

NA01-FISCO2

1. FISCO2 (structural modifications)
2. Brief overview of what has been done so far (Deliverables/ Milestones/RP1and RP2 expenses/Amendments)
3. What is to be done by August 31st 2020

1. FISCO2 (structural modifications)

Financial and Scientific COordination

Management of the ENSAR2 project

Coordination of all technical, scientific, financial, administrative, contractual and legal activities of the ENSAR2 Integrating Activity.

Management Group

Coordinator: Muhsin N. Harakeh

Deputy coordinator: Marek Lewitowicz

Manager: ~~Ketel Turzó~~ Sabrina Lecerf

Financial officer: ~~Véronique Vandevorde~~ Chrystel Goursault

Administrative officer: ~~Sandrine Dubromel~~ Stéphanie Pupin + Sabrina Lecerf

TNA : Marie Laure Abavent + ~~Sandrine Dubromel~~ Sabrina Lecerf

Impact Studies: Sabrina Lecerf



2. Brief overview of what has been done so far

Deliverables

Deliverables, Ethics, DMP, Other Reports				
WP	Del Ref No	Del N	Title	Lead Beneficiary
WP1	D1.1	D1	Dissemination	GANIL
WP1	D1.2	D2	Facility Coordination Group	GANIL
WP1	D1.3	D3	Impact studies	GANIL
WP2	D2.1	D5	Report on workshops in months 1-12	JLU
WP2	D2.2	D6	Mid-term report: Status and needs - synthesis of results of first workshops	JLU
WP2	D2.3	D7	Report on EURISOL Town Meeting	JLU
WP2	D2.4	D8	Report on the workshops in months 25-34	JLU
WP3	D3.1	D10	Report on setup of common database	JYU
WP3	D3.3	D12	Report on a series of workshops	JYU
WP3	D3.4	D13	Report on hands-on-training	JYU
WP4	D4.1	D14	Report on the setup of the website, members and chairs of the Scientific Committee and Working Groups	INFN
WP4	D4.2	D15	Midterm report on the activity of the Scientific Committee and Working Groups	INFN
WP4	D4.3	D16	Intermediate report on the activity of the Scientific Committee and Working Groups	INFN
WP4	D4.5	D18	Midterm report on the Collaboration Workshops and training activities	INFN
WP4	D4.6	D19	Intermediate report on the Collaboration Workshops and training activities	INFN
WP5	D5.1	D22	Specific need and proposed solutions of nuclear tools for medicine	EBG MedAustron
WP5	D5.2	D23	Clarifying/adapting nuclear concepts to the medical field	EBG MedAustron
WP5	D5.3	D24	Nuclear physics instrumentation for medicine	EBG MedAustron
WP5	D5.4	D25	Use of nuclear physics tools to support biological effectiveness assessment in ion-beam therapy	EBG MedAustron
WP6	D6.1	D26	Web Site	GANIL
WP6	D6.3	D28	GDS Topical Meeting "GDS for high-intensity and heavy-ion beams"	GANIL
WP6	D6.4	D29	GDS Topical Meeting "GDS with rare gas targets: handling and recycling"	GANIL
WP6	D6.5	D30	GDS Topical Meeting "GDS coupling to auxiliary detection systems"	GANIL
WP7	D7.1	D31	Strategy Report "Physics Opportunities and Innovation at European Small-Scale Accelerators"	NCSR
WP7	D7.2	D32	Overview on the "International Workshop on Accelerator Operation and Management"	NCSR
WP7	D7.3	D33	Strategy Report "Training Opportunities at European Small-Scale Accelerators"	NCSR

2. Brief overview of what has been done so far

Deliverables

WP8	D8.1	D35	Intermediate report on Innovation Survey	GANIL
WP8	D8.3	D37	Intermediate report on the identified industrial network	GANIL
WP8	D8.5	D39	Dissemination kit	GANIL
WP8	D8.6	D40	Report on the survey of available courses in European countries and on the description of the courses proposed	GANIL
WP8	D8.7	D41	Intermediate Report on the provided courses	GANIL
WP9	D9.1	D43	Report: present status of New Scintillator Materials and their basic characterisation (energy & time response)	CSIC
WP9	D9.2	D44	Report: Sensor characterization and Base design of hybrid detectors	CSIC
WP9	D9.3	D45	Report: Scintillator response to gamma and particle radiation	CSIC
WP9	D9.4	D46	Report: Digital pre-processing at frontend	CSIC
WP9	D9.5	D47	Report: Design Phoswich Assemblies for homeland security	CSIC
WP10	D10.1	D49	Results of the JRA2 kick-off meeting	CSIC
WP10	D10.2	D50	Advancement report for the Segmentation and Geometry tasks	CSIC
WP10	D10.3	D51	Advancement report for the p-type task	CSIC
WP10	D10.4	D52	Advancement report for the Imaging task	CSIC
WP11	D11.1	D56	New effective interaction for beyond-mean-field calculations	CNRS
WP11	D11.2	D57	Codes for transfer and CDCC calculations with core excitation	CNRS
WP11	D11.3	D58	Eikonal-based code to describe dynamical effects in scattering, breakup and knockout reactions	CNRS
WP12	D12.1	D60	Report on Task developments from RESIST	JYU
WP12	D12.2	D61	Mid-term report on new techniques to enhance ion beam purity prior to the LIST multipole	JYU
WP12	D12.3	D62	Mid-term report on new methods to improve the efficiency, selectivity and spectral resolution	JYU
WP12	D12.4	D63	Mid-term report on new concepts and developments related to laser technologies	JYU
WP13	D13.4	D69	Report on workshop on developments of the nuclear-physics community for GEANT4	RUG
WP14	D14.1	D70	Report on performances of the EBIS debuncher	CNRS
WP14	D14.2	D71	Report on R&D on radioactive plasma ion sources	CNRS
WP14	D14.3	D72	Conceptual design report of a new generation charge breeder	CNRS
WP15	D15.1	D75	Report on the characterization of a Niobium disk under RF	CNRS
WP15	D15.4	D78	Report and publication on yields, radioisotopic purity and disturbing impurities achievable	CNRS
WP15	D15.5	D79	Plastic scintillator prototype	CNRS
WP15	D15.7	D81	Report on R&D on studies on X-ray emission and detector material	CNRS
WP15	D15.8	D82	Report on R&D on characterization and optimization of detector design	CNRS
WP15	D15.10	D84	Report on Chip Design	CNRS



Total : 57/86 Deliverables submitted

2. Brief overview of what has been done so far

Milestones

Milestones				
Item	Name	Lead Beneficiary	Delivery Date	Achieved
1	Start of impact studies	GANIL	31 Aug 2017	✓
2	Constitution of steering committee	JLU	31 May 2016	✓
3	Workshop on nuclear structure	JLU	31 Aug 2016	✓
4	Workshop on nuclear reactions	JLU	28 Feb 2018	✓
5	Workshop on nuclear astrophysics	JLU	28 Feb 2018	✓
6	Workshop on superheavy elements	JLU	30-nov-18	✓
7	Workshop on cross-combining elements: nuclear theory, instrumentation, computing	JLU	31 Aug 2019	✓
8	Steering committee established	JYU	31 May 2016	✓
9	Website established for database	JYU	30-nov-16	✓
10	Program for hands-on training	JYU	31 Aug 2016	✓
11	Setup of the website, Scientific Committee and Working groups	INFN	28 Feb 2017	✓
12	Scientific and Working groups meetings	INFN	31-oct-17	✓
13	Collaboration Workshops	INFN	31-oct-18	✓
14	Training Courses and exchange of personnel	INFN	31-oct-19	✓
15	Kickoff-Meeting	EBG MedAustron	31 May 2016	✓
16	Website	EBG MedAustron	30-juin-16	✓
17	Mid-term meeting	EBG MedAustron	31 May 2018	✓
18	Final meeting	EBG MedAustron	29 Feb 2020	✓
19	GDS coordination committee	GANIL	31 May 2016	✓
20	Creation of the GDS community	GANIL	31 Aug 2016	✓
21	News Feed	GANIL	31 Aug 2016	✓
22	ENSAF webpages	NCSR	31 May 2016	✓
23	2nd ENSAF Workshop held	NCSR	31 Aug 2018	✓
24	International Workshop on Accelerator Operation and Management	NCSR	31 May 2017	✓
25	Meetings on Training at Small-Scale Accelerator	NCSR	28 Feb 2017	✓
26	Decision for technology transfer network	GANIL	28 Feb 2018	✓
27	End of the collection of impact data	GANIL	30-juin-19	✓
28	Website and workshop	GANIL	31 Aug 2017	✓

2. Brief overview of what has been done so far

Milestones

29	Summary of courses	GANIL	28 Feb 2018	✓
30	Crystal characterisation	CSIC	28 Feb 2017	✓
31	Scintillator readout Test-bench	CSIC	31 Aug 2017	✓
32	Hybrid readout	CSIC	28 Feb 2018	✓
33	Data processing	CSIC	28 Feb 2018	✓
34	Imaging using segmented detector	CSIC	28 Feb 2019	✓
35	Kick-off R&D	CSIC	31 Aug 2016	✓
36	Detector R&D Application / associated technologies Workshop	CSIC	28 Feb 2017	✓
37	Detector R&D Application / associated technologies Workshop - 2	CSIC	28 Feb 2018	✓
39	Definition of an appropriate power counting	CNRS	28 Feb 2018	✓
41	Definition of appropriate reaction observables	CNRS	28 Feb 2018	✓
45	Ionization scheme development	JYU	28 Feb 2018	✓
46	Pulsed dye amplifier seeded by CW diode laser and injection-locked Ti:sapphire laser used in both off-line and on-line gas jet spectroscopy	JYU	28 Feb 2019	✓
47	New nuclear data libraries for GEANT4	RUG	28 Feb 2018	✓
48	Heavy-ion penetration in GEANT4	RUG	28 Feb 2018	✓
49	Algorithms for specific analysis and tracking	RUG	28 Feb 2018	✓
50	Inventory finished	RUG	28 Feb 2019	✓
51	Experiments for the optimal breeder configuration	CNRS	28 Feb 2018	✓
52	Nuclear data of produced beams	CNRS	28 Feb 2019	✓
53	Construction of polishing device	CNRS	28 Feb 2017	✓
54	Prototype of a PVT + PPO plastic scintillator	CNRS	28 Feb 2018	✓
55	Detector design and construction	CNRS	28 Feb 2019	✓
56	Asic prototype	CNRS	31 Aug 2018	✓
57	EURISOL Town Meeting	JLU	31 Aug 2018	✓
58	New high temperature transfer line material utilized for surface ion suppression	JYU	28 Feb 2019	✓
59	Automated wide-range wavelength tunability for scheme development	JYU	28 Feb 2018	✓
60	Test of the prototype with radioactive source and in beam in coincidence measurements	CNRS	30-nov-18	✓
61	Simulated and real signal database for Pulse shape analysis	CNRS	28 Feb 2018	✓
62	Approval of chamber design by CERN health physics	CNRS	28 Feb 2018	✓
63	Delivery of a 1 kW irradiation station	CNRS	31 Aug 2019	✓

Total : 58/63 Milestones achieved

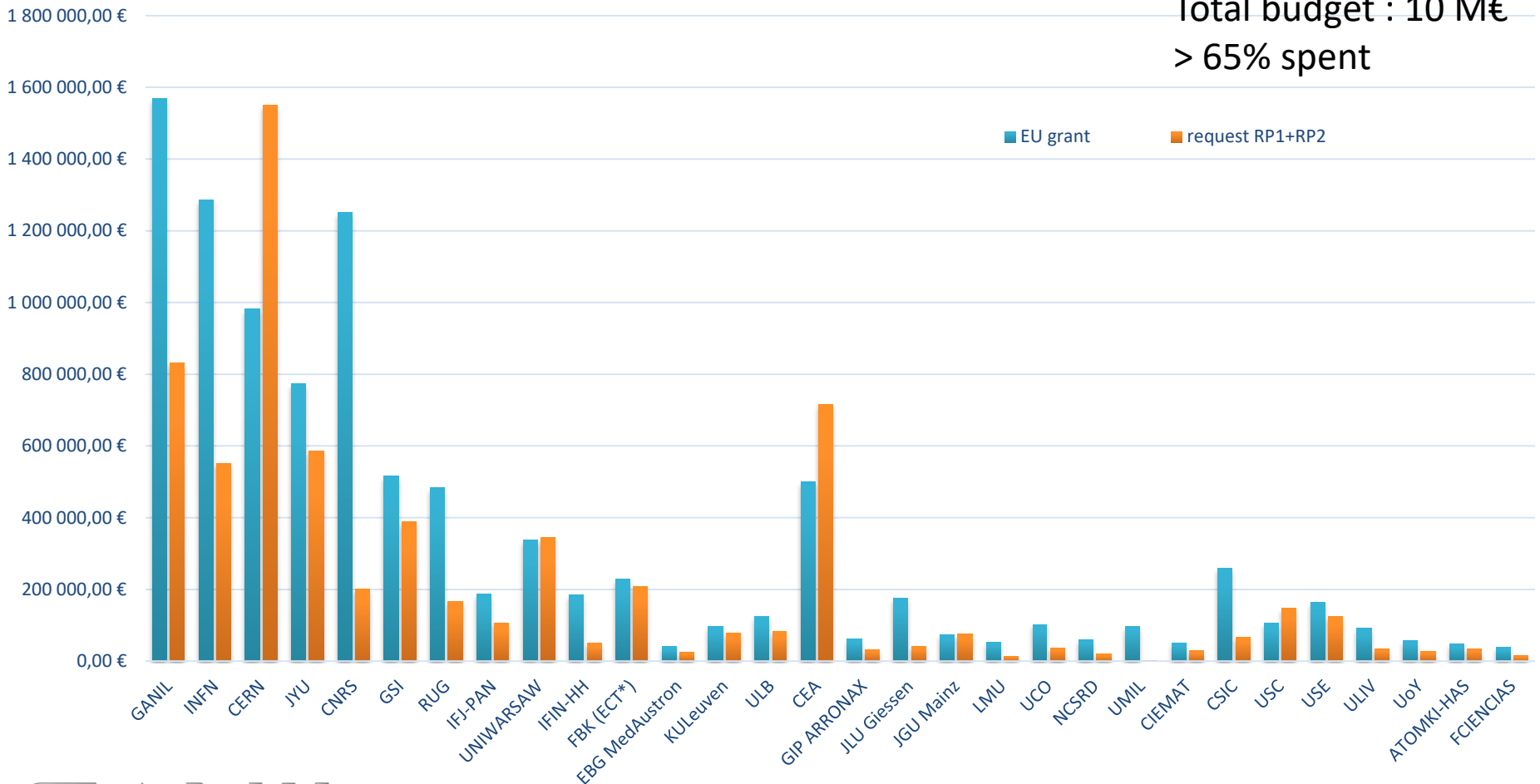


2. Brief overview of what has been done so far

Expenses for the 1st and 2nd periods (March 2016 – February 2019)

The expenses per partner are compared to the total share foreseen for the whole project.

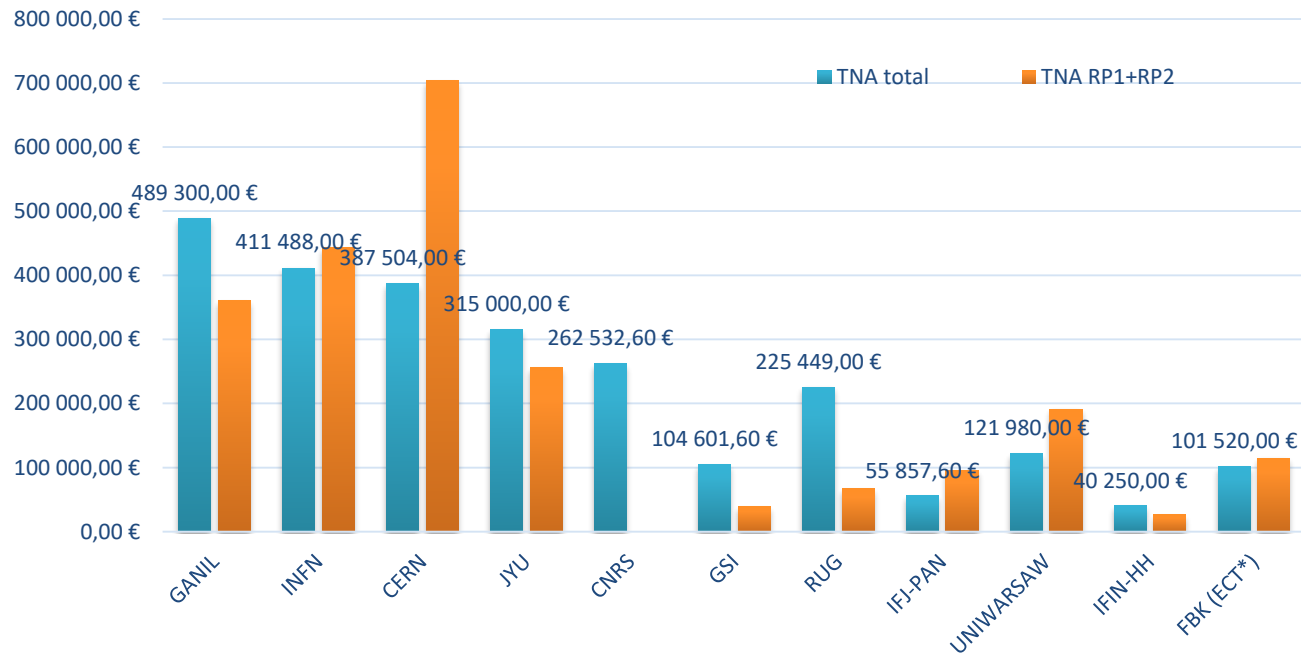
Total budget : 10 M€
> 65% spent



2. Brief overview of what has been done so far

TNA Expenses for the 1st and 2nd period (March 2016 – February 2019)

The expenses per partner (beam time) are compared to the total share foreseen for the whole project.



2. Brief overview of what has been done so far

Amendements



1st amendement March 2017 : Change of beneficiary due to partial takeover (Fundacao da Faculdade de Ciencias da Universidade de Lisboa (FFCUL) → Fciencias.ID Associacao para a investigacao E desenvolvimento de Ciencias (FCIENCIAS.ID)

2nd amendment January 2018 : GANIL (beneficiary n°1) will work with personnel of ~~with two Third Parties in the framework of the ENSAR2 project~~

~~These Third Parties are:~~

o CNRS (Centre National de Recherche Scientifique) – beneficiary n°5

o CEA (Commissariat à l’Energie Atomique et aux Energies Alternatives) – beneficiary n°15

3rd amendment November 2019 : Change of duration >54 months

RP1 month 1 → month 18

RP2 month 19 → month 36

RP3 month 37 → month 54

2. Brief overview of what has been done so far

Amendements



1- Work package 16 – TA1 – GANIL-SPIRAL2

1st experiments at SPIRAL2 to be performed, which was not possible until now because the French authorities only recently gave the license to run this modern facility.

2- Work package 17 – TA2 – LNL-LNS

Due to unscheduled maintenance of the accelerators, mainly at LNL, there are still some approved projects by the User Selection Panel (USP) at TA2 that can be scheduled only in the first half of 2020 at LNL LNS

3- Work package 19 – TA4 – JYFL

Because of an exceptionally long shutdown period (three months) December 2019-February 2020, which was not foreseen in a spending profile of ENSAR2 support, an extension of ENSAR2 will help to fulfill the TNA commitments

4- Work package 21 – TA6 – GSI

In contrast to initial planning, GSI had essentially no beam time in 2018. This was due to an unfortunate fire accident with the heavy-ion linear accelerator UNILAC. There is TNA budget left to be spent (10 February and will last until 31 May 2020).

2. Brief overview of what has been done so far

Amendements



5- Work package 24 – TA9 – IFIN-HH / ELI-NP

No gamma beam at ELI-NP. So remaining TA beam hours and T&S to be provided for the experiments at Tandem

6- Work package 4 – NA4 – NUSPIN

Two workshops: a school in GSI in preparation of the NUSTAR experiments and a hands-on school on reactions mechanism for nuclear structure

Experimentalists had to be postponed > end of February 2020

7- Work package 9 – JRA1 – PASPAG

In the case of Task2 because of problems on Phoswich detectors took time to be overcome + replacement of manpower led to a delay of D9.5. In the case of INFN, the material for the PMT test station has not yet arrived and a delay in the final testing of scintillators of Task1 is also to be expected.

8- Work package 15 – JRA7 – TechHIBA

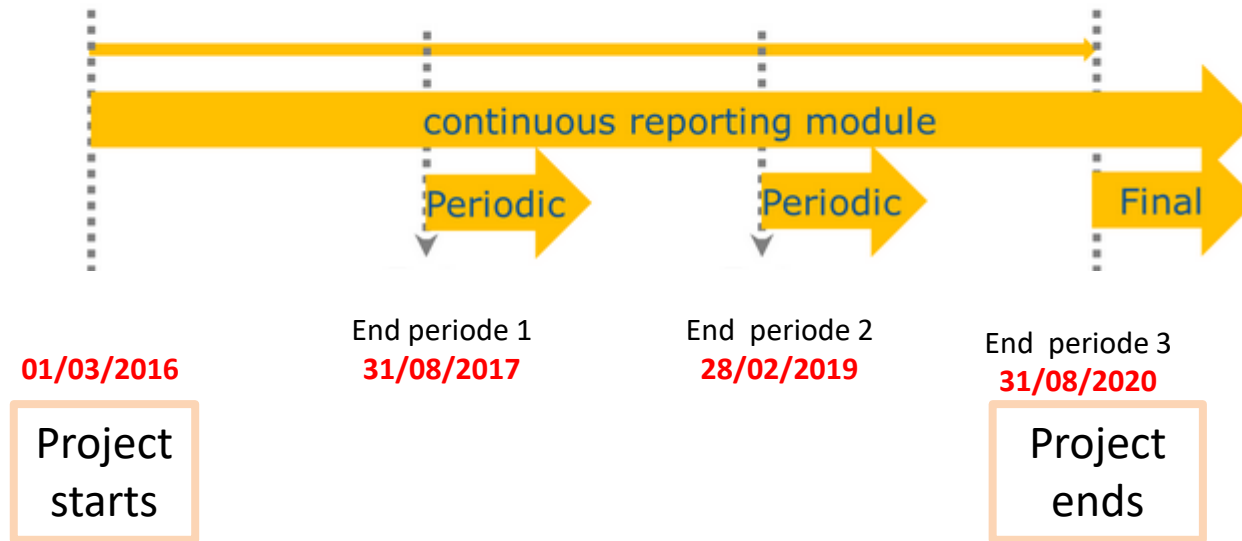
A long and unforeseen delay until July 2018 in the return of the naked test chips from CMP occurred. This gave rise to an overall delay of the engineering working schedules by at least 5 months. An extension of ENSAR2 by 6 months will allow recuperating the time lost in the FEANICS programme.

TechHIBA would like to organise a final workshop in spring 2020 on the different tasks, also involving other JRAs and NAs that are in close connection with the TechHIBA tasks. In this respect, management funds have been provided by IPN Orsay that may be used for that purpose.

3. What is to be done by August 31st 2020

Next and final steps

- *Continuous reporting module*
- *Periodic reporting module*



3. What is to be done by August 31st 2020

Next and final steps

Continuous reporting functionality in the Funding & Tenders Portal

- It is **activated at the time the project starts**
- It is continuously open for the beneficiaries to:
 - ✓ submit deliverables,
 - ✓ report on progress in achieving milestones,
 - ✓ update the publishable summary
 - ✓ follow up of critical risks, ethics issues, publications, communications activities,
 - ✓ answer to the questionnaire on horizontal issues.

3. What is to be done by August 31st 2020

Next and final steps

Continuous reporting functionality

Remaining deliverables to be submitted,

Deliverables, Ethics, DMP, Other Reports					
WP	Del No	Del	Title	Lead Beneficiary	Est. Del. Date (annex I)
WP1	D1.4	D4	Nuclear Physics in European Research Area	GANIL	29 Feb 2020
WP2	D2.5	D9	Final report: Future directions – synthesis of NUSPRASEN activities	JLU	29 Feb 2020
WP3	D3.2	D11	Report on the networking activities	JYU	29 Feb 2020
WP4	D4.4	D17	Final Report on the activity of the Scientific Committee and Working Groups	INFN	29 Feb 2020
WP4	D4.7	D20	Final Report on the Collaboration Workshops and training activities	INFN	31 Aug 2020
WP4	D4.8	D21	Final Report on the exchange of key technical personnel	INFN	31 Aug 2020
WP6	D6.2	D27	GDS Topical Meeting “GDS in strong and non-uniform magnetic fields”	GANIL	29 Feb 2020
WP7	D7.4	D34	Strategy Report “Integration of the ENSAF labs with the European TA Accelerator Facilities”	NCSR	29 Feb 2020
WP8	D8.2	D36	Report to be distributed to stakeholders, end-users and funding agencies	GANIL	29 Feb 2020
WP8	D8.4	D38	Report on Industry days, workshops	GANIL	29 Feb 2020
WP8	D8.8	D42	Report on Courses in Nuclear Techniques for industrial partners	GANIL	29 Feb 2020
WP9	D9.6	D48	Report: Summary of test results	CSIC	31 Aug 2020
WP10	D10.5	D53	Final report for the Segmentation and Geometry tasks	CSIC	29 Feb 2020
WP10	D10.6	D54	Final report for the p-type task	CSIC	29 Feb 2020
WP10	D10.7	D55	Final report for the Imaging task	CSIC	29 Feb 2020
WP11	D11.4	D59	Report and package of the TDHF+BCS and QRPA codes	CNRS	29 Feb 2020
WP12	D12.5	D64	Final report on new techniques to enhance ion beam purity prior to the LIST multipole	JYU	29 Feb 2020
WP12	D12.6	D65	Final report on new methods to improve the efficiency, selectivity and spectral resolution	JYU	29 Feb 2020
WP12	D12.7	D86	Final report on new concepts and developments related to laser technologies	JYU	29 Feb 2020
WP13	D13.1	D66	Creation and validation of improved data libraries and models and implementation into GEANT4	RUG	29 Feb 2020
WP13	D13.2	D67	Code ENSARRoot with generic codes with specific reactions and tracking	RUG	29 Feb 2020
WP13	D13.3	D68	Inventory and protocol for data management	RUG	29 Feb 2020
WP14	D14.4	D73	New targets, ion sources and beams	CNRS	29 Feb 2020
WP14	D14.5	D74	Chart of Beams	CNRS	29 Feb 2020
WP15	D15.2	D76	Report on the polishing results on an accelerating cavity	CNRS	29 Feb 2020
WP15	D15.3	D77	Report on 1 kW high power target station	CNRS	29 Feb 2020
WP15	D15.6	D80	Report of experimental results of the tests of the prototype	CNRS	29 Feb 2020
WP15	D15.9	D83	Report on Detector test (source and In-beam)	CNRS	29 Feb 2020
WP15	D15.11	D85	Report on silicon detector and ASIC tests	CNRS	31 Aug 2020



Total : 25 in February and 4 in August 2020

3. What is to be done by August 31st 2020

Next and final steps

Continuous reporting functionality

Remaining milestones to be achieved,

38	Completed R&D Detector R&D Application / associated technologies Workshop	CSIC	29 Feb 2020
40	Inclusion of quantum fluctuations	CNRS	29 Feb 2020
42	Understanding the dynamical effects	CNRS	29 Feb 2020
43	Reduction of hot cavity and gas jet radioisotope deposition	JYU	29 Feb 2020
44	Supersonic, high Mach number gas jet produced	JYU	29 Feb 2020



Total : 5 in February 2020

3. What is to be done by August 31st 2020

Next and final steps

Final periodic report

Once the periodic reporting function is activated at the end of each reporting period:

- ✓ all beneficiaries receive a notification and log on to the Participant Portal.
- ✓ all beneficiaries complete their own Financial Statement and their contribution to the Technical Part of the Periodic Report. Beneficiaries e-sign and submit their Financial Statements to the Coordinator.
- ✓ the Coordinator approves the elements of the Periodic Report & submits to the EU Services.
- ✓ the EU Services review the submitted Periodic Report and accept or reject it.
- ✓ **Interim Payment ????**

3. What is to be done by August 31st 2020

Next and final steps

Final report (what does it consist of?)

In addition to the submission of the periodic report of the last reporting period, a **final report is generated automatically by the IT tool**

The final report consists of 2 parts - both of which must be completed in the grant management system (no need to upload any documents):

1. **Final technical report:**

- Publishable summary of the entire project overview of the results and their exploitation and dissemination
- ✓ conclusions on the project
- ✓ its socio-economic impact of the project
- ✓ an up-to-date link to the project website
- ✓ project logos, diagrams, photographs and videos illustrating its work (if available).

2. **Final financial report:**

- final summary financial statement that is automatically created by the system and corresponds to the request for payment of the balance.

NA01-FISCO2

How to get information

ENSAR2 website: <http://www.ensarfp7.eu/>

Management Group: ensar@ganil.fr