

Cooperation Agreement for providing a framework for the testing and performance studies of photosensors 12 October 2017

Preamble

Considering that:

various Institutions and industrial partners, have expressed their interest in carrying out together a *long-term detector R&D for future ultimate photosensor*, which also includes an educational and technology training component.

These activities, referred to as **SENSE Cooperation Agreement**, comprise detector testing and prototyping, electronics design, computer simulations, end-user need analysis and more, are to be performed in the partner laboratories and at the CERN IdeaSquare testing facility on SiPM.

These experimental activities aim at exploring new detector technologies for physics experiments and industrial applications, while engaging students from different fields and school levels and industrial partners.

If the SENSE-Cooperation Programme proves successful, it may result in a formal proposal for a larger-scale follow-up program which will be regulated elsewhere.

Depending on the case, there may be activities involving industrial partners, to be laid down in Annexes and Amendments to this Agreement on terms consistent with this one.

Through this Agreement (including its Annexes and Amendments) the parties' obligations in the implementation of the SENSE-Cooperation program are defined.

It is understood as follows:

Article 1: Parties

The Agreement is signed between:



The **SENSE Consortium** composed of Stiftung Deutsches Elektronen Synchrotron (referred to as **DESY**), Hamburg, Germany represented by Dr. Thomas Berghöfer,

the University of Geneva, Départment de Physique Nucleaire et Corpusculaire (referred to as **UniGE**), represented by Prof. Teresa Montaruli,

the Max-Planck-Institute für Physik (referred to as **MPI**), represented by Dr. Razmik Mirzoyan,

The KIT-Centrum Elementarteilchen und Astroteilchenphysik (referred to as **KIT**), represented by Dr. Andreas Haungs,

on the one hand,

and

The University of Heidelberg, Kirchhoff-Institut für Physik (referred to as **Heidelberg**), represented by Prof. Hans-Christian Schultz-Coulon,

The Institute of Cosmos Sciences, University of Barcelona (referred to as **ICCUB**), represented by Eng. David Gascón,

The Institut de Física d'Altes Energies (referred to as **IFAE**), represented by Prof. Ramon Miquel.

The INAF-Osservatorio Astrofisico di Catania (referred to as **INAF-CT**), represented by Dr. Giovanni Bonanno,

The Institute for Space-Earth Environmental Research, Nagoya University (referred to as **Nagoya**), represented by Prof. Hiroyasu Tajima,

The Institut de Física Corpuscular (IFIC), centro mixto del Consejo Superior de Investigaciones Científicas (CSIC) y de la Universitat de València (UV) referred to as **IFIC (CSIC-UV)**, represented by Dr. Llosa Gabriela,



The Université Libre de Bruxelles (referred to as **ULB**), represented by prof. Ioana Maris and prof. Juan Antonio Aguilar Sanchez.

Article 2: Purpose

- 2.1 This Agreement is not binding upon the parties, but it is recognised by the parties that adherence to its provisions is fundamental for the success of the SENSE Cooperation Programme.
- 2.2 This Agreement should lead to open access publications which will be approved by the Consortium in the terms laid down in the Consortium Agreement of SENSE as of the 14th of July 2016.
- 2.3 This MoU defines the terms of participation of the parties in the SENSE Programme for non-military purposes only.
- 2.4 Any in-kind contributions shall be deemed to have no financial value.
- 2.5 The partners of this Agreement communicate through a Forum (also called Technology Exchange Platform, TEP). The material in the Forum is based on open access, but registration is needed. Material of other nature has to be exchanged on other platforms and regulated under gentle-man-woman agreements.

Article 3: Governance

- 3.1 Each Institution is represented in the Research Board (RB) by the representatives listed in Article 1. Any representative can be substituted under request of the representative of the Institution. The RB can invite experts if required to its meetings.
- 3.2 At each meeting of the RB a Chairperson is nominated.
- 3.3 The RB meets under request of at least one party otherwise communicates through the SENSE Forum or by email.
- 3.4 The RB has authority of veto on publications proposed under this agreement if the majority (2/3 of the RB members) is against.
- 3.5 The RB discusses and signs Annexes and Amendments to this Agreement, for instance with Industrial Partners or non-disclosure agreements if required.



3.6 The RB is responsible of negotiating and resolving any default or disputes.

Article 4: Duration

4.1 This MoU will remain in force until/inclusive completion of the SENSE Programme on 31 August 2018, or the ceasing of its approval by the Research Board.

4.2 A party may withdraw from an experiment, and thereby from this MoU, by giving six months' written notice to the Chairperson of the Research Board.

ANNEX 1

Signatures of the SENSE-Cooperation Agreement

The representatives of parties declare that they understand the Agreement that governs the implementation of the SENSE-Cooperation program:

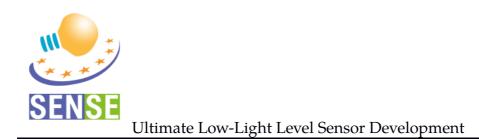
Dr. Thomas Berghöfer (DESY)



The representatives of parties declare that they understand the Agreement that governs the implementation of the SENSE-Cooperation program:

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Prof. Teresa Montaruli University of Geneva – DPNC



The representatives of parties declare that they understand the Agreement that governs the implementation of the SENSE-Cooperation program:

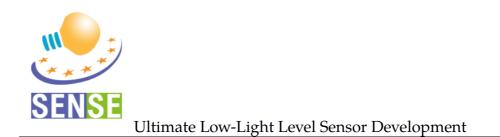
Dr. Razmik Mirzoyan MPI, Munich



The representatives of parties declare that they understand the Agreement that governs the implementation of the SENSE-Cooperation program:

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Dr. Andreas Haungs KIT, Karlsruhe

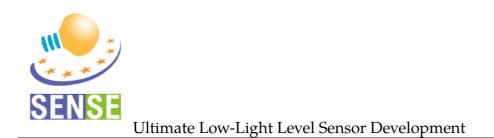


The representatives of parties declare that they understand the Agreement that governs the implementation of the SENSE-Cooperation program:

Other parties:

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Prof. Dr. Hans-Christian Schultz-Coulon Heidelberg University

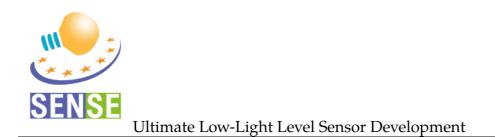


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Other parties:

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Dr. David Gascón-Fora Institute of Cosmos Sciences (ICCUB) University of Barcelona

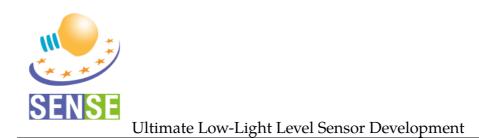


The representatives of parties declare that they understand the Agreement that governs the implementation of the SENSE-Cooperation program:

Other parties:

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Prof. Ramon Miquel Institut de Física d'Altes Energies (IFAE)



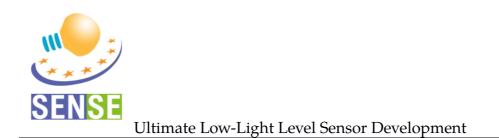
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Other Parties:

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Dr. Giovanni Bonanno

INAF – Catania

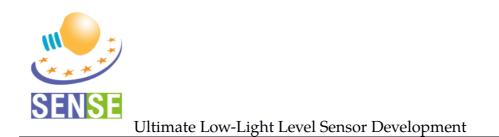


The representatives of parties declare that they understand the Agreement that governs the implementation of the SENSE-Cooperation program:

Other parties:

K.Z.

Prof. Hiroyasu Tajima Nagoya University

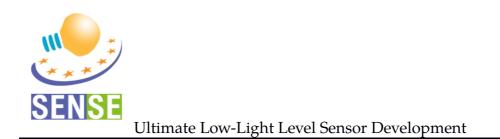


The representatives of parties declare that they understand the Agreement that governs the implementation of the SENSE-Cooperation program:

Other parties:

Dr. Llosa Gabriela IFIC (CSIC-UV)

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The representatives of parties declare that they understand the Agreement that governs the implementation of the SENSE-Cooperation program:

Other parties:

J. Marin Total

Prof. Ioana Maris ULB Prof. Juan Antonio Aguilar Sanchez



ANNEX 2

Measurements of Hexagonal LCT2 SiPM with and without light guide

The **UniGE** agrees to send a light guide (presented by Winston Cone) to the **INAF-CT** for measurement provided that these will be discussed with **UniGE** prior eventual publication. The eventual production and usage of light guides for other purposes will have to be approved by **UniGE**.

The representatives of parties declare that they understand the Agreement that governs the implementation of the SENSE-Cooperation program

UniGE:

Prof. Teresa Montaruli University of Geneva – DPNC

Teore Macherl.

INAF-CT:



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Dr. Giovanni Bonanno