (Work towards updating projections of expected physics capabilities of SBN programming using full simulation & reconstruction. Analysis workshop held in March. Mini workshop w/focus on calorimetric scheduled for July 6 & 7. PAC acknowledges the progress of the working group and technical side. FD is turning point in SBN program.)
5. SBND Analysis Infrastructure Group (In May, presented unified picture of SBN Program's computing needs to Fermi Scientific Computing Division. Need to develop & implement computer model to enable timely production and analysis of SBN's program data and to perform Monte Carlo simulation. Also need seamless sharing of data with ICARUS and SBND.)

Kevin McFarland asked if there are enough levels of commitment from each group. There are internal sub-groups in charge of different aspects. Some groups are well organized in terms of resources, and some are not yet optimal. Over next year, we should formalize commitments being made to working groups. Some concern the high-level aspects may be lacking because they're not needed right away. Ornella is more concerned about having enough help at the reconstruction level than the high-level event selection or oscillation fitting.

This should be brought up in the IB meeting. No formal MOU needed, but maybe documents where institutions should be encouraged to participate. Something written down. Also agreed there needs to be a system for replacing students when they leave.

Kevin also asked about computing infrastructure. Is the process for getting input from 2 detector collaborations working well? Conveners are Wes Ketchum and Joseph Zennamo. Once we start to get real data, do you have good understanding with Scientific Computing as to when the data estimates need to be uploaded? We should invite Wes and Joseph to attend next meeting to discuss.

Update on SBN Institutional Board. K. McFarland

In process of going live with SLACK, a joint communication app. Working on it with Wes Ketchum

Nominations for rules-writing committee done. Next step in process – contacting them to see if people will accept nomination.

Kevin will have conversation with Steve regarding possibility of stepping down as IB Chair due to University commitments.

IB meeting held May 29th. Web page ready to go live. Will have 2 sets of notes, one for the Board and one to release publicly for all collaborators.

We had a proposal to invite young members from both collaborations to help with communication and to encourage them to bring and questions or concerns to the Board.

Another proposal is to collect longer term concerns related to COVID response. What will it look like a year or two out? It may be increasingly difficult for some institutions to bring students to Fermilab.

Future SBN Topics for IB

Membership and authorship

Permanent rules for SBN IB

Develop result publication presentation

Joint computing processes for SBN

Final thoughts

Bob Wilson is stepping down from ICARUS as IB chair, Mark Convery from SLAC is his replacement.

The data access topic is very relevant, and we should act as soon as possible. We should have rules in place to flush out the principles. Kevin and Ornella will have a discussion offline.

The SBN-OB meeting was adjourned.

Next meeting 3 months from now 11 September 2020