

**MINUTES OF THE IN2P3 – COPIN
JOINT COMMITTEE MEETING
HELD ON JANUARY 25, 2016 AT IN2P3**

Purpose

The joint committee meeting between COPIN-Consortium Polonais des Institutions Nucléaires and IN2P3 – National institute of nuclear and particle physics took place on 25 of January 2016 at CNRS/IN2P3 headquarters in Paris, France.

Participants:

The participants of the COPIN– IN2P3 joint committee meeting were:

From COPIN:

M. JEZABEK,	
A. MAJ	Director of IFJ PAN
A. GOZDZ,	Chair of COPIN Consortium, IFJ PAN
J. JASTRZEBSKI,	UMCS Lublin
K. RUSEK,	HIL Warsaw
M. NIEWARA,	Director of SLCI, Warsaw
B. FORMAL (guest),	COPIN Secretary, IFJ PAN
J. STYCZEN (guest),	Scientific Coordinator of LEA COPIGAL, IFJ PAN
	IFJ PAN

From IN2P3:

R. PAIN,	Director of IN2P3
U. BASSLER,	Deputy Director of IN2P3
D.GUILLEMAUD-MUELLER,	Scientific Deputy Director of IN2P3
F. FARGET,	Scientific Deputy Director of IN2P3 for Nucl. Physics & Applications

M. LEWITOWICZ (guest),	Scientific coordinator of LEA COPIGAL
S. LECERF-ROSSARD,	Secretary COPIN/COPIGAL
B.THEOFILOPOULOU,	Legal counsel of IN2P3 (International Office)

Overview

R. PAIN opens the meeting and welcomes the COPIN delegation and suggests a brief round table so that all the participants can introduce themselves because of the recent changes in the management of IN2P3.

According to the new organization of IN2P3:

Reynald PAIN is the Director of IN2P3,

Ursula BASSLER is the Deputy Director,

Patrice VERDIER is Scientific Deputy Director for '**Particle Physics and Hadronic Physics**'

Berry GIEBELS is Scientific Deputy Director for '**Astroparticle and Cosmology**'

Fanny FARGET is Scientific Deputy Director for '**Nuclear Physics and Applications**'

Jean Luc BIARROTTE is Scientific Deputy Director for '**Accelerators and Technology**'

It is noted that the new Scientific Deputy Director for '**Computing and Data**' has not yet been appointed. His functions are actually being performed by Ursula BASSLER.

Then he asks an overview of the scientific activities of both sides and discusses the exchange programs for 2016.

COPIN presentation of activities and scientific objectives

A. MAJ indicated that COPIN is a consortium created in 2006 to effectively coordinate scientific cooperation of Polish Institutions in nuclear physics and its applications and particle physics with France, mainly with **Institut National de Physique Nucléaire et Physique des Particules (IN2P3), CNRS and CEA**. It grouped 9 institutions - 7 university units and 2 scientific institutes. In 2008, by decision of the Consortium Council, the cooperation was enlarged and included **ECT*** (European Center for Theoretical Studies in Nuclear Physics and Related areas) in Trento. Consortium has signed several cooperation agreements. In 2014 an agreement was signed with INFN in Italy.

He also indicated that funding procedure related to Grants allocated by Polish Ministries has been changed. COPIN asked for a prolongation of funding until March 2016 and it was accepted. The demand for the new Grant (for 3 years) was rejected for some formal reasons with a possibility to apply again in September 2016. However, it was specified that a certain amount of money has been left from the previous grant allocated to COPIN, therefore A. Mai will request additional prolongation of the grant until end of 2016.

COPIN's scientific activity is based in Nuclear Physics, Particle Physics and Applications. In Poland are two major laboratories: one is Heavy Ion Laboratory in Warsaw and the second one is Cyclotron Center Bronowice in Krakow. Recently a consortium of the National Laboratories has been accepted and recognized as Transnational Laboratory.

K. RUSEK made a brief presentation of laboratory in Warsaw. There are two cyclotrons in Warsaw: one is used for scientific research in nuclear physics, the other one is used for the radiopharmaceutical production. The isotopes production on both cyclotrons consumes 20% of total activity. They have also 30-40 experiments on nuclear physics per year. Now the large cyclotron is not working due to the upgrade that will be finished in May 2016.

K.RUSEK mentioned also about the XXXIV Mazurian Lakes Conference on Physics organized in September 2015 in Piaski, with the participation of ab. 140 scientists. The participation of many scientists from France was covered by the COPIN/COPIGAL Collaboration.

M. JEZABEK indicated that research done in the IFJ PAN Krakow concerns particle physics, nuclear physics, solid state physics, applications and theory. IFJ PAN is involved in 3 major experiments related to Particle Physics: ATLAS, LHCb and ALICE. IFJ PAN will soon get involved in the JUNO experiments, in neutrino studies in Japan and in FERMILAB experiments in USA as well as in the construction of mirrors for small telescopes of CTA project. COPIN is a member of Pierre Auger Collaboration and has also started to collaborate with the JINR in Dubna on the neutrino studies program. At CCB (Cyclotron Center Bronowice) there is since 4 years treatment of eye melanoma, while the whole body treatments with 2 gantries will start in 2016. The Construction Department of IFJ PAN is involved in leading projects in DESY (testing of cryomagnets from France) and the European Spallation Source.

A.MAJ mentioned about the involvement in basic research i.e. nuclear collective modes, gamma rays light reactions for nucleon system, the testing of PARIS detectors in GANIL. There is also the collaboration with Rzeszów University on fusion physics, especially on undergoing initiative to host the IFMIF/DONES facility in Rzeszow. A. Maj is chairing the Scientific Committee of the IFMIF project in Rzeszow, and a town meeting will be organized in Rzeszów on 14-15 April 2016. A. Maj recalled that the prestigious international conference COMEX5 was held in Krakow in September 2015, with large presence of French scientists

(covered by COPIN and COPIGAL projects). He remind also the regular Zakopane conference on Nuclear Physics will be held in Zakopane in August/September 2016.

A. GOZDZ indicated that low energy physics activities are taking place in 3 cities: Warsaw, Krakow and Lublin. Theoretical works are conducted on exotic nuclei on the edge of nuclear stability, nuclei far from stability, superheavy nuclei, hyperdeformation of fast rotating nuclei, dissipating phenomena, structure describing terms of stochastic effects, basing symmetries shapes of nuclei. Answering a question of R.PAIN he explained that in theoretical works are involved: 7 people in Warsaw University, 2 people in Krakow Institute and 7 people in UMCS Lublin.

A. GOZDZ mentioned also about the XXII Nuclear Physics Workshop in Kazimierz Dolny organized on 22-27 September 2015 – with the participation of a large group of theoretical physicists from France, supported by COPIN/COPIGAL collaboration.

A. MAJ said that the Polish Roadmap of the Scientific Infrastructure is under revision. FAIR receives about 2% of funding allocated by the Polish ministry but not SPIRAL2. Setting of new objectives in the Polish Roadmap will certainly be one of the major priorities.

Answering the questions of R.PAIN Polish participants explains that there is one nuclear energy reactor MARIA in Świerk (near Warsaw) producing the isotopes. As concerns cosmology there is a group of theorists in Lublin working on cosmology as well as a group of A.Zalewska at the IFJ PAN Kraków. R. PAIN mentioned that the COPIN/IN2P3 Collaboration should think about this kind of collaboration in cosmology, i.e. on educational level of young people (M. JEZABEK).

IN2P3 presentation of activities and scientific objectives

R.PAIN summarizes the priorities of IN2P3 as follows:

1/ In the domain of Nuclear Physics:

- GANIL and SPIRAL2 is the national priority project of the CNRS in terms of nuclear physics. In 2015 two very important agreements have been signed.

The first one concerns the financial contribution of Germany (FAIR/GSI GmbH) in the construction in Caen (France) of the facility, called "SPIRAL2" and based on a multi-beam drivers of world-record intensities in order to allow both ISOL and low-energy in-flight techniques to produce radioactive ion beam (RIB) to significantly extend the current possibilities of RIB physics and related applications. SPIRAL2 comprises two phases. The Phase 1 (Construction of LINAC and of experimental rooms for S³, NFS and DESIR) will be soon completed. The postponed Phase 2 (Construction du bâtiment de production des faisceaux radioactifs) has to be discussed again with the French Ministry.

The second agreement is related to the extension of the French economic interest group called 'GIE GANIL' (Grand Accélérateur National d'Ions Lourds) for 30 years with the possibility to include new scientific partners.

2/ In the domain of Particle Physics and Cosmology:

- LHC upgrades. The upgrades of Phase1 (ALICE and LHCb) are funded. For the phase2 upgrades, IN2P3 has applied for funding
- AEGIS
- LLST
- Euclid
- CTA

- As for Gamma Ray, the IN2P3 participates in the HESS experiment in Namibia and in the Auger observatory

3/ In neutrino physics:

- T2K in Japan
- Dooble Chooz (research on neutrino oscillations)
- Juno experiment in China
- Antares (underwater experiments) and for the future ORCA
- DUNE in Fermilab
- SUPER NEMO experiment in Modane

4/ in other interdisciplinary fields:

- Several projects related to energy, treatment cancer (joint projects with many medical institutes)
- In the field of nuclear energy, research has been made on new ways producing energy with reactors.

Concerning the gravitational Waves, IN2P3 participates to the Advanced Virgo experiment (Italy).

R. PAIN also indicated that Theory is of great importance for IN2P3 and that it is extremely important to develop theoretical work related to the experiments on which IN2P3 is already working.

Following a question made by M. MAJ concerning IN2P3's administrative rules to fund Theory, R. PAIN explained that, indeed, there is a Committee exterior to IN2P3 composed of theorists.

M. RUSEK asked if IN2P3 has connections with DUBNA institutions. R.PAIN indicated that IN2P3 maintains with JINR (Joint Institute for Nuclear Research) collaboration very similar to the existing one with Poland. However, IN2P3 is not fully member of JINR for diplomatic reasons.

R. PAIN concluded that it would be of great importance a potential participation of COPIN in GANIL project and proposed to set this potential collaboration at the agenda of governmental discussions, even if Roadmap of Poland is under revision. He also added that there might be different forms for COPIN to participate to GANIL, which do not necessarily imply huge financial investments. GANIL explores already new ways to involve Poland through European projects for example.

In so far, two factors are positive:

- The revision of Polish roadmap
- The fact that the new articles of association of GANIL foresee the possibility to include new scientific partners.

Discussion for the 2016 exchanges

After an item-by-item discussion, IN2P3 and COPIN agreed with the allocations as figuring in Excel Table attached. Have been attributed:

- a total of **305** days for COPIN researchers to be received in the IN2P3 laboratories;
- a total of **367** days for IN2P3 researchers to be received in the COPIN laboratories.

Next meeting

As for the next meeting in 2017, it is agreed that COPIN will host the meeting on the 20th of January 2017 in Cracow.