



Ultimate

Low-Light

Level

Sensor

Development

SENSE

WP2 - R&D Cooperation between Academy and Industry

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WP2 Mission & Milestones



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SENSE can act as guarantor to overcome 'psychological' barriers and encourage cooperation between research institutes and these ones with industry.

The role of the Expert Group is fundamental for the development of the project.

Milestones:

- Agreement on R&D Cooperation (M12)
- Technology Forum (M32)
- Report on Technology Forum (M34)



The Expert Group



- It should advise on Cooperation Agreement and Roadmap
- It should be representative of the diversity of the different R&D/innovation areas SENSE should follow that **in the afternoon we should discuss.**
- For instance:
 - **Cryogenic Detectors** (PMT, SiPM, Bolometers, TES)
 - **Light Detectors** at about room temperature (PMT, Abalone, SiPM, Organic sensors), in various environments (deserts, high altitude, sea water, ...)
 - **Light Detectors suitable for space applications**
 - **Associated electronics**
 - ...
 - coatings, filters, light sources for calibrations (lasers, LEDs,...)
- What else ??? - **be propositive !**



The Expert group and the WP2 Working Group



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- Ground-based (about room temperature): CTA, LHAASO, Pierre Auger Observatory, Mu3e, KM3NeT, SHIP,...
- Cryogenic: CUORE, CUPID, XENON/DARWIN, GERDA, DarkSide, Neutrino Platform detectors
- Space: Gamma-400, Jem-EUSO, HERD



Tasks



- **Task 2.1: Agreement on R&D cooperation between research groups and industry for advancing LLL sensors**
 - Major research institutes working on R&D are identified (WP1 & WP2)
 - The involvement of research institutes to implement the roadmap should be defined (WP1)
 - A **Working Group with project and legal representatives** has to be formed to prepare an agreement for the implementation of the Roadmap (WP1) and R&D Cooperation;
 - The agreement of R&D cooperation should define the rules **dealing with Intellectual Property** related issues ;
 - The WG will be advised by the **SENSE Expert Group** and the legal experts of institutions.
 - A complete draft will have to be prepared by M12 and signed by Institutions.



The Agreement on R&D Cooperation



- An **agreement on R&D cooperation**, if well **conceived and correctly addressing IP**, is key to facilitate the process of :
 - Minimizing the duplication of efforts given the limited funds for innovation;
 - Encouraging the formation of **Consortia** between research Institutions and Industrial partners ;
 - Developing strategies for tagging IP issues (NDA, OpenHW, OpenAccess);
 - Obtaining funds for developments through applications to EU calls, ATTRACT calls, APPEC common calls;
 - Obtaining sponsoring from global organizations such as APPEC and the future ECFA Detector Panel;
 - Negotiation between research institutes and industries to optimize costs of developments capable of satisfying ‘common needs’;
 - **Offering a platform for testing devices;**
 - **Offering a platform for disseminating knowledge on developments.**
- **This afternoon we should discuss about such platforms and the formation of a WG.**



Missions & Tasks



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- **Task 2.2: Linking to other European initiatives**
- Provide information on the R&D activities followed by SENSE through the web page (WB3), phone calls of the working group and with EG;
- Liaise with the other initiatives :
 - ATTRACT;
 - Photonics 21;
 - T-Infrastructures for accelerators and superconducting magnets - <http://irfu.cea.fr/Phocea/Page/index.php?id=625>)

Reporting to APPPEC will be done regularly.



Missions & Tasks



- **Task 2.3: Fostering the exchange between academia and industry**
 - Three schemes: Exchange between Research Institutes, Research Institutes and industrial partners, and between industrial partners
- **Organization of the Technology Forum (100-120 people)**
 - Present major developments followed by SENSE and their achievements
 - Invite all stakeholders of other EU initiatives
 - Prepare the meeting with Industrial partners visiting their managements to maximize their interest in participating to the event.
 - Illustrate the roadmap can be shared and agree - Advise from expert group
- **Report on the Technology Forum**

