NEWS

Transfer of Knowledge

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WP-10 Co-Leaders

Transfer of Knowledge

One of the main target of the NEWS project is to promote the collaboration between researches and to facilitate the knowledge transfer between research institutions and companies;

For this reason, it is important to coordinate all the activities specifically aimed to this target: direct collaborations, training courses at companies, Schools, general training courses, …

These are exactly the main objectives of this Work Package.

Main Objectives of WP-10

Coordinate all the training activities:

- Maximize the transfer of knowledge between the participant projects;

- Increase the research quality and competitiveness of the participants institutions;

Provide trained personnel:

- Enhance personnel capabilities to be independent in the needed skills;

WP-10 Tasks

A list of specific tasks was identified, among the main actions of the project.

Some tasks are more specifically related to selected activities of the project, while others are more general and involve all the participants.

A Task Leader is foreseen for each task in the work-package.

The appointment of the TK will be done in the next future, taking into account the involvement in the related activities.

Tasks List and connections

- T10.1: Research-Industry transfer of knowledge;

- T10.2: GPD polarimeter for space applications;

- T10.3: Electronics for particle physics and space applications;

- T10.4: Electrochemical techniques;

- T10.5: High speed computing;

- T10.6: Training courses;

Task	Involved WPs
T10.1	WP2:WP8
T10.2	WP5
T10.3	WP5, WP6
T10.4	WP7
T10.5	WP2:WP8
T10.6	WP2:WP8

Details on tasks

T10.1 - Research-Industry Transfer of Knowledge:

Maximization of the Transfer of Knowledge among research institutions, international Laboratories, and companies which will be placed in contact with the most recent developments in science and acquire new competences.

T10.2 - GPD polarimeter for space applications:

INFN will transfer its long-standing expertise in integration and production of X-ray detectors for space applications. The GPD prototypes will be thoroughly tested and characterized at INFN and the final design implementation and will serve as a base for the definition of the assembly procedure of all flight models.

Details on tasks

T10.3 - Radiation hard electronic components for particle physics and space applications:

Transfer of expertise in the design of radiation hard electronic components for particle physics and space applications. This will be important for future involvement of companies in projects for the development of components for space or medical applications for in-vivo dosimetry at proton and ion beams. HZDR will provide training on the use of irradiation facilities.

T10.4 - State-of-the-art electrochemical techniques:

Transfer of knowledge between POLIMI, FNAL and FRD to optimize electrochemical techniques for Nb3Sn thin layer deposition on Nb and Cu surfaces to develop superconducting wires and radio-frequency cavities.

Details on tasks

T10.5 - High-Speed Computing:

Transfer of the US Laboratories Scientific Computing Division competencies in the field of high-speed computing, grid, cloud computing, to European research Institutions involved in the development of computing infrastructures and data analysis.

T10.6 - Training courses:

Organization of special training courses in connection with the General Meetings. Training Sessions will be devoted to trainings on specific advanced topics from research development in fundamental physics or from technological developments from companies.

Methodology

In order to fulfill the required tasks it is necessary:

a) Check the progress of cross activities between WPs;

b) Check the effectiveness of secondments in terms of cooperation and knowledge transfer;

c) Promote training events and schools, already foreseen by the participating institutions, among the project participants;

d) Organize special training courses: this is already foreseen in connection with General Meetings (T10.6);

Milestones and Deliverable

No milestone is foreseen for this WP;

A report on training is expected on M9 (D10.1);

In coincidence with the General Meetings, trainings for the project researchers will be organized;

There will be trainings delivered both by external experts and by the project researchers;

These will take place on M9, M21, M33, M45.

General Meeting Training

Tomorrow the first training session is planned.

By taking advantage from the Fermi-LAT Collaboration Meeting, lasting from 12 to 16 March, a full day training session was organized (Fermi-LAT Open Day);

The training session will last from 9:00 to 17:50;

Many contributions are foreseen, not only by the Fermi community;

All NEWS researchers are encouraged to participate.

General Meeting Training

In particular, updates from IceCube, Km3NET, Advanced Virgo and LIGO and CTA are foreseen, apart, of course, an update on the last Femi LAT-GBM results.

Moreover a number of seminars about the possible common science and future collaboration will be given, like the AGILE-LAT joint project, and the possible synergies with neutrinos and gravitational wave detectors.

Finally, some more technical seminars, about the detectors used in Fermi are planned.

INFO: Fermi-LAT Collaboration Meeting -
https://agenda.infn.it/conferenceDisplay.py?confId=14837

General Meeting Training

This training session is an opportunity for people involved in the above experiments to exchange ideas and suggestions on the new-borne multi-messenger astronomy, its methods and instruments.

Since it involves very different observatories, based on a large class of physical phenomena, often using different techniques and methods, such opportunities are very important to make people, with selected scientific and technical background, to share knowledge, competences, experimental and data analysis techniques that could be useful for a better understanding of current results and for future improvements of the next detectors.

Other Training Activities (T10.6)

In the framework of the Majorana Lectures, an annual series of lectures dedicated to selected arguments of profound general interest in theoretical high energy physics, a series of lectures were given on the topic:

The New Era of Gravitational-Wave Physics and Astrophysics

The lectures were organized by the Physics Dept of the Naples University and by the Naples INFN section on 22-23 January 2018

Ettore Majorana

Other Training Activities (T10.6)

The lectures were given by A. Buonanno (Max-Planck-Institut für Gravitationsphysik, Albert-Einstein-Institut):

- Modeling the Dynamics and Gravitational Radiation from Compact-Object Binaries

- Gravitational Wave Emission and their Multi-Messenger Signatures

- The Bright Future of Gravitational-Wave Astronomy

VII series of Majorana Lectures - https://agenda.infn.it/conferenceDisplay.py?confId=14532

Ettore Majorana

Other Training activities (T10.1)

A training activity is ongoing, mainly inside the WP3:

Gravitational wave detectors

aimed to reinforce the collaboration between European and Japanese groups involved in the development of new gravitational waves detectors.

In particular, there is a strong collaboration and training activity performed by UNIPG to NAOJ for the development of a sapphire cryogenic suspension for the KAGRA optics.

Other Training activities (T10.1)

The main actions are:

Measuring the stress distribution on some mechanical components (the blade springs);

Testing and organizing the HCB procedure for bonding the lateral sapphire "ears" to the experiment final optics;

Designing the whole mechanics and procedure for the final optics installation.

For these actions, 3 secondments were already done and others are planned (see H. Vocca past talks).

Research-Industry ToK (T10.3)

A physicist from CLEVER OPERATION will be seconded in INFN Pisa for T10.3 :

- INFN Pisa will start a design for a data digitalization system using components at the cutting edge of technology (PolarFireFPGA);

- The system will work in a harsh environment (rad hard, high magnetic field and vacuum);

- CLEVER will contribute to the design, gaining experience with this kind of technology, increasing its level of competitiveness;

Other tasks status

Except for T10.1, T10.3 and T10.6 there are no particular news from other tasks;

Probably this is connected with the late start of the secondments for tasks T10.2, T10.4 and T10.5 that are strongly related with the activities of most of the experimental work-packages.

It should be important to have task managers, for these selected tasks, that are well connected with the on-going activities of their own WP.

Preparation of the report (D10.1)

The report on the activities of the WP10 is expected at the end of this month;

It will be mainly focused on the training activities, but a short description of the other activities is also foreseen.

The report is almost completed and is now in reviewing phase;

I ask to MB and SB members to communicate if local training actions to add in the report.

The report will be delivered by the end of March.