

Memorandum of Understanding of the Global Neutrino Network

Adopted: 18 January 2024

Preamble

The Global Neutrino Network (GNN) is established with the goals to:

- Promote international cooperation and scientific exploitation of neutrino telescopes
- Promote the development of neutrino detection as an astronomical tool, and facilitate the potential of neutrino telescopes for multi-messenger astrophysics
- Organize regular meetings and workshops (e.g. MANTS and VLVNT) to foster advancement and sharing of techniques and technology for the advancement of neutrino astronomy
- Provide a forum for project leaders to meet and discuss common issues within the field of neutrino astronomy.

This MoU describes the operation and governance of the GNN.

Membership

The GNN is composed of representatives of the neutrino telescope detector collaborations or projects. The initial member collaborations at the acceptance of this MoU are: ANTARES, Baikal/GVD, IceCube and KM3NeT. Admission of new member collaborations requires approval by a majority vote of the GNN board.

GNN Board

- The coordination of GNN activities will be handled by a GNN board. Composition of the board is described in the Membership section.
- Decisions of the board should normally occur by discussion and consensus. In the absence of consensus, the chair can call for a vote of the member collaborations requiring majority vote, unless otherwise specified in this MoU.
- The board will have regular video or phone calls. At least once per year. Phone/video calls and meetings should be documented in written minutes.
- Decisions of the GNN board that may have impact on operational or programmatic aspects of individual collaborations will require endorsement by all member collaborations.
- The GNN board will be responsible for finding the resources for facilitating administrative support, needed to prepare meetings, teleconferences, and schools; manage bookkeeping of the various activities; help coordinate the exchange program;

endow the annual prize for outstanding PhD theses with a prize money and maintain the web page. Support will also be sought for exchange programs for young scientists.

Chairperson

- The chairperson of the GNN board serves a two-year term. There are no restrictions on the number of terms
- The chairperson is elected by a majority vote.
- The elected chair serves as a neutral party, and is not counted as one of the representatives of a collaboration

Membership of the GNN Board

- Each collaboration will be represented on the board by up to 3 members
- Members represent their collaborations, and not their host institutions, funding agencies, governments or other organizations
- Each collaboration may choose its representative(s) by whatever internal process it chooses.
- New collaborations may apply for membership, or be invited to apply for membership, at any time. The applicant will be invited to a GNN meeting to make a presentation about their project and collaboration and to discuss their status and plans. A majority vote in closed session is required to approve new projects or collaborations.
- GNN may extend invitations to individuals whose participation may further its goals. A majority vote of the membership is required for approval.
- Projects or collaborations which cease to be active may be removed from the GNN either through resignation or through a two-thirds vote of the membership.

Voting

The board will most often make decisions by consensus. When a vote is called by the Chair, each collaboration will have 1 vote and the result is determined by the threshold specified in the relevant section of this MoU.

Amendments to the MoU

The MoU may be amended by two-thirds vote. Amendments may be proposed by any member of GNN. Such amendments will be brought to the attention of the Chairperson. Amendments will be circulated to the membership at least two weeks prior to a board meeting and will be discussed at the meeting. Voting will be by email after the meeting at which it is discussed. A two-thirds majority is required to approve any amendments.

Activities of GNN

GNN aims to facilitate closer collaboration among the individual neutrino telescope collaborations and facilities and to advance the field of neutrino astronomy more generally. It serves as a forum for formalizing and further developing the present Mediterranean-Antarctic Neutrino Telescope Symposium (MANTS) meetings (to be renamed and extended in scope so as to include all current and future GNN member collaborations) and traditionally biannual international workshop on Very Large Volume Neutrino Telescopes (VLVNT).

The primary aims and activities of the GNN should be to:

- organize schools and topical workshops, specifically the MANTS meetings and VLVNT conferences,
- provide a forum for consultation between the partners,
- work toward a framework for coordination of cooperative actions and self-organization of the neutrino astronomy community including the possibility of joint MoUs between the neutrino astronomy community and other experiments,
- establish a common legacy of public documents that would form the foundation of the field (like Technical Design Reports, VLVNT proceedings, etc.),
- award an annual prize for outstanding PhD theses,
- maintain a public web page,
- edit a regular newsletter for keeping the community informed about new developments and about activities and status of the partners,
- stimulate joint outreach activities,
- coordinate relations with other fields of science, such as multi-messenger programs, particle physics, astrophysics, environmental sciences, geosciences, marine biology and oceanography, and glaciology

GNN encourages the formation of cooperative projects by facilitating the combination of experimental data to achieve more reliable results and to further increase the sensitivity beyond that of individual detectors. Possible example projects may include:

- performing joint analyses
- cross-checks of results with different systematic uncertainties,
- coordination of alert and multi-messenger policies,
- exchange and mutual checks of software,
- creation of a common software pool,
- standards for data representation,
- exchange of expertise through mutual working visits of scientists and engineers, and
- exchange of expertise by forming ad-hoc advisory committees of members of the participating collaborations, if requested by a participating party; this may generate

better understanding of data, optimization of future detector configurations, or technological solutions for the next generation arrays.

Confidentiality

Confidential information shared through the activities of the GNN will not be disclosed without explicit approval of the individual collaborations concerned.

Membership:

18-Jan-2024

ANTARES
Baikal/GVD
IceCube
KM3NeT

15-Feb-2024

ANTARES
Baikal/GVD
IceCube
KM3NeT
P-ONE

14-Jan-2025

ANTARES
Baikal/GVD
IceCube
KM3NeT
P-ONE
RNO-G