

HORIZON 2020
RESEARCH INFRASTRUCTURES

H2020-INFRAIA-2014-2015

INFRAIA-1-2014-2015 INTEGRATING AND OPENING EXISTING NATIONAL AND REGIONAL RESEARCH
INFRASTRUCTURES OF EUROPEAN INTEREST



ENSAR2
EUROPEAN NUCLEAR SCIENCE AND APPLICATION RESEARCH 2

GRANT AGREEMENT NUMBER: 654002

DELIVERABLE D1.2 – FACILITY COORDINATION GROUP
PLAN FOR HARMONIZATION AND BEST PRACTICES IN ENSAR2 INFRASTRUCTURES

PROJECT AND DELIVERABLE INFORMATION SHEET

ENSAR2 Project Ref. N ^o	654002
Project Title	European Nuclear Science and Application Research 2
Project Web Site	http://www.ensarfp7.eu/
Deliverable ID	D1.2
Deliverable Nature	Report
Deliverable Level*	PU
Contractual Date of Delivery	February 28, 2018
Actual Date of Delivery	February 27, 2018
EC Project Officer	Mina KOLEVA

* The dissemination levels are indicated as follows: PU – Public, PP – Restricted to other participants (including the Commission Services), RE – Restricted to a group specified by the consortium (including the Commission Services). CO – Confidential, only for members of the consortium (including the Commission Services).

DOCUMENT CONTROL SHEET

Document	Title: Dissemination	
	ID: D1.2	
	Version: 1.1	
	Available at: http://www.ensarfp7.eu/	
	Software Tool: Microsoft Office Word 2007	
	File: ENSAR2_D1.2_v1	
Authorship	Written by:	Ketel TURZÓ, GANIL
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	Approved by:	

DOCUMENT STATUS SHEET

Version	Date	Status	Comments
0.0	26.01.2018	Reviewed by M.N. Harakeh	
1.0	14.02.2018	Reviewed by FCG members	
1.1	27.02.2018	Submitted	

Document Keywords

Keywords	ENSAR2, harmonisation, research infrastructures
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This deliverable has been prepared by Work Package 1 (FISCO2 - Financial and Scientific Organisation 2) of the Project in accordance with the Consortium Agreement and the Grant Agreement n°654002. It solely reflects the opinion of the parties to such agreements on a collective basis in the context of the Project and to the extent foreseen in such agreements.

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LIST OF ACRONYMS AND ABBREVIATIONS

GANIL	Grand Accélérateur National d'Ions Lourds, France
FCG	Facility Coordination Group
PAC	Programme Advisory Committee
RI	Research Infrastructure
TAC	Technical Advisory Committee

EXECUTIVE SUMMARY

ENSAR2 Research Infrastructures (RIs) are the core of this integrating activity. They provide access to a large and diverse user community. Their organisation and their selection procedure for access present similarities and differences.

The Facility Coordination Group (FCG) set-up through ENSAR2 helps these RIs and their users to identify best practices and future actions to harmonise procedures at European level.

INTRODUCTION

ENSAR2 is the integrating activity for European nuclear scientists who are performing research in three of the major subfields defined by NuPECC: Nuclear Structure and Dynamics, Nuclear Astrophysics and Nuclear Physics Tools and Applications. Its core aim is to provide access to nine of the complementary world-class large-scale facilities: GANIL (F), GSI (D), joint LNL-LNS (I), JYFL (FI), KVI-CART (NL), CERN-ISOLDE (CH), ALTO (F), joint IFIN-HH/ELI-NP (RO) and NLC (PL). These facilities provide stable and radioactive ion beams of excellent qualities ranging in energies from tens of keV/u to a few GeV/u and intense photon beams up to 20 MeV energy. The stable-ion beams range from protons to uranium. Radioactive ion beams are produced using the two complementary methods of in-flight fragmentation (IFF) and isotope separation on-line (ISOL), so that several hundred isotopes are available for the users. The high-intensity, high-energy photon beams are produced by laser back-scattering from high-energy electron beams. In addition, the infrastructure ECT* (I) will provide a unique place for meetings, seminars and workshops to the community.

These infrastructures will be offering access to a very large, wide and diverse user community. The size of this community of physicists in nuclear structure, nuclear astrophysics, and applications of nuclear science in addition to the staff that is involved in accelerator and detector development and in running the facilities ranges between 2700-3000 scientists and highly qualified engineers according to a survey by NuPECC (<http://www.nupecc.org/pub/>) and a more recent one by NuPNET (Nuclear Physics ERA-NET), which was published as a brochure. The facilities will also provide an increased amount of beam time for applications of nuclear techniques.

In such a community, the question of harmonisation of access arises quickly as often the same research team will use different infrastructures according to the needs of their scientific programme. In order to answer this question, a Facility Coordination Group (FCG) was set up through ENSAR2, consisting of the directors of the infrastructures providing transnational access, the chairpersons of the local Programme Advisory Committees (PACs), the representative of the ENSAF network of small-scale facilities and the coordinator of ENSAR2. This FCG activates and promotes access to the joint facilities. Furthermore, the FCG meets once a year to review the working procedures of the various PACs and will participate in the definition and the improvement of the criteria for access. Beyond the confidentiality aspect of the proposals submitted to the various PACs, which has to be respected, the FCG gives advice on the strategic coordination of the scientific programmes and proposals after their evaluation by the local PACs. Based on the reports of the local PAC chairs, the FCG discusses and makes recommendations on common policies for the proposed experimental programmes, for allocation of the appropriate infrastructure, for allocation of financial support for transnational access in the framework of ENSAR2, and for the eligibility criteria applied and for exchange of best practices. Therefore, the mission of this overarching Facility Coordination Group is the coordination and harmonisation between the ENSAR2 infrastructures and also their PACs, which are activities conducted very much in the spirit of the 'Integrating activity' programme through the integration of transnational access.

In this vein, the PAC chairs present during the FCG meetings RI practices, evolutions, and results. Beyond news exchange, the presentations highlight specificities of each RI. The present report lists current similarities, differences, and harmonisation actions between ENSAR2 Research Infrastructures, and proposes directions for best practices.

SECTION 1 – SIMILARITIES

1.1. User community

The ENSAR2 Research Infrastructures (RIs) are used by various communities working mainly on nuclear physics, atomic physics and material physics projects. The RIs proposing ion beams collaborate also with industry.

1.2. Selection process

The academic users can access the ENSAR2 RIs following the same procedure: they have to propose an experiment or a workshop project through an application form and this proposal is reviewed by a panel of international experts before selection.

Each single RI has such a panel, often called Programme Advisory Committee (PAC). The PAC will meet at least once per year. Its members will first review the proposal submitted. Secondly, in most cases, the spokesperson of the team proposing the scientific project presents orally the request for access. The PAC members discuss the selection of projects during a closed session.

The selection criteria are the same for all RIs: the scientific merit and the feasibility.

The industrial users do not propose their projects to PACs.

1.3. RI developments

In order to maintain their excellence, all experimental RIs need upgrades of their accelerators and other facilities. In their constant development, it is also necessary to build new facilities.

The consequences are to provide a variability of the services for users, but also to face possible shutdowns during the technical upgrades. The teams managing RIs have developed communication exchanges with users in order to optimise their services, in particular, as to what the RIs are able to provide. These exchanges are communicated during meetings, conferences, through web sites and e-mails.

SECTION 2 – DIFFERENCES

2.1. Services to users

Each ENSAR2 RI provides different beams, energies, and equipment to the scientific community. The beam time is decided locally according to the constraints specific to the RIs.

2.2. Selection process

The application form for project proposal is different for each RI.

According to each RI, the PAC assigns different priorities for the experimental proposals during the selection procedure. Some PACs will look for consensus during the selection procedure, while other PACs prefer that their members rank the proposals with grades after which priorities are set by averaging the grades.

In some RIs, it is requested that the proposal is also analysed by a Technical Advisory Committee (TAC) in order to guarantee the feasibility of the project.

In some RIs, different PACs exist according to the scientific topic. For instance, GSI has a general PAC (G PAC). This General PAC also acts as an umbrella for the different sub-PACs like:

- Biophysics & Radio-Biology Programme Advisory Committee (Bio-PAC) - evaluates experiment proposals in the areas of biophysics and radio-biology.
- Materials Research Programme Advisory Committee (Mat-PAC) - evaluates experiment proposals in the area of materials research.
- PHELIX Committee (former PPAC) - evaluates experiment proposals concerning plasma physics and Petawatt High-Energy Laser for Heavy-Ion Experiments (PHELIX).

SECTION 3 – CURRENT AND FUTURE HARMONISATION ACTIONS

As the same community is using the ENSAR2 RIs, it is necessary to develop common tools to help users in the development of their project.

In particular, a web site was developed, during the FP7 ENSAR project, to propose a chart of stable beams available in Europe: <http://u.ganil-spiral2.eu/chart-ecos/>. It provides technical features of each stable beam currently produced in heavy-ion accelerators. This information is crucial to propose new experiments. Following this initiative, a task of the ENSAR2 project is dedicated to the development of a similar chart for radioactive beams.

Among best practices in ENSAR2 RIs, the FCG has identified the first future actions in the matter of harmonisation:

- A unique application form for all RIs.
- Involvement of local technical advisory committees in the procedure for pre-evaluation of proposals.
- Define a unique way to choose the proposals: consensus or grades.
- A central database of all approved experiments that PACs could consult before selecting new experiments.

CONCLUSION

ENSAR2 RIs present many similarities but also differences in their selection of project proposals. Thanks to FCG discussions, first actions in favour of harmonisation and optimisation of these practices are foreseen. They aim to ease the evaluation procedure for users and PAC members.