HORIZON 2020

Research Infrastructures

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INDIVIDUAL SUPPORT TO ESFRI AND OTHER WORLD-CLASS RESEARCH INFRASTRUCTURES

IDEAAL

International Development of gAnil-spirAL2

Grant Agreement Number: 730989

D1.2 - Report on technical and financial activities of the project since the RP1

Version: V.3
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LIST OF ACRONYMS AND ABBREVIATIONS

GANIL	Grand Accélérateur National d'Ions Lourds
MoU	Memorandum of Understanding

DISCLAIMER

This deliverable has been prepared by Work Package 1 (WP Management) of the Project in accordance with the Consortium Agreement and the Grant Agreement n°730989. 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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Technical Report Part A

1 SUMMARY FOR PUBLICATION

The main objective of the IDEAAL Project is the exploration of all opportunities for sustainable operation and development of Grand Accélérateur National d'Ions Lourds (GANIL) infrastructure, with its new ESFRI roadmap SPIRAL2 facility. The collaborative work of the IDEAAL partners allowed to elaborate a clear path towards internationalization of GANIL-SPIRAL2. Discussions and negotiations with several candidate countries for the Scientific Partnership were advanced to the point where the first formal agreements are fully prepared for signatures.

A complete procedure for the elaboration and recognition of the in-kind contributions of the future Scientific Partners was elaborated and successfully tested with one of the partners.

In the framework of the IDEAAL project a GANIL User Group and its GANIL User Executive Committee (GUEC) were formally established and begun its activities. Today, the GANIL User Group counts 900 registered users from academia and industry.

A future search for additional funds through private fundraising necessary for new projects of the facility was prepared and evaluated by external experts.

A new code of conduct and access policy for GANIL users is under preparation in order to fully clarify rights and obligations of the facility and of its users. A complete Data Management Plan (DMP) for GANIL was prepared, discussed with GUEC and approved by the GANIL management. The DMP will be fully deployed from the beginning of the next experimental campaign in 2021.

An innovative tool for calculations of operation cost of the facility was elaborated. It allows to provide to funding agencies and future partners a detailed cost analysis which considers the full cost of production of beam and use of different experimental devices.

IDEAAL helped to analyze and improve an internal organization of the infrastructure with its new administrative structure.

Improving innovation potential and industrial applications of the facility is the third objective of IDEAAL. New opportunities for transnational access for industrial users were opened. The support was granted to industrial partner and one of the selected experiments was performed. A mapping of existing potential industrial applications at GANIL was accomplished and identified new contacts with industries were taken. A contract for the transfer of know-how for the beam profile monitors was signed.

All above mentioned actions were accompanied by a targeted communication strategy towards future Scientific Partners, users and general public. Several international conferences emphasizing scientific opportunities at GANIL-SPIRAL2 were organized, a new GANIL electronic newsletters and a new poster for the laboratory were produced, a harmonization of GANIL graphic identity was deployed, posters and flyers for scientific and industrial users were created and the GANIL brochure for the layman was updated.

1.1 *Summary of the context and overall objectives of the project*

The objectives of the IDEAAL Project are to explore all possibilities to develop GANIL (Grand Accélérateur National d'Ions Lourds) infrastructure, with its new SPIRAL2 facility, in order to ensure its long-term sustainability.

GANIL is one of the premiere European heavy-ion beam research institutes and contributes to the radiance of European Science. The SPIRAL2 ESFRI roadmap facility, currently under installation and commissioning in its first phase, will extend the GANIL opportunities to heavier radioactive beams, and/or with much higher intensities of both stable and radioactive ions. Since January 1st, 2016, the GANIL legal status allows associated scientific partnerships with national and international collaborating institutions.

The first objective of the IDEAAL Project is to expand the GANIL membership to academic national and international institutions, industries and private sponsors. This development goes hand-in-hand with a reinforcement of the involvement of the current institutional funding partners and academic users of GANIL facilities in the decision-making processes of the infrastructure.

The second objective of IDEAAL is to further improve access to the infrastructure on several aspects including support to the users, access policy, assessment on cost of access to facilities and to data, improvement of performance capabilities as well as exchange and training of personnel with associated partners.

The third objective of IDEAAL is an improving innovation potential and industrial applications of the facility. Access provision dedicated to industrial users will help to increase their interest and trust in GANIL. In parallel, new topics for industrial applications and technology transfer have to be being clearly identified.

These three above mentioned objectives must be supported by a strong communication policy towards members and funders, users and the layman.

1.2 *Work performed from the beginning of the project to the end of the period covered by the report and main results achieved so far*

One of the main achievements of the IDEAAL project is the preparation and approval by the board of directors of GANIL (CODIR) in May 2019 of a document untitled "General provisions for the status of Scientific Partner at GANIL-SPIRAL2". This document gives the definition of the scientific partnership, the ways to conclude partnerships, the status of scientific partner, and the rights and duties of the partners. On the basis of this document, partnerships have been negotiated with collaborators. The contacts were made with collaborators from Poland, Czech Republic, Belgium, Romania, Spain and Germany. The status of discussions/negotiations with different partners is the following:

- Poland: the COPIN consortium signed with GANIL-SPIRAL2 a Memorandum of Understanding on April 2nd 2020, in the expectation for COPIN to become a transitional scientific partner.
- Czech Republic: NPI and GANIL-SPIRAL2 have reached an agreement on a partnership, which would grant to NPI the status of Scientific partner at GANIL-SPIRAL2. The agreement is currently under approval process and is expected to be signed in late 2020/beginning of 2021.

In addition, a subcontracting of Philanthropia company, expert in private fundraising was accomplished. The phase 1 of the contract provided GANIL with all the elements needed to start the fundraising campaign, in particular, the leaflet filled with arguments to highlight GANIL, its offer (i.e. three core projects) and vision, message to donors, and motivation

towards the patronage. Potential donors selected from GANIL's network led to a provisional collection plan and a business model preparation. As the last element, phase 1 facilitated the establishment of the sponsorship campaign strategy with specific actions selected for GANIL. In phase 2, all these documents were valided by the fundraising experts and its additional improvements were introduced.

The evaluation of in-kind contributions was explored during a dedicated international workshop organized at GANIL and at the Big Science Business Forum (BSBF) in Copenhagen. MS2 and MS3 (reports on cash, in-kind and like-kind exchange contributions for target partners and on the already existing contributions from the partner laboratories) were reached in time. The elaborated methodology for the in-kind contributions (D2.3: Procedure of evaluation of in-kind contributions and their monitoring) was applied in practice for all in-kind contributions to the SPIRAL2 facility of NPI (Czech Republic).

A new organization of the GANIL-SPIRAL2 users was accomplished and a corresponding user database was created. MS4 (working out a structure of the General GANIL-SPIRAL2 Collaboration) and MS5 (Database on research groups and equipment) were completed in time. The ensemble of GANIL-SPIRAL2 collaborations formed GANIL Users Group, and the membership in it is open upon the declaration by any scientists interested in GANIL- SPIRAL2 program. The User Group elected/appointed the GANIL User Executive Committee (GUEC). Currently, the new data base of the GANIL users elaborated thanks to the IDEAAL project contains 900 persons.

The WP3 team worked towards this objective, first preparing a code of conduct for users. Its preparatory study is now completed. The update of GANIL access policy is in progress, as well as the creation of a new user office and of a customer request procedure. MS6 (Ethical code of conduct of users) is delayed due to the precocious maternity leave of the person in charge of this task.

In addition, the analysis of the costs for serving the users is now completed. The corresponding powerful tool is available for internal users (D3.3). A Web interface for the tool is under development.

The audit and study for the data management at GANIL are now completed. MS7 (report on data management strategy) was reached in due time. The editorial work on the data policy and data management plans was accomplished on time (D3.4).

The inventory of technical and administrative practices (MS9 - Analysis of existing technical and administrative organization) at GANIL is done. The modification of GANIL internal organization is currently in progress. The review of existing provisions and of required competences at GANIL for the coming years is done.

The WP4 team prepared transnational access for industrial users. The international selection panel on transnational access is now settled and the two calls for experimental proposals were launched. The beam time was provided to one of the selected experiments.

In parallel, the mapping of existing potential industrial applications at GANIL is done and new contacts were created with industries in this aim. The contract for the transfer of know-how for the beam profile monitors is signed. The corresponding R&D collaboration contract was signed in 2020. (MS11 Beam profile monitors: License contract and R&D collaboration contract with the company)

In terms of innovation potential, several application domains have been identified and studied.

The WP5 team performed a harmonization of GANIL graphic identity, strengthen the communication towards members and funding partners through the laboratory highlights, involvement in a local communication network, a new GANIL electronic newsletters and a new poster for the laboratory.

In addition, for the benefit of GANIL users, several actions were accomplished – an audit on GANIL users' website prior to its update, a new GANIL Web site on-line, a renewal of the internal broadcast system, a new GANIL user community portal, the organization of EURORIB'18 conference of Colloque GANIL 2017 and 2019, of the France-China symposium, and recently of the most important international conference on accelerators IPAC'20 (one of the first big on-line conferences in May 2020).

Posters and flyers for scientific and industrial users were created. For the layman, the GANIL brochure was updated. GANIL personnel participated actively in French science festival and general public lectures.

1.3 *Progress beyond the state of the art, expected results until the end of the project and potential impacts (including the socio-economic impact and the wider societal implications of the project so far)*

Fulfilling the four objectives of IDEAAL project will allow a well-organized, highly efficient and sustainable development of the current GANIL structure, transforming existing collaborations into strong partnerships and creating new cooperation opportunities. It is expected that by the end of the project GANIL-SPIRAL2 will sign first Scientific Partnership Agreement and will open a way for the full internationalization of the facility.

With SPIRAL2 accelerator, the leadership of the European Research Area in the global research environment will be strengthened through the uniqueness of the beams, the state-of-the-art scientific equipment and high-quality staff. GANIL will offer new opportunities to address societal challenges related in particular to energy and medicine especially through its new very intense light-ion and neutron beams.

With its scientific and technological expertise, GANIL acts as a relay enhancing the transfer of its employee skills to industrial companies and their applications.

GANIL with SPIRAL2 will attract additional researchers from all over the world, for the uniqueness of its facilities and for the very active collaborations with academia and industrial companies developed during the IDEAAL project. The users of GANIL will have easier and better organized access to the facility and will be able to contribute through the User Group to its further optimization and development.

2 DELIVERABLES

Del. No	Deliverable name	WP No	Lead Beneficiary	Type	Dissemination Level	Delivery date from Annex 1	Actual delivery date	Status
D1.1	Plan for dissemination and exploitation of results	WP1	GANIL	Report	Public	30 Jun 2017	30 Jun 2017	Approved
D1.2	Report on technical and financial activities of the project since the RP1.	WP1	GANIL	Report	Public	30 Nov 2020		Pending
D2.1	Draft collaboration agreements negotiated	WP2	CNRS	Report	Public	30 Sep 2020	29 Sep 2020	Submitted

	with academic partners							
D2.2	Report on strategic and legal studies for private funding	WP2	CNRS	Report	Public	31 Mar 2021		Pending
D2.3	Procedure of evaluation of in-kind contributions and their monitoring	WP2	CNRS	Report	Public	31 Dec 2018	20 Dec 2018	Submitted
D2.4	Report on new organization involving users	WP2	CNRS	Report	Public	30 Jun 2019	08 Jul 2019	Submitted
D3.1	Access policy rules for academic and industrial users of GANIL	WP3	GANIL	Report	Public	31 Mar 2021		Pending
D3.2	Definition of a new User Office	WP3	GANIL	Other	Public	31 Mar 2021		Pending
D3.3	Tool for operation costs modeling according to beam time and experiments scenarios	WP3	GANIL	Other	Public	30 Sep 2020	30 Sep 2020	Submitted
D3.4	Data Management Plan	WP3	GANIL	Report	Public	30 Sep 2020	30 Sep 2020	Submitted
D3.5	Report on the new organisation of GANIL	WP3	GANIL	Report	Public	31 Mar 2021		Pending
D3.6	Complete mobility agreement ready for signature	WP3	GANIL	Report	Public	31 Mar 2021		Pending
D4.1	Business plan for the industrial application activity at GANIL	WP4	GANIL	Report	Public	31 Mar 2021		Pending
D4.2	Report on the technology transfers developed in the framework of the project	WP4	GANIL	Report	Public	31 Mar 2021		Pending
D4.3	Report on the increase of innovation potential study	WP4	GANIL	Report	Public	31 Mar 2021		Pending
D5.1	Information tools for industrial users	WP5	GANIL	Websites, patents filling, etc.	Public	31 Dec 2018	20 Dec 2018	Submitted
D5.2	Report on annual international conferences for GANIL users	WP5	GANIL	Report	Public	31 Mar 2021		Pending
D5.3	New web site and newsletters for academic users	WP5	GANIL	Websites, patents filling, etc.	Public	31 Dec 2018	20 Dec 2018	Submitted
D5.4	Online and printed communication tools for dissemination of information to the general public	WP5	GANIL	Websites, patents filling, etc.	Public	31 Mar 2021		Pending
D5.5	Press kit and online contents for journalists	WP5	GANIL	Websites, patents filling, etc.	Public	30 Jun 2019	08 Jul 2019	Submitted

3 MILESTONES

Milest. no.	Milestone title	Related WP(s) no.	Lead beneficiary	Delivery date from Annex 1	Means of verification	Achieved	If not achieved Forecast achievement date	Comments
MS1	Template of collaboration agreement with academic partners	WP2	CNRS	30/06/2017	Template of collaboration agreement with academic partners	**Yes**		
MS2	Report on cash, in-kind and like-kind exchange contributions for target partners	WP2	CNRS	30/06/2018	Report on cash, in-kind and like-kind exchange contributions for target partners	**Yes**		

MS3	Report of the already existing contributions from the partner laboratories	WP2	CNRS	31/03/2018	Report of the already existing contributions from the partner laboratories	**Yes**		
MS4	Kick-off meeting of the General GANIL-SPIRAL2 Collaboration	WP2	CNRS	31/12/2017	Kick-off meeting of the General GANIL-SPIRAL2 Collaboration	**Yes**		
MS5	Database on research groups and equipment of GANIL-SPIRAL2	WP2	CNRS	30/06/2018	Database on research groups and equipment of GANIL-SPIRAL2	**Yes**		
MS6	Ethical code of conduct for users	WP3	GANIL	30/06/2018	Ethical code of conduct for users	**Yes**	**29/11/2018**	**The milestone MS6 was delayed until December 1st, 2018, due to the early maternity leave of the person in charge of this report.**
MS7	Report on data management strategy	WP3	GANIL	31/12/2017	Report on data management strategy	**Yes**		
MS8	Assessment of data storage needs at GANIL	WP3	GANIL	31/12/2018	Assessment of data storage needs at GANIL	**Yes**		
MS9	Analysis of existing technical and administrative organisation	WP3	GANIL	30/06/2017	Analysis of existing technical and administrative organisation	**Yes**		
MS10	First version of mobility agreement	WP3	GANIL	31/12/2018	First version of mobility agreement	**Yes**		
MS11	Beam profile monitors: Licence contract and R&D collaboration contract with the company	WP4	GANIL	30/06/2017	Beam profile monitors: Licence contract and R&D collaboration contract with the company	**Yes**	**10/02/2020**	**The milestone MS11 corresponds to the signature of the contract for the transfer of know-how concerning the production of beam profile monitors developed at GANIL.The contract started to be discussed in summer 2016 with the industrial company and with GANIL direction, and is associated to some negotiation conditions. The new GANIL direction (change in January 2017) has decided to change the negotiation conditions, thus new discussions with the industrial company are in progress. This contract has to be signed by both GANIL supervisory authorities, CEA and CNRS. The contract has been validated by CEA and CNRS from the legal point view. So when the new negotiations conditions will be approved both by GANIL direction and the industrial company, the transfer contract will be launched in the final signature circuit.**

MS12	Report on the methodology for the technology transfer for radioisotope production	WP4	GANIL	30/06/2019	Report on the methodology for the technology transfer for radioisotope production	**Yes**		

4 CRITICAL IMPLEMENTATION RISKS AND MITIGATION ACTIONS

Foreseen Risks

Risk Number	Description of Risk	Work Packages Concerned	Proposed risk-mitigation measures
1	Financial	WP1, WP2, WP3, WP4, WP5	Planning and regular monitoring of spending by the coordinator and steering committee
2	Human	WP1, WP2, WP3, WP4, WP5	Identify a deputy to the work package leader
3	Human: lack of personnel per task	WP1, WP2, WP3, WP4, WP5	EU funding for personnel is supported where possible with realistic own contributions. Overall personnel is closely monitored within the WP and by each task leader.
4	Human: inability to find proper candidates for positions	WP1, WP2, WP3, WP4, WP5	The call for positions will be communicated as soon as possible and if necessary on an international level.
5	Non comprehensive view on the data of each partner	WP1	Creation of an IDEAAL web site + a biannual meeting with WP leaders.
6	Technical or legal issues slowing down negotiations with partners	WP2	Negotiations have to be prepared from the beginning of the project. Negotiations have to start as soon as possible.
7	Non necessity to improve the involvement of existing fruitful collaborations	WP2	A compact and rather detailed list of attractive propositions to each partner is helpful to gain on reliability (“bottom up” approach)
8	Difficulty to create Euro- Group	WP2	Information to future members at the very beginning of the project.
9	Scheduling issue due to unavailability of users and difficulties to get interviews and answers	WP3	Contact users for interviews as soon as possible Recruit the DMP interviewer/writer as soon as possible
10	Process risk due to lack of responses from users	WP3	Foresee to contact enough users to have sufficient answers (half expected) Use online tools to contact users (Video, online meeting, web, etc)
11	Inadequacy of contracts for staff exchanges	WP3	Consult other European infrastructure toget existing models of contracts and exchanges schemes

12	Inadequacy on training schemes between different countries	WP3	Consult other European infrastructures to get existing models of training schemes
13	Difficulty to find users for access pilots	WP4	Advertise early and widely the new opportunity for experiments at SPIRAL2.
14	Technical risk on accelerator to deliver beam	WP4	Delay experiment in the second half and adapt the beam schedule.
15	Technology transfers: unexpected delay in the negotiations	WP4	Start the technology transfer at the very beginning of the project.
16	Difficulty to organise the travelling exhibition on partner premises	WP5	Inform the partners about this action already during the preparation of the exhibition in order to adapt its configuration.

Unforeseen Risks

Risk Number	Description of Risk	Work Packages Concerned	Proposed risk-mitigation measures
17	COVID-19 Pandemic	WP1 to WP5	Extension of the project, on-line project meetings

States of the Play for Risk Mitigation

Risk Number	Period	Did you apply risk mitigation measures?	Did your risk materialise?	Comments
3	2019	YES	YES	The Project deputy coordinator being also the project manager left project in 2019. New Project deputy coordinator and manager was appointed. This required a re-organisation of the project management.
3	2019-2020	YES	YES	The WP5 leader hired on temporary position left project earlier than foreseen. New WP leader could be found and was appointed but only few months later.

17	2020	YES	YES	Second important wave of pandemic in Europe was not foreseen. The mitigation measures were not sufficient to avoid delays in all project WP.

5 DISSEMINATION AND COMMUNICATION ACTIVITIES

Type of dissemination and communication activities	Number
Events • « A la recherche de l'ultime atome », November 2019, University of Caen, France • "Nuit de l'antimatière", March 2019, University of Caen, France • « Il pleut .... des particules ! Le rayonnement cosmique », October 2018, Library of Caen, France • Seminar in an high school in Milano, April 2018, CLIL-EMILE European program, Italy • Seminar "From nuclei to stars", February 2018, Hungarian Institute, Paris, France • « La lumière à travers les siècles » et « Des rayons X au GANIL, une petite histoire de la physique nucléaire », 2017 et 2018, Université Interage de Normandie, France • Film-debate evening « Particle fever », March 2017, University of Caen, France • Participation in French science festival in 2017 • GANIL open days • Participation in French science festival *Exhibitions / Arts* • Artist residency (2019) • Exhibition posters (presentation of one of the poster by the KU Leuven Institute ate the Big Science event) *Documents and communication tools* • Brochure for the layman (distributed during mediation events, GANIL visits and conferences) • Activity booklet for children • Posters, roll-up and a flyer presenting the general valorisation activities used during industrial exhibitions (RADECS conference (http://radecs2017.com/Radecs2017/index.php October, 2-6 / In 2018, new posters were created for World Nuclear Exhibition (WNE - https://www.world-nuclear-exhibition.com/fr/Accueil/), RADECS conference (http://radecs2018.org/) and *Rendez-vous Carnot* conference (https://www.rdv-carnot.com/). • A brochure for GANIL new scientific partnerships (distributed during negotiations with new potential partners) with flyers inside • A press kit *Multimedia tools* • Website : https://www.ganil-spiral2.eu/ • 2Touch screens (used during GANIL visits and off-site demonstrations) Virtual visit *Contributions in conferences and workshops:* 6 scientific events (listed in the WP5 reports below) *Electronic newsletter*	
Total funding amount	148 763€

Type of audience reached In the context of all dissemination & communication activities ('multiple choices' is possible)	Estimated Number of persons reached
Events Dedicated to the public (mainly families) discovery of GANIL activities thanks to scientific mediation workshops. And opportunity to meet GANIL staff and discuss with them *Exhibitions / Arts* Dedicated to the general public *Documents and communication tools* • A presentation brochure of GANIL for the layman (distributed during scientific mediation events (Open days, French Science festival, visits of the laboratory…) • Activity booklet for children (distributed to children 6 - 10 years old during GANIL open days) • Posters, roll-up and a for industrial users presenting the general valorization activities used during industrial exhibitions • A brochure for GANIL new scientific partnerships (distributed to foreign funding agencies, foreign laboratories…) within the framework of the GANIL Internationalisation • A press kit (for the local press, national journalists *Multimedia tools* For every GANIL users *Contributions in conferences and workshops* *Dedicated to researchers and the scientific community* *Electronic newsletter* Sent to the GANIL community (researchers, engineers and technicians) and funding partners:	

6 GENDER

Gender of researchers and other workforce[1] involved in the project

– Figures from RP1

Beneficiaries	Number Women researchers2 (all levels, incl. postdocs and PhD students)	Number Men researchers2 (all levels, incl. postdocs and PhD students)	Number Women in the workforce other than researchers	Number Men in the workforce other than researchers
GANIL	0	1	8	6
CNRS	1	1	1	0
CEA	2	2	1	1
GSI	0	1	1	0
IFJ PAN	1	3	0	0
Nucleopolis	0	0	2	1

[1] Figures must be provided in Head Count.

[2] Researchers are professionals engaged in the conception or creation of new knowledge. They conduct research and improve or develop concepts, theories, models, techniques instrumentation, software or operational methods. (Frascati Manual (2015): §5.35).

– Figures from current situation

Beneficiaries	Number Women researchers[1] (all levels, incl. postdocs and PhD students)	Number Men researchers[9] (all levels, incl. postdocs and PhD students)	Number Women in the workforce other than researchers	Number Men in the workforce other than researchers
GANIL	0	1	6	3
CNRS	1	1	1	1
CEA	1	2	1	1
GSI	0	1	1	0
IFJ PAN	1	3	0	0
Normandie Energies	0	0	2	0

7 INFRASTRUCTURES

List of users

Researchers who have trans-national access to research infrastructures through Union support

Researcher			Employing organization/Home institution			User-project acronym	Activity Domain (Discipline)	Installations used by the researcher (*)		
Name	Gender	Nationality	Name	Legal Status	Country			Infrastructure Short Name	Installation ID	Installation Short Name
Radoslaw MARCINKOWSKI	*M*	Polish	RADEC GmbH	SME	Switzerland	IDE1	Physics	GANIL		
Radoslaw HAJDAS	*M*	Polish	PSI	SME	Switzerland	IDE1	Physics	GANIL		

Research infrastructures made accessible to all researchers in Europe and beyond through EU support and summary of trans-national access provision per installation per reporting period (RP)

Participant number	Organization short name	Short name of infrastructure	Installation		Unit of access	Min. quantity of access to be provided in Annex I (A)	Access provided in RP1	Access provided in RP2	Access provided in RP3	Access provided in RP4	Total access provided (B)	Difference (B-A)
			Number	Short name								
1	GANIL	GANIL	1	GANIL	Beam hour	240	0	34			34	-206

Technical Report Part B

Period covered by the report: from 01/01/2017 to 31/10/2020

8 EXPLANATION OF THE WORK CARRIED OUT BY THE BENEFICIARIES AND OVERVIEW OF THE PROGRESS

8.1 *Objectives*

The objectives of the IDEAAL Project are to explore all possibilities to develop GANIL (Grand Accélérateur National d'Ions Lourds) infrastructure, with its new SPIRAL2 facility, in order to ensure its long-term sustainability.
GANIL is one of the premiere European heavy-ion beam research institutes and contributes to the radiance of European Science. This constant strive for excellence has led the GANIL scientific community and technical teams to develop and build a new accelerator SPIRAL2. The SPIRAL2 facility, currently under installation and commissioning in its first phase, will extend the GANIL opportunities to heavier radioactive beams, and/or with much higher intensities of both stable and radioactive ions. The SPIRAL2 facility is located on the GANIL campus and is integrated in its organization scheme and legal status. Since January 1st, 2016, the GANIL legal status allows associated scientific partnerships with national and international collaborating institutions.

The first objective of the IDEAAL project is to capitalize on this new legal opportunity in order to expand the GANIL membership to academic national and international institutions, industries and private sponsors. This development goes hand-in-hand with a reinforcement of the involvement of the current institutional funding partners and academic users of GANIL facilities in the decision-making processes of the infrastructure. In this aim, the WP2 (International Coordination and New Partners) team drafted a strategy document for the development of GANIL-SPIRAL2 defining ways to adhesion of associated members. Contacts were also made with identified interested countries. In parallel, MS1 (template of collaboration agreement with academic partners) was reached in due time.
The draft agreements with academic partners was elaborated in a due time (D2.1) as serve as a model for the future Scientific Partnership agreements.

To allow GANIL-SPIRAL2 to conclude partnerships, the board of directors (CODIR) approved in May 2019, a document untitled "General provisions for the status of Scientific Partner at GANIL-SPIRAL2". This document gives the definition of the scientific partnership, the ways to conclude partnerships, the status of scientific partner, and the rights and duties of the partners. On the basis of this document, partnerships have been negotiated with collaborators. In the first reporting period, contacts were made with some collaborators from Poland, Czech Republic, Belgium, Romania and Germany. Due to

continuous efforts, following these different contacts and approaches to collaborators, some promising scientific partnerships are expected to be signed soon.

- Poland: the COPIN consortium signed with GANIL-SPIRAL2 a Memorandum of Understanding on April 2nd 2020, in the expectation for COPIN to become a transitional scientific partner.
- Czech Republic: NPI and GANIL-SPIRAL2 have reached an agreement on a partnership, which would grant to NPI the status of Scientific partner at GANIL-SPIRAL2. The agreement is currently under approval process and is expected to be signed in late 2020/beginning of 2021.

In addition, a subcontracting of Philanthropia company, expert in private fundraising was accomplished. The phase 1 of the contract provided GANIL with all the elements needed to start the fundraising campaign, in particular, the leaflet filled with arguments to highlight GANIL, its offer (i.e. three core projects) and vision, message to donors, and motivation towards the patronage. Potential donors selected from GANIL's network led to a provisional collection plan and a business model preparation. As the last element, phase 1 facilitated the establishment of the sponsorship campaign strategy with specific actions selected for GANIL. In phase 2, all these documents were valided by the fundraising experts and its additional improvements were introduced.

The evaluation of in-kind contributions was explored during a dedicated international workshop organized at GANIL and at the Big Science Business Forum (BSBF) in Copenhagen. MS2 and MS3 (reports on cash, in-kind and like-kind exchange contributions for target partners and on the already existing contributions from the partner laboratories) were reached in time. The elaborated methodology for the in-kind contributions (D2.3: Procedure of evaluation of in-kind contributions and their monitoring) was applied in practice for all in-kind contributions to the SPIRAL2 facility of NPI (Czech Republic).

A new organization of the GANIL-SPIRAL2 users was accomplished and a corresponding user database was created. MS4 (working out a structure of the General GANIL-SPIRAL2 Collaboration) and MS5 (Database on research groups and equipment) were completed in time. The ensemble of GANIL-SPIRAL2 collaborations formed GANIL Users Group, and the membership in it is open upon the declaration by any scientists interested in GANIL- SPIRAL2 program. The User Group elected/appointed the GANIL User Executive Committee (GUEC). Currently, the new data base of the GANIL users elaborated thanks to the IDEAAL project contains 900 persons.

The second objective of IDEAAL is to enhance the excellence of access to the infrastructure on several aspects including support to the users, access policy, assessment on cost of access to facilities and to data, improvement of performance capabilities as well as exchange and training of personnel with associated partners.

The WP3 team worked towards this objective, first preparing a code of conduct for users. Its preparatory study is now completed. The update of GANIL access policy is in progress, as well as the

creation of a new user office and of a customer request procedure. MS6 (Ethical code of conduct of users) is delayed due to the precocious maternity leave of the person in charge of this task.
In addition, the analysis of the costs for serving the users is now completed. The corresponding powerful tool is available for internal users (D3.3). A Web interface for the tool is under development.
The audit and study for the data management at GANIL are now completed. MS7 (report on data management strategy) was reached in due time. The editorial work on the data policy and data management plans was accomplished on time (D3.4).
The inventory of technical and administrative practices (MS9 - Analysis of existing technical and administrative organization) at GANIL is done. The modification of GANIL internal organization is currently in progress. The review of existing provisions and of required competences at GANIL for the coming years is done.

Improving innovation potential and industrial applications of the facility is **the third objective of IDEAAL**. With the new facility SPIRAL2, it is essential to convince industrial users of the reliability of this new machine and to develop new experimental tools at the existing GANIL facilities. Access provision dedicated to industrial users will greatly help to increase their interest and trust in GANIL. In parallel, new topics for technology transfer are being clearly identified. The increase of innovation potential of GANIL is under evaluation.
In this goal, WP4 team prepared transnational access for industrial users. The international selection panel on transnational access is now settled and the two calls for experimental proposals were launched. The beam time was provided to one of the selected experiments.

In parallel, the mapping of existing potential industrial applications at GANIL is done and new contacts were created with industries in this aim. The contract for the transfer of know-how for the beam profile monitors is signed. The corresponding R&D collaboration contract was signed in 2020. (MS11 Beam profile monitors: License contract and R&D collaboration contract with the company)
In terms of innovation potential, several application domains have been identified and studied.

The three above mentions objectives of the IDEAAL project must be supported by a strong communication policy towards members and funders, users and the layman. This is **the fourth objective of the Project**.
This objective first needed a harmonization of GANIL graphic identity. After this first performed action, WP5 team could strengthen the communication towards members and funding partners through highlights of publications, involvement in a local communication network, a new GANIL electronic newsletters and a new poster for the laboratory.
In addition, for the benefit of GANIL users, several actions were accomplished – a new GANIL Web site, a renewal of the internal broadcast system, a new GANIL user community portal, an electronic newsletter dedicated to GANIL users, an audit on GANIL users' website in order to update it, the organisation of EURORIB'18 conference of Colloque GANIL 2017 and 2019, of the France-China

symposium, and recently of the most important international conference on accelerators IPAC'20 (one of the first big on-line conferences in May 2020).
Posters and flyers for scientific and industrial users were created. For the layman, the GANIL brochure was updated. GANIL personnel participated actively in French science festival and general public lectures.

8.2 *Explanation of the work carried per work package*

8.2.1 WORK PACKAGE 1: MANAGEMENT

Task leader: GANIL

The WP1 coordinates all technical, scientific, financial, administrative, contractual, and legal activities of the IDEAAL Project. It successfully managed IDEAAL activities in the first reporting period ensuring that milestones and deliverable were submitted on time. It has also taken into account the difficulties encountered by the work packages due to the COVID-19 pandemic (from March 2020 to July 2020) and submitted an amendment of the IDEAAL Grant Agreement asking for its prolongation up to March 31st 2021. Fortunately, the extension was accepted giving the chance for the work packages to finish their planned activities which were hindered in the first nine-month extension.
Since the beginning of the project the WP1 organized six consortium meetings and prepared three amendments to the IDEAAL contract.

Task 1.1: Management

The Consortium Agreement was prepared and signed in December 2016.
Since the beginning of the project, WP1 team has organized the meetings of the consortium:

- The Kick-off meeting on February 3rd 2017
- The collaboration meetings, with Work Package leaders and members of the IDEAAL General Assembly, on November 7th 2017, April 26th 2018, August 27th 2018, December 7th 2018, April 12th 2019, January 7th 2020.

On September 28th 2018, the WP1 coordinated the preparation of the Mid-Term review organized in Brussels.
The WP1 prepared also three different amendment requests:

- Amendment n° 1: included change of partner for the Task 2 of Work Package 2, a budget transfer towards subcontracting for partner n°6 and a modification of a deliverable for Task 4 of Work Package 3.
- Amendment n°2 : included extension of the IDEAAL Project by 9 months up to September 30th 2020 for the following reasons/replacement of the project deputy coordinator, the delay in the beginning of operation of SPIRAL2 causing delay in the negotiations of the agreements with different partners and also postponing the availabilities of the beam time for the academic and industrial users, profound modification of the organization of GANIL in 2018/2019 which was not

foreseen at the time of the signature of the Grant Agreement of IDEAAL generating important modifications of the GANIL/SPIRAL2 administrative documents. D3.2 scheduled month 24 was postponed up to month 36.

- Amendment n°3: included another extension of the IDEAAL project by 6 months up to March 31st 2021 due to the COVID-19 pandemic causing severe restrictions in France and in most European countries slowing down drastically all activities of the IDEAAL Project. The impact was to postponed all deliverables scheduled initially on month 36 up to month 45 (D2.1, D2.2, D3.1, D3.2, D3.3, D3.4, D3.5, D3.6, D4.1, D4.2, D4.3, D5.2, D5.3).

The WP1 is related in the working group on the GANIL internationalization (WP2 task 1 and task 3) specifically coordinating meeting with representatives of the Czech Republic.
It has also organized visits of foreign collaborators at the GANIL facilities in view of preparing potential future partnerships: F. Negoita and R. Borcea from IFIN-HH Romania (January 2019) and D. Tarrio and A Prokofiev from University of Uppsala Sweden (in October 2020).

Task 1.2: Studies and reporting

The WP1 coordinated the continuous reporting, especially the submission of deliverable reports and took a special care on the quality and relevance of the milestones. Only two milestones were delayed (MS6 delivered on month 24 instead of month 18, due to the early maternity leave of the person in charge of this report; MS11 delivered on month 37 instead of month 6 due to a long negotiation before the signature of the contract.

Task 1.3: Dissemination and Exploitation of results

The WP1 developed the IDEAAL website: https://ideaal.ganil-spiral2.eu/ . This website is meant for internal and external communication about IDEAAL actions and results. It was able to foresee improvement of the website as the project progressed. A new design and a reorganization of the different items have been made for the sake of clarity.
The Deliverable D1.1 “Plan for dissemination and exploitation of results” was submitted on time.
The project progress and results were communicated internally to the GANIL management and externally during the meetings with international partners from Poland, Czech Republic, Germany, Sweden, Spain and Belgium.

8.2.2 WORK PACKAGE 2: INTERNATIONAL COORDINATION AND NEW PARTNERS

Participants : GANIL, CNRS, CEA, GSI, IFJ PAN

Objectives:
Since January 1st 2016, the legal status of the GIE GANIL allows associated scientific partnerships with national and international collaborating institutions. The WP2 – International Coordination and New Partners is based on this new legal opportunity to enlarge the GANIL membership to include academic and/or private institutions. Looking for new partnerships will be based on longstanding collaborations of GANIL with numerous institutions worldwide. In particular, GANIL has been

collaborating for decades with German institutions such as GSI, where the ESFRI FAIR infrastructure is currently being built. The other close-collaborating countries are Poland, Italy, Romania, Belgium, Czech Republic, Spain and Sweden in Europe, India and U.S.A. abroad. Other collaborating countries will be approached in a second stage (such Japan, Republic of Korea, Russia and U.K.).

Enlargement of the GANIL membership goes hand-in-hand with strengthening the involvement of the present institutional funding partners, and through the addition of possible private sponsors and academic users of GANIL facilities in the governing infrastructure.

The Work Package is divided into four tasks:
- Task 2.1: deals with the strengthening of the support of regional, national and international partners through new bilateral partnerships,
- Task 2.2: explores the possibilities for private foundations and/or individuals to sponsor GANIL,
- Task 2.3: evaluates in-kind contributions,
- Task 2.4: deals with users' involvement in the GANIL organization and development.

Task 2.1: Enlargement of membership towards academies and involvement of institutional funders

Task leaders: CNRS

Involved partners: GANIL, CEA

Introduction

This task (WP2.T1) has a main goal of transitioning the GANIL managing organization from a national to an international structure, gathering international support for either specific development projects and/or for the operating costs of GANIL via bilateral partnerships.
In order to achieve this goal, this task is:

- Contacting potential future partners and identifying the proper contact level for the negotiations;
- Organising the negotiation team on the GANIL side;
- Compiling information on future partners for the negotiations, such as past and current contributions, agreements and collaborations;
- Benchmarking partner situation and defining an economical model for each target country;

and will

- Organise preparatory meetings;
- Propose the first draft of the bilateral agreement for each potential partner (a draft of the agreement was already prepared for the first prospective partner);
- Organise the signature process, if possible, during the time of the IDEAAL project;
- Ensure GANIL participation in NuPECC, RI Roadmaps and/or GSO; and
- Create a "Euro-Group" of GANIL institutional funding partners.

List of milestones for the task

- M1: “Template of collaboration agreement with academic partners” (M6), achieved during the first period report.

List of deliverables for the task

- D2.1: “Draft collaboration agreements negotiated with academic partners”, submitted on September 29th 2020 (M45).

Work carried out

In order to achieve the goals of WP2 task 1, a working group on the GANIL internationalization composed of seven members from CEA’s IRFU, CNRS/IN2P3’s board, GANIL’s direction and from the IDEAAL Project meets every month for two hours by videoconference. Minutes of all the meetings are available.

As the international development strategy allows the conclusion of partnerships for new funders, the enlargement of membership task for institutional partners leads to approach several collaborators of GANIL-SPIRAL2 to propose a partnership (nb: in this WP2.T1 report, “partner” will refer to the institutions which concluded, or are expected to conclude, a “scientific partnership” as part of the IDEAAL project WP2.T1 efforts. “Collaborator” will refer to the institutions already involved in GANIL’s collaboration network through agreements, MoU, LIA, IRP or other collaboration frameworks).

To allow GANIL-SPIRAL2 to conclude partnerships, the board of directors (CODIR) approved in May 2019, a document untitled “General provisions for the status of Scientific Partner at GANIL-SPIRAL2”. This document gives the definition of the scientific partnership, the ways to conclude partnerships, the status of scientific partner, and the rights and duties of the partners. On the basis of this document, partnerships have been negotiated with collaborators.

In the first reporting period, contacts were made with some collaborators from Poland, Czech Republic, Belgium, Romania and Germany. Due to continuous efforts, following these different contacts and approaches to collaborators, some promising scientific partnerships are expected to be signed soon.

- Poland: the COPIN consortium signed with GANIL-SPIRAL2 a Memorandum of Understanding on April 2nd 2020, in the expectation for COPIN to become a transitional scientific partner.

This memorandum, concluded for one year and renewable, settles the expected partnership framework “upon implementation of the scientific partnership between the Parties”. Indeed, the partnership will be effective and validated once the Polish party officially agrees to the contribution (fees & in-kind).

The contribution plan is expected in late 2020 or early 2021. The partnership would be signed upon contribution approval by GANIL-SPIRAL2, which will be annexed to the partnership agreement.

- Czech Republic: NPI and GANIL-SPIRAL2 have reached an agreement on a partnership, which would grant to NPI the status of Scientific partner at GANIL-SPIRAL2. The agreement is currently under approval process and is expected to be signed in late 2020.
- Contact is constant with Belgium and Germany.
- Approach has been made with Sweden, which shows interest to develop current collaborative framework.
- Approach has been made with Spain, which shows interests to develop current collaborative framework.

Due to the pandemic situation, the progression of the task has been slowed down, impeding progress difficult and reducing potential contacts.

As part of WP2.T1 mission, a workshop is expected to be organized to gather collaborators and partners to present the scientific partnership model. The organization is still in process, due to the uncertainties induced by the pandemic.

Conclusion and evaluation of results achieved

The first scientific partnerships are expected to be signed soon, and these successful accomplishments demonstrate that the partnership model is suitable for the enlargement of membership towards academic collaborators.

Task 2.2: Private sponsors & Banks

Task leader: GANIL

Involved partners: CNRS, CEA

Introduction

The main objective of Work Package 2 – Task 2 (WP2.T2) was to explore the possibility for GANIL to attract private foundations and/or individual sponsors to financially support and enlarge the number of partners. A team dedicated to this task studied multiple aspects of possible fundraising activity in GANIL including:

- GANIL attractiveness towards the contribution of potential private sponsors including GANIL's strengths, selection of burning projects, and mapping of potential donors from its network,
- GANIL fundraising feasibility study to establish a strategy for a suitable campaign including an estimated sum of dons, a collection plan, and a business model,
- GANIL's legal status to check whether GANIL can receive and manage donations in respect of the French law.

The work within the WP2.T2 was conducted in close collaboration of GANIL with external companies: Philanthropia/HOPENING (consulting company specialized in fundraising) and DELSOL (law counsellors) sub-contracted for this task to fully explore the full potential of GANIL. This

document serves as a summary report on strategic and legal revisions towards the possibility to start the fundraising campaign in GANIL.

The methodological approach suggested by Philanthropia was made of two phases (including the legal analysis performed by DELSOL law firm), the second one dividing in two sub-phases (2A and 2B), with a clear determination of main objectives and actions undertaken in each of them (Annexes).

Results

➢ Phase 1: Development of the strategic components of GANIL-SPIRAL2 for the patronage offer

A message to sponsors was constructed with the establishment of GANIL's offer divided into three core programs selected for donations:

- 1. Research Development (atom for applications, atom for life, atom for discovery, and support to experiments)
- 2. Outreach activities to disseminate knowledge (conferences, media, communication events)
- 3. Talent Development (education, training, theses & innovative prize, professorship)

The GANIL's offer comes with a recognition program depending on the level of financial support provided by donors with the following advantages proposed:

- Reporting (annual meeting, written reports, personalized thanks)
- Advertisement (visual & real panels, naming of facilities, logos, press)
- Privileges (access to publications/laboratories/beam, visits, meetings)
- Networking (between sponsors, with researchers/internships)
- Special events (conferences, an invitation to theses).

In the next step mapping of donors from GANIL's network was performed including Crédit Agricole & Crédit Agricole Normandie (CA Normandie), Airbus, and Thales Group, Valeo, Pantechnik, and Air Liquide, just to name a few. The total number of 40 potential donors were selected, and detailed (see Annex - D).

Following that, we envisioned a 5-year collection plan with the objective of around €6 million to be raised by GANIL.

In summary, phase 1 provided GANIL with all the elements needed to start the fundraising campaign, in particular, the leaflet filled with arguments to highlight GANIL, its offer (i.e. three core projects) and vision, message to donors, and motivation towards the patronage. Potential donors selected from GANIL's network led to a provisional collection plan and a business model preparation. As the last element, phase 1 facilitated the establishment of the sponsorship campaign strategy with specific actions selected for GANIL. In phase 2, all these documents needed validation by the fundraising experts.

- Legal analysis of GANIL by DELSOL Avocats

The objective of DELSOL's analysis is to determine whether the GANIL is legally eligible to collect and manage donations directly. The current legal status of GANIL is GIE (fr. GIE - Groupement d'Intérêt Économique) with several actors involved in GANIL's scientific activities (i.e., CEA and CNRS). The GIE GANIL has not been a subject of private foundations nor individual sponsor donations, which is the primary reason for the undertaken study. Three possible solutions are proposed:

- Collection of funds by the CEA and/or the CNRS structure on behalf of the GIE GANIL regulated via special contract/convention signed by partners. From the legal point of view, both the CEA and the CNRS are public research institutes eligible to conduct the fundraising activities directly. The fund transfer to the GIE GANIL for projects, which fall within the scope of the sponsorship campaign, is possible under precisely determined conditions included in a contract/convention signed between the partners.

- Direct collection of funds by GANIL, after the evolution of its legal status from the GIE to a GIP (fr. GIP - Groupement d'Intérêt Publique). The GIP form of GANIL would then make it act as a public service group eligible for the independent fundraising campaigns similar to the CEA and CNRS structures. However, this solution is complex to undertake with a lot of administrative work and significant amount of time required to come into life.

- Creation of a special dedicated endowment fund (fr. fond de dotation) as a solution allowing for fund collection on behalf of the GIE GANIL. The endowment fund involves three parties: two legal persons under public law (e.g., CEA, CNRS, or GANIL) and a third party governed by the private law (e.g., company, private investor). This solution is relatively fast and easy to implement, and it eliminates going through the public establishments that are members of the GIE (i.e., CEA/CNRS).

In conclusion, direct fund collection is of GANIL's preference without starting the endowment fund initiative. Following that, the GANIL's direction decided to ask the tax administration office for the official permission to function as the GIP structure due to the voluntary management board in the GIE GANIL. The response comes within the next six months (i.e., beginning of 2021).

➢ Phase 2: Validation of the concept and potential for fundraising in GANIL in accordance with the results of phase 1.

The first step of phase 2 (Phase 2A final remarks with a personal opinion concerning the entire GANIL's fundraising strategy were obtained via interviews with five sponsorship professionals) involved validation of attractiveness of the GANIL's fundraising campaign, established in phase 1, to collect donations. This step was fulfilled via interviews with five selected fundraising experts to have their feedback and personal opinion on the matter. Analysis of the points raised during these consultations resulted in the following recommendations:

1. The fundraising objective of ~€6 million over five years is too ambitious for a structure that is just embarking on the patronage. Hence, a significant up-front investment (i.e., employment of

fundraising experts and ambassadors) is required from GANIL to start patronage activity. Instead, a reduction of the prospective donation sum down to €3 million / five years collection plan makes it more realistic to achieve. Running the GANIL's fundraising campaign in 'silence' before announcing it publicly additionally facilitate the collection at the very early stage.

2. The GANIL is a structure that is not widely recognized by the public, which is not the case for the well-known and trusted CEA/CNRS. Both institutes who manage GANIL are a solid-guarantee of seriousness and public respect. The panel of experts recommended including the name of CEA/CNRS in the sponsorship offer (i.e., sales pitch) without removing the focus on GANIL and the regional location aspect of the laboratory.

3. The reasons for starting the patronage in GANIL are not obvious. The panel of experts suggested modifying the arguments by inserting a part called 'Why we turn into patronage today?' as part of GANIL's global vision.

4. Developing the visibility and communication of GANIL would facilitate sponsorship. A good fundraising strategy includes an excessive communication capability, which is currently missing in GANIL (i.e., GANIL's Communication Unit). Donors tend to fund socially well-known structures, which is not the case of GANIL. The panel of experts recommended starting a communication campaign.

5. The patronage argumentation is not emotional and visionary enough. The 'star' researchers with their distinctions and particular discoveries should be put forward (adding human faces into the argument' as well as an editorial note signed by GANIL's director, for example).

6. Highlighting applications and achievements of GANIL would comfort the donations. The projects and programs selected for GANIL's fundraising campaign should come with their clear social impact as the sponsors favors to see what the practical utility of donations.

7. National and international targets seem to have priority, but the regional target needs further exploration. The creation of a 'Local Club' of donating companies facilitates the discovery of the Normandy region and potentially increases its attractiveness by drawing international researchers. The panel of experts proposed to highlight the regional aspect of GANIL and to lower an entry ticket (i.e., €5 – 10 thousand) by offering a brief reward in exchange for the financial contribution.

8. The advantages proposed to sponsors could be more differentiating as the 'privilege' aspect interests the most the donors (e.g., meetings with researchers, for instance).

9. The sponsorship process can only work with the support of GANIL's management and internal engagement. GANIL must select in-house ambassadors to run the fundraising strategy.

10. Recruiting experienced people to develop the GANIL's patronage is essential. The main person responsible for the GANIL's fundraising campaign should have a 'senior' profile with ambition and willingness to take up an ambitious fundraising campaign. Recruitment of 2-3 people with clearly defined tasks is a bare minimum.

Entering phase 2B (validation of the GANIL's strategy constructed in the previous phases was envision by contacting a panel of real potential donors) cannot start immediately for several reasons: lack of the formal response from the tax administration authority concerning the GANIL's

legal status; the persistent COVID-19 pandemic is the main obstacle; there is presently not enough human resources at GANIL to launch a communication and fundraising campaign. Instead, GANIL decided to explore targeted complementary action such as professorship, dissemination of knowledge, Ph.D. training, or other short-range initiatives, which can take place for the next four months (i.e., until the end of March 2021).

Conclusion

The entire work done within the WP2.T2 is of high value for GANIL but, the decision launching the sponsorship campaign will take place later after the COVID-19 pandemic and when the communication structure in GANIL is enhanced. In addition to that, the final choice will include cost/benefit analysis in terms of HR in particular. The target of €3 million in fundraising over five years is not very attractive for GANIL. In this regard, a reduced target could be more effective in the coming years (e.g., shortening of the envision time collection down to 2 years or focus on specific actions like talent training programs or professorship sponsorship).

Annex

Phase 1.

A. Benchmark (eng. Benchmarking)
B. Restitution des entretiens internes (eng. Restitution of internal interviews)
C. Argumentaire (eng. Arguments)
D. Cartographie prospects GANIL - Entreprises & Fondations (eng. GANIL prospect mapping - Companies & Foundations)
E. Plan de collecte et plan affaires (eng. Fundraising plan and business plan)
F. Note méthodologique: stratégie de campagne de mécénat pour le GANIL – SPIRAL2 (eng. Methodological note: sponsorship campaign strategy for GANIL – SPIRAL2)
G. DELSOL Avocats : GIE GANIL Structuration collecte mécénat (eng. GIE GANIL Fundraising structuration)
H. DELSOL Avocats : Envoi complémentaire note juridique (eng. Sending additional legal note)
I. DELSOL Avocats : Suite et fin étude juridique (eng. Continuation and end of legal study).

Phase 2A.

J. Restitution des entretiens avec les experts mécénat (eng. Feedback from interviews with sponsorship experts)
K. Synthèse et analyse des entretiens (eng. Summary and analysis of interviews)
L. Stratégie de campagne de mécénat pour le GANIL – SPIRAL2 (eng. Sponsorship campaign strategy for GANIL – SPIRAL2)
M. Plan de collecte et plan affaires revus (eng. Revised collection plan and business plan)
N. Argumentaire GANIL (eng. GANIL's arguments)
O. Projets/programme GANIL (eng. Projects and Programs in GANIL).

Task 2.3: In-kind contributions

Task leader: GSI

Involved partners: GANIL, CEA, CNRS

All milestones of task 3 were achieved at the time of the last interim report:

List of milestones for the task

- MS2: "Report on cash, in-kind and like-kind exchange contributions for target partners"
- MS3: "Report of the already existing contributions from the partner laboratories"

List of deliverables for the task

- D2.3: "Procedure of evaluation of in-kind contributions and their monitoring", submitted (M24).

Given the internal logic of the tasks and the stage of the SPIRAL2 project, we formulated the following stretch tasks, which were submitted in the last report. The stretch tasks were also completed in full.

Stretch tasks:

- Field test of reduced specifications and bilateral agreements applicable to SPIRAL2.
- Field test of a model contract.
- Draft of acceptance procedure

Here we report on the completed stretch tasks. Field tests were carried out in close collaboration with GANIL partner Nuclear Physics Institute of the Czech Academy of Science (NPI)

- The in-kind model was drafted, and agreed by the director and co-director of GANIL.
- A three-stage acceptance procedure for in-kind contributions to GANIL SPIRAL2 was drafted, agreed by the director and co-director of GANIL.
- Sonia Utermann (GSI), Marek Lewitowicz (GANIL) and Sabrina Lecerf (GANIL) negotiated a three-year bilateral agreement with Nuclear Physics Institute of the Czech Academy of Science (NPI ASCR). The in-kind aspect was included in an annex to the bilateral agreement.
- The in-kind model and the in-kind acceptance procedure drafted in WP2.3 were rolled out in two test cases: a past contribution of the Czech Republic to SPIRAL2; and a planned future contribution from the Czech Republic to SPIRAL2.

Test case 1: Past contributions to SPIRAL2 from NPI

In this situation, an in-kind contribution is already at GANIL and is being taken into commission by GANIL and NPI scientists. The three steps to acceptance are technical, financial and legal. The technical and financial acceptance are prerequisites for the legal acceptance.

Objectives of technical acceptance

+ To ascertain that all documentation and certification is complete;
+ To ascertain that the equipment does what it should;

+ To ascertain that all test protocols and results are documented;
+ To ascertain that sufficient knowledge has been transferred to GANIL scientists to allow operation at GANIL

= To make a declaration that the in-kind contribution is technically complete.

In test case 1, GANIL and NPI scientists agreed on a set of tests and the necessary degree of documentation. A simple declaration was signed by GANIL scientists specifying the contribution is complete and without defect. This will be made public on the IDEAAL website in 2021.

Financial aspects

+ To decide on a fair financial value for the contribution;
+ To document the financial value in a transparent and compliant way;
+ To agree on the value that is to be subtracted from the partner's obligations as set down in the bilateral agreement with GANIL.

= To make a declaration that the in-kind contribution has a financial value in Euro, agreed by both parties.

In test case 1, NPI sent a detailed cost declaration to GANIL administration. A member of the GANIL administration team checked the cost declarations for plausibility. The agreed financial value was included in an annex to the bilateral agreement between GANIL and NPI. This will be made public on the IDEAAL website in 2021.

Legal aspects

+ To enact the passage of ownership from the in-kind partner to GANIL
+ To avoid the "implicit acceptance" that is foreseen by EU law and the Code Civil
+ To trigger the start of the warranty period

= The legal acceptance can only be signed by the Director of GANIL.

In test case 1, the legal acceptance consists of a letter from the GANIL directorate to NPI in which the name of the contribution and its financial value are acknowledged. This document will be made public on the IDEAAL website in 2021.

Test case 2: Planned contributions to SPIRAL2 from NPI

In this situation, both parties have agreed on a scope of work and a financial value of what NPI is to deliver to the SPIRAL2 project. This is set down in an annex to the bilateral agreement or in a subsequent in-kind contract.

Since the financial value has already been agreed in advance, there are two steps to acceptance: technical and legal.

Technical acceptance

The technical acceptance is prerequisite for the legal acceptance. We foresee two types of acceptance: acceptance without fault and acceptance with minor faults.

An idealized set of technical quality gates was devised. The idea is that GANIL and NPI scientists choose the quality gates appropriate for each contribution in advance. Not all of the gates suggested below will be appropriate for all contributions. The comprehensive gate process is as follows:

- Conceptual design review (CDR)
- Final design review (FDR)
- Release for serial production (e.g. after tests on a prototype/first of series)
- Factory acceptance test (FAT): testing that takes place on the provider's premises, usually by the provider.
- Site acceptance tests (SATs)
  - SAT1- "delivery": this is a visual inspection that the item has arrived complete and without visible damage.
  - SAT2 – "installation": these are the pre-and post-installation tests.
  - SAT3 – "with beam": the tests of the item with beam.
- For critical and expensive items, the test protocols for FAT and SAT should be agreed beforehand.

Once the contribution is installed, commissioned and tested, the responsible scientist at GANIL fills in a simple checklist, appends the supporting documentation and signs one of two declarations:

1. "To the best of my knowledge, the contribution is without defects"

OR

2. "The contribution is complete and has the defects listed in the appendix"

In case 2, the GANIL scientist suggests a period of time in which remedy should be feasible.

The checklists were drafted with consultation of GANIL scientists and agreed in the test case of the bilateral agreement between GANIL and NPI. They will be made public on the IDEAAL website in 2021.

<u>Legal acceptance</u>

Legal acceptance takes the form of a letter from the GANIL Director to the in-kind partner.

In the case that there are no defects, the legal acceptance letter contains the following:

- The name of the in-kind contribution, part number etc.
- The context of the contribution, for example a bilateral partnership; the period to which the contribution is to be counted.
- "The in-kind obligation [name] has been fulfilled in its entirety. The cash equivalent value of the contribution is [value], price point [year]"

In the case that a legal acceptance is needed for a contribution with defects, the legal acceptance letter includes, in addition to the above:

- Acceptance of defective Contract Work / Contract Performance. GANIL-SPIRAL2 reserves its rights with regard to the defects (article 1792 of the French Civil Code)
- "Defects determined by GANIL are [listed]"
- "Any defects determined shall be removed by the Provider *within x weeks* at the latest (period for cure). If the period for cure expires without remedy, GANIL may remedy the defect itself at the Provider's expense".

The process and the supporting documents (agreements, checklists etc.) that have been field tested by NPI and GANIL scientists will be published on the IDEAAL website in 2021.

Task 2.4: Involvement of academic users-representatives of large collaborations in User Board

Task leader: IFJ PAN

Involved partners: GANIL, CEA, CNRS

Introduction

This task is dedicated to users' involvement in the GANIL organization and development. With the development of GANIL-SPIRAL2 towards an international infrastructure, it is crucial to further involve the users and the collaborations in charge of detection systems in its organizational structure. The users and the collaborations have to take part of the GANIL-SPIRAL2 evolution and in its decision-making structure. The process of the involvement of users in an organizational structure which will integrate the different groups and detector collaborations; will continuously improve the scientific program for GANIL-SPIRAL2; and will have a possibility to influence the management policy on conducted science.

The general scope of the task is the following:

- Identification of most collaborations planning to carry out their research at GANIL-SPIRAL2;
- Creation of a data base which includes information on all collaborative research groups, their members and all the equipment at GANIL-SPIRAL2;
- Working out a structure of the General GANIL-SPIRAL2 Collaboration.

List of milestones for the task

- MS4: "Working out a structure of the General GANIL-SPIRAL2 Collaboration" (M12)
- MS5: *"Database on research groups and equipment"* (M18)

List of deliverables for the task

- D2.4: "Report on new Organization involving users" submitted (M30)

Work carried out:

The kick-off meeting of the General GANIL-SPIRAL2 Collaboration took place on 17th October 2017 in Amboise (France), as a part of the 20th Colloque GANIL conference program. In the meeting participated around 100 scientists.

The program of the meeting included 3 introductory presentations by Navin Alahari (Director of GANIL) explaining the need for the GANIL User Group and the GANIL User Executive Committee;

Marek Lewitowicz (Coordinator of the IDEAAL project) – explaining briefly what is IDEAAL and how it can help in setting up the GANIL User Group; Adam Maj (leader of the Task 4 in WP 2 of IDEAAL) presenting initial alternative ideas of creating the GANIL User Group and election of the GANIL User Executive Committee.

After introductory talks, there was a detailed and fruitful general discussion, led by Yorick Blumenfeld (IPN Orsay) and Emmanuel Clement (GANIL), in which the alternative initial ideas were commented, and new solutions proposed.

As a result of the general discussion the following decisions were taken:

a) The name of the ensemble of GANIL-SPIRAL2 collaborations will be GANIL Users Group, and the membership in it will be open upon the declaration by any scientists interested in GANIL- SPIRAL2 program.

b) The GANIL Users Group will be represented by the GANIL Users Executive Committee (GUEC) consisting of 7 members, elected for a 4-year term in a following way:

1) 3 members representing the Nuclear Physics GANIL user community of will be elected by all the members of the GANIL User Group;
2) 1 member will be elected by the collaborations around GANIL infrastructures;
3) 1 member will be elected by the collaborations around travelling detectors;
4) 1 member representing collaborations around atomic and material science and non- nuclear physics will be nominated by the Director of CIMAP;
5) 1 member, the liaison member of GANIL, will be nominated by the Director of GANIL, acting as the Secretary of the committee, and facilitating communication between the Committee and the GANIL Director.

c) The Chairperson of the Committee will be elected by the Executive Committee at the first meeting from the Committee members for 4-year term.

d) Role of the GUEC consists in:

1) assisting the GANIL Management in developing an ambitious scientific program of GANIL (inputs for developments of infrastructure, detectors, operation, long-range planning, etc.),
2) Chairperson of the GUEC – ex-officio member of GANIL Scientific Council (GSC), will confer on a regular basis with chairperson of the GANIL Program Advisory Committee and chairperson of GSC,
3) organizing annual meetings of the GANIL User Group,
4) coordinating the editorial board of the GANIL Annual Report.
5) The newly elected GANIL User Executive Committee will prepare the Terms of Reference defining precisely the role and organization of the GANIL User Group
6) The implementation of these decisions should be done in 2018 with an assistance of the IDEAAL project and the GANIL management.

The database on research groups and equipment named ‘GANIL user community portal’ has been created in close collaboration with GANIL technical staff in charge of the task 2 of WP5. The new web server has been installed in GANIL and it is available on: https://u.GANIL-spiral2.eu/portal/

The database contains the possibility of creation of an account for each user. The users get their own password and can manage all information. The basic information about the user is: first name,

last name, affiliation, gender, position and country. It allows choosing the instruments interesting for user and the fields of interests.
The instruments are defined as 'Traveling detectors' and 'GANIL instruments'.
There is open possibility to enlarge the choice of instruments or list of interests in the future. The database allows creating statistics on how many people are interested in each detector; it allows also planning and preparing dedicated workshops or other meetings.
The GANIL main fields of interests have been defined: Atomic Physics/Material Science, Fundamental interaction studies, Nuclear Astrophysics, Nuclear dynamics from low to medium energy, Nuclear structure and Theory, Nuclear science for health and for sustainable nuclear energy. Each user can indicate the interest in one or more of them. There is also a possibility to subscribe for GANIL newsletters.
The information about registration in this database has been sent to more than 2500 email addresses and repeated once. The outcome so far is more than 900 registered users. The registration is automatic for email addresses which are recognized as institutional ones.
Also, the election rules for the GANIL Executive User Committee (GUEC) have been established and the election panel has been prepared and tested. A number of candidates has been selected and the voting procedure is being established. The election started and were accomplished in July 2018.
The security of the user data in the GANIL User Community portal is ensured by the GANIL computing department.

PARIS Collaboration meeting
PARIS is a travelling detector developed at European level for experiments at GANIL, among other infrastructures. As travelling detectors will be represented in the GUEC, during the Annual PARIS Collaboration meeting (January 25-26, 2018 in Warsaw (http://paris.slcj.uw.edu.pl/en/paris/.) the possible involvement of the PARIS Collaboration in GANIL and in the GUEC was discussed.

The last goal of the WP2.4 part of the project was the creation of a platform dedicated to exchanging information and ideas between the GANIL User Group and their representatives - the GANIL User Executive Committee. This objective was realised by the creation of a designated webpage.
The webpage consists of subpages containing information about GUG and GUEC; previous and future activities; contact details to the GUEC members; and a collection of links to various scientific collaborations connected to GANIL.
The most important parts of the webpage are the Contact Form and Frequently Asked Questions (FAQ) section. The contact form will give all GANIL users a simple way to communicate with their representatives, while the answers to the most important and/or recurrent questions will be collected in the FAQ section.

The webpage has been developed to accommodate future growth. On request from the GUEC members, the webpage will be maintained and administrated by the GANIL staff. It is currently located on the GANIL servers, guaranteeing the same level of the cyber-security.
The initial content of the webpage is being consulted with the GUEC members, and their comments will be inserted. It is hoped to be a living space for discussions and idea exchange, ultimately fulfilling the goal of the WP2.4 – the increase of the Users' involvement in the GANIL-SPIRAL2 organization and development.

8.2.3 WORK PACKAGE 3 EXCELLENCE OF ACCESS TO INFRASTRUCTURE

Participant: GANIL

Task 3.1: Definition of access policies for researchers, organization of the logistic support for researchers, and management of IPRs and ethical issues

This task, the aim of which is to promote the access to GANIL in order to conduct innovative research with collaborating organizations, attract new users and promote collaborations, has two deliverables:
- D3.1:" Access policy rules for academic and industrials users of GANIL" (M51)
- D3.2: "Definition of a new user office" (M51)

and one milestone:
-MS6: "code of conduct" (M24)

1- Code of conduct
The first step of this task was the elaboration of a code of conduct to be signed by the users. This document that defines GANIL's expectations with respect to members of collaboration who come to perform scientific experiments at the GANIL laboratory has been completed after several preparatory meetings with staff and the Director of the Laboratory during the present period and transmitted to the GUEC (GANIL Users Executive Committee) for validation last September. It will be applicable beginning from the next period of experiments in early March 2021.

Linked to that code of conduct, an experimenter's focused procedure, also in progress of validation by the GUEC, was elaborated. This operational document describes the system set up to obtain a feedback from GANIL users and implement solutions to improve the provided services. It contains a questionnaire to be filled by users at the end of their experiments. Requests are centralized by a committee composed of representatives of GANIL and a member of GUEC. The committee will be in charge of studying the relevance of the remarks, proposing solution and putting in place an action plan.

2- Definition of a new user office
The definition of a new user office, as part of the services offered by the host laboratory, is aiming in facilitating access to GANIL for the scientific community. The user office has been implemented, since the reorganization of the Laboratory (task 3.4), through the redefinition of the quality

management system that includes the review of all the processes. One of the processes deals with the improvements of the new user office.

The work performed since the last periodic report, includes:
- Assessment of present organization and analysis of the weaknesses of the user office procedures by interviews with persons in charge of welcome system; *(→ trails of identified improvement through a better definition of the tasks, a stronger link with the process "scheduling experiments".*)
- Validation of the role of the users' office by the GANIL management, and the definition of the category of users taken in charge by the office (first priority given to participants of experiments);

- Analysis of the software used for the experiment proposals in view of a potential development for the welcome system (*dematerialization of the whole process and standardization of the different platforms used*).

The next step is to evaluate and define human and technological resources required for the user office before proposing different types of organization and services such as a virtual access (through a portal) and a physical reception (at the GANIL entrance).

An exchange of best practices was planned between the GANIL laboratory and the GSI laboratory in Germany. The meeting, initially scheduled in March 2020, was postponed and then cancelled because of the pandemic. A new visit will be planned in the Institut Laue-Langevin (ILL) in Grenoble, an international research centre specialized in research with neutrons, as soon as travels become possible again.

After setting up the welcome office for users participating in experiments, office duties will be extended to deal with the entire scientific community. In the future the office is supposed to take in charge all types of visitors (students, new workers, visitors, …). These extensions will need some additional developments, involvement of staff and relevant decisions of management.

3- Access policy rules
As a next step for the code of conduct, GANIL will proceed to an update of its access policy to take into account the use of new experimental halls.
This task has been put on standby in 2018 due to the early maternity leave and the resignation of the person in charge of this task some weeks later. The sanitary crisis didn't allow GANIL to resume this task up to now. It will be continued during the last months of the IDEAAL project.

Task 3.2: Assessment of the costs for serving the user

This task aims at providing a tool in order to calculate the cost of experiments according to different parameters: type of a provided beam and duration of an experiment.

This tool will serve to inform the GANIL management and funding agencies as well as users of the cost of an experiment and will allow GANIL to negotiate the conditions of partnerships within the framework of the internationalization of the laboratory.

In the period January 2017-June 2018 the task was dedicated to:

- The analysis of the financial records of GANIL, and their classification into 3 different categories:
  - Running costs: direct costs that can be allocated to the cost calculation of an experiment
  - Maintenance in Operational Condition costs: indirect technical costs related to an experiment, its technical equipment and services
  - Support costs: indirect infrastructure costs allocated to the cost of an experiment related to administrative services
- The realisation of an Excel tool using visual basic language

During the period July 2018- September 2020, the following developments were implemented:

- An update of the 2018 financial data
- The writing and setting up of a user guide and an administrator guide into the tool to help in its use and in data update
- The implementation of an inventory of the tangible assets of the laboratory to make the cost of amortization of the equipment reliable in order to be incorporated in the cost of an experiment. This task allowed from September to December 2019 on an exhaustive inventory of GANIL assets including a labelling procedure in view of regular updates (around 5000 records in the data base).

With the aim of providing a tool to above mentioned users and allowing exchange with laboratories in the discussion on potential partnerships, the deliverable was submitted in September 2020.

The development of the tool will continue in the following weeks more specifically on:

- The integration of a new item (cost of equipment) that can be selected by user to asses a full cost of experiment,
- The development a web interface for the tool to facilitate its use and update,
- The adaptation of the tool to the new organization of GANIL (see task 3.4).

Task 3.3: Data Management

Task leader: GANIL

After the first period during which the strategy of the GANIL data management plan has been defined, the main activity was dedicated to preparation of two main documents: The Data Policy and the Data Management Plan.

The Data Policy is a three pages document providing definitions and describing obligations of the two parties involved: the spokesperson of the experiment and GANIL. The Data Policy will have to be signed by the spokesperson during the submission phase.

The Data Management Plan is a twenty-page document describing precisely the whole workflow and the role of experimental team, GANIL staff and the spokesperson. It also gives details about obligations of spokesperson and GANIL and describes accurately the metadata.

The preparation of those two documents was made in 2019/2020 using a specific workflow which included discussions, corrections and validations by authors (B. Fusberti and N. Ménard), the group

of physicists and the Directorate of GANIL. The Data Policy was also submitted to the GUEC for remarks.

During the second period, in parallel to the preparation of documents, the following actions were led and accomplished:

- Several presentations of the global process of the data management were made to GANIL staff (technician, physicist, etc.); most of the presentations were made upon a poster designed by B. Fusberti during his full-time position at GANIL/IDEAAL.
- B. Fusberti and N. Ménard collected information and attended several meetings and workshops about data management and contacted several persons and services in CNRS, IN2P3 and INIST. The goal was to ensure a consistency of the GANIL DMP with other institutions in France.
- Several discussions and meetings were organized with INIST and CC IN2P3 to implement (technically and organizationally) the workflow of the DMP.
- The DOI GANIL was purchased using the INIST contract and will be renewed each year with the same process. This gives GANIL its own DOI and the ability to manage the registration of metadata on Datacite.
- The DOI and ORCID were presented during two meetings of the group of physicists at GANIL in order to enhance the interest of using them and also to show how to use them. The presentations were organized jointly with the responsible of the documentation service.
- The IT group led several technical tests of the whole workflow, those tests allowed to validate the following technical points:
  - The organization of the dataset on the local storage cluster;
  - The transfer of the Data Set on the iRods infrastructure in CC Lyon;
  - The possibility to tag the copied data on the iRods infrastructure with the collected metadata;
  - The transformation of the metadata in a raw format to the Xml format of Datacite;
  - The registration of experimental data description on Datacite and the registration of the associated metadata;
  - The construction of the landing page of a dataset using the Xml file of metadata.

List of deliverables for the task

- D3.4: “Data management plan” (M 45)

The deliverable was submitted on time.

Task 3.4: How to improve efficiency: study of GANIL performance capabilities

Task leader: GANIL

Following the decision of reorganization of the laboratory, the content of this task has been modified through an amendment of the IDEAAL contract signed on September 17th 2018.

The aim of the task is to improve the efficiency of the laboratory and to simplify its governance define the corresponding processes and clarify missions and responsibilities at all organizational levels (Division, group, individual).

List of deliverables for the task

D3.4: “Report on the new organization of GANIL” (M 51)

Schedule and the organization in link with the reorganization of the laboratory:

- Schedule:
  - Start of the reorganization project: May 2018
  - Definition of the new organization (organization chart): published on February 1st 2019
  - Rewriting of the processes (a process dedicated to the user office was added)
- Recruitment of a Quality Assistant in the framework of the IDEAAL project: arrival 2nd trimester 2019;
- Creation of two committees to manage and follow its implementation:
  - Steering committee: it defines the priorities and main actions, defines the means and schedule, takes decisions before implementation;
  - Monitoring committee: it follows the implementation of the process, provides resources, elaborates proposals, reports to the steering committee

Priority areas of work deduced from the organizational diagnosis:

- Organization of work and governance (decompartmentalisation, collaborations, clarifications, simplifications ...)
- Vision and scientific strategy
- Project management, definition of priorities for activities, distribution of load plans
- Human resources management
- Budget and purchasing management
- Steering of activities related to safety and security
- Functional managerial model
- Quality and process control
- Social relations
- Quality of life at work

Implementation via the working groups in a spirit of co-construction and share of experiences:

The status in September 2020 was the following:

- The first process “Strategy and Management” was updated and validated:
  - Transformation of the scientific plan into strategic and operational objectives; definition of the governance rules.

- The processes “Scheduling experiments” and “Realizing the experiments” have been reviewed:
  - Clarification of some missions are still needed (finalization initially foreseen 1st trimester 2020 postponed to end of 2020 due to a change in the management team of the Physics Division).

- The process “Managing the projects” has been completed and endorsed at the GANIL Council in June 2020
- Procedure related to non-conformities, dysfunctions, preventive and corrective actions has been updated
- New processes:
  - Scheduling of activities: the procedure is closed to be finalized
  - User office (see report on Task 3.1)
  - Welcome office for the contractors: some adjustments are required by the safety/security group
  - Planification of human resources, redefinition of a budgetary structure and purchase procedure are operational

Software tools for management are to be set up to meet the requirements of the new organization, in the following fields:

- Planification of human resources: the tool is operational
- Budget elaboration and budget monitoring: the tool is operational
- Planification of activities: in progress
- Management of documents (new Data Management System):
  - DMS selected, configuration in progress (tree diagram, rights, validation procedure of documents…)
  - Review of old documents (migration, update)
  - The tool should be operational before the end of the year.

Task 3.5: Organization of personnel exchange and training

This task aims at developing:

- collaborations between GANIL and partners in order to favor the exchange of personnel and training programs

and

- benefit from highly qualified staff for the operation of facilities.

The corresponding deliverable is the elaboration of a template of mobility agreement between GANIL and its partners ready for signature (M51).

The first period was dedicated to list an inventory of the different schemes existing to identify the more relevant provisions to be included in a mobility agreement in view of answering the aims of this task. A mobility agreement has been elaborated for exchange and training under the form of a bilateral agreement between GANIL and its partners in two configurations:

- one for visiting scientist programs: the draft was validated by working group on GANIL internationalization (WP2). It is under validation of the GUEC.
- one for all partners’ staff exchanges in the frame of collaborations: this document still has to be sent for the validation by GUEC.

The mobility agreements contain the same general provisions but differ in terms of duration and its cost:

- The mobility agreement in the frame of visiting scientists program have a duration that ranges from 3 months to one year, renewable once, and allocate to the second a global monthly allowance and reimbursement of trips and related expenses on the basis of justification documents.
- The other mobility agreement is dedicated to short stays (up to one month).

It was foreseen to test these mobility agreements through visit of staff from partners at GANIL during the year 2020. Unfortunately, several attempts were not successful due to the pandemic and the strong restrictions in organization of in-person visits. Attempts will be made again to test the agreements when the COVID-19 restrictions will be released.

8.2.4 WORK PACKAGE 4 INNOVATION AND INDUSTRIES

Participants: GANIL, CEA, Normandie Energies/Nucleopolis

The WP4 – Innovation and Industries focuses on actions towards industrial users and on actions on industrial valorization and innovation.
These actions are of general interest for GANIL as access dedicated for new applications at the existing GANIL accelerators and at the new SPIRAL2 facility, proposal on involvement of industrial users within GANIL organization, general support for industrial applications and technology transfer, and increase of innovation potential of GANIL.
Two specific topics are also developed as they are subjects of dedicated R&D developments at GANIL: the technology and know-how transfer for beam profile monitors and the definition of a methodology for technology transfer for the radioisotope production. They will allow to test and improve the proposed organizational schemes.
WP4 has been divided into 3 tasks, as follows:

- Task 4.1: Limited pilots of access provision to research teams from industries and involvement of industrial users
- Task 4.2: Industrial Applications
- Task 4.3: Increase of Innovation potential

Task 4.1 – Limited pilots of access provision to research teams from industries and involvement of industrial users

Task leader: GANIL

The first objective of Task 4.1 is to propose access to GANIL and SPIRAL2 to research teams for new applications, for teams from industries exclusively. The goal is to convince the industries of the interest of the new accelerator SPIRAL2 for their measurements and applications and to attract more industries for new applications with the use of the GANIL accelerators. For this, Task 4.1 finances 240 hours of beam time (and travel expenses) for some new industrial experiments that would like to test the capabilities of the SPIRAL2 and GANIL facilities in order to confirm industrial's

interest in the available beams. Task 4.1 includes the creation of an international selection panel to assess the proposed experiments, as well.
In parallel, the Task 4.1 team is discussing with major industrial users on the way to increase their involvement in the organization of GANIL.
The international selection panel was created in 2018 and validated by the GANIL Director and includes members of CERN, CEA and CNRS organizations. The first call for proposals with GANIL beams was launched in April 2018, and was focusing on GANIL beams, the SPIRAL2 facility first beams could not be scheduled before 2020. The first selection of experiments was done in February 2019 and the two proposals were selected by the international panel. Only one project could be realized, the second one being cancelled because of a major facility break-down in July 2019.
Calls for proposals were also presented during various conferences, and in particular at the RADECs conferences in 2018 and 2019.
A last call for proposal was launched in 2020 for the use of the SPIRAL2 facility neutron beam available in autumn 2020; no proposals were received probably due to economic crisis caused by COVID-19 pandemic.

A study started in 2019 on the possible involvement of the industrial users in the GANIL organization. The proposal was to launch a survey with all the industrial users, in order to identify their needs in terms of beam time in the next three and six years for both facilities, heavy ion and neutron beams. The goal is to anticipate more than nowadays the global beam time requirements for each year, and to include them as much as possible and as early as possible in the general operation calendar defined each year. The final result of this survey will be analyzed in the next months.
This study will include as well a proposal of a business plan for the industrial application activities at GANIL for the next years.

List of deliverables for the task
D4.1 – “Business plan for the industrial applications at GANIL” (M51)

Task 4.2 – Industrial applications

Task leader: Normandie Energies/Nucleopolis
Participant: GANIL

Actions of this task concern new applications with the existing GANIL accelerators and new SPIRAL2 facility as well as with their future developments. The aim is to reinforce links between GANIL and industrial users (R&D collaborations, technology transfer, training activities…). Companies could use GANIL know-how to create business activities, employment and GANIL could develop some new applied research actions in collaboration with industrial partners.

The objectives of Task 4.2 are the following:

- Identify and map the industrial application potential of GANIL activities
- Define a general implementation method
- Launch the implementation of these industrial applications, particularly in two areas where this potential has already been identified (beam diagnostic system, production of radioisotopes).

To reach these objectives, Task 4.2 has been divided into 4 sub-tasks

Sub-Task 4.2.1 – Provide the GANIL industrial application tools

Leader: Normandie Energies/Nucleopolis

One of the objectives of this subtask is to identify new areas for industrial applications by making a market study. A mapping of the existing potential in GANIL (know-how, competences, technologies…) has been performed. Normandie Energies/Nucleopolis coordinated and organized almost 40 meetings and interviews in 2017 with the physicists, engineers, technicians working in GANIL laboratory, in order to detect the developments potentially transferable to companies. A non-exhaustive list was established: it presents the existing potential that could be interesting for R&D projects with companies, training projects or technology transfer.

In 2018, a consulting firm specialized in market research and innovation worked on the assessment of the transfer and application potentiality of the various identified items within the know-how cartography. A few subjects were put forward, according to the market study and potential customers were identified for these selected technical subjects.

In parallel, actions for communication have been undertaken, for several selected items identified as potentially transferable to industries or potential subjects of collaboration with industrial partners, after an intellectual property analysis (protect the technology before communicate about it for example). The communication tools were developed in collaboration with WP 5 (Communication and Outreach) in 2018-2019.

Sub-Task 4.2.2 – Operational implementation - General case

Leader: Normandie Energie/Nucleopolis

A first action was undertaken in 2017 with a visit to GSI laboratory, for a brain storming meeting on exchange on good practices on technology transfers and actions with industries, between both laboratories GANIL and GSI.

In March 2018, GANIL and Normandie Energie/Nucleopolis participated in the Big Science Business Forum in Copenhagen. During this event, several contacts with industrial companies were taken.

In June 2018, Normandie Energie/Nucleopolis participated to the World Nuclear Exhibition, and GANIL had a booth on the 200 square meter space dedicated to Normandie Energie/Nucleopolis and its members. GANIL's goal, in the frame of IDEAAL project, was to create new contacts with industries. Several were taken, in particular for technologies related to safety equipment.

In October 2018, GANIL and Normandie Energies/Nucleopolis participated to the ENSAR2/NUPIA workshop in Warsaw, this workshop being dedicated to networking between nuclear physics

European laboratories and industrial companies connected to the research field over the whole Europe.

A one-day event, "Innovation Day" was organised at GANIL in February 2019, hosting companies identified within subtask 4.2.1 and interested by the various technical identified items to be subjects of collaboration and/or transfer. This one-day event was a great success, and led to several new industrial contacts (visits of the technical laboratories).

In November 2019, GANIL and Normandie Energies/Nucleopolis participated to the second ENSAR2/NUPIA workshop organized in Sevilla, the scope being the same as the first one organized in Warsaw. It was confirmed that networking between research laboratories and companies is to be developed, in order to go together towards more innovation.

Sub-Task 4.2.3 – Operational implementation - Support for the technology transfer of the beam profile monitors

Leader: GANIL

GANIL has been developing for several years a type of beam diagnostic called a "Beam profile monitor", which is used to measure the beam dimensions. Up to 2015, GANIL used to produce itself the units necessary for its own needs and for the needs of other nuclear physics laboratories as well. In 2016, it was decided to transfer the know-how on this technology towards an industrial company and to implement a R&D collaboration between GANIL and the company. Both contracts were established, after studies on legal, economical and marketing aspects, undertaken in the frame of the IDEAAL project. These contracts have to be signed by both GANIL authorities, CNRS and CEA. After some delay due change of the GANIL Directorate at the beginning of 2017, the contract for transfer of know-how was signed at the end of 2017, while the R&D collaboration contract signature was pending until the end of 2019, due to very long-time negotiations between CEA and CNRS at a national level on technology transfer policy and intellectual property. The signature occurred finally in January 2020.

The milestone MS11 corresponding to the signature of these both contracts was reached on month M37 (instead of M6 initially planned).

Sub-Task 4.2.4 – Operational implementation - Innovative radio-isotopes production

Leader: Normandie Energie/Nucleopolis

In the general context of nuclear physics applications in the health domain, the R&D program on development of new production methods for innovative medical radioisotopes started at GANIL in 2014; it has been showing the interest from the industrial side.

Within the frame of sub-task 4.2.4, a study of the various possibilities for the technology transfer of this type of activity was achieved in 2018.

The milestone related to this study, MS10, was completed on month M30.

Some contacts were taken with an industrial company, and further discussions took place in 2019 in order to have a positioning of this company about the common development of new production methods of some medical innovative radioisotopes in GANIL laboratory. Unfortunately, this company decided not to be interested by these new developments.
The MoU between ARRONAX and GANIL related to the production of radioisotopes is currently on stand-by.

List of deliverables for the task
D4.2 – "Report on the technology transfers developed in the framework of the project" (M51)

Task 4.3 – Increase of Innovation potential

Task leader: CEA
Participant: GANIL

The objectives of this task are to study the possibilities of increasing the innovation potential of the GANIL laboratory, with the following actions:
- Identify new applications with heavy and light ions beams, to replace the reactor technology with the accelerator technology, for as many applications as possible
- Identify new R&D subjects that might lead to innovative technologies and applications
- Identify the necessary technical developments to adapt the facility to these future and new applications.

This thematic is becoming more and more important in the national and international contexts, and the GANIL facility can offer, through its specificities and its various scientific and technical developments, a lot of new application fields and innovations.
The activities in 2017 were dedicated to some bibliography studies and brainstorming on new applications with the use of heavy and light ion beams (GANIL and SPIRAL2 facilities) and new fast neutron beams produced by the SPIRAL2 facility. Several application domains were identified: Boron Neutron Capture Therapy (BNCT), Neutrons for analysis and Neutron Activation Analysis, Production and separation of isotopes, Membranes and filtration by Nanostructuration with Middle and High Energy Ion Beams, Low Energy Focused Ion Beams. The medical radioisotope field is taking off as this thematic is included in sub-task 2.4.
Two subjects were selected to be investigated in details in 2018:
- Membranes and filtration by nanostructuration with middle and high energy ion beams
- Production and separation of isotopes (other than for medical applications) by an electromagnetic process.

As far as membranes are concerned, the considered technology for the production of polymeric membranes (standard chemical composition of polymers include carbon, oxygen, hydrogen, and

nitrogen atoms) is called *track etching* or *swift heavy ion* irradiation. The production process includes three subsequent steps: ion irradiation of a polymeric film with high-energy (mostly MeV/nucleon range) heavy ions; chemical etching, and post-production treatment associated directly with the membrane's specific application. Track-etched membrane (TEMs) technology results in the manufacture of uniformly sized micro/nanoporous polymeric structures with channel-like pores, which leads to high-performance functional membranes in many fields. A broad market study has been performed, which presents the international situation and all the applications using TEMs. This study shows some "niche" markets requiring the development of new types of TEM, with new materials and new functionalities. GANIL's potential for these future developments has been assessed, putting forward the facility specificities. A business plan based on these future activities has been developed and will be presented in the deliverable D4.1 (cf. Task 4.1).

As far as production and separation of isotopes by an electromagnetic process are concerned, the study has been conducted on three main points:

- a complete market study and assessment of the international situation, from which the necessity for an organized network at the European level appears;
- the assessment of the added value of the GANIL facility in this domain, and in particular the identification of isotopes which could take advantage of it;
- the proposal of a technical facility at GANIL for the development of these isotopes.

Both studies will be presented in detail in the final report.

List of deliverables for the task
D4.3: "Report on the increase of innovation potential study" (M51)

8.2.5 WORK PACKAGE 5 COMMUNICATION AND OUTREACH

Participant: GANIL
Objectives
The work package 5 (Communication and Outreach activities) aims at supporting work packages 2, 3 and 4 actions in order to optimize their own effects.
It highlights and raises the visibility of GANIL and its partners' activities through communication actions towards members and funders, users and general public.

Tasks
The Work package 5 is organized in four tasks. Each task represents a specific audience of the communication developed in this work package:

- Task 5.1: towards members and funding partners
- Task 5.2: towards users (academics and industrial)
- Task 5.3: towards the layman

- Task 5.4: towards press

Work carried out from the beginning to now (January 1st 2017 – October 31st 2020)
Graphic harmonization of the communication

To harmonize all the media, the first step was to redefine GANIL's graphic identity. In this aim, the current booklet presenting the facility (printed in 2017) was used as a starting point.
Based on this document, we set up an identity guideline explaining in detail how to use the logo, the colours and the fonts in order to bring more cohesion between the media. By coordinating all the communication, the goal is to make GANIL's identity easily identifiable and stronger.
From now on, external and internal communication tools share the same identity, to strengthen the laboratory's image and visibility.

Task 5.1: towards members and funding partners

Task 5.1 aims at improving diffusion of information towards members (CEA and CNRS) and funding partners (local authorities, other laboratories…) to advise them about results and achievements in GANIL.

Highlights
Highlights of the facility activities are sent to GANIL's funding organizations CEA and CNRS to promote projects, collaborations and news achieved by GANIL team.
From January 2017 to June 2019, sixteen highlights have been sent to CNRS/IN2P3 and CEA/IRFU to be distributed through their online and printed publications.

Local network
GANIL is involved in a local communication network gathering research laboratories, CNRS, the University of Caen and the "CCSTI" Relais d'Sciences (technical and scientific centre designed to promote exchanges between scientists and the general public). This network is involved in the launch of Echosciences Normandie, an online platform gathering news and articles about science in Normandy: https://www.echosciences-normandie.fr/
GANIL Communications officer was trained by Relais d'sciences to be able to publish contents in accordance with the editorial strategy of the website.

Furthermore, GANIL sends news to its local partner about joined projects. In December 2017, the Normandy Region funded a research project coordinated by GANIL and LPC laboratory. The news was sent to the Normandy Region communication office who published it on its Twitter page: https://twitter.com/RegionNormandie/status/951852523379396608

GANIL is also a member of the Science and Innovation EPOPEA Park in Normandy which covers 300 hectares entirely dedicated to global innovation in health, energy and digital sciences.

Newsletter

The first edition of GANIL electronic newsletters was sent in January 2018 to members and funding partners: http://pro.GANIL-spiral2.eu/laboratory/news-and-highlights/GANIL-newsletter

It gathers information about GANIL and recent achievements. This news was published on the GANIL website dedicated to users (http://pro.GANIL-spiral2.eu).

Poster GANIL-SPIRAL2 for KU Leuven laboratory

In order to promote KU Leuven activities at GANIL-SPIRAL2 facilities, a poster was created in February 2018 to be presented during an event organised by their funding agencies. This poster was presented in March 2018 in Brussels.

Partners and Sponsorship Brochure

In order to develop the international scientific partnership, a brochure has been created introducing the current structure and a description of the GANIL-SPIRAL2 facility, the current international collaborations, the objective of new collaborations and the cooperation offers. The document is dedicated to all potential international partners of GANIL.

Task 5.2: towards users (academics and industrial)

Internal information broadcast system

The renewal of the internal broadcast system, operates thanks to screens located in laboratories reception desk, floors of the main building and guest house, is ongoing. This system is used to diffuse news about the laboratory to GANIL staff, visitors and users.

For a better dissemination of information towards users, a new design was set up to present information on the screens inside GANIL, using a new colour coding for each category (workshop, forum, seminar, conference, beam schedule, scientific event…) and a unique way to organize the content for all slides.

The publication management system is under revision to facilitate the update.

GANIL user community portal

A portal dedicated to GANIL community was implemented on January 25th 2018: https://u.GANIL-spiral2.eu/portal/login. This portal simplifies the access to GANIL's tools (IT tools, communication tools...). In this way, every GANIL user has a unique account and only one place to manage that account for all tools. A database for GANIL Users was created, thanks to email addresses used for conferences announcement and collaborations lists. It is used for important announcements for GANIL community: elections of the GANIL User Executive Committee (GUEC), call for proposals for the Program Advisory Committee of the laboratory, circulars of conferences…

This portal also provides a centralized access to publication and automatic edition tools (newsletter, publication on internal information broadcast system).
The GANIL user community portal was developed in narrow collaboration with the team in charge of the Task 2.4 of WP2.

Newsletter

The electronic newsletter, dedicated to GANIL community, gives an overview on projects and achievements in GANIL. The audience is mainly consisted of researchers, engineers and technicians. Hence, the contents have been adapted to these readers.
The newsletter is generated with the new GANIL portal, with a predefined template. Once created this newsletter can be send automatically to all GANIL users. This tool is added in the portal where it can be managed. It is possible to add articles, events and publications to the content of the newsletter as well as an editorial.
Thanks to the database created for the portal, the newsletter was sent to more than 2,300 addresses.

Website

The new GANIL user's website facilitate the access to the infrastructure, present information about the facilities and its equipment and relay news about GANIL and its activities. To offer a website for GANIL users that fits their needs and demands, we interviewed 33 of them to collect all information about their expectations, ideas and habits. The audit was conducted with both internal and external users. It allowed us to create a report that listed what users need before, during and after their visit. The site map and new design are ongoing validation. The new website is online since December 31st, 2018.

Intranet

A new GANIL-SPIRAL2 intranet is currently in development to ease the communication and research of information. It will be also the place where internal staff members will be able to see the structure of the laboratory.

Conferences and workshops

- *XXth GANIL Colloque, 2017*

The 20th GANIL Colloque was held from October 16th to 20th, 2017 in Amboise (France). The event was organized by a GANIL team in partnership with IPN Orsay laboratory. It gathered 133 physicists from 16 countries. During the conference, 64 talks and 20 posters were presented. The purpose of the conference was to review and discuss the research carried out at GANIL and the related activities carried out at similar facilities around the world. Traditionally the Colloque covers the range of topics addressed at GANIL:

- Nuclear Structure

- Nuclear Dynamics
- Nuclear Astrophysics
- Fundamental Interactions
- Interdisciplinary research
- Related theoretical developments
- Applications
- Instrumentation and Technical developments

- *1st China-France Joint Nuclear Physics Symposium, 2018*

The first edition of the China-France Joint Nuclear Physics Symposium was held in GANIL from April 10th to 13th, 2018. 57 participants from both countries attended the event. The Symposium was dedicated to the presentation and discussion of projects in fundamental nuclear physics and its applications.

It gathered researchers, directorates and representatives of Chinese institutions, laboratories and universities and of CEA, IN2P3 and GANIL for the French side.

For this occasion, the organizing committee wanted to illustrate the collaboration between the two countries and advertise the event with a clear design. To meet this demand, an identity was created while fully respecting GANIL's guideline. It comes in several versions for online and printed media (poster and website: https://cn-f-nusymp.sciencesconf.org/).

- *EURORIB 2018*

The conference EURORIB is jointly organized by the main Radioactive Ion Beam (RIB) facilities in Europe, presently engaged in the major upgrades HIE-ISOLDE@CERN, NUSTAR@FAIR, SPES@LNL and SPIRAL2@GANIL with the long-term goal of EURISOL. In 2018, GANIL was in charge of organizing it in France. Therefore, the conference was held in Giens from May 27th until June 1st 2018. It gathered 100 physicists from 18 countries. During the conference, 74 talks and 15 posters were presented. In the margins of the conference, a poster session permitted to select the top-3 best posters. The winners were able to present their topics during an oral session on the last day.

- *GANIL community meeting, 2018*

The first GANIL-Community Meeting was held from October 8th to 12th, 2018 at the Musée des Beaux Arts of Caen (France), which gathered 104 physicists. The purpose of the meeting is to bring together the whole GANIL community to discuss and define coherently the future research programs for GANIL. 26 presentations were organized to review both the intended experimental and theoretical programs related to GANIL covering the main topics as follows:

- Study of the N~Z nuclei
- Nuclear structure at the shell closures
- Nuclear dynamics
- Study of Heavy Elements (Z>92)

- Application to the Nuclear Astrophysics
- Atomic Physic
- Giant collective modes
- Phenomena at the particle threshold
- Fundamental interactions

To promote this particular event, a poster and a website were designed, following the guideline: https://gcm2018.sciencesconf.org/

The main concept to transpose was that this meeting is about exchanging ideas together to define the future research programs.

- *XXIth GANIL Colloque, 2019*

The 21st GANIL Colloque was held from September 9th to 13th, 2019 in Strasbourg (France), which gathered 123 physicists. The event was organized by a GANIL team in partnership with IPHC laboratory. The purpose of the conference was to review and discuss the research carried out at GANIL and the related activities carried out at similar facilities around the world. Traditionally the Colloque will cover the range of topics addressed at GANIL:

- Nuclear Structure
- Nuclear Dynamics
- Nuclear Astrophysics
- Fundamental Interactions
- Interdisciplinary research
- Related theoretical developments
- Applications
- Instrumentation and Technical developments

- *IPAC'20, 2020*

The 11th International Particle Accelerator Conference was hosted by the GANIL/SPIRAL2 laboratory and supported by the global French accelerator community (CNRS, CEA, SOLEIL and ESRF).

IPAC is the main international event for the worldwide accelerator community and industry. Attendees presented advanced accelerator research and development results and gain the latest insights into accelerator facilities across the globe. With over 1000 delegates and 70 industry represented this is a unique opportunity to network with, learn from and meet a wide range of decision makers, opinion leaders, buyers and newcomers to the field. During IPAC, it's the opportunity to meet and interact with accelerator scientists, engineers, students, and industrials.

Normally, IPAC'20 should have taken place from May 10th to 15th, 2020 in Caen (France). Finally, the conference turned to a virtual format from May 10th to 14th, 2020 because of sanitary restrictions. It turned out that 3,000 people registered, 77 virtual presentations took place and a live closing session was organized.

Posters as a support for scientific visitors

Posters were created to introduce the main rooms (experimental areas, accelerators, sources…) during visits with a scientific audience. A common template has been created to present main

features of the facilities: scientific and technical goals, recent achievements and publications, outlook. It is illustrated with pictures of results and equipment which are not always visible during the visits.

Communication tools for industrial users

A flyer presenting the general valorization activities has been created and integrated in GANIL brochure. This document was used during industrial exhibitions where GANIL was an exhibitor (World Nuclear Exhibition (WNE) 2018, RADECS 2017). Moreover, the background of GANIL booth on WNE was decorated with relevant information about GANIL for industrial visitors.

List of deliverables for the task

D5.1: "Information tools for industrial users" (M24) submitted on time
D5.2: "Report on annual international conferences for GANIL users" (M51)
D5.3: "New web site and newsletters for academic users" (M24) reached on time

Task 5.3: Towards the layman

Brochure

The presentation brochure of GANIL for the layman was updated in September 2020. It presents the laboratory, the questions which conduct nuclear physics researches in GANIL and a focus on ongoing projects (SPIRAL2, S3, NFS, DESIR and others). This brochure is distributed during scientific mediation events (Open days, French Science festival, visits of the laboratory…). It is available in French and in English.

Brochure for children

This brochure was created for the GANIL open days and is dedicated to children. The brochure has several games inside related to particle accelerators and accessible for children from 5 to 10 years old. It includes stickers and coloring mainly structure.

Participation in French science festival

GANIL participated in 2017, 2018, 2019 and 2020 in the French scientific festival. During several days, the public (mainly families) discovered GANIL activities thanks to scientific mediation workshops. Public could discover the principles of vacuum, magnetism and ion sources, how to conduct an ion beam, the diversity of nuclei in the chart of elements, the detection of the cosmic particles with the Muoscope and scientific projects supported by GANIL. The visitors had the opportunity to meet GANIL staff members and discuss with them.

Digital interactive screens

During the GANIL open days, Digital interactive screens are available to the layman to discover different machines of which the laboratory is composes. With this new tool, they can easily understand the operation at their own pace.

Interactive visit

A virtual visit of GANIL is available on the website (https://u.ganil-spiral2.eu/virtualvisit_en/) offering the possibility to discover the infrastructure in a very simple and intuitive way. The system has been developed mainly for layman but is also of interest for the users and partners. The visit lets discover the SPIRAL 2 facility, the cyclotrons, experimental areas and the ARIBE facility.

Public lectures

On October 2017, a general public lecture organized by GANIL and CNRS was held in the great library of Caen. The conference "It rains.... particles! Cosmic radiation." was presented by François de Oliveira, nuclear astrophysicist in GANIL.

He also gave a public lecture in the Institute of Hungary in February 2018, untitled Mysteries and the evolution of the universe and its stars.

In April 2018, Anthea Fantina, physicist in GANIL, led a physics seminar in Italy for high school students.

Artiste residency

GANIL contracts with artists to promote the activities of the infrastructure, in their own areas of expertise. The promotions are related to the global activities at GANIL, testimony of physicists, presentation of machines and/or reactions etc.

List of deliverables for the task

D5.4: "Online and printed communication tools for dissemination of information to the general public" (M51)

Task 5.4: Towards press

National and international press campaigns are managed by central communication offices of CEA and CNRS.

Local press information is managed by GANIL team. The updated GANIL press kit and releases is currently under validation and will be online soon. On the current webpage photos with credits are available.

List of deliverables for the task

D5.5: "Press kit and online contents for journalists" (M30)

8.3 *Impact*

No significant deviation from the project impact describe in section 2.1 of the DoA is expected.

8.4 *Access provisions to research infrastructures*

Description of the publicity concerning the new opportunities for access

A call for proposals was launched in April 2018, to all the industrial networks connected to GANIL and other European nuclear physics laboratories (through ENSAR2 network). A recall was launched in July 2018. The dead line for proposals has been scheduled at the end of August 2018. Moreover, the call for proposals was presented in 2018 and 2019 at the RADECs conference GANIL exhibition booth (RADEC 2020 was cancelled), this conference gathers all international organizations and companies working in the field of irradiation tests for electronic components for the aerospace field.

Description of the selection procedure

An international selection panel was created in 2018. Experts from various application fields have been identified, and the panel was validated at the beginning of 2018. The experts of this panel belong to CERN, CEA and CNRS.
The selection panel met remotely on February 6th 2019, to assess the proposals and select those to be scheduled in 2019. The selection panel followed the criteria described in the Grant Agreement (Article 16).
Two proposals were received, one from Austria and one from Switzerland. Both proposals were selected by the selection panel, and both concern the aerospace field research and new development activities.

Description of the Trans-national Access activity

Only one project could access the facility, as for the second one, a major accelerator breakdown occurred in July 2019 which lead up to the experiment cancellation. This second experiment could not be scheduled again in 2020, as the company had performed the tests on another facility in the meantime and had no new project to propose for that period.
The scheduled project concerns tests on a telescope developed by a private company for a spatial mission. They used several different ion beams at different energies, and needed then to have different beam periods scheduled: one in 2019 and one in 2020. The total amount of beam time granted to this project is thirty-four hours.

Scientific output of the users at the facilities

As the user is a private company, the scientific output is neither published nor communicated to our facility.

User meeting

No user meeting dedicated to this transnational access was organized during the reporting period.

9 UPDATE OF THE PLAN FOR EXPLOITATION AND DISSEMINATION OF RESULTS

Include in this section whether the plan for exploitation and dissemination of results as described in the DoA needs to be updated and give details.

All dissemination actions planned as face-to-face meetings and workshops were cancelled since March 2020 due to COVID-19 pandemic. At this stage it is not possible to predict if any of actions of this type can be scheduled before the end of March 2021.

10 FOLLOW UP OF RECOMMENDATIONS AND COMMENTS FROM PREVIOUS REVIEW(S)

The progress of the project is very good with the deliverable and most of the milestones achieved in time or with minor delays. Nevertheless, I would like to provide a few recommendations related to the period covered by the report.

One problem encountered during this period is the strong dependence of the GANIL structure on its members, CEA and CRNS, both with their own administrative rules. This dependence is difficult to overcome, in particular given the current purely French nature of GANIL. I would recommend to try to use the proposed internationalization of the GANIL structure to achieve a greater degree of independence.

The internationalization of GANIL was pursued in the framework of WP2 with several major steps reached (see report on WP2 for detailed information):

The board of directors (CODIR) approved in May 2019, a document untitled “General provisions for the status of Scientific Partner at GANIL-SPIRAL2”. This document gives the definition of the scientific partnership, the ways to conclude partnerships, the status of scientific partner, and the rights and duties of the partners. On the basis of this document, partnerships have been negotiated with collaborators.

- Poland: the COPIN consortium signed with GANIL-SPIRAL2 a Memorandum of Understanding on April 2nd 2020, in the expectation for COPIN to become a transitional scientific partner.
This memorandum, concluded for one year and renewable, settles the expected partnership framework “upon implementation of the scientific partnership between the Parties”.
- Czech Republic: NPI and GANIL-SPIRAL2 have reached an agreement on a partnership, which would grant to NPI the status of Scientific partner at GANIL-SPIRAL2. The agreement is currently under approval process and is expected to be signed in late 2020.

The budget has been relatively underused in the first period subject to review. There are reasons for that but I would recommend to keep a close eye on the use of the budget to ensure that all the originally proposed goals can be achieved within the duration of the project.

The COVID-19 pandemic did not allow to undertake many actions foreseen in WP2, WP4 and WP5. As a consequence, a significant part of the budget dedicated to these actions and in particular support for the TNA could not be spent as foreseen.

Innovation and industrial applications are clearly some of the most important avenues to develop to achieve the goal of long-term sustainability. Good progress has been made so far but I would recommend to insist on the development of industrial applications of GANIL and to ensure that the "market opportunity studies" are delivered in time.

Except the part related to TNA all other activities of WP4 progressed on schedule and in particular "market opportunity studies" (D4.3 Report on the increase of innovation potential study) is very well advanced and will be delivered on time (see report on WP4 for details).

Finally, I would recommend to consider exporting the very interesting tool developed to estimate costs of the experiments run in the GANIL facilities to other similar facilities.

A Web interface of the tool is under development (WP3) and should allow for its wider dissemination.

The work plan for the rest of the duration of the project is well structured and, if followed, will lead to a successful completion of the project. Therefore, no significant changes in this work plan are needed. However, there are two relevant aspects that I would like to comment on.

The first one is that the unfortunate (and impossible to foresee) delay in the starting date of the SPIRAL-2 facility has a significant impact on an important task of WP4. The starting date is now fixed shortly after the end date of the IDEAAL project. I think this task is important and, although its partial application would allow to achieve most of the goals of task, I would recommend to request an extension in the duration of the project. This would guarantee, without requiring any extra funding, the successful completion of this task.

Following the above recommendation, the project duration was extended through two amendments by 9 and 6 months respectively. Unfortunately, two waves of pandemic did not allow to explore all opportunities for the TNA for industrial users as it was foreseen initially (see report on WP4 for more details).

Secondly, the management of the IDEAAL project has proposed to introduce two changes in the GA. One, related to deliverable D3.5, proposes to replace a soon-to-be-useless mock audit with a real description of the new GANIL structure. The second is related to a change in the distribution of the budget among the different beneficiaries due to the change in the rules of the European Commission. I think that both proposed modifications are very sensible and they do not modify in any way the proposed goals and the way to achieve them.

This recommendation was applied in the GA in the corresponding amendment in 2019. The work plan was modified and is being realized (see report on WP3 for more details).

11 DEVIATIONS FROM ANNEX 1 AND ANNEX 2

11.1 *Tasks*

Task 4.1 The first call for proposals for new industrial user with GANIL beams was launched in April 2018, and was focusing on GANIL beams, the SPIRAL2 facility first beams could not be scheduled before 2020. The first selection of experiments was done in February 2019 and the two proposals were selected by the international panel. Only one project could be realized, the second one being cancelled because of a major facility break-down in July 2019.
A last call for proposal was launched in 2020 for the use of the SPIRAL2 facility neutron beam available in autumn 2020; no proposals were received probably due to economic crisis caused by COVID-19 pandemic.
The situation of Task 4.1 has no impact on other tasks or work packages.

11.2 *Use of resources*

The only deviation of the use of resources between actual and planned use of resources in Annex 1 is related to the TNA as explained in 5.2.
No transfer of cost categories was required.
No adjustment with respect to the GA was necessary.
No unforeseen subcontracting was necessary.

12 ANNEX 1 REPORT ON EXPLANATIONS ON THE USE OF RESOURCES PER BENEFICIARIES

Project Number	**730989**
Acronym	IDEAAL
Period covered	From 1/01/2017 to 31/10/2020

Beneficiary Number	[1]
Beneficiary Short Name	[GANIL]

Direct personnel costs

1. Direct personnel costs declared as actual costs.

Person months	Associated WP

2. Direct personnel costs declared as unit costs

Person months	Associated WP

3. Use of in kind contribution from third party ***(Not applicable)***

.

No Use of resources was specified for this category

Direct costs of subcontracting

Description	Foreseen in Annex 1	Explanations (if not foreseen in Annex 1)	Costs
Drafting of a tax ruling			5.000,00
Physical inventory of			41.230,00

fixed assets			
Support for the reorganization project			85.541,08
Kalachakra project			4.000,00
Multimedia system renovation			26.180,50
TOTAL			**161.951,58**

Direct costs of providing financial support to third parties *(Not applicable)*

No Use of resources was specified for this category

Other direct costs: 1. explanation of major actual cost items if the amount exceeds 15% of personnel costs; 2. Unit costs for internal invoicing

1. Other direct costs declared as actual costs:

Short description	Category	Associated WP	Foreseen in Annex 1	Explanation (if not included in Annex 1)	Costs
	Travel	**WP1**			9.380,10
	Other direct costs	**WP1**			4.739,06
	Travel	**WP2**			6.728,87
	Other direct costs	**WP2**			25.818,36
	Travel	**WP3**			1.021,86
	Other direct costs	**WP3**			1.162,41
	Travel	**WP4**			6.409,72
	Other direct costs	**WP5**			307.855,96
TOTAL					**363.116,34**

2. Other direct costs declared as unit costs

Short description	Associated WP	Foreseen in Annex 1	Explanation (if not included in Annex 1)	Costs
	WP4			4.436,32
TOTAL				**4.436,32**

Other direct costs reported as use of in kind contribution from third party *(Not applicable)*
No Use of resources was specified for this category

Project Number	**730989**
Acronym	IDEAAL
Period covered	From 1/01/2017 to 31/10/2020

Beneficiary Number	[2]
Beneficiary Short Name	[CNRS]

Direct personnel costs

1. Direct personnel costs declared as actual costs.

Person months	Associated WP
[3,89]	WP1
[1,90]	WP2
[59,74]	WP3
[93,98]	WP5

2. Direct personnel costs declared as unit costs

Person months	Associated WP

3. Use of in kind contribution from third party *(Not applicable)*.

No Use of resources was specified for this category

Direct costs of subcontracting

No Use of resources was specified for this category

Direct costs of providing financial support to third parties *(Not applicable)*

No Use of resources was specified for this category

Other direct costs: 1. explanation of major actual cost items if the amount exceeds 15% of personnel costs; 2. Unit costs for internal invoicing

1. Other direct costs declared as actual costs:

Short description	Category	Associated WP	Foreseen in Annex 1	Explanation (if not included in Annex 1)	Costs
7004,02	Travel Equipment Other goods & services	WP2	YES		7004,02
TOTAL					7004,02

2. Other direct costs declared as unit costs
No Use of resources was specified for this category

Other direct costs reported as use of in kind contribution from third party ***(Not applicable)***

No Use of resources was specified for this category

Project Number	**730989**
Acronym	IDEAAL
Period covered	From 1/01/2017 to 31/10/2020

Beneficiary Number	[3]
Beneficiary Short Name	[CEA]

Direct personnel costs

1. Direct personnel costs declared as actual costs.

Person months	Associated WP
12.50	WP2
4.11	WP4

2. Direct personnel costs declared as unit costs

Person months	Associated WP
17.16	WP2
6.22	WP4

3. Use of in kind contribution from third party ***(Not applicable)***
No Use of resources was specified for this category

Direct costs of subcontracting

Description	Foreseen in Annex 1	Explanations (if not foreseen in Annex 1)	Costs
Conseil Mecenat			33 465.30 €
Etude juridique			10 600.00
TOTAL			**44 065.30**

Direct costs of providing financial support to third parties *(Not applicable)*

(**No Use of resources was specified for this category**

1. Other direct costs declared as actual costs:

Short description	Category	Associated WP	Foreseen in Annex 1	Explanation (if not included in Annex 1)	Costs
2 834.06		WP2			2 834.06
10 709.59		WP4			10 709.59
TOTAL					13 543.65EUR

2. Other direct costs declared as unit costs
No Use of resources was specified for this category

Other direct costs reported as use of in kind contribution from third party *(Not applicable)*
No Use of resources was specified for this category

Project Number	**730989**
Acronym	IDEAAL
Period covered	From 1/01/2017 to 31/10/2020

Beneficiary Number	[4]
Beneficiary Short Name	[GSI]

Direct personnel costs

1. Direct personnel costs declared as actual costs.

Person months	Associated WP
53,91	WP2

2. Direct personnel costs declared as unit costs

Person months	Associated WP
0	WP2

3. Use of in kind contribution from third party *(Not applicable)*
No Use of resources was specified for this category

Direct costs of subcontracting

No Use of resources was specified for this category

Direct costs of providing financial support to third parties *(Not applicable)*

No Use of resources was specified for this category

Other direct costs: 1. explanation of major actual cost items if the amount exceeds 15% of personnel costs; 2. Unit costs for internal invoicing

1. Other direct costs declared as actual costs:

Short description	Category	Associated WP	Foreseen in Annex 1	Explanation (if not included in Annex 1)	Costs
37.579,80	Travel	WP2.3	yes		37.579,80
TOTAL					37.579,80

2. Other direct costs declared as unit costs
No Use of resources was specified for this category

Other direct costs reported as use of in kind contribution from third party *(Not applicable)*
No Use of resources was specified for this category

Project Number	**730989**
Acronym	IDEAAL
Period covered	From 1/01/2017 to 31/10/2020

Beneficiary Number	[5]
Beneficiary Short Name	[IFJ PAN]

Direct personnel costs (euro)	**85 900,96**

1. Direct personnel costs declared as actual costs.

Name of the person working for the project	Associated WP	Person months
Michał Ciemała	WP 2	9 PM
Bogdan Fornal	WP 2	1,2 PM
Adam Maj	WP 2	1,2 PM
Katarzyna Mazurek	WP 2	13,8 PM
Barbara Wasilewska	WP 2	16,6 PM

2. Direct personnel costs declared as unit costs ***(Not applicable)***
No Use of resources was specified for this category

3. Use of in kind contribution from third party ***(Not applicable)***
No Use of resources was specified for this category

Direct costs of subcontracting

No subcontracting declared

Direct costs of providing financial support to third parties ***(Not applicable)***

No Use of resources was specified for this category

Other direct costs: 1. explanation of major actual cost items if the amount exceeds 15% of personnel costs; 2. Unit costs for internal invoicing

1. Other direct costs declared as actual costs:

Short description	Category	Associated WP	Foreseen in Annex 1	Explanation (if not included in Annex 1)	Costs (euro)
Travel expenses	[Travel] [Equipment] [Other goods & services]	WP 2	[YES] [NO]	Prof. Bogdan Fornal Feb. 2017 GANIL France – kick-of-meeting Prof. Bogdan Fornal Oct. 2017 GANIL France, conference Colloque GANIL Katarzyna Mazurek, Oct. 2017, France, conference Colloque GANIL Prof. Adam Maj, France, Oct. 2017, meeting at GANIL Michał Ciemała, Nov. 2017, Portugal, participation in EURISOL meeting Prof. Adam Maj, Nov. 2017, Portugal, participation in conference EURISOL and meeting in GANIL Workshop BUSPRASSEN, Coll. Meeting at the University of Warsaw, Jan. 2018 – participation of 9 persons from IFJ PAN. Prof. Adam Maj, France, April 2018, project Meeting	**6 714, 54**
				Participation in costs of organization of the PARIS meeting (in cooperation with University of Warsaw)	4 846, 87
Travel expenses				Michał Ciemała, France, Oct. 2018, GANIL community meeting	19 557 ,10

				Katarzyna Mazurek, France, Oct. 2018, GANIL community meeting Prof. Bogdan Fornal, France, Oct. 2018, GANIL community meeting Prof. Adam Maj, Hungary, Oct. 2018, GANIL community meeting and NuPECC Prof. Adam Maj, France, Feb. 2019, LISE workshop Michał Ciemała, France, Feb. 2019, LISE workshop Prof. Adam Maj, France, April 2019, IDEAAL meeting Barabara Wasilewska, France, April 2019, IDEAAL meeting Piotr Bednarczyk, Michał Ciemała, Mateusz Krzysiek, Katarzyna Mazurek, Adam Maj, Barbara Wasilewska, France, Oct. 2019, Participation in the JENAS 2019 conference and discussion of the GUEC goals. Piotr Bednarczyk, Michał Ciemała, Cieplicka-Oryńczak, Bogdan Fornal, Maria Kmiecik, Adam Maj, M. Matejska-Minda, Barabara Wasilewska, Italy, Dec. 2019. Participation in the „Workshop of the PARIS collaboration". Prof. Adam Maj, France, Jan. 2020, Meeting of the IDEAAL project. Prof. Adam Maj, France, Feb.	

				2020. Presenting the outcome of the IDEAAL WP2.4 at the GANIL Scientific Council.	
N=Z meeting GRIT meeting				The meeting was dedicated to prepare, by the international users, proposals for the GANIL experimental campaigns using the GRIT end EXOGAM detecto.rs	14 560 ,12
Co-financing of the cost of "Colloque GANIL 2019" held 9-13.09.2019				The purpose of the Colloque GANIL conference was to review and discuss the research carried out at GANIL and the related activities carried out at similar facilities around the world. The main outcome of the IDEAAL WP4.2 was presented.	17 889 ,90
Licenses for Zoom Meeting				In order to conduct the work of the IDEAAL project in the pandemic situation period, the professional application for online communication was purchased.	2 262, 74
TOTAL					**65 831 ,27**

3. **Other direct costs declared as unit costs**

No unit cost declared

Other direct costs reported as use of in kind contribution from third party ***(Not applicable)***

Project Number	**730989**
Acronym	IDEAAL
Period covered	From 1/01/2017 to 31/10/2020

Beneficiary Number	[6]
Beneficiary Short Name	[Normandie Energie]

Direct personnel costs

1. Direct personnel costs declared as actual costs.

Person months	Associated WP
10,5	WP4
3,5	WP4
2,6	WP4
0,14	WP4
0,05	WP4
0,05	WP4
0,05	WP4

2. Direct personnel costs declared as unit costs

No use of resources was specified for this category

3. Use of in kind contribution from third party *(Not applicable)*

No use of in kind contribution was specified for direct costs

Direct costs of subcontracting

(

Description	Foreseen in Annex 1	Explanations (if not foreseen in Annex 1)	Costs
Valorisation Study – Erdyn Atlantique	YES	-	25 000.00€
TOTAL			25 000.00€

Direct costs of providing financial support to third parties *(Not applicable)*

No **use of resources was specified for this category**

Other direct costs: 1. explanation of major actual cost items if the amount exceeds 15% of personnel costs; 2. Unit costs for internal invoicing

~~1.~~ Other direct costs declared as actual costs:
2.

Short description	Category	Associated WP	Foreseen in Annex 1	Explanation (if not included in Annex 1)	Costs
Nadine Renard Licence Access	Other goods & services	WP4	yes		329,90€
Nadine Renard Computer	Equipment	WP4	yes		1286,76€
WNE Stand in October 2018	Other goods & services	WP4	yes		3755.00€
Focus Ganil 2019	Other goods & services	WP4	yes		1176,00€
Nadine Renard: European project manager between 2017 and 2019: 2017: visit to GSI laboratory (Germany) March 2018: Participation to the big science business forum in Copenhagen Many travels to Brussels, Poland, Lyon, Charlemagne, Seville between 2017 and 2019	Travel	WP4	yes		10875,49€
TOTAL					17423,15€

2. Other direct costs declared as unit costs
No use of resources was specified for major cost item

Other direct costs reported as use of in kind contribution from third party ***(Not applicable)***

No Use of resources was specified for this category

13 ANNEX 2 FINANCIAL STATEMENT SUMMARY FOR THE PROJECT

Financial Statements Summary

Participant No	Organisation Short Name	Fin. Stat. from 01/01/2017 to 31/10/2020	n° WP	Direct personnel costs declared as actual costs (a)	Direct personnel costs declared as unit costs (average costs) (b)	Number of units	Direct personnel costs declared as unit costs (c)	Direct costs of subcontracting (d)	Direct costs of providing financial support to third parties (e)	Other direct costs (f)	Costs of large research infrastructure (g)	Costs of internally invoiced goods and services (h)	Indirect costs (i)	Special unit costs covering direct and indirect costs (y)	Total costs (k)	Reimbursement rate %	Maximum EU contribution (n)	Requested EU contribution (o)	Costs of in-kind contributions not used on premises (p)
1	GANIL		WP1	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	14 119,16 €	0,00 €	0,00 €	3 529,79 €	0,00 €	17 648,95 €	100,00 €		17 648,95 €	0,00 €
1	GANIL		WP2	0,00 €	0,00 €	0,00 €	0,00 €	5 000,00 €	0,00 €	32 547,23 €	0,00 €	0,00 €	8 136,81 €	0,00 €	45 684,04 €	100,00 €		45 684,04 €	0,00 €
1	GANIL		WP3	0,00 €	0,00 €	0,00 €	0,00 €	126 771,08 €	0,00 €	2 184,27 €	0,00 €	0,00 €	546,07 €	0,00 €	129 501,42 €	100,00 €		129 501,42 €	0,00 €
1	GANIL		WP4	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	6 409,72 €	4 436,32 €	0,00 €	1 602,43 €	0,00 €	12 448,47 €	100,00 €		12 448,47 €	0,00 €
1	GANIL		WP5	0,00 €	0,00 €	0,00 €	0,00 €	30 180,50 €	0,00 €	307 855,96 €	0,00 €	0,00 €	76 963,99 €	0,00 €	415 000,45 €	100,00 €		415 000,45 €	0,00 €
	TOTAL			0,00 €	0,00 €	0,00 €	0,00 €	161 951,58 €	0,00 €	363 116,34 €	4 436,32 €	0,00 €	90 779,09 €	0,00 €	620 283,33 €	100,00 €	1 296 490,00 €	620 283,33 €	0,00 €
2	CNRS		WP1	36 056,02 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	9 014,01 €	0,00 €	45 070,03 €	100,00 €		45 070,03 €	0,00 €
2	CNRS		WP2	111 694,32 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	7 004,02 €	0,00 €	0,00 €	29 674,59 €	0,00 €	148 372,93 €	100,00 €		148 372,93 €	0,00 €
2	CNRS		WP3	197 590,01 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	49 397,50 €	0,00 €	246 987,51 €	100,00 €		246 987,51 €	0,00 €
2	CNRS		WP5	329 969,64 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	82 492,41 €	0,00 €	412 462,05 €	100,00 €		412 462,05 €	0,00 €
	TOTAL			675 309,99 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	7 004,02 €	0,00 €	0,00 €	170 578,50 €	0,00 €	852 892,51 €	100,00 €	924 025,00 €	852 892,51 €	0,00 €
3	CEA		WP2	50 519,84 €	169 074,89 €	0,00 €	0,00 €	44 065,30 €	0,00 €	2 834,06 €	0,00 €	0,00 €	55 607,20 €	0,00 €	322 101,29 €	100,00 €		322 101,29 €	0,00 €
3	CEA		WP4	16 919,84 €	61 253,72 €	0,00 €	0,00 €	0,00 €	0,00 €	10 709,59 €	0,00 €	0,00 €	22 220,79 €	0,00 €	111 103,94 €	100,00 €		111 103,94 €	0,00 €
	TOTAL			67 439,68 €	230 328,61 €	0,00 €	0,00 €	44 065,30 €	0,00 €	13 543,65 €	0,00 €	0,00 €	77 827,99 €	0,00 €	433 205,23 €	100,00 €	682 875,00 €	433 205,23 €	0,00 €
4	GSI		WP2	325 139,12 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	37 579,80 €	0,00 €	0,00 €	90 679,73 €	0,00 €	453 398,65 €	100,00 €		453 398,65 €	0,00 €
	TOTAL			325 139,12 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	37 579,80 €	0,00 €	0,00 €	90 679,73 €	0,00 €	453 398,65 €	100,00 €	475 000,00 €	453 398,65 €	0,00 €
5	IFJPAN		WP2	68 693,67 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	65 831,27 €	0,00 €	0,00 €	30 740,88 €	0,00 €	153 704,40 €	100,00 €		153 704,40 €	0,00 €
	TOTAL			68 693,67 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	65 831,27 €	0,00 €	0,00 €	30 740,88 €	0,00 €	153 704,40 €	100,00 €	282 500,00 €	153 704,40 €	0,00 €
6	Normandie Energie		WP4	76 060,72 €	0,00 €	0,00 €	0,00 €	25 000,00 €	0,00 €	17 423,15 €	0,00 €	0,00 €	29 620,96 €	0,00 €	148 104,83 €	100,00 €		148 104,83 €	0,00 €
	TOTAL		WP4	76 060,72 €	0,00 €	0,00 €	0,00 €	25 000,00 €	0,00 €	17 423,15 €	0,00 €	0,00 €	29 620,96 €	0,00 €	148 104,83 €	100,00 €	222 500,00 €	148 104,83 €	0,00 €