

# Memorandum of Understanding

between

**The European Organization for Nuclear Research (“CERN”)**, represented by the Director of Research and Scientific Computing,

on the one hand,

and

**The Collaborating Institutions of the Virgo Experiment** (as listed in Annex 1), represented by its Spokesperson (or other appointed representative),

on the other hand,

hereafter referred to as “Parties” or individually as “Party”.

## Preamble

- (a) The main purpose of the **Virgo** Experiment (the “Experiment”) is to improve the gravitational wave detection rate by  $\sim 1000$  with respect to Virgo, and to initiate the era of gravitational wave astronomy.
- (b) On 9 March 2016, in application of the provisions of CERN document “*Recognized Experiments at CERN*” (Annex 2), the CERN Research Board has granted to the Experiment, on the recommendation of the Recognized Experiments Committee, extension of the status of Recognized Experiment.

### **Article 1: Purpose**

- 1.1 This Memorandum of Understanding (MoU), including its Annexes, which shall form an integral part of this MoU, defines the applicable framework for the activities at CERN related to the Experiment, including in particular the support provided by CERN as well as the obligations of the Experiment towards CERN.
- 1.2 Without prejudice to each Party's duty to comply with the provisions of this MoU, it is understood that nothing in this MoU constitutes a firm commitment for any of the Parties to provide financial or other resources, including for a Collaborating Institution to provide or continue to provide a contribution to the Experiment, this question being a matter for internal decision within the Experiment.
- 1.3 Any reference made in this MoU to a specific document shall be to its most recent version.

### **Article 2: Support by CERN**

CERN shall provide to the Experiment the support specified in the Annexes 3 to 7 and in CERN document "*Recognized Experiments at CERN*" (Annex 2), subject to the provisions of this MoU and the aforementioned CERN document, and to the availability of resources at CERN. Except as may be agreed otherwise, such support shall be in respect of the Experiment's activities on the CERN site.

### **Article 3: Obligations of the Experiment**

#### **Basic obligations**

- 3.1 Whilst at CERN, the Experiment team members shall be subject to the authority of the Director-General of CERN and shall comply with its rules and regulations. Items brought onto the site by the Experiment are subject to the rules and regulations in force at CERN.

#### **Status of personnel**

- 3.2 The Experiment team members shall have the status of associated member of the personnel at CERN. Application for this status shall be through a registration form that shall be signed by the Experiment team member concerned as well as his/her Collaborating Institution. A contract of association may then be issued in accordance with Article RI 2.04 of the CERN Staff Rules and Regulations.
- 3.3 The Experiment team members shall at all times during their association with CERN be employed by the Collaborating Institution concerned, or where the team members are students, enrolled at it. The Collaborating Institution shall be responsible for their social insurance, as well as for medical insurance cover adequate in Switzerland and France for them as well as for the accompanying family members, which for the Experiment team members shall include cover for occupational illness and accidents.



- 3.4 The Collaborating Institution shall be liable to CERN for any cost or expense resulting from non-compliance with the obligations specified in Article 3.3.

#### **Medical surveillance and certificates**

- 3.5 The Collaborating Institution shall remain responsible for the medical surveillance of its team members during their stay at CERN and, in the case of team members who are to work in conditions that are deemed to pose special risks (e.g. radiation controlled areas), shall supply to the CERN Medical Service a certificate of medical fitness, for the first time on registration of the team member at CERN and then every two years thereafter (a form for such certificates is available on the Users' Office Web site).

#### **Safety responsibility, training and inspections**

- 3.6 The Collaborating Institutions participating in the Experiment shall be responsible for Safety within the Experiment during all activities carried out at CERN. To this end they shall participate in Safety meetings and shall ensure that their activities, equipment and team members comply with the CERN Safety Policy and CERN Safety Rules in particular.

Each team member carrying out an activity at CERN shall comply with the CERN Safety Rules and shall complete any Safety training deemed necessary by the Experiment or by CERN.

CERN Safety personnel shall be entitled to carry out Safety visits, checks and inspections as well as other Safety measures deemed necessary.

#### **Supply and ownership of Equipment**

- 3.7 The Experiment shall make available on the CERN site the equipment that it has agreed to supply (the "Equipment"), according to an agreed timetable.

As a condition of coverage by CERN's insurance policy, the Experiment shall provide CERN with a list of the Equipment, specifying the ownership for each item. It shall keep the list up-to-date and promptly inform CERN of any modification.

Except as may be agreed in writing by the owning Collaborating Institution and CERN, the delivery of Equipment to, or its handling on the CERN site, shall not affect its ownership. The owning Collaborating Institution and CERN may agree in writing to transfer ownership of any Equipment that is no longer required by the Experiment to CERN.

#### **Transport, installation of Equipment**

- 3.8 The Experiment shall be responsible for the supply of Equipment and its delivery to the CERN site, in compliance with applicable export laws and regulations. All Equipment shall be properly documented to indicate handling requirements and any potential hazards that it may pose. The Experiment shall be responsible for its installation.

#### **Release of space**

- 3.9 Space allocated for construction and assembly shall be released upon completion of these activities. CERN reserves the right to change the space allocation during the lifetime of the Experiment. As soon as the Experiment has been declared completed, all space used

including office and laboratory space, and the space used for testing and running the Experiment, shall be made available to CERN for reallocation. Changes in space usage, modifications to the existing installations and any other space related matters should be reported to the Space Manager of the Department concerned.

### **Dismantling and removal of Equipment**

- 3.10 The dismantling and removal of the Equipment must respect the CERN safety rules and the laws of the countries through which the dismantled Equipment will transit during the removal, including the country of its final destination (e.g. transport, disposal, elimination of special or radioactive waste). Except as may be agreed in writing by the Experiment and CERN, the associated costs shall be borne by the Experiment.

### **Computing rules**

- 3.11 All computing activities shall be executed in accordance with the computing rules in force at CERN.

## **Article 4: Liability and disputes**

- 4.1 CERN shall have no liability in connection with this MoU and the Experiment shall hold it free and harmless from liability, including but not limited to liability relating to the installation, transportation or operation of equipment belonging to the Experiment.
- 4.2 Any dispute arising from the execution of this MoU shall be resolved by amicable settlement or, failing that, by arbitration through the President of the CERN Council, who may, at his or her discretion, adopt any appropriate form of arbitration process. The resulting decision shall be binding and final, without right of revision or appeal.

## **Article 5: Duration**

- 5.1 The initial period of validity of this MoU shall be three years from the date of its signature.
- 5.2 This MoU may be extended following approval by the CERN Research Board, on the recommendation of the Recognized Experiments Committee.
- 5.3 This MoU may be terminated at any time with the agreement of the Parties, or if the Experiment is completed, abandoned or the applicable conditions as set out in this MoU, including those governing recognition as a Recognized Experiment, are no longer met.

## **Article 6: Amendments**

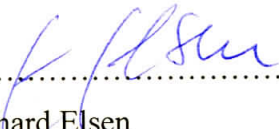
- 6.1 The Parties will make every effort to ensure that the information contained in the Annexes is up-to-date.
- 6.2 This MoU may be amended at any time by written agreement between the Parties.




Signed on 19<sup>th</sup> April 2016, in two originals in the English language.

For the European Organization  
for Nuclear Research (CERN)

For the Experiment,

  
.....  
Eckhard Elsen  
Director for Research and Computing

  
.....  
Fulvio Ricci  
Spokesperson

Annexes:

Annex 1: List of Collaborating Institutions and Contact Persons

Annex 2: Conditions for Recognized Experiments at CERN

Annex 3: Support by CERN

Annex 4: Office space at CERN

Annex 5: Assembly space at CERN

Annex 6: Test Beam at CERN

Annex 7: Computing and networking

**Annex 1**      **List of Collaborating Institutions and Contact Persons**

<b>Country</b>	<b>Collaborating Institutions</b>	<b>Town</b>	<b>Contact</b>
France	APC - CNRS	Paris	M. Barsuglia
	ARTEMIS / Observatoire de la Côte d'Azur	Nice	N. Man
	LAL- CNRS/IN2P3	Orsay	P. Hello
	L.M.A.- CNRS/IN2P3	Lyon	C. Cagnoli
	LAPP –CNRS/IN2P3	Annecy	F. Marion
	Lab. Kastler Brossel – Universit. P. et M. Curie	Paris	A. Heidmann
Hungary	Wigner Research Center	Budapest	M. Vasuth
Italy	INFN-Sezione di Firenze	Firenze	A. Vicerè
	INFN – Sezione di Genova	Genova	G. Gemme
	INFN – Sezione di Napoli	Napoli	E. Calloni
	INFN – Sezione di Perugia	Perugia	H. Vocca
	INFN – Sezione di Pisa	Pisa	F. Frasconi
	INFN Sezione di Roma	Roma	F. Ricci
	INFN Sezione di Tor Vergata	Roma	V. Fafone
	INFN- TIFPA Trento	Trento	G. Prodi
	INFN - Sez.di Padova	Padova	J. P. Zendri
Poland	Inst. Of Mathematics - Polish Academy of Science	Warsaw	A. Krolak
NL	NIKHEF	Amsterdam	J. Van den Brand
	Radboud University Nijmegen	Nijmegen	G. Nelemans
International	European Gravitational Observatory	Cascina	F. Ferrini

**Annex 2**      **Conditions for Recognized Experiments at CERN**

"RECOGNIZED EXPERIMENTS" AT CERN

*LLC/mr/14.06.99, modified 2.09.2009*

CERN is prepared to recognize experiments in fields allied to particle physics, such as astroparticle physics, under the following conditions:

1. Recognized experiments must have substantial participation of physicists from several CERN Member States
2. Recognized experiments must already be approved by relevant agencies and be reasonably funded.
3. Whenever an experiment requests this status the case will be handled by the Recognized Experiments Committee, where the requirements will be defined and discussed. The Committee will present to the Research Board the recommendation for granting RE status.

The Research Board will judge whether recognition by CERN is appropriate, in which case this should not be taken to imply that CERN has in any sense approved the experiment.

4. Once an experiment is recognized- the groups involved will be able to open visiting team accounts at CERN- the members of the experiment will be allowed to become registered as CERN users; this would not, however, imply automatic assignment of office space- CERN would allow such teams the use of CERN's premises to organize meetings, and to use basic services, provided that

*i) the cost to CERN is truly marginal, and on the condition that*

*ii) approved CERN activities would always take priority.*

Additional services could be provided by mutual agreement, on the understanding that CERN will charge if there are costs for the Organization.

5. Recognition will be granted for up to three years, with the possibility of renewal following the request to the Recognized Experiments Committee and, following its recommendation, a positive decision of the Research Board.

### **Annex 3**      **Support by CERN**

#### **Installation**

CERN shall agree in writing to the installation of the Experiment's equipment (the "Equipment") and counting rooms in the appropriate experimental area, provided that the Experiment has ensured that these meet the CERN safety rules.

#### **Duration**

CERN may agree to keep the Equipment on-site for the duration of data-taking.

#### **Network connections**

CERN may agree to connect computers and peripherals belonging to the Collaboration which are needed for the operation of the Equipment to the CERN computer network, provided these meet its compatibility and security standards, including as set out in the "Operational Circular No 5 - Use of CERN Computing Facilities" and subsidiary rules. Prior to any connection the IT Department must be contacted via [Network.Support@cern.ch](mailto:Network.Support@cern.ch)

#### **Insurance**

##### ***- Property***

CERN shall at its expense insure against the risks of fire, explosion, natural disaster and water damage all items belonging to the Experiment, once they have been delivered to the CERN site, added to the ownership inventory and accepted in writing by CERN. CERN shall not insure such items against the risks of transport, crane or rigging accidents. It may however offer the possibility that such insurance is taken out at the expense of the Experiment.

##### ***- Third party liability***

CERN shall at its expense insure the Experiment Team members against third party liability incurred by them at CERN in the execution of the Experiment.

##### ***- Limitation of coverage***

The insurance covers defined above (property and third party liability) are subject to the provisions, including the specified deductibles, exclusions and limits, of CERN's insurance policies. Any risk or amount not covered by such policies shall be for the exclusive account of the Experiment. CERN does not warrant or accept liability as to the sufficiency of its insurance policies in relation to the risks incurred by the Experiment.

#### **SERVICES**

##### **User support, Users' Office and ACCU**

CERN operates a Users' Office as a point of contact with the user community. Documentation for users is maintained on the Users' Office Web site, which can be accessed through the CERN home page (<http://www.cern.ch>). CERN shall provide access to its services, as described in the



“CERN Guide for Newcomers” (available from the Users’ Office Web site). The Users’ Office provides assistance on questions concerning access to the services provided by CERN.

The Advisory Committee of CERN Users (ACCU) promotes links between CERN Management and the User Community and advises CERN Users on the working conditions and the arrangements for technical support.

### **Standard services and facilities**

CERN normally provides, free of charge and within the limits and constraints imposed by the available resources and schedules of accelerators, the following standard services and facilities:

#### ***Test beam***

Test-beam time for activities described in [Annex 6](#), subject to the applicable scheduling and allocation procedures via the official co-ordinator;

#### ***Space***

Space for the needs defined in [Annex 4](#) for equipped office space and [Annex 5](#) for assembly space;

#### ***Supplies and installations at the Experiment***

The Experiment may request support such as assistance with the installation and removal of the Equipment, the provision of crane and rigging services, geometrical survey and alignment, as well as transport of the Equipment on and between the parts of the CERN site and inside the experimental areas and use of the CERN infrastructure for electricity. Conditions will apply according to the nature of the request.

#### ***Computing***

Central computing resources for the Collaboration, in amounts to be decided in accordance with the applicable CERN allocation procedures;

#### ***Transport of persons***

Basic transportation for personnel between the main parts of the CERN site, including the experimental areas;

#### ***Safety services***

Access to its safety services for advice, inspection and verification, and first aid or other emergency help;

#### ***Administrative services***

Access to its administrative services to assist the Experiment in financial matters, in accordance with the Financial Rules and the Financial and Administrative Provisions for Visiting Research Teams;

***Purchasing services***

Access to its purchasing services to assist the Experiment by placing purchase orders and contracts on its behalf, in accordance with the CERN Financial Rules and the CERN Purchasing Procedures. The Collaborating Institution(s) for which the purchase is made shall hold CERN free and harmless from liability arising from such assistance;

**Special services**

A variety of services other than those specified above may be provided to the Experiment on request, subject to the availability of resources. Such services shall be charged according to the applicable conditions

**Annex 4      Office Space at CERN**

No office space is requested by the Experiment, however use of a 100 person Conference Room twice a year is requested, as is the possibility to host a 1 week Gravitational Wave community meeting with up to 200 participants for 1 week.

All space remains the property of CERN, and must be released as soon as it is no longer needed and at the latest on expiration of the present agreement, unless extended.

**Annex 5      Assembly Space at CERN**

No assembly space is requested by the Experiment.

**Annex 6      Test Beam at CERN**

No test beam is requested by the experiment.

**Annex 7      Computing and Networking**

The Experiment requests the use of 2 TB of home directory space and the possibility to consult with computer experts on efficiency questions. The CernVM file system may be used in future.