

# **Memorandum of Understanding for the Terrestrial Very Long Baseline Atom Interferometer Study**

THE INSTITUTES, LABORATORIES, UNIVERSITIES, FUNDING AGENCIES AND OTHER SIGNATORIES OF THIS MEMORANDUM ON UNDERSTANDING (“the Participants”)

## **Whereas**

The scientific community wishes to draft a framework for the development and realization of Terrestrial Very-Long-Baseline Atom Interferometry (TVLBAI) experiments, with a view to executing a Conceptual Design Study for a TVLBAI (the “TVLBAI Study”),

## **It is hereby acknowledged:**

### **1. Purpose of this Memorandum**

- 1.1. This Memorandum establishes a common basis among the Participants for the collaborative effort required for the TVLBAI Study. The TVLBAI Study and its results shall be used for peaceful purposes only.
- 1.2. By signing this Memorandum, the signatory becomes a Participant in TVLBAI, together with the other institutes, laboratories, universities, and their funding agencies who are, or who subsequently decide to become, Participants in TVLBAI. A Participant shall officially join TVLBAI on the date of their signature to this Memorandum.
- 1.3. It is expressly acknowledged that, except for Articles 5, 6 and 7, this Memorandum is not legally binding and each Participant’s involvement in the TVLBAI Study is on a “best-efforts” basis. This Memorandum does not imply any commitment of resources. Each Participant’s involvement in the TVLBAI Study is governed, as the case may be, by its internal policies and regulations and the laws to which it is subject.
- 1.4. The TVBAI community is committed to and supports an Equity, Diversity, and Inclusion (EDI) policy, which will inform their corresponding actions. Among the latter are diversity balance and inclusion in the composition of TVBAI organisation bodies and in invitations of speakers to TVBAI-organised public events, fostering equal opportunities and valuing diversity in building the TVBAI research environment, in developing training of students and early-career researchers, and while disseminating the results of the TVBAI activity within other expert communities or via general public outreach.

## **2. Scope**

- 2.1. The main focus of the TVLBAI Study Group shall be to prepare a full science and technology Roadmap accompanied by a Conceptual Design Report for a potential TVLBAI project that may consist of one or more demonstrators in various locations using a combination of design options, e.g., vertical and horizontal geometries and different cold atom species, operated as a network. As part of the Roadmap, the TVLBAI Study shall provide a baseline concept for such a TVLBAI project, performance expectations, and assess the associated key risks, as well as the cost drivers. It shall also identify an R&D path to demonstrate the feasibility of a TVLBAI project and support its performance claims.
- 2.2. Depending on the results of the Roadmap, there could be one or several conceptual design studies for specific experiments that may be undertaken, under the aegis of the TVLBAI, and that may be developed independently by the Participants possibly together with other external Partners.
- 2.3. The TVLBAI Study supports sharing of ideas and encourages free and open exchange of scientific and technical knowledge, expertise, engineering designs, and equipment, within the provisions of Article 5.
- 2.4. Potential synergies with other projects shall be explored and used where beneficial to the TVLBAI Study.

## **3. Organization**

- 3.1. The TVLBAI Study will be executed through the following entities:
  - (i) An International Collaboration Board (ICB) whose mandate is to oversee the TVBAI Study, define the strategies and channel contributions from the Participants. Each Participant shall have one representative in the ICB. The ICB shall elect a Study Chair and can invite representatives of institutes that have not signed this Memorandum to participate in the discussions, without the right to vote.
  - (ii) The Chair appointed by the ICB shall be guided by its decisions, with the mandate to assure the overall coordination and organisation of the TLVBAI Study.
  - (iii) The ICB shall appoint on suggestion of the Chair a Coordination Group to support the Chair in executing its mandate.
- 3.2. The Chair shall organise and guide the study, establish collaborations with the Participants and any other involved entities, ensure coherent communications, coordinate all resources associated with the TVBAI Study, organise workshops, conferences and meetings relevant for the TVBAI Study.

## **4. Contributions by the Participants**

- 4.1. Each Participant's contribution to the TVLBAI Study shall be set out in an Addendum to this Memorandum, which shall be signed by the Chair and a representative of the Participant.
- 4.2. The Participants may, between themselves and with any other entity, enter into arrangements or agreements as may be necessary for the delivery of their contributions, provided always that their terms shall be consistent with the provisions of this Memorandum.
- 4.3. Except as agreed otherwise, each Participant shall bear the cost of its contribution to the TVLBAI Study. A Participant may contribute in terms of funds, expertise, equipment, materials, knowledge and/or other resources.
- 4.4. It is understood that the activities of the Chair and the Coordination Group do not diminish the Participants' responsibility for the delivery of their contributions, nor the responsibility for their personnel, including but not limited to matters concerning social insurance.

## **5. Intellectual Property**

- 5.1. Title in intellectual property that is developed by a Participant in the execution of this Memorandum shall be vested in that Participant (or if developed collectively by two or more Participants, vested in those Participants), who shall grant the other Participants a free, non-exclusive licence for the use of such intellectual property in the execution of their scientific programmes, including their participation in the TVLBAI Study.
- 5.2. Each Participant that provides intellectual property under this Memorandum to another Participant does not provide any warranty in respect of such intellectual property and any Participant using such intellectual property shall be exclusively liable for any cost and expense resulting from such use.

## **6. Publications**

- 6.1. The Participants shall publish the results of their collaboration as Open Access publications.
- 6.2. Publications shall acknowledge the collaboration between the Participants, including, wherever appropriate, the experts having taken part in the development of the results covered by the publication.

## **7. Liability**

Except as expressly provided in this Memorandum, the Participants shall have no liability in connection with their participation in the TVLBAI Study.

## 8. Duration

- 8.1. In recognition of the fact that this Memorandum does not imply any commitment of resources, a Participant may withdraw from this Memorandum by giving a minimum of three months written notice to the ICB.
- 8.2. This Memorandum shall remain in force for as long as required to give effect to its provisions.

Signed by:

**The Chair of the Terrestrial  
Very-Long-Baseline Atom  
Interferometry (TVLBAI) Study**

**For the “{Name of Participant  
Institute}” ({Short name})**

---

X Y  
TVLBAI Study Chair

---

{First Name, Last Name}  
{Function}

Date: \_\_\_\_\_

Date: \_\_\_\_\_