

SBN Organization

March 14, 2018

Looking ahead to the operations phase of the Short-Baseline Neutrino Program, a set of organizational structures are defined to oversee the completion of the ICARUS and SBND detectors, to develop plans and procedures for their commissioning and operation, and to coordinate efforts toward combined physics analyses in the future. The joint SBN physics program is taken to start when both the ICARUS and SBND detectors become operational. It is anticipated that the physics operation of ICARUS will begin early in 2019, and the operation of SBND will start approximately one year later. The SBN physics program will include both a set of multi-detector joint oscillation measurements as well as measurements carried out independently by each experiment.

In October 2017, a **SBN Board** was formed and charged with developing an initial set of organizational structures and plans to address these needs. The SBN Board consists of the SBN scientific collaboration spokespersons, the Head of the Fermilab Neutrino Division, and a chair for the group appointed by the Fermilab Director. The SBN Board proposes the following Boards and Working Groups be created; some are new bodies and some are a formalization of present structures within SBN.

1) SBN Program Oversight Board (SBN-OB)

- Purpose: The SBN-OB is internal to SBN and will provide a key forum for cross-collaboration communication or MoU development on issues relevant to construction, commissioning, operations, data management, and analysis. The SBN-OB is not directly a decision making body since policies must ultimately be approved by the scientific collaborations, but it does provide a much needed place for direct communication between SBN stakeholders. During the construction phase, this group should meet regularly with the SBN Program Office and Technical Coordinators to review the costs, schedule, and necessary resources for the completion of the ICARUS and SBND detector installations and advise the Program Office on strategic choices that will have impact on the physics capabilities or schedules of one or both detectors.
- Membership: Initial SBN-OB membership will be set by the SBN Board and is intended to provide good representation of the SBN stakeholders while maintaining a manageable size for the Board. The group will consist of the ICARUS and SBND spokespersons (or their alternates) as well as additional SBN collaborators selected to provide good representation of the international groups making major contributions to the ICARUS and SBND detectors, initially including the groups from Italy-INFN, the US-DOE and NSF, UK-STFC, Swiss NSF, and CERN. The initial Chair of the board will be the head of Fermilab Neutrino Division. Minutes of the meetings should be made available to the collaborations. During the construction phases, meetings of the SBN-OB with the SBN Program Office and Technical Coordinators should be held regularly.

2) SBN Institutional Board (SBN-IB)

- Purpose: The SBN-IB will provide a forum for program-wide communication on issues relevant to the Program. Procedures and policies covering joint aspects of operation, data sharing, data analysis, publications, etc. in the form of MoUs or other agreements can be brought to this body for deliberation or developed from within the group.

Agreements developed within the SBN-IB will need to return to the individual collaborations involved in the MoU for final ratification.

- **Membership:** The SBN-IB will consist of one member from each institution participating in the SBN Program. Each institution's representative is selected by that institution and communicated to the IB chairperson who will maintain the official list of membership and mailing list. The chairperson will be elected by the members of the IB from within its membership.

3) **SBN Joint Working Groups**

- **Purpose:** A set of SBN Joint Working Groups are needed to co-develop many key aspects of SBN operations and physics analysis. A list of existing Working Groups will be maintained by the SBN Oversight Board (see appendix II). New SBN Working Groups shall be set up as needed by the SBN-OB.
- **Membership:** The Working Groups are open to all participants in the SBN Program. For each Working Group the SBN-OB will identify a set of conveners to lead the activities of the group and report progress to the SBN-OB and the collaborations.

Appendix I: Relevant Existing Internal and External Bodies

- **SBN Executive Board:** The SBN-EB is comprised of the SBND, MicroBooNE, and ICARUS collaboration spokespersons. It has existed since 2015.
- **LBNC:** The Long-Baseline Neutrino Committee is charged by the Fermilab Director to review the scientific, technical, and managerial progress, plans and decisions associated with the Fermilab Long Baseline Neutrino Facility (LBNF) and the Deep Underground Neutrino Experiment (DUNE). The committee also considers some specific aspects of the Short Baseline Neutrino (SBN) Program. <http://pac.fnal.gov/lbnc/>
- **RRB:** The LBNF/DUNE Resources Review Board (RRB) is part of the international project governance structure for the Long-Baseline Neutrino Facility / Deep Underground Neutrino Experiment (LBNF/DUNE). It was established to provide coordination among funding partners, oversight of DUNE, and effective coordination between DUNE, LBNF, Proton Improvement Plan-II (PIP-II), and the Short-Baseline Neutrino Program (SBN) (collectively, the Projects). It is comprised of representatives of all funding agencies that sponsor the Projects, and of Fermilab management. The RRB provides focused monitoring and detailed oversight of the DUNE Collaboration, and also monitors the progress of LBNF, PIP-II, and SBN as well as international contributions to those projects. <http://rrb.fnal.gov/>

Appendix II: SBN Joint Working Groups

SBN JOINT WORKING GROUPS	
Working Group	Description
SBN Analysis Group	Explore how combined SBN physics analysis for sterile neutrino oscillation searches can be most effectively performed. Work focuses on implementing a three detector simulation, building reconstruction and analysis tools within a common framework, and developing an end-to-end common analysis scheme in preparation for real data exploitation.
SBN DAQ and Data Pre-Processing	Prepare the infrastructure for the efficient collection of high quality data with ICARUS and SBND using common strategies whenever possible.
SBN Slow Controls	Compare Slow Controls needs and designs and identify common hardware and software solutions for ICARUS and SBND.

This is an active list that should be updated as changes and additions are made.