Report on the outcome of the EWIRA Workshop, the EWIRA foresight study and the common EWIRA Scientific Advisory Committee

(1) EWIRA Workshop "Status and Perspectives of the EWIRA Laboratories"

The final EWIRA workshop "Status and perspectives of the EWIRA laboratories" has been held on October 23rd – 25th, 2013 at IFIN-HH, Bucharest-Magurele, Romania. There were in total 45 participants, 15 from abroad and about 30 from the host institute. The program consisted of 28 talks and a round table discussion and covered the highlights of the different tasks of the EWIRA JRA, some key achievements of the users of the EWIRA laboratories, as well as the status and the perspectives for the EWIRA laboratories. The presentations can be found at the workshop website:

http://www.nipne.ro/indico/conferenceDisplay.py?confId=180

The most important results which were achieved within the EWIRA project were presented, namely:

- New plunger devices for stable and radioactive beams in different energy regimes and techniques for Doppler-shift measurements (C. Fransen, U. Koeln);
- How do we analyze data from low-energy Coulomb excitation experiments? – GOSIA, GOSIA2 and JACOB: Stable and exotic beam cases (K. Hadynska-Klek, U. Oslo);
- Step by step towards nuclear moment measurements with radioactive ion beams (G. Georgiev, CSNSM, Orsay);
- Observation of the decay of a new light neutral boson with a new compact e^+e^- (COPE) spectrometer (A. Krasznahorkay, MTA Atomki, Debrecen);
- Diamond detectors and ion-beam applications (M. Jaksic, RBI, Zagreb);
- Test of diamond detectors as ion-beam monitors (M. Jastrzab, IFJ PAN, Krakow);
- Conceptual design of a neutron generator target (J. Mrazek, NPI ASCR, Prague).

Key results, achieved by the users of the EWIRA laboratories were presented as follows:

- Highlights of the scientific program of the Heavy-Ion Laboratory of the University of Warsaw (J. Srebrny, HIL, U. Warsaw);
- Overview of the experiments performed with the ROSPHERE array (N. Marginean, IFIN-HH, Bucharest)
- RDDS lifetime measurements in neutron-deficient rare-earth nuclei in Bucharest and Warsaw (F. Bello Garotte, U. Oslo);

- Plunger measurements in the ROSPHERE experimental campaigns (C. Mihai, IFIN-HH, Bucharest);
- Polarized nuclei from dedicated laser spectroscopy (D.T. Yordanov, IPN, Orsay);
- Probing collectivity of atomic nuclei through lifetime measurements (S. Pascu, IFIN-HH, Bucharest);
- Lifetime measurements in A = 100 nuclei with the ROSPERE array (S. Kisyov, U. Sofia).

The status and the perspectives of the EWIRA laboratories were presented as follows:

- From SEENet to EWON and EWIRA and from LIBRA to COLIBRA and NUSTAR, S. Harissopulos (NCSR Demokritos, Athens)
- Experimental opportunities at the National Cyclotron Laboratory in Poland (B. Fornal, IFJ PAN, Krakow);
- A new European large-scale facility with unique combination of high-power laser and a brilliant gamma-beam (S. Gales, ELI-NP, Bucharest);
- Gamma-beam experiments at ELI-NP (C.A. Ur, ELI-NP, Bucharest);
- Center of accelerators and nuclear analytical methods at NPI ASCR (J. Dobes, NPI ASCR, Prague);
- RFI facility, future plans and options (M. Jaksic, RBI, Zagreb);
- Selected topics on research activities in Bulgaria (Ch. Stoyanov, INRNE, Sofia);
- Future plans of the Institute of Nuclear Physics of the Hungarian Academy of Sciences (A. Krasznahorkay, MTA Atomki, Debrecen)
- IFIN-HH: Short term perspective (L. Trache, IFIN-HH, Bucharest).

During the round table discussion it was pointed out by a number of participants that such meetings are very useful, because they provide a ground to discuss the problems, which are common for this class of laboratories and that they are very important to keep up to date with the developments going on at different facilities. . It was mentioned that in ENSAR2 a network of small facilities will be suggested.

(2) Working group meeting on the EWIRA Foresight study

During final EWIRA workshop “Status and perspectives of the EWIRA laboratories” a meeting of the working group on the EWIRA Foresight study took place on October 25th, 2013 at IFIN-HH, Bucharest-Magurele, Romania. The working group consisted of:

- Prof. Chavdar Stoyanov, INRNE – BAS, Sofia, Bulgaria
- Dr. Milko Jaksic, RBI, Zagreb, Croatia
- Prof. Jan Dobes, NPI ASCR, Prague, Czech Republic (chair)
- Dr. Sotirios Harissopulos, NCSR “Demokritos”, Athens, Greece
- Prof. Attila Krasznahorkay, MTA Atomki, Debrecen, Hungary
- Prof. Livius Trache, IFIN-HH, Bucharest, Romania
- Prof. Dimiter L. Balabanski, ELI-NP, Bucharest, Romania (EWIRA Task leader)
- Prof. Adam Maj, IFJ PAN, Krakow, Poland

- Dr. Pawel Napierkowski, HIL, Univ. Warsaw, Poland

Prof. Maj and Dr. Napierkowski were unable to attend the meeting and sent representatives. A questionnaire, for the preparation of the EWIRA subtask Foresight study of the strategic development of the EWIRA laboratories was discussed and approved:

- laboratory
- location, contact, web page
- facility (ies) – specification, parameters, beams available
- instrumentation, portfolio of services and methods
- research and applications focus
- funding model and situation
- access to facility
- PAC, SAC or similar body
- structure of users / number, home vs international /
- progress and development since the last mapping study (2008)
- upgrade and development plans, perspective
- any other information

At the workshop the status and the perspectives of all EWIRA laboratories were presented, see item (1).

It should be noted that the workshop and, respectively, the working group meeting were delayed, due to financial reasons, i.e. the transfer of funding for organization of the workshop from INRNE-BAS, Sofia, Bulgaria to IFIN-HH, Bucharest, Romania. For this reason some of the members of the working group and most of the members of the Scientific Advisory Committee could not attend the meeting. The materials of the Foresight Study were sent to them.

On October 25th, 2013 a round table discussion, related to the status and the perspectives of the EWIRA laboratories, was organized. It was noted that the integration of all EWIRA laboratories to the European research area is going on successfully. This process has stared already in the preparatory phase of EC FP6, the Central and South-eastern European communities, which at that time had organized themselves in two networks, called NEENet (North-eastern European Nuclear Physics Network) and SEENet (South-eastern European Nuclear Physics Network) were presented within the FP6 I3 EURONS project, as a networking activity EWON (East-West Outreach Nuclear Physics Network). The process continued through the EWIRA JRA activity within the FP7 I3 ENSAR project and few of the facilities in the EWIRA countries, namely the Heavy-Ion Laboratory of the University of Warsaw, the Cyclotron Laboratory of IFJ PAN, Krakow, the Tandem Laboratory of IFIN-HH and the ELI-NP facility in Bucharest, Romania, were identified as Research Infrastructures in the ENSAR2 project within Horizon 2020 EC program. It was noted that all EWIRA laboratories take part in a variety of EC networks and projects. Each of the laboratories has developed its specific specialization within the European Research area. New basic equipment has been installed or is under construction in the different laboratories, which is reflected in the

presented materials and description is included in the EWIRA Foresight study, which is an Annex to this delivery report.

(3) Scientific Advisory Committee

The Scientific Advisory Committee was appointed in April 2014, after consultations between the EWIRA member laboratories. It consists of:

- Prof. Muhsin Harakeh, KVI, Groningen, TheNetherlands
- Prof. Angela Bracco, Univ. Milano, Italy
- Prof. Christoph Scheidenberger, GSI, Darmstadt and Univ. Giessen, Germany
- Prof. Patrick H. Regan, Univ. Surrey, UK
- Dr. Faisal Azaiez, IPN, Orsay, France

The EWIRA Foresight study was submitted and reviewed by the SAC members.