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## PIANOFORTE Partnership

European Partnership for Radiation Protection Research

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# D1.4 – Annual Work Program for year 3 – AWP3

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## 1. Coherence with Annex 1

### 1.1 AWP objectives for month 25 to 36

The PIANOFORTE partnership aims to improve radiological protection of members of the public, patients, workers and the environment in all exposure scenarios and to provide solutions and recommendations for optimised protection in accordance with the BSS. This objective will be reached by multidisciplinary research, innovation and citizen involvement activities in a collaborative approach of scientists, regulators and stakeholders. Research projects focusing on identified research and innovation priorities will be selected through competitive open calls.

This general objective will be reached through the achievement of six specific objectives (four scientific specific objectives and two integration specific objectives) that are inter-dependent and are as follows:

- To innovate in ionising radiation based medical applications combating cancer and other diseases by new and optimised diagnostic and therapeutic approaches improving patient health and safety and supporting transfer of the R&I outcome to practice.
- To improve scientific understanding of the variability in individual radiation response and health risk of exposure.
- To support regulations and implementation of the BSS and improve practices in the domain of low dose exposures of humans and the environment by better understanding and reducing uncertainties in risk estimates.
- To provide the scientific basis to recommendations, procedures and tools for assuring better preparedness to response and recovery from a potential radiological event or nuclear accident and to improve the know-how to manage legacy sites.
- To maintain a sustainable expertise capability on radiation protection issues across the EU by fostering the availability, the use, and the sharing of existing state-of-the-art infrastructures at European level and beyond, and conducting education and training activities.
- To involve all the relevant stakeholders at the different stages of the implementation of research projects and assure efficient dissemination, knowledge management and uptake of results

The consortium aims to continue its work done in the two first years. Activities of the consortium will continue to focus on the one hand on the aspects to develop an integrated landscape for radiation protection in Europe and, on the other hand, which will be the main focus, to directly fund coordinated research projects in an open, fair and transparent manner dedicated to state of the art science and tailored to the needs of the stakeholder target groups that have been defined in part B of the proposal. Integration of education and training activities in connection with co-funded research projects as well as optimal use of research infrastructures in Europe and even beyond are also essential to the consortium. Finally, communication, dissemination of results and impact creation activities will ensure that the outcomes from the Partnership will contribute to a significant improvement of radiation protection of the public, patients, workers and the environment at the European level.

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## 1.2 Expected impacts

The set of activities in the Annual Work Plan Month 25 to 36 will contribute to the circling workflow on an approximately annual basis to prepare and launch the second Open Call.

### **WP1**

The coordinator has set up all management procedures for the PIANOFORTE Partnership in the two first years and will continue to call for ExB and GA meetings in the third year as necessary for the management of the project, in particular for taking decisions on the funding of second open Call research projects, education and training activities, on strategies for future research, dissemination activities and on new members joining the PIANOFORTE consortium following the open second Call. Furthermore, the coordinator will continue the interaction with the EC concerning call text, evaluation, reporting and Grant Agreement updates. Experience from the two first years will be used to optimise and improve the PIANOFORTE internal information and workflow between work package leaders on one side and the PIANOFORTE beneficiaries on the other.

### **WP2**

The priority setting for the second Call was executed successfully and it led to a consensus list of topics. The same exercise will be done for Call 3, starting with lessons learned discussions with WP3. This will lead to a new procedure on how to come to the third Call priorities. As before, the POMs, platforms, stakeholders and SAB will be involved in this procedure.

As the projects selected in the first Call will start soon, task 2.3 is now in action. After the analyses of the questionnaire sent to the coordinators of the first selected projects, a series of online workshops will be organized to foster interproject cooperation, joint planning of dissemination activities and project workshops, and to provide support in inclusion of social sciences and humanities to the projects. The monitoring of the scientific progress, and the workshops and contacts between the projects, should stimulate their smooth progress and the collaboration between them.

A Technical Meeting on AI/ML and big data implementations in RP will be organized in April 2024 at NCSR "Demokritos".. During the workshop specific attention will be put on how much ML/AI is already included in the first Call projects, and on how this can be stimulated for the next calls. The workshop on ethical challenges in AI/ML will be held during the above mentioned workshop, leading to a report.

### **WP3**

In the course of the third project year, WP3 will continue its stakeholder engagement activities that will raise awareness of radiation protection issues and widen the inputs into developing the research priorities. Key activities will be the continuous stakeholder engagement and the work with the various internal and external project stakeholders, i.e. with regard to the third Open Call. Further consultation meetings will be organised with the SAB and with external stakeholders regarding research needs and priorities. In particular, the insights in the opinion of external stakeholders, obtained in course of the third series of Topical Online Meetings (TOM, stakeholder consultations) will create an impact in that way, that the views of the external stakeholders can be included in the design of the 3rd Open Call. The impact which is created by the PIANOFORTE funded projects will be enhanced by coordinating their stakeholder activities and linking them to the overarching stakeholder strategy of PIANOFORTE. The results of the e-survey will be published in a scientific journal and may achieve an impact in terms

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of informing the wider scientific community on the public view on radiation protection issues. As an outcome of the expert workshop on clinical data in modern proton therapy a position paper on the cooperation and data exchange between European proton therapy centres will be drafted and shall achieve an impact in the form of encouraging the setup of a European database for clinical trial data which is conform with the EU General Data Protection Regulation.

#### **WP4**

WP4 on education and training will specifically contribute to reinforcing training by continuous training and career upgrades. It will develop competences in radiological protection with a special focus on radiological protection culture. To this end WP will continue organizing calls on a competitive basis and finance: 1) short courses for young researchers and professionals on topics related to radiation protection; and 2) mobility grants for researchers and radiation protection professionals to participate in conferences, training activities and exchange visits. Also, the applications for setting up and maintaining a European PhD and early career researcher/professional association in the field of radiation protection will be evaluated.

#### **WP5**

The maintenance of sustainable RPR capabilities and expertise on radiation protection issues across the EU is being achieved through the objectives of WP5, namely to foster the availability, use, sharing and optimization of existing state-of-the-art infrastructures and data management systems at the European level and beyond, and by conducting education and training activities. Following establishment of the programme of work during years 1 and 2 and the success of the Infrastructure workshop to collate stakeholder input into the continued work on WP5, the key performance indicators of this activity within year 3 will be the establishment of systems in support of and the successful funding of activities focused on access to, training in respect of, and intercomparisons for quality standardisation for the key infrastructures (those most relevant for the current open call and associated research programmes).

#### **WP6**

Within the WP6, which focuses on knowledge management, communication, dissemination and impact creation, several activities are planned during the third year of the partnership. The on-line communication tools, including the partnership web pages and social media channels will be exploited to disseminate results of the first project call, statistics and details about funded projects. Later the same tools will serve to inform research community about scientific topics, financial and legal rules of the second open call. We envisage organisation of the meeting devoted to the presentation of projects funded in the second open call. Information meeting for EU researcher groups about the call content will be organized after launching of the second call. Regular update on partnership activities shall be provided by all communication means including also newsletters.

First estimations of project impact via stakeholders, international RP organisations, national RP offices and organisations will be performed.

#### **WP7**

During first months of the year 3 main involvement on WP7 will focus on the eligibility check and

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evaluation of submitted proposals within the second PIANOFORTE Open Call 2024. As a result a Ranked List of Eligible Projects (RLEP) will be prepared.

Moreover, under WP7 will be organized and managed third Open Call for R&I proposals for funding multilateral research projects on radiation protection under the Partnership for European research in radiation protection and detection of ionising radiation co-fund mechanism. The aim of the call will be the support for transnational research projects that combine innovative approaches in the field of radiation protection in line with the research priorities of PIANOFORTE Partnership set up in WP2. WP7 lead will be responsible for a revision and preparation of all call documents. Invariably, the third call will be implemented as a one-step submission procedure. An electronic submission portal will be in place. The third Open Call 2025 will be launched at the end of the year 3.

### **WP9**

Work Package 9 is a new work package dedicated to monitoring the 9 projects selected in Call 1. A description of each of these projects is given below.

#### **1) TOPIC 1 : Developing a knowledge base for a better understanding of disease pathogenesis of ionising radiation-induced cancer to improve risk assessment**

##### **DISCOVER - Dissecting radiation effects into the Cerebellum microenvironment driving tumour promotion (coordination : ENEA, Italy)**

Radiation carcinogenesis has classically been attributed to unrepaired or misrepaired DNA damage. By now, there is increasing recognition that radiation can induce changes within the microenvironment and cause epigenetic modifications, which can also contribute to the development of cancer, challenging the conventional target theory in radiobiology. However, the interplay between DNA damage, microenvironmental changes, and epigenetic modifications in radiation-induced carcinogenesis is complex and not yet fully understood. DISCOVER will study the impact of radiation-induced changes in the microenvironment and the influence of related cell communication processes on carcinogenesis. The project will exploit a robust model of radiation-induced carcinogenesis, the Ptch1<sup>+/-</sup> mice, exhibiting a genetic predisposition for development of medulloblastoma (MB), a cerebellar tumour. Irradiation of these mice, even at low dose, increases MB incidence. The project aims to understand how different cerebellar populations, such as granule cell precursors, the MB cell of origin, and astrocytes, microglia and endothelium, representing microenvironmental components, respond to moderate (2 Gy) and low (0.1 Gy) radiation doses and contribute to tumour formation. Model systems of different complexity including (i) Ptch1<sup>+/-</sup> mice, (ii) ex-vivo cerebellum slices and (iii) in vitro cerebellar cell cultures, will be used to evaluate the effect of the microenvironment in transmitting radiation signals driving carcinogenesis. We will conduct a comprehensive analysis of various types of data, including morphology, function, tumourigenesis and omics data. We will also investigate secretome, as well as extracellular vesicles from exposed tissue and their specific bioactive cargo for their role in mediating radiation tumourigenesis. An integrated analysis of DISCOVER animal data and publicly available human brain cancer data aims to identify patterns/signatures for MB development.

#### **2) TOPIC 2 : Individualised diagnostic and therapeutic procedures with regard to optimisation of the benefit/risk ratio.**

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### **SONORA (coordination : Faculty of dental medicine and health Osijek, Hungary)**

Special attention should be given to the justification and optimization of the procedure, considering both, the expectant individual and the unborn child. This research proposal focuses on improving the accuracy of fetal doses estimation in diagnostic and interventional radiology (DIR) and radiotherapy (RT) to optimize process and improve benefit/risk communication with the patient. In DIR, a variety of methods and software are used for fetal dose estimation in clinical practice. However, there is a lack of harmonization, resulting in large differences in fetal dose estimation for the same cases. In RT, the treatment planning systems do not allow for accurate assessment of dose to the fetus. This project aims at:

- developing physical phantoms of different pregnancy stages
- developing a library of personalized computational phantoms using available CT or MR images of pregnant patients and a method to select appropriate phantom using clinical parameters
- investigating fetal doses and dosimetry methods for different DIR procedures, RT techniques and patient anatomies using the physical and personalized computational phantoms developed in the project. The investigation includes the doses from imaging in RT process
- identifying the factors that affect the fetal dose estimations by methods used in clinical practice in DIR and give further guidance on the limitations of each method to decrease variability of dose estimation and enable further personalization and optimisation of the procedure considering fetal dose
- developing and testing a clinical tool for estimating the fetal doses in proton RT according to the individual pregnant patient's anatomy and clinical plan parameters

The project will result in a good practice guide to perform fetal dose estimation in pregnant or potentially pregnant patients undergoing radiology or radiotherapy procedures. Fetal dose and associated risk data will be considered and debated for their ethical aspects to increase the quality of risk-benefit communication with the patient.

### **LutADose (coordination : KU Leuven, Belgium)**

Prostate cancer is the second most frequent malignancy worldwide with metastatic castration-resistant prostate cancer (mCRPC) being very difficult to treat. A possible treatment of mCRPC is PSMA (prostate-specific membrane antigen) radioligand therapy (PRLT) to deliver a targeted high dose of ionizing radiation directly to tumour cells. However, current treatment schemes for  $^{177}\text{Lu}$ (Beta)-PRLT use fixed therapeutic schemes, resulting in a conservative tendency to undertreat patients and sacrificing efficacy for safety. As a result, complete response is still uncommon with about 30% of patients not responding to treatment. Meanwhile,  $^{225}\text{Ac}$ (Alpha)-PRLT has emerged as adjuvant therapy to improve efficacy and overcome the potential radio resistance to  $^{177}\text{Lu}$ -PRLT. However,  $^{225}\text{Ac}$ -PRLT can induce significant side effects such as salivary radiotoxicity, which has led patients to request treatment discontinuation. These side effects should be addressed before  $^{225}\text{Ac}$ -PRLT can be considered for earlier lines of treatment and not only for compassionate use. Therefore, the aim of LutADose is to increase the clinical applicability of tumour and organ dosimetry during  $^{177}\text{Lu}/^{225}\text{Ac}$ -PRLT to allow individualized treatment schemes and move away from a 'one fits all' approach. This includes improved quantitative  $^{177}\text{Lu}/^{225}\text{Ac}$ -SPECT imaging during therapy to better estimate the pharmacokinetics (PK) of  $^{177}\text{Lu}/^{225}\text{Ac}$ -PSMA ligands in tumours and organs at risk (OAR). For patients receiving  $^{225}\text{Ac}$ -PRLT as adjuvant therapy to  $^{177}\text{Lu}$ -PRLT, we will use  $^{177}\text{Lu}$ -PSMA PK information from



the final  $^{177}\text{Lu}$ -PRLT cycle to better predict the absorbed dose of the subsequent  $^{225}\text{Ac}$ -PRLT cycle. In addition, we will revisit the relative biological effectiveness (RBE) of  $^{225}\text{Ac}$ -PRLT vs  $^{177}\text{Lu}$ -PRLT for the salivary glands to better predict differences in radiotoxic effects between  $^{225}\text{Ac}$ -PRLT and  $^{177}\text{Lu}$ -PRLT. Meanwhile, small scale dosimetry will be considered for  $^{225}\text{Ac}$ -PRLT to better estimate the absorbed dose to OAR. Finally, we will evaluate the impact of the recoil daughter effect (RDE) for  $^{225}\text{Ac}$ -PRLT and the potential renal toxicity caused by redistribution of free  $^{213}\text{Bi}$ . As a result, we will increase the clinical applicability of image guided dosimetry during  $^{177}\text{Lu}/^{225}\text{Ac}$ -PRLT such that therapeutic doses can be tailored for each patient individually to achieve a better risk–benefit balance and improved efficacy.

### **VERIFIED (SCK CEN, Belgium)**

Errors in radiotherapy can have significant consequences for patients and generate concerns in public opinion due to misconceptions surrounding ionizing radiation. To enhance its safety, the implementation of in vivo dosimetry is crucial. The VERIFIED project aims to advance individualized therapeutic procedures by utilizing patient-specific information, real-time dose, and deep learning techniques in adaptive radiotherapy (ART). The primary objective of the project is to develop dynamic end-to-end methods that closely simulate real patient treatments. Our project encompasses several key objectives. First, it involves the development and characterization of appropriate phantoms featuring movable and deformable inserts, specifically targeting lung and brain tumors for ART. Additionally, we focus on investigating individualized patient-specific real-time dosimetry in cases of non-small-cell lung cancer using Volumetric Modulated Arc Therapy (ART-VMAT). This approach enables accurate and timely monitoring of radiation doses. development of a realtime dose prediction protocol for non-small-cell lung and bladder tumors ART-VMAT. This protocol combines data obtained from the developed dynamic phantoms and the patient-specific real-time dosimetry system. Deep learning algorithms are employed to enhance the accuracy of dose prediction. Furthermore, an image-based system is being implemented to monitor the patient's head surface during in adaptive hypofractionated Gamma Knife radiosurgery (hfGKRS) for brain tumours, ensuring precise treatment delivery. Additionally, we will analyze the data obtained from the patient's head surface monitoring system, incorporating deep learning-based algorithms to generate a protocol for patient selection in hfGKRS. The proposed protocols integrate state-of-the-art deep learning methods with patientspecific real-time dosimetry in ART-VMAT and real-time position imaging in hfGKRS, effectively addressing several unmet needs in adaptive radiotherapy. These protocols encompass adaptability assessment, dosimetric verification, imaging validation, plan evaluation metrics, and treatment efficiency. By leveraging the power of real-time dosimetry, imaging, and deep learning, treatment efficacy can be enhanced while minimizing toxicity and radiation-induced side effects, ultimately resulting in improved patient outcomes in radiotherapy.

### **IMAGEOMICS (NNK, Hungary)**

A major objective of PIANOFORTE is to innovate in ionising radiation based medical diagnostic and therapeutic applications combating cancer to improve patient health and safety. Combating cancer is in the focus of other EU initiatives as well, such as the Samira action plan, Europe's Beating Cancer Plan and Horizon Europe Mission on Cancer. IMAGEOMICS adheres to these initiatives by proposing new imaging modality to improve cancer diagnosis and solutions to increase the benefit of cancer patients

from radiotherapy. The main aims of IMAGEOMICS are to improve benefit/risk ratio of breast cancer (BC) patients by identifying patients with a predicted favourable response to combined radiotherapy (RT) and immunotherapy and to develop new imaging modality with increased diagnostic potential and reduced ionizing radiation exposure. These aims will be realized through the following specific objectives: a) investigate how RT influences immunogenic heterogeneity of BC cells of different molecular subtypes using in vitro and in vivo approaches; b) test the applicability of nanoparticles for X ray fluorescence computed tomography (XFCT) to be used for the detection of BC heterogeneity; c) to identify local and systemic signatures that predict patient benefit from combined RT and immunotherapy and test their clinical applicability; d) to integrate data retrieved from experimental models and human studies with epidemiological data to build up a protocol for optimal patient stratification. High-throughput techniques such as immunopeptidome analysis and spatial multiomics analysis coupled with single cell imaging will be used. The innovative aspects of the project rely on providing an integrative analysis based on in vitro (3D bioprints, organ-on-a-chip systems), in vivo and human studies on markers reflecting interactions between BC RT and immunotherapy as well as investigating the applicability of molecularly targeted nanoparticles to be used in XFCT, opening the possibility for further developments in their theranostic application. The successful completion of IMAGEOMICS tasks is guaranteed by its multidisciplinary team, involving radiation physicists, radiation oncologists, radiation and molecular biologists, as well as epidemiologists, all strongly committed to advance radiation protection research for the benefit of the public and patients.

#### **IMMPRINT (Coordination : OVGU, Germany)**

Molecular medical imaging plays a crucial role in modern medical diagnosis, enabling early and personalized therapy for various diseases, especially cancer. However, existing in vivo medical imaging methods have limitations for molecular imaging in humans, such as low sensitivity to molecular processes, limited spatial and temporal resolution, or high exposure to ionizing radiation. To address these challenges, IMMPRINT aims to develop a proof-of-principle demonstrator for in vivo 3D imaging, utilizing X-ray dark-field imaging (DFI) and X-ray fluorescence computed tomography (XFCT) as a novel hybrid tool for personalised tumor profiling, with a specific focus on breast cancer (BC) disease. DFI will aid the identification of suspicious tumor lesion sites at micrometer scales, followed by a detailed high spatial resolution molecular assessment at the local tumor level using XFCT. As a result of this approach, exposure to body-wide high ionizing radiation doses, as seen in nuclear medical imaging methods, can be confined to regions of interest, thus promoting patient safety. The DF-XFCT will rely on various pillars of innovative technology development, from novel detectors to integrated in vivo, in vitro bio-diagnostics. X-ray fluorescence is emitted when nanoparticles are excited by X-rays. Within IMMPRINT, distinct signatures of intra- and inter-tumor heterogeneity in BC will be identified, which are suitable for detection by specifically designed and targeted nanoparticles. The IMMPRINT system for hybrid DF-XFCT imaging will include standard clinical X-ray sources and will benefit from innovative detectors, enabling concurrent detection of DFI and XFCT, aimed at high spatial and energy resolution. The unequally distributed data, which includes timing and energy information, requires the development of new methods to extract 3D imaging information from this data, providing insights into the functional, molecular, and anatomical properties of BC disease. The IMMPRINT imaging system will allow new approaches for better medical diagnosis and also new biomedical research. It will demonstrate the technical feasibility on the lab scale and potentially form the basis for the commercial

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development of a system. The consortium unites expertise from all fields mentioned above and is using nationally and internationally funded large-scale infrastructures.

**3) TOPIC 3 : Development of risk assessment and risk management approaches and technological capabilities to cope with scenarios arising from threats due to war or armed conflict situations or natural disasters taking into consideration social, ethical and legal issues**

**RRADDEW (coordination : CEPN, France)**

The overall objective of RRADDEW (“Resilience to RADiological Events in Wartime”) is to enhance nuclear emergency preparedness, response, and recovery (EPR&R) systems by developing methodological and technological approaches to strengthen resilience in the context of war or armed conflict disasters. Despite extensive research on planning and response for radiological and nuclear emergencies, existing studies and guidelines have not yet considered the context of armed conflict situations, which present unique challenges that can compromise the safety and well-being of both affected populations and responders. To meet this objective, RRADDEW, brings together 14 institutions, including two from Ukraine, with a broad expertise in EPR&R, covering technical, social, ethical, legal, and regulatory aspects. Supported by extensive stakeholder engagement, and bringing expertise from other areas of disaster research, RRADDEW will address emergency management as a system of closely linked social, organisational, and technical elements. RRADDEW research adopts a scenario approach that allows key actors to envision, anticipate and solve problems that can arise during disasters. This recognizes that contingency planning is an important part of EPR&R and follows the United Nation's Sendai Framework on Disaster Risk Reduction definition of resilience as the “ability of a system, community or society exposed to hazards to resist, absorb, accommodate, adapt to, transform and recover from the effects of a hazard in a timely and efficient manner”. In the context of nuclear emergency preparedness, this requires a critical reflection on how an armed conflict situation may impact the feasibility and adequacy of current planning, response and recovery strategies. RRADDEW will assess and prioritize plausible scenarios for the deployment of hostilities at nuclear facilities and consider their possible radiological consequences. The resilience of the emergency management system will be analysed through case studies, the development and application of a resilience analysis platform, and assessment of legal, ethical, and social issues. The final output of the project will be guidance and recommendations for improving radiological protection and strengthening resilience in situations of armed conflict, as well as education and training materials for better preparation of stakeholders.

**CITISTRA (SURO, Czech Republic)**

The current geopolitical situation in Europe raises the issue of whether risk management procedures and technological solutions are up-to-date to handle scenarios arising from threats due to war or armed conflicts. The conflict in Ukraine leads to serious concerns about the safety and security of nuclear facilities in the region. In the event of military action or sabotage targeting these facilities, there is a risk of releasing radioactive materials, leading to a potential radiation emergency with consequences for public health and the environment in close proximity and at least to public concern in more distant territories. There is even a threat of using nuclear weapons. In these scenarios, the functioning of official monitoring networks can be perturbed due to network failure, communication

failure, blackout or through sabotage activities. Citizen radiation measurements can complement official monitoring systems and provide fast local radiation data. The project aims to analyze the feasibility and procedures of employment of citizen measurements with regard to different national legal frames, social and cultural habits using experimental study in three countries – Czech Republic, Slovak Republic and Poland. The project addresses challenges in using citizen radiation measurements:

- quality, accuracy, and reliability of the data collected and analyzed by citizens,
- ethical, legal, and social implications of sharing and using radiation data in different countries,
- adequate training, support, and feedback to citizens involved in radiation measurement activities,
- preconditions of the sustainability of a system built on measurements by volunteers.

The developed radiation detector CzechRad will be distributed among selected citizen groups together with simple software. Training will be provided on taking measurements, data processing and interpreting. Practical guides for training and measurements in different emergency scenarios will be designed and tested. In addition to the living environment, the self-measurements of thyroid glands, food, feed and personal items of daily use etc. will be considered. The public attitude to citizen measurements will be monitored using sociological surveys. The effect of the self-measurement availability on a public sense of security and fear about ionizing radiation shall be determined

#### **PREDICT (Coordination : BfS, Germany)**

The present risk assessment and risk management knowledge of civilian emergency planning organisations concerning radiological consequences of nuclear fallout is still limited. This project aims at filling in significant gaps and improving upon current radiological assessment and decision-aiding technological capabilities. Since the invasion of Ukraine by Russia, there has been ongoing concern over the threatened use of tactical nuclear weapons. In such an event, radiation protection of the public should focus on the fallout zone, where urgent protective actions could significantly help reduce health impacts. Several European countries have already undertaken assessments of the radiological impacts of nuclear detonations and this project will build on that work, further extending technical capabilities. PREDICT aims to enable the major internationally used decision support systems JRODOS and ARGOS and other nationally used atmospheric dispersion and transport codes and follow-on foodchain models to simulate and predict consequences due to the fallout of a nuclear detonation in Europe or worldwide. A key aspect will be the description of the blast cloud which is complex due to its height, the large number of radionuclides (most short-lived) and variety of particle sizes produced. Using a range of source terms and weather conditions, results from different Partner assessment models will be compared and the uncertainties better understood. Recommendations will be made to improve dose modelling and computing run times. Existing advice on responding to nuclear power plant accidents will be adapted, and public protection strategies will be reviewed and improved ways of communicating these to the public will be developed. A key outcome will be harmonising the technical means of decision-making following a nuclear detonation event at the European level as well as considering social, ethical and communication aspects. There will be pro-active engagement with decision-makers and other stakeholders to ensure that the information arising from the assessment models will apply a holistic understanding of the event consequences enabling them to better understand the risks and thereby improving the protection of the public from harm.

## 2. Annual Work Programme Activities

### 2.2 Structure of the Annual Work Programme

The Annual Work Plan of year 3 of the PIANOFORTE partnership is dominated by the circling work flow of PIANOFORTE Year 3 will be dominated on the one hand by the implementation of research projects selected following the first open call (projects are starting) and, on the other hand, by the launch of the second open call (at the end of the first trimester) and the evaluation/selection of the projects submitted. This strictly follows the work flow description of the PIANOFORTE proposal. In year 3 PIANOFORTE will focus on maintaining and improving the structures and procedures to manage and administer the Partnership with the goal to launch the third open call during spring 2026. All PIANOFORTE WP are integrated into this circling work flow, which is in principle designed to start with the prioritization of research priorities and finally the funding and monitoring of research projects which fulfil all the requirements of scientific excellence and integration. Cross-cutting through this circling workflow are WP dedicated to integration activities which on one side have input through interfaces into the circling work flow and on the other side have the target for a sustainable support of radiation protection research. These principle work flows, one circling, and one more or less continuous are described in the PIANOFORTE proposal. However, the same principles give the AWP a clear structure. Activities in the AWP are listed as WP activities. Due to the large number of POM as PIANOFORTE participants and many institutions actively involved in PIANOFORTE activities as AE in addition to the strong involvement of the research platforms with their large active membership, a breakdown of the annual activities further down as WPs and Tasks results in low person-month involvement of some PIANOFORTE participants and AEs.

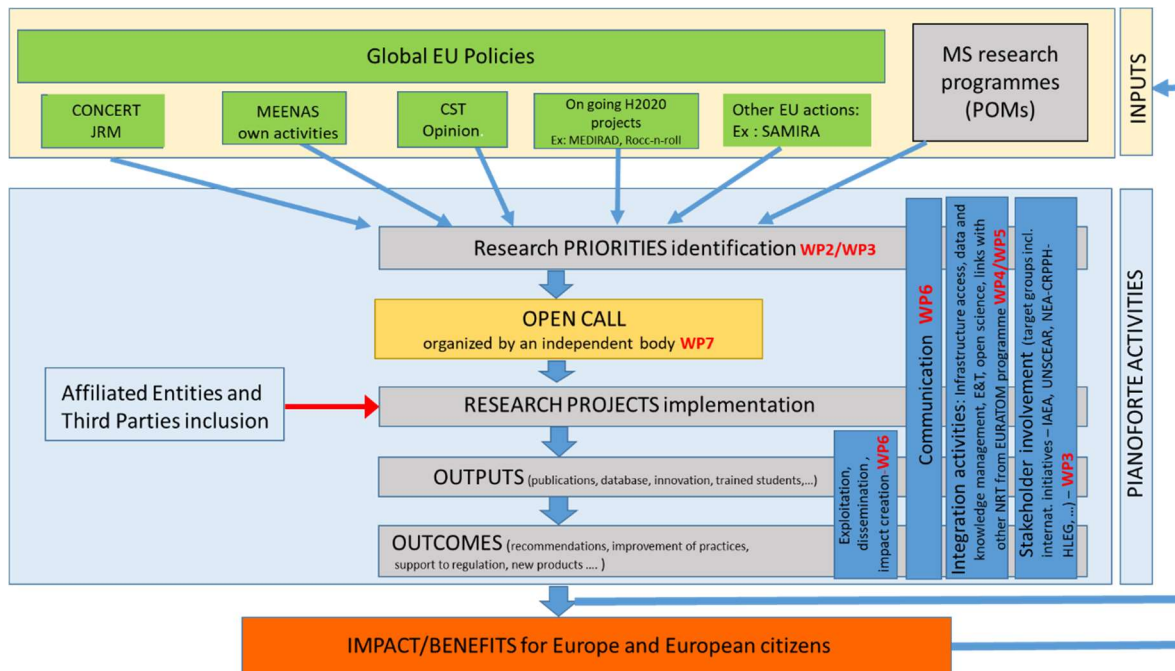


Figure 1 : This diagram shows both the iterative process and the inter-relationship between the different WP in the PIANOFORTE partnership.

## 2.3 Timing of the different programmed activities and their components

		YEAR 3											
		Q1			Q2			Q3			Q4		
		1	2	3	4	5	6	7	8	9	10	11	12
<b>WP1</b>	<b>Project coordination and management</b>												
	meetings (kick-off, periodic meetings)									D1.5, D1.6			
Task 1.1	Coordination and management												
Task 1.2	Executive and AG meetings												
Task 1.3	Updating the AWP												
Task 1.4	Negotiation of projects funded												
Task 1.5	Funding decision process for Integration activities												
Task 1.6	Monitoring of the progress of PIANOFORTE												
<b>WP2</b>	<b>Research and innovation projects</b>												
												D2.1.3	
Task 2.1	Setting-up the research priorities												
Task 2.2	Update of the Joint Road Map												
Task 2.3	Scientific follow-up of projects												
Task 2.4	Integration of AI in Radiation Protection												
<b>WP3</b>	<b>Stakeholder engagement</b>												
									D3.3				D3.10
Task 3.1	International Partners and priority setting												
Task 3.2	Partnership projects												
Task 3.3	Stakeholder engagement planning and management												
Task 3.4	Direct Stakeholder engagement plan												
Task 3.5	Addressing stakeholder interests of DG Health: RP and proton therapy												
<b>WP4</b>	<b>Education and Training</b>												
													D4.3.3, D4.4
Task 4.1	Support of targeted courses												
Task 4.2	Support of mobility for MSc/PhD												
Task 4.3	Support of continuous professional devt												
Task 4.4	Dvpt of sustainable radiation protection E&T												
<b>WP5</b>	<b>Infrastructures and data management for radiation protection research</b>												
Task 5.1	Establish an infrastructure oversight/stakeholder committee												
Task 5.2	Providing support for cross-national access to infrastructure												
Task 5.3	Promoting harmonization of quality standards, practices and protocols												
Task 5.4	Developing a vision and strategic work plan for utilisation, novel uses and inter-operability of key RPR infrastructures												
Task 5.5	Developing a plan and vision for data management and approaches to exploitation of archived data												
<b>WP6</b>	<b>Knowledge management, communication, dissemination and impact creation</b>												
						D6.4.2	D6.6						
Task 6.1	Knowledge management												
Task 6.2	Communication and dissemination												
Task 6.3	On-line communication tools												
Task 6.4	Impact creation												
<b>WP7</b>	<b>Organisation and management of PIANOFORTE R&amp;I Open Calls</b>												
					D7.2.2							D7.3.1	
Task 7.1	Setting up a Calls Secretariat												
Task 7.2	Preparation of the Open Call documents and launch of the calls												
Task 7.3	Implementation of the open calls												
Task 7.4	Quality management of open research calls procedures												

## 2.4 Detailed work description

**Table 2.3.a: Annual Work Programme Activities for each set of activities**

Set of Activities Number	WP1		Start Date or Starting Event					Month 25	
Set of Activities Title	Partnership coordination and management								
Participant number	1	5	2	3	40	7	19		
Short name of participant	IRSN	SCKCEN	BfS	SU	UKHSA	SURO	NCBR	All POMs	All platfor
Person months per participant	30	0,4	0,4	0.4	0.4	0.4	0.6	28x0,0 5=1.40	6x0,05 =0,3
Start month	Month 25		End month				Month 36		

### Objectives

WP1 purpose is to ensure the most effective coordination, administrative and financial management of the consortium with a view of reaching a good synergy between the partners; The overall objective of the managerial organisation is to provide the necessary structures for participatory and efficient decision-making and coordination of activities, fluent day-to-day management including flow of information and financing (including the establishment of contracts with PIANOFORTE grantee consortia and PIANOFORTE external contractors), reporting to EC, as well as providing support and guidance on consortium activities.

**Description of Programmed Activities** (possibly broken down into tasks), lead partner, role of participants, and relevant Work Package

**Task 1.1: Overall coordination and legal, contractual, administrative and financial management (Lead : IRSN).**

Key activities during year 3 are:

- Monitoring the compliance by beneficiaries with their obligations under the grant agreement
- Monitoring the progress of the project and review the deliverables and reports to verify consistency with the project tasks
- Collection of information about achievements in relation to objectives from the partners every 12 months in order to ensure efficient follow-up of the project progress and proper reporting to EC.
- Updating the Consortium Agreement following the first open call.
- Submitting amendments to the Grant agreement following the first Open Call in order to include new partners in the consortium
- Administration of the EC financial contribution regarding its allocation between beneficiaries and activities, in accordance with the grant agreement and the decisions taken by the consortium.
- Keeping the records and financial accounts
- Writing the third periodic report.

**Task 1.2: General Assembly and Executive Board meetings (Lead IRSN, ExB members, General Assembly members)**

Key activities during year 3 are:

- Organisation of periodic GA meetings in connection with reporting periods and preparation of the third open call
- Organisation of regular ExB meetings (about every 6 weeks) by video conference.

**Task 1.3: Updating the annual work plan (IRSN, ExB, GA members)**

Key activities during year 3 are:

- Update of the AWP
- Submission of the AWP for year 4 together with the annual project report (year 3) to the EC.

**Task 1.4 : Negotiation of projects to be funded through open R&I calls (Lead: IRSN, ExB members, GA members).**

Projects for the second open call will be selected at month 31.

Key activities during year 3 are:

- Organisation of the PIANOFORTE Funding Meeting for the second Call (December 2025).
- Preparation of draft contracts by the coordinator and WP 7 leader
- Negotiation of the contracts

**Task 1.5: Funding decision process for integration activities listed in the approved annual work program (Lead: IRSN, ExB members, )**

Key activities during year 3 are:

- Proposal by the coordinator and decision by the ExB on the funding of integration activities as listed in the AWP.
- When it is suggested by the ExB that an integration activity be performed, in part or in total, by one or more external entities, the Coordinator launches a European public procurement procedure to identify and contract with such entities for the delivery of the required services

**Task 1.6: Monitoring of the progress of the Partnership (Lead IRSN, ExB members)**

Key activities during year 3 are:

- To monitor KPI indicator twice a year at the ExB level.

**Deliverable(s) :**

N°	Name	WP	Lead	Type	Level	Due date
D1.5	Third periodic report to the EC in accordance with the provisions of the consortium contract	1	IRSN	Report	PU	33
D1.6	Annual work programme for year 4	1	IRSN	Report	PU	33



Set of Activities Number	WP2		Start Date or Starting Event			Month 25	
Set of Activities Title	Research and innovation projects						
Participant Number	5	13	32	18	22	21	24
Short name of participant	SCK-CEN	NNK	SSM	CIEMAT	JSI	EK	ENEA
Person-months per Participant:	4.0	2.5	1,5	1.5	0.1	0.1	1
Participant Number	17.1	34	23	23.2	20	42	
Short name of participant	STUK	NCRPP	CEA	INSERM	ISS	UExet	
Person-months per Participant:	1	1	1	0.3	0.1	0.6	
Participant Number	16	1	11.1				
Short name of participant	NCSR	IRSN	OVGU	All other POMs			
Person-months per Participant:	3	1.25	1	0.25x28=7			
Start month	Month 25		End month			Month 36	

**Description of Programmed Activities** (possibly broken down into tasks), lead partner, role of participants, and relevant Work Package

**Task 2.1.: (Lead NNK):** The major objective of Task 2.1 for the next period is to set the prioritisation procedure for Call 3. At first we will analyse the procedure used for Call 2 and discuss (together with the POMs, stakeholders and SAB) how to set the procedure to come to the priorities for Call 3. This will also be done in close collaboration with WP3 and the ExB, and the goal should be to get a similar consensual approach as in the previous two prioritisation procedures. So by the end of 2024 we want to have identified the research topics of highest priority to be proposed for the GA for approval.

**Task 2.2.a: (Lead ENEA):** Identification of changes in science, technology, society and environment affecting the Joint Roadmap: permanent evaluation of state of the art, by literature and participation in events such as ERPW meetings. The Milestone related to this task is due in M32, but this task has a permanent character.

**Task 2.3.a (Lead CEA):** After the analyses of the questionnaire sent to the coordinators of the first selected projects, a series of online workshops will be organized to foster interproject cooperation, joint planning of dissemination activities and project workshops, and to provide support in inclusion of social sciences and humanities to the projects. The first workshop for project coordinators will be held in spring 2024. The SAB and relevant members of the Stakeholders Network (WP3) will be invited. At the end of year 3, when the projects for the second call are selected, a new round of questionnaires, discussions and contacts will be organised with the new and „old” projects.

**Task 2.3.c (Lead STUK):** As soon as all selected projects will have started, this task will start monitoring the scientific progress of the research projects and promote the integration of the different projects working towards the related research priority. The monitoring is based on scientific reports and articles, progress reports, conference contributions and innovations.

**Task 2.4.1 (Lead: NCSR):** The literature review on relevance and applicability of AI and big data

technologies in radiation protection domains will be continued.

**Task 2.4.2 (Lead IRSN):** The process of identification and development of links with scientific communities specializing on AI and big data technologies will be continued and the Technical Meeting on AI and big data implementations in RP will be organized in April 2024 at NCSR “Demokritos”.

**Task 2.4.3 (Lead OVGU):** Preparation of the report on “Recommendations on the uptake of AI in R&I calls” will be continued. During the workshop in April specific attention will be put on how much ML/AI is already included in the first call projects, and on how this can be stimulated for the next calls.

**Task 2.4.4 (Lead UExet)** The workshop on ethical challenges will be held during the above mentioned workshop in April, leading to the deliverable.

**Deliverable(s) :**

N°	Name	WP	Lead	Type	Level	Due date
D2.1.2	Research priorities for the second open call	2	CIEMAT	Report	PU	23

Set of Activities Number	WP3		Start Date or Starting Event		M25	
Set of Activities Title	Stakeholder engagement					
Participant Number	1	1.1	2	3	3.1	5
Short name of participant	IRSN	CEPN	BfS	SU	SKAND	SCK-CEN
Person-months per Participant:	0.3	0.3	12.0	0.1	0.5	1.0
Participant Number	5.1	14	15	15.1	18	18.1
Short name of participant	KU Leuven	UTARTU	GIG	IFJ	CIEMAT	MERIENCE
Person-months per Participant:	0.5	0.3	0.3	2.0	3.0	0.2
Participant Number	20	21	22	22.1	23	23.1
Short name of participant	ISS	EK	JSI	EIMV	CEA	UNICAEN
Person-months per Participant:	0.2	0.1	0.2	0.3	0.1	0.5
Participant Number	27	28	28.1	30	31	33
Short name of participant	EEAE	IMROH	UNIZG	IST	NRG	INFN
Person-months per Participant:	0.1	1.5	0.1	0.4	0.1	0.5
Participant Number	40	43	44			
Short name of participant	DH	DSA	NMBU			
Person-months per Participant:	0.1	2.0	1.0			
Start month	Month 25		End month		Month 36	

### Objectives

This work package will connect the diverse set of relevant stakeholders within and outside the radiation protection community to show that radiation protection research influences and improves the lives of all European citizens.

Aims during project year 3 are:

- Organise further consultations to get input to priority setting from all external stakeholders target groups.
- Usage of professional and agile consultation methods to consider the voice of the users of radiation science products as well as the broader civil society.
- Identify the most urgent stakeholder needs for the large political missions of our time - health, sustainability, innovation and safety.
- Specific focus on stakeholder needs in medical applications, specifically proton therapy.

**Description of Programmed Activities** (possibly broken down into tasks), lead partner, role of participants, and relevant Work Package

**Task 3.1 International partners and partnership priority setting** (*Lead: BfS; Partners: DH-PHE, SU, GIG, EIMV, UTartu, STUK*)

Key activities during year 3 are:

- Link to international RP research initiatives/networks.
- Priority setting for R&I Open Call 3 in collaboration with WP2.
- Coordination of stakeholder engagement within PIANOFORTE.

**Task 3.2 Partnership Projects (Lead: IMROH; Partners: JSI, MERIENCE, SCK CEN, IRSN, CEPN, UNIZG-RGNF)**

Key activity during year 3 is:

- Oversee running PIANOFORTE funded projects and link them to the overall stakeholder activities in a coordinated manner and in line with the stakeholder engagement plan.

**Task 3.3. Stakeholder Engagement Planning and Management (Lead: CIEMAT; Partners: DSA, CEPN, IRSN, ISS, GIG, SCK CEN, EIMV, MERIENCE).**

Key activities during year 3 are:

- Support and coordination of the Stakeholder and Advisory Board (SAB), i.e. in terms of joint research needs and research topic prioritisation of the 3<sup>rd</sup> Open Call, as well as on lessons learned from the previous calls.
- Align stakeholder engagement activities with the guidelines given in the Stakeholder Engagement Plan (SEP) (D3.6).

**Task 3.4 Direct Stakeholder Engagement (Lead: DSA; Partners: BfS, CIEMAT, EK, SCK-CEN, IRSN, CEPN, CEA, ISS, IST, EIMV, EEA, NMBU, NRG, GIG, UTartu).**

Key activities during year 3 are:

- Publication of results from e-survey on stakeholders' understanding and opinions of radiation protection issues in a peer review journal to make them publicly available
- Direct stakeholder engagement – Organisation and implementation of topical online meetings (TOMs, stakeholder consultations) with regard to the 3<sup>rd</sup> Open Call

**Task 3.5 Addressing stakeholder interests of DG Health: radiation protection and proton therapy (PT) (Lead: IFJ; Partners: SKANDION, KULeuven, INFN, UCaen, SCK CEN, BfS)**

Key activities during year 3 are:

- Preparation of a position paper on the topic of an “European database - cooperation and data exchange between proton therapy centres”

N°	Name	WP	Lead	Type	Level	Due date
D3.3	Stakeholder comments on Exeboard suggestion for call topics & criteria from connected entities (3.1.1), SAB (3.3.1) and online consultations of target groups (3.4.3) for third call	3	BfS	Report	PU	32
D3.10	Stakeholder topical meetings - overview and input results to the Research Calls within the Partnership	3	NMBU	Report	PU	36

<b>Set of Activities Number</b>	<b>WP 4</b>		<b>Start Date or Starting Event</b>					<b>Month 25</b>		
<b>Set of Activities Title</b>	Education and Training									
<b>Participant number</b>	2	3	4	5	6	8	9	10	11	13
<b>Short name of participant</b>	BfS	SU	MELODI	SCK CEN	EURADOS	NERIS	ALLIANCE	SHARE	EURAMED	NNK
<b>Person months per participant</b>	0.2	6.2	0.2	1	0.2	0.2	0.2	0.2	0.2	0.2
<b>Participant number</b>	14	25	21	22	44	23.1	24.1	30	52	
<b>Short name of participant</b>	Utartu	GIG	EK	JSI	NMBU	UnCaen	UnPv	IST	UVZSR	
<b>Person months per participant</b>	0.2	0.2	1	0.2	1	0.2	0.2	0.2	0.2	
<b>Start month</b>	<b>Month 25</b>		<b>End month</b>					<b>Month 36</b>		

**Objectives**

WP4 will maintain existing and develop new competences in radiation protection in research areas relevant for radiation protection. Specific aims are:

- To support targeted courses to promote training and competence;
- To promote mobility of students and early career researchers by travel grants;
- To support continuous professional development (CPD) by mobility grants to professionals;
- To develop and implement sustainable early career researcher and professional networking.

**Description of Programmed Activities** (possibly broken down into tasks), lead partner, role of participants, and relevant Work Package

**Task 4.1: Support of targeted courses to promote knowledge, skills and competences of MSc/PhD students, early career researchers and professionals (Lead NMBU; Participants: SCK CEN, SU, EK, IST, UniPv, UniCaen, ALLIANCE, EURADOS, EURAMED, MELODI, NERIS, SHARE).**

Key activities during year 2 are:

- Evaluate the courses held in 2024
- Launch call for courses 2025, evaluate applications and fund winning courses

**Task 4.2: Support of mobility for MSc/PhD students and early career researchers (travel grants) (Lead SU; Participants: SCK CEN, NMBU, EK, NNK, UTartu, VIAA, ALLIANCE, EURADOS, EURAMED, MELODI, NERIS, SHARE)**

Key activities during year 3 are:

- Evaluate the applications 2024 and if needed adjust the calls for year 3 of the project
- Launch calls for the mobility programme, evaluate applications and fund winners

**Task 4.3: Support of a continuous professional development programme for radiation protection professionals (Lead SCK CEN; Participants: BfS, GIG, SU, NMBU, EK, JSI, VIAA, ALLIANCE, EURADOS, EURAMED, MELODI, NERIS, SHARE)**

Key activities during year 3 are:

- Evaluate the applications 2024 and if needed adjust the calls for year 3 of the project
- Launch calls for the mobility programme, evaluate applications and fund winners

**Task 4.4: Development of a sustainable radiation protection E&T programme and support for early career researcher organisations (Lead EK; Participants: UTartu, UniPv, SCK CEN, NMBU, SU, ALLIANCE, EURADOS, EURAMED, MELODI, NERIS, SHARE)**

Key activities during year 3 are:

- Evaluate the applications for call launched in 2024
- Organize the PIANOFORTE early career researchers and professionals (ECRP) group and collate European RP E&T initiatives

**Deliverable(s) :**

N°	Name	WP	Lead	Type	Level	Due date
D4.3.1	Report on the received applications, evaluation, consultation with PIANOFORTE beneficiaries and final decision of the calls, including financial reporting of task 1, 2, 3 and 4.1.	4	SU	Report	PU	36

Set of Activities Number	WP5		Start Date or Starting Event				Month 25	
Set of Activities Title	Infrastructures and data management for radiation protection research							
Participant Number	40	23	20	14	2	4	9	
Short name of participant	UKHSA	CEA	ISS	UTartu	BfS	MELODI	ALLIANCE	
Person-months per participant	3	4	2.3	4	2.15	0.2	0.2	
Participant Number	6	11	8	10	23.3	16	28	
Short name of participant	EURADOS	EURAMED	NERIS	SHARE	CNRS	NCSR	IMROH	
Person-months per Participant:	0.5	0.2	0.2	0.2	0.3	0.2	0.3	
Participant Number	3	22	33	21	24.1	41	18	
Short name of participant	SU	JSI	INFN	EK	UniPv	UCAMB	CIEMAT	
Person-months per Participant:	0.1	0.7	0.7	2	0.3	0.6	0.3	
Participant Number	1							
Short name of participant	IRSN							
Person-months per Participant:	0.3							
Start month	Month 25		End month		Month 36			

### Objectives

The objective of WP5 will be to ensure that all infrastructure needs required for the implementation of the RPR roadmap and *Pianoforte* projects are recognised and served, with a specific emphasis on development of new approaches for management of data and data infrastructures.

With the activities of years 1 and 2 successfully completed, in year 3, the key objectives will be develop and implement, based on the input received from the community as part of the Infrastructures workshop, programmes to fund activities supporting infrastructure access, training and intercomparisons.

**Description of Programmed Activities** (possibly broken down into tasks), lead partner, role of participants, and relevant Work Package

Within year 3, the relevant tasks and activities will be:

Continuation of Task 5.1 - Establish an infrastructure oversight committee, with a focus on the group supporting development of the infrastructure calls and taking responsibility for selection of the recipients of infrastructure specific funding (**Task leader: UKHSA; participants: all Platforms, SU, IRSN, CEA, ISS, UTartu, BfS**);

Continued promotion of the existence and use of key existing RPR infrastructures, specifically around updating the AIR2D2 database, and to develop funding in support for access to these infrastructures, under Tasks 5.2.1., Promoting the use of key existing RPR infrastructures (**Subtask leader: INFN; participants: CEA, CNRS, UTartu, EK, all Platforms**) and Task 5.2.2., Developing a fair and transparent system to allow researchers to access key infrastructures through open calls (**Subtask leader: EK; CEA, CNRS, JSI, all Platforms**). In addition, continued development of training materials about different infrastructures and their role in the RPR research landscape, in support of the wider Task 5.2.3. Developing and promoting training in the use of key RPR infrastructures. (**Subtask leader: CEA; participants: UniPv, EK, all Platforms**); To use the analysis of current intercomparisons in support of development of specific funding programmes

for Task 5.3.1. Development of a system for funding inter-comparisons to promote standardization (identify tools and funding framework; **(Subtask lead: EURADOS; participants: JSI, INFN, ISS, all Platforms)**, as well as a further move towards standardisation, in support of Subtask 5.3.2. Development of Standard Operating Procedures (SOP) for key protocols to promote standardization. **(Subtask leader: IMROH; participants: CIEMAT, ISS, JSI, all Platforms)**;

To continue the work started during the Infrastructures workshop on Task 5.4.1. Identification of challenges faced by RPR infrastructures. **(Subtask leader: CEA, EK, IRSN, UTartu, ISS, DH-PHE, BfS, all Platforms)** and to continue to develop a framework to promote best practice for sustainable RPR infrastructures within a harmonized European context in support of Task 5.4.2. Guidelines of best practices for sustainable, harmonized RPR infrastructures. **(Subtask leader: EK; participants: CEA, IRSN, UTartu, ISS, UKHSA, BfS, all Platforms)**;

To develop and fund specific training on the STORE platform to ensure an open and FAIR approach to the entire programme of work delivered by PIANOFORTE as a whole, for Subtask 5.5.2. Promoting and training on available data storage platform (STOREDB) **(Subtask lead: UCAMB; participants: BfS)**, and to work with colleagues in WP2 and wider to begin to explore novel approaches in support of the FAIR principles and open science, with a focus on AI, under Task 5.5.3., Promoting the application of novel approaches to exploitation of archived data **(Subtask leader: BfS, Contributors: NCSR, UCAMB)**.

**Deliverable(s) :**

N°	Name	WP	Lead	Type	Level	Due date
	No deliverable planned for the period					



<b>Set of Activities Number</b>	<b>WP6</b>			<b>Start Date or Starting Event</b>			Month 25
<b>Set of Activities Title</b>	Knowledge management, communication, dissemination and impact creation						
<b>Participant Number</b>	1	2	3	40	7	23	18
<b>Short name of participant</b>	IRSN	BfS	SU	UKHSA	SURO	CEA	CIEMAT
<b>Person-months per participant</b>	0.7	0.2	0.2	0.6	6	0.2	0.6
<b>Participant Number</b>	43	27	22.1	21	15	30	22
<b>Short name of participant</b>	DSA	EEAE	EIMV	EK	GIG	IST	JSI
<b>Person-months per Participant:</b>	0.6	0.1	0.2	0.6	0.2	0.1	0.1
<b>Participant Number</b>	34	16	13	31	14	39	1.1
<b>Short name of participant</b>	NCRRP	NCSR	NNK	RIVM	UTartu	LZP	CEPN
<b>Person-months per Participant:</b>	0.1	0.4	0.2	2	0.6	1.4	0.6
<b>Participant Number</b>	44	26					
<b>Short name of participant</b>	NMBU	HZDR	All platforms				
<b>Person-months per Participant:</b>	0.8	0.1					
<b>Start month</b>	<b>Month 25</b>			<b>End month</b>		<b>Month 36</b>	

### Objectives

The main objectives of WP6 are:

- To enable bidirectional communication about PIANOFORTE and its results effectively to the broader research community, key stakeholders and the public
- To make PIANOFORTE open calls projects results transferable and accessible to audiences that may use the new knowledge, data and information in their own work, enable use and uptake of results and maximize the impact of the EU-funded research
- To develop practical knowledge management tools that contribute to the integration of national research programs as well as to a sustainable collective memory in the radiation protection field on the basis of open science principles.
- To exploit the outputs of PIANOFORTE in order to maximize its impact

### Description of work

**Task 6.1: Knowledge management (Lead: RIVM; SURO, HZDR, UTartu, CIEMAT, EEAE, NCSR, EK, NNK, DSA, NMBU, GIG, DH-PHE, ALLIANCE, EURADOS, EURAMED, MELODI, NERIS, SHARE, JRC)**

Key activity during year 3 is:

- Knowledge management SWOT analysis

**Task 6.2: Communication and dissemination (Lead: LZP; CEPN, NCRRP, SURO, CEA, DSA, GIG, IST, JSI, DH-PHE ALLIANCE, EURADOS, EURAMED, MELODI, NERIS, SHARE)**

Key activities during year 3 are:

- Review of communication plan – implementation of rules for communication of funded projects
- Publishing results of the second project call, statistics and details about funded projects
- Regular newsletter publication

**Task 6.3: On-line communication tools (Lead: SURO; IRSN, EIMV, ALLIANCE, EURADOS, EURAMED, MELODI,**

*NERIS, SHARE)*

Key activities during year 3 are:

- Regular update on news related to the partnership and funded research projects
- Extension of website to allow communication of funded research projects
- Extension of website to allow wider communication about education and professional training opportunities in the radiation protection domain
- Attracting research community to information meeting and 2nd open call
- 

**Task 6.4: Impact creation (Lead: SU; IRSN, CEPN, SURO, BfS, CIEMAT, CEA, EK, NNN, RIVM, DSA, NMBU, EIMV, DH-PHE, ALLIANCE, EURADOS, EURAMED, MELODI, NERIS, SHARE)**

Key activities during year 3 are:

- Assess the impact via stakeholders, national representatives to EURATOM and the EC, national and international RP organisations, research projects

#### Deliverable(s)

N°	Name	WP	Lead	Type	Level	Due date
D6.5	Information on projects selected for funding - call 2	6	LZP	Report	PU	29
D6.8	Knowledge management SWOT analysis	6	RIVM	Report	Pu	30

<b>Set of Activities Number</b>	<b>WP7</b>		<b>Start Date or Starting Event</b>			Month 25
<b>Set of Activities Title</b>	Organisation and management of PIANOFORTE R&I Open Calls					
<b>Participant Number</b>	19	12	36			
<b>Short name of participant</b>	NCBR	IFA	MUR			
<b>Person-months per participant</b>	19	0,15	0,15			
<b>Start month</b>	<b>Month 25</b>		<b>End month</b>		<b>Month 36</b>	

### Objectives

The aim of WP7 is the PIANOFORTE open research calls process.

The main objectives of the third project year are:

- Implementation of the second open call,
- Preparation of the documents for the third PIANOFORTE open research call,
- Launching the third PIANOFORTE open research call,
- Quality management of open research calls procedures.

**Description of work** (where appropriate, broken down into tasks), lead partner role of participants and relevant Work Package

**Task 7.2 - Preparation of the Open Call documents and launch of the calls (Lead: NCBR, participants: IFA, MUR),**

Key activities during third year are:

- Call documents will be prepared for the third PIANOFORTE open research call - Governance of the Call and Evaluation document, Call Text, Guidelines for applicants, Proposal templates and documents for reviewers
- Submission and evaluation platform will be provided

**Task 7.3: Implementation of the open calls (Lead: NCBR, participants: IFA, MUR)**

Key activities during third year are:

- Implementation of an evaluation process for submitted proposals in the first PIANOFORTE open research call
- Launch of the second PIANOFORTE open research call

**Task 7.4 Quality management of open research calls procedures (Lead: NCBR)**

Key activities during third year are:

- The lessons learned will feed the call design and implementation of the next open research calls.

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**Deliverable(s)**

<b>N°</b>	<b>Name</b>	<b>WP</b>	<b>Lead</b>	<b>Type</b>	<b>Level</b>	<b>Due date</b>
D7.4	Ranked list of eligible projects to be funded from the joint international peer review of full proposals for the PIANOFORTE open Call 2	7	NCBR	Report	PU	28
D7.5	Call documents: governance of the Call and evaluation document, call text, Guidelines for applicants, proposal templates, for the PIANOFORTE open Call3	7	NCBR	Report	PU	34

<b>Set of Activities Number</b>	<b>WP9</b>	<b>Start Date or Starting Event</b>	<b>M25</b>
<b>Set of Activities Title</b>	<b>Follow-up and monitoring of first call projects selected</b>		
<b>Start month</b>	<b>Month 25</b>	<b>End month</b>	<b>Month 36</b>

**Objectives**

This work package is specially created on Month 25 of the PIANOFORTE partnership following the first Open Call. It is dedicated to the follow-up and the monitoring of the 9 scientific projects that were selected.

**Description of Programmed Activities** (possibly broken down into tasks), lead partner, role of participants, and relevant Work Package

The funding agreement of the 9 projects will all be signed before the end of Month 25 and will be ready for implementation. . In addition to the scientific and technical reports proposed by the coordinators, they will be asked to submit an annual report to monitor the progress of the work and the use of resources.

**Task 9.1.1 : CITISTRA project**

<b>CITISTRA</b>	<b>Start Date : 01/02/2024</b>		<b>Duration : 36 months</b>
	<b>Organisation</b>	<b>Status</b>	<b>Country</b>
<b>Coordinator</b>	SURO	BEN	Czech republic
<b>Participants</b>	IFJ PAN	AE to GIG	Poland
	Slovak Medical U. (SZU)	AE to SURO	Slovakia
	GIG	BEN	Poland

**Duration : 36 months**

**Total costs : 1 347 680 €**

**Requested funds : 849 038 €**

**Task 9.1.2 : DISCOVER project**

<b>DISCOVER</b>	<b>Start Date : 01/02/2024</b>		<b>Duration : 36 months</b>
	<b>Organisation</b>	<b>Status</b>	<b>Country</b>
<b>Coordinator</b>	ENEA	BEN	Italy
<b>Participants</b>	BfS	BEN	Germany
	NNK	BEN	Hungary
	OBU	Subcontractor	UK

**Duration : 36 months**

**Total costs : 1 344 970 €**

**Requested funds : 847 331 €**

**Task 9.1.3 : IMAGEOMICS project**

<b>IMAGEOMICS</b>	<b>Start Date : 01/02/2024</b>		<b>Duration : 40 months</b>
	<b>Organisation</b>	<b>Status</b>	<b>Country</b>
<b>Coordinator</b>	NNGYK	BEN	Hungary
<b>Participants</b>	EURAMED	BEN	Austria
	OvGU	AE to EURAMED	Germany
	CIEMAT	BEN	Spain
	ISGlobal	AE to CIEMAT	Spain
	ENEA	BEN	Italy
	UNIPV	AE to ENEA	

**Duration : 40 months**

**Total costs : 1 405 230 €**

**Requested funds : 885 294,90 €**

**Task 9.1.4 : IMMPRINT project**

<b>IMMPRINT</b>	<b>Start Date : 01/04/2024</b>		<b>Duration : 36 months</b>
	<b>Organisation</b>	<b>Status</b>	<b>Country</b>
<b>Coordinator</b>	OvGU	AE to EURAMED	Germany
<b>Participants</b>	EURAMED	BEN	Austria
	BfS	BEN	Germany
	NNK	BEN	Hungary
	CSIC	AE to CIEMAT	Spain
	JSI	BEN	Slovenia
	HHU	Third Party linked to BfS	Germany

**Duration : 36 months**

**Total costs : 1 499 910 €**

**Requested funds : 944 943,30 €**

**Task 9.1.5 : LUTADOSE project**

LUTADOSE	Start Date : 01/04/2024		Duration : 48 months
	Organisation	Status	Country
<b>Coordinator</b>	KU Leuven	AE to SCK CEN	Belgium
<b>Participants</b>	BfS	BEN	Germany
	SCK CEN	BEN	Belgium
	CEA	BEN	France
	INSERM	AE to CEA	France
	RIVM	BEN	Netherlands
	Erasmus MC	AE to RIVM	Netherlands

**Duration : 48 months**

**Total costs : 1 499 868 €**

**Requested funds : 944 916,84 €**

**Task 9.1.6 : PREDICT project**

PREDICT	Start Date : 01/02/2024		Duration : 36 months
	Organisation	Status	Country
<b>Coordinator</b>	BfS	BEN	Germany
<b>Participants</b>	NERIS	BEN	France
	PDC Argos	AE to NERIS	Denmark
	MoD	BEN	Denmark
	DTU	AE to MoD	Denmark
	HZDR	BEN	Germany
	KIT	AE to HZDR	Germany
	RIVM	BEN	Netherlands
	SSM	BEN	Sweden
	EPA	BEN	Ireland
	DH	Ass. Partner	UK
	DSA	Ass. Partner	Norway
	NMBU	Ass. Partner	Norway
	UKMO	Ass. Partner	UK

**Duration : 36 months**

**Total costs : 1 499 868 €**

**Requested funds : 944 916,84 €**

**Task 9.1.7 : RRADEW project**

<b>RRADEW</b>	<b>Start Date : 01/02/2024</b>		<b>Duration : 30 months</b>
	<b>Organisation</b>	<b>Status</b>	<b>Country</b>
<b>Coordinator</b>	CEPN	AE to IRSN	France
<b>Participants</b>	IRSN	BEN	France
	ENSOSP	AE to IRSN	France
	SCK CEN	BEN	Belgium
	UA	AE to SCK CEN	Belgium
	SURO	BEN	Czech Republic
	USB	AE to SURO	Slovakia
	NERIS	BEN	France
	ISPNNP	AE to NERIS	Ukraine
	CIEMAT	BEN	Spain
	HZDR	BEN	Germany
	KIT	AE to HZDR	Germany
	APA	BEN	Portugal
	SSM	BEN	Sweden
	LU	AE to SSM	Sweden
	DH	Ass. Partner	UK
	NMBU	Ass. Partner	Norway
	NRCRM	Third party linked to SU	Ukraine

**Duration : 30 months**

**Total costs : 1 362 550,75 €**

**Requested funds : 858 406,97 €**

**Task 9.1.8 : SONORA project**

<b>SONORA</b>	<b>Start Date : 01/02/2024</b>		<b>Duration : 48 months</b>
	<b>Organisation</b>	<b>Status</b>	<b>Country</b>
<b>Coordinator</b>	FDMH	AE to IMROH	Croatia
<b>Participants</b>	IST	BEN	Italy
	SURO	BEN	Czechia
	NPI	AE to SURO	Czechia
	DCPT	AE to SURO	Czechia
	EEAE	BEN	Greece
	IRSN	BEN	France



	IMROH	BEN	Croatia
	SCK CEN	BEN	Belgium
	GIG-PIB	BEN	Poland
	IFJ PAN	AE to GIG-PIB	Poland
	IRB	AE to IMROH	Croatia
	VIO	AE to EURADOS	Italy
	EURADOS	BEN	
	SU	BEN	Sweden
	SKANDION	AE o SU	Sweden
	APA	BEN	Portugal
	IPL	AE to APA	Portugal
	UEF	BEN	Finland
	DUH	Third Party	Croatia
	UKG	AP	Serbia

**Duration : 48 months**

**Total costs : 1 491 064,00 €**

**Requested funds : 939 370,32 €**

**Task 9.1.9 : VERIFIED project**

<b>VERIFIED</b>	<b>Start Date : 01/04/2024</b>		<b>Duration : 48 months</b>
	<b>Organisation</b>	<b>Status</b>	<b>Country</b>
<b>Coordinator</b>	SCK CEN	BEN	Belgium
<b>Participants</b>	UA	AE to SCK CEN	Belgium
	GZA	AE to SCK CEN	Belgium
	IMROH	BEN	Croatia
	UZSM	AE to IMROH	Croatia
	RIVM	BEN	Netherlands
	UM	AE to RIVM	Netherlands

**Duration : 48 months**

**Total costs : 1 409 038 €**

**Requested funds : 887 693,94 €**

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N°	Name	WP	Lead	Type	Level	Due date from the start of project
D9.1.1.1	Sociological survey to define trusted public group	9.1.1	SURO	Report	PU	M12
D9.1.2.1	Data management plan	9.1.2	ENEA	Report	PU	M6
D9.1.3.1	Data management plan	9.1.3	NNK	Report	PU	M3
D9.1.4.1	Initial specifications of system design and integration parameters for the hybrid DF-XFCT	9.1.4	OVGU	Report	PU	M12
D9.1.5.1	Comparison of a 3D CZT vs Anger-type dual-head SPECT system for <sup>177</sup> Lu-and <sup>225</sup> Ac-SPECT Imaging	9.1.5	KU Leuven	Report	PU	M12
D9.1.6.1	Report defining important radionuclides at different time phases	9.1.6	SSM	Report	PU	M12
D9.1.6.2	Report of influence of blast type on physicochemical characteristics	9.1.6	DTU	Report	PU	M12
D9.1.8.1	Dedicated website	9.1.8	IPL	Website	PU	M3

### 3. Participation in Annual Work Programme Activities

Most of the PIANOFORTE consortium partners do not plan to involve Associated Entities (AE) or external experts .

The following PIANOFORTE consortium partners will involve (after the successive calls), or plan to involve, AE and/or external experts in their works:

#### **Participant 1: IRSN, France:**

Does the participant plan to subcontract certain tasks (please note that core tasks of the programme should not be sub-contracted) (article 6.2 B and 9.3 of Model Grant Agreement (MGA))?	N
Does the participant envisage that part of its work is performed by affiliated entities (article 8 of MGA)?	Y
<i>The AE (CEPN) is research partners of IRSN in its function as national radiation protection research programme manager. In WP 3 and WP6, of PIANOFORTE and integrative activities input is required that cannot be covered by the national PM in total. Additional expertise and competence is provided by the AE</i>	
Does the participant envisage the use of in-kind contribution provided by third parties (articles 6.1 and 9.2 of MGA)?	N

The AE have special expertise and competence for input in the PIANOFORTE integrative activities and possibly in the R&I activities. Its contribution is expert input in the tasks and deliverables of WP3 and WP6.	
Does the participant envisage the provision of financial support to third parties (articles 6.2 D.1 and 9.4 of MGA)?	N
Does the participant envisage that part of the work is performed by associated partners <sup>1</sup> (Article 9.1 of the MGA)?	
	N

Centre d'étude sur l'Evaluation de la Protection dans le domaine Nucléaire (CEPN), 28, rue de la Redoute, F-92260 FONTENAY AUX ROSES, Tel: +33 1 55 52 19 20, contact: thierry.schneider@cepn.asso.fr , <http://www.cepn.asso.fr/en/>

French National Fire Officers Academy (ENSOSP), 1070 Rue du Lieutenant Parayre 13798 Aix-en-Provence, France, contact : [wilfried.stefic@ensosp.fr](mailto:wilfried.stefic@ensosp.fr)

### Participant 2 BfS, Germany

<b>Does the participant plan to subcontract certain tasks (please note that core tasks of the programme should not be sub-contracted) (article 6.2 B and 9.3 of Model Grant Agreement (MGA))?</b>	<b>Y</b>
<i>BfS will subcontract the organization of major meetings in Task 3.4 target meeting, especially with external impact, to guarantee a consistent high level, e.g. in organization, moderation and sum up of results. This can be guaranteed by a professional provider.</i>	
Does the participant envisage that part of its work is performed by affiliated entities (article 8 of MGA)?	N
<i>If yes, describe the affiliated entity, the link of the participant to the affiliated entity, and describe and justify the foreseen tasks to be performed by the affiliated entity</i>	
Does the participant envisage the use of in-kind contribution provided by third parties (articles 6.1 and 9.2 of MGA)?	N
Does the participant envisage the provision of financial support to third parties (articles 6.2 D.1 and 9.4 of MGA)?	N
Does the participant envisage that part of the work is performed by associated partners <sup>1</sup> (Article 9.1 of the MGA)?	N

### Participant 3 : SU, Sweden:

Does the participant plan to subcontract certain tasks (please note that core tasks of the programme should not be sub-contracted) (article 6.2 B and 9.3 of Model Grant Agreement (MGA))?	
Does the participant envisage that part of its work is performed by affiliated entities (article 8 of MGA)?	
	Y
<b>SKANDION clinics, Uppsala.</b> <i>SKANDION is the national Swedish proton therapy centre. There is a standing collaboration with SU in the area of medical radiation protection research. SKANDION will contribute to WP3 with its expertise in evaluating the therapeutic and cost effectiveness of</i>	

<i>proton therapy. The responsible person in SKANDION is Dr Alexandru Dasu, the head medical physicist.</i>	
Does the participant envisage the use of in-kind contribution provided by third parties (articles 6.1 and 9.2 of MGA)?	N
Does the participant envisage the provision of financial support to third parties (articles 6.2 D.1 and 9.4 of MGA)?	N
Does the participant envisage that part of the work is performed by associated partners <sup>1</sup> (Article 9.1 of the MGA)?	N

Dr Alexandru Dasu, Chief Medical Physicist, Skandionkliniken, von Kraemers allé 26, 752 37 Uppsala, Sweden, +46-18-495 80 06, [alexandru.dasu@skandion.se](mailto:alexandru.dasu@skandion.se)

#### **Participant 40 : DH-PHE, UK**

Does the participant plan to subcontract certain tasks (please note that core tasks of the programme should not be sub-contracted) (article 6.2 B and 9.3 of Model Grant Agreement (MGA))?	N
Does the participant envisage that part of its work is performed by affiliated entities (article 8 of MGA)?	Y
<p><b>University of Cambridge</b> is an Affiliated Entity to DH-PHE and has worked with DH-PHE over many years in the context of a variety of projects/contracts. University of Cambridge is part of a DH-PHE instigated UK-wide collaboration on radiation protection research. University of Cambridge will be contributing expertise in radiation protection research data management, notably the STORE database as such they will contribute to WP5, task 5.</p> <p><b>University of Exeter</b> is an Affiliated Entity to DH-PHE and has worked with DH-PHE in the context of stakeholder engagement issues in the CONCERT project and European radiation protection research platforms. University of Exeter is part of a DH-PHE instigated UK-wide collaboration on radiation protection research. University of Exeter will be contributing to the Pianoforte partnership as lead of the SHARE platform and in its own right, contributing to tasks in WPs 2, 4, 5 and 6.</p>	
Does the participant envisage the use of in-kind contribution provided by third parties (articles 6.1 and 9.2 of MGA)?	N
Does the participant envisage the provision of financial support to third parties (articles 6.2 D.1 and 9.4 of MGA)?	N
Does the participant envisage that part of the work is performed by associated partners <sup>1</sup> (Article 9.1 of the MGA)?	N

#### **Participant 5 : SCK CEN, Belgium**

Does the participant plan to subcontract certain tasks (please note that core tasks of the programme should not be sub-contracted) (article 6.2 B and 9.3 of Model Grant Agreement (MGA))?	N
Does the participant envisage that part of its work is performed by affiliated entities (article 8 of MGA)?	Y

<b>AE: KULeuven</b>	
<i>Link: SCK CEN and KULeuven are both member of the Belgian Convention of Radiation Protection Research, which governs the Belgian Radiation Protection Research Programme</i>	
<i>Tasks: KULeuven will participate in Task 3.5 on proton therapy, as they are the seat of the Belgian Proton Therapy Centre.</i>	
Does the participant envisage the use of in-kind contribution provided by third parties (articles 6.1 and 9.2 of MGA)?	N
Does the participant envisage the provision of financial support to third parties (articles 6.2 D.1 and 9.4 of MGA)?	N
Does the participant envisage that part of the work is performed by associated partners <sup>1</sup> (Article 9.1 of the MGA)?	N

University of Antwerp (UA), Sint Jacobstraat 2, Antwerp, Belgium, contact : [Peter.Thijssen@uantwerpen.be](mailto:Peter.Thijssen@uantwerpen.be) (First Call project : RRADEW).

University of Antwerp, inViL, Groenenborgerlaan 171, 2020, Antwerp, Belgium, [steve.vanlanduit@uantwerpen.be](mailto:steve.vanlanduit@uantwerpen.be) (First Call project : VERIFIED)

Gasthuiszusters Antwerpen University Hospital, GZA, Oosterveldlaan 24, 2610, Wilrijk, Belgium, [Alessia.gasparini@gza.be](mailto:Alessia.gasparini@gza.be), (First Call project : VERIFIED)

KU Leuven, Imaging and Pathology, Herestraat 49, 3000 Leuven, +3216341242, contact : [michel.koole@kuleuven.be](mailto:michel.koole@kuleuven.be) (First Call project : LutaDose)

**Participant 7: SURO, Czech Republic:**

Does the participant plan to subcontract certain tasks (please note that core tasks of the programme should not be sub-contracted) (article 6.2 B and 9.3 of Model Grant Agreement (MGA))?	N
Does the participant envisage that part of its work is performed by affiliated entities (article 8 of MGA)?	Y
<i>See below</i>	
Does the participant envisage the use of in-kind contribution provided by third parties (articles 6.1 and 9.2 of MGA)?	N
Does the participant envisage the provision of financial support to third parties (articles 6.2 D.1 and 9.4 of MGA)?	N
Does the participant envisage that part of the work is performed by associated partners <sup>1</sup> (Article 9.1 of the MGA)?	N

Nuclear Physics Institute of the Czech Academy of Sciences, Husinec-Řež, čp. 130, 250 68 Řež, Czech Republic, Phone: +420 266 177 200, Contact Person: Dr. Marie Davidková ([davidkova@ujf.cas.cz](mailto:davidkova@ujf.cas.cz)), [www.ujf.cas.cz](http://www.ujf.cas.cz)

University of South Bohemia in České Budějovice, Branišovská 1645/31a, 370 05 České Budějovice,

Czech Republic, Phone: +420 776 296 676, Contact Person: Prof. Friedo Zölzer ([zoelzer@zsf.jcu.cz](mailto:zoelzer@zsf.jcu.cz)), [www.jcu.cz](http://www.jcu.cz) (First Call project : RRADEW)

Slovak Medical University in Bratislava, Faculty of Public Health, Department of Radiation Protection, Limbova 12, 83303, Bratislava, Slovakia, [igor.gomola@szu.sk](mailto:igor.gomola@szu.sk) ((First Call project : CITISTRA)

**Participant 11: EURAMED, European Platform**

Does the participant plan to subcontract certain tasks (please note that core tasks of the programme should not be sub-contracted) (article 6.2 B and 9.3 of Model Grant Agreement (MGA))?	N
Does the participant envisage that part of its work is performed by affiliated entities (article 8 of MGA)?	Y
<i>Part of EURAMED's work in the project will be performed by OvGU. OvGU is a member institution of EURAMED, and Prof Christoph Hoeschen is Chair of the EURAMED Scientific Committee. Within PIANOFORTE OvGU will contribute to the work package 2 "Research and innovation projects", among other tasks dedicated to improving medical radiation protection research with the aim of helping to combat cancer including modern approaches, in particular to the task 2.4 "Integration of Artificial Intelligence in Radiation Protection."</i>	
Does the participant envisage the use of in-kind contribution provided by third parties (articles 6.1 and 9.2 of MGA)?	N
Does the participant envisage the provision of financial support to third parties (articles 6.2 D.1 and 9.4 of MGA)?	N
Does the participant envisage that part of the work is performed by associated partners <sup>1</sup> (Article 9.1 of the MGA)?	N

**Participant 12 : IFA, Romania**

Does the participant plan to subcontract certain tasks (please note that core tasks of the programme should not be sub-contracted) (article 6.2 B and 9.3 of Model Grant Agreement (MGA))?	N
Does the participant envisage that part of its work is performed by affiliated entities (article 8 of MGA)?	Y
<i>The Affiliated Entities are research partners of IFA in its function as national radiation protection research programme manager. Joint programming and integrative activities input cannot be covered by the national PM, so additional expertise and competence is needed from the Affiliated Entities.</i>	
Does the participant envisage the use of in-kind contribution provided by third parties (articles 6.1 and 9.2 of MGA)?	N
Does the participant envisage the provision of financial support to third parties (articles 6.2 D.1 and 9.4 of MGA)?	N
Does the participant envisage that part of the work is performed by associated partners <sup>1</sup> (Article 9.1 of the MGA)?	N

**Institutul Național de Cercetare-Dezvoltare pentru Fizică și Inginerie Nucleară „Horia Hulubei” (IFIN-HH)**, 30 Reactorului str., Măgurele, Ilfov county, 077373, Tel. 021.404.2300, Fax 021.457.4440,

Webpage: <https://www.nipne.ro/>

Legal link between PM and AE: Cooperation Agreement

Contact person: Dr. Diana SAVU, [dsavu@nipne.ro](mailto:dsavu@nipne.ro)

**Institutul Național de Cercetare-Dezvoltare pentru Fizica Laserilor, Plasmei și Radiației (INFLPR)**, 409 Atomiștilor str., Măgurele, Ilfov county, 077125, Tel. 021.457.4489, Fax 021.457.4243, Webpage: <http://inflpr.ro>

Legal link between PM and AE: Cooperation Agreement

Contact person: Dr. Gabriela CRĂCIUN, [gabriela.craciun@inflpr.ro](mailto:gabriela.craciun@inflpr.ro)

**Institutul Național de Cercetare-Dezvoltare pentru Fizica Materialelor (INFIM)**, 405A Atomiștilor Str., Măgurele, Ilfov county, 077125, Tel. 021.369.0185, Fax 021.369.0177, Webpage: <https://infim.ro/>

Legal link between PM and AE: Cooperation Agreement

Contact person: Dr. Andrei GĂLĂȚEANU, [gala@infim.ro](mailto:gala@infim.ro)

**Institutul Național de Cercetare-Dezvoltare pentru Tehnologii Criogenice și Izotopice (ICSI)**, 4 Uzinei Str., Râmnicu Vâlcea, Vâlcea county, 240050, Tel.: 025.0733890, Fax: 025.0732746, Webpage: <https://www.icsi.ro/>

Legal link between PM and AE: Cooperation Agreement

Contact person: Dr. Sebastian BRAD, [sebastian.brad@icsi.ro](mailto:sebastian.brad@icsi.ro)

**Institutul Național de Cercetare-Dezvoltare pentru Optoelectronică (INOE 2000)**, 409 Atomiștilor Str., Măgurele, Ilfov county, 077125, Tel. 021.457.4522, Fax 021.457.4522, Webpage: <https://www.inoe.ro/ro/>

Legal link between PM and AE: Cooperation Agreement

Contact person: Dr. eng. Roxana RADVAN, [radvan@inoe.ro](mailto:radvan@inoe.ro)

**Universitatea Alexandru Ioan Cuza din Iași (UAIC)**, 11 Carol I Bld., Iași, Iași county, 700506, Tel. 023.220.1010, Fax 023.220.1201; Webpage: <https://www.uaic.ro/>

Legal link between PM and AE: Cooperation Agreement

Contact person: Dr. Cătălin BORCIA, [cborcia@uaic.ro](mailto:cborcia@uaic.ro)

**Universitatea din Craiova (UCV)**, 13 A.I.Cuza, Craiova, Dolj county, 20580, Tel. 035.1403.145, Fax. +025.141.1688; Webpage: <https://www.ucv.ro/>

Legal link between PM and AE: Cooperation Agreement

Contact person: Mihaela Tinca UDRIȘTIOIU, [mtudristioiu@central.ucv.ro](mailto:mtudristioiu@central.ucv.ro)

#### **Participant 17 : UEF, Finland**

Does the participant plan to subcontract certain tasks (please note that core tasks of the programme should not be sub-contracted) (article 6.2 B and 9.3 of Model Grant Agreement (MGA))?	N
Does the participant envisage that part of its work is performed by affiliated entities (article 8 of MGA)?	Y
<p><i>STUK (Finnish Radiation and Nuclear Safety Authority) is an affiliated entity to UEF through a national radiation research network (CORES). The network is based on agreements and long-lasting cooperation.</i></p> <p><i>In WP2 joint programming and integrative activities input is required that cannot be covered by the national Program Manager alone. Additional expertise and competence are provided by the</i></p>	

<p><i>AE. AE will lead a WP2 task to evaluate scientific output of the research projects, evaluate the integration of social sciences and humanities in the projects, and monitor the innovation and guidance formation of the projects.</i></p> <p><i>In WP2 joint programming and integrative activities input is required that cannot be covered by the national Program Manager alone, such as the role and competence of STUK as national authority in radiation protection and nuclear safety that provides insight into the implementation of results.</i></p> <p><i>Other Affiliated Entities to UEF are University of Jyväskylä, University of Helsinki, Aalto University, University of Oulu, Turku University Hospital, Tampere University Hospital, and Kuopio University Hospital. These AEs will be interested in applying funding through open calls arranged by PIANOFORTE. These AEs do not have any specific role in this stage.</i></p>	
Does the participant envisage the use of in-kind contribution provided by third parties (articles 6.1 and 9.2 of MGA)?	N
Does the participant envisage the provision of financial support to third parties (articles 6.2 D.1 and 9.4 of MGA)?	N
Does the participant envisage that part of the work is performed by associated partners <sup>1</sup> (Article 9.1 of the MGA)?	N

UEF AEs and their PIC numbers (all other information could be accessed through PIC):

- Radiation and Nuclear Safety Authority (STUK; AE participating in Integration Activities): 999460744
- University of Jyväskylä (JYU): 999842245
- University of Helsinki (HY): 999994535
- Aalto University (Aalto): 991256096
- University of Oulu (UOulu): 999844670
- Turku University Hospital (VSSH/TUCH): 999495858
- Tampere University Hospital (PSHP/TAUH): 999460065
- Kuopio University Hospital (PSSH/KUH): 998250766
- Tampere University (TAU): 902999288
- University of Turku (UTU): 999903064
- LUT University (LUT): 999591209
- Oulu University Hospital (OUH): 950305509
- Åbo Akademi (ÅA): 999903355
- Helsinki University Hospital (HUS): 999483830

**Participant 15 : GIG, Poland**

Does the participant plan to subcontract certain tasks (please note that core tasks of the programme should not be sub-contracted) (article 6.2 B and 9.3 of Model Grant Agreement (MGA))?	N
Does the participant envisage that part of its work is performed by affiliated entities (article 8 of MGA)?	Y
<p><i>The AE is research partners of GIG in its function as national radiation protection research programme manager. In WP5 and WP3 of PIANOFORTE and in integrative activities, a specific input is required that cannot be covered by the national PM in total. Additional expertise and</i></p>	



<i>competence in the proton therapy and standardization of measurement protocols is provided by the AE</i>	
Does the participant envisage the use of in-kind contribution provided by third parties (articles 6.1 and 9.2 of MGA)?	y
The AE have special expertise and competence for input in the PIANOFORTE integrative activities and possibly in the R&I activities. Its contribution is expert input in the tasks and deliverables of WP5 and WP3.	
Does the participant envisage the provision of financial support to third parties (articles 6.2 D.1 and 9.4 of MGA)?	N
Does the participant envisage that part of the work is performed by associated partners <sup>1</sup> (Article 9.1 of the MGA)?	N

Associated Entity (AE) to GIG:

THE HENRYK NIEWODNICZANSKI INSTITUTE OF NUCLEAR PHYSICS,  
POLISH ACADEMY OF SCIENCES  
KRAKOW, PL  
PIC: 999611579

#### **Participant 18 : CIEMAT, Spain**

Does the participant plan to subcontract certain tasks (please note that core tasks of the programme should not be sub-contracted) (article 6.2 B and 9.3 of Model Grant Agreement (MGA))?	N
<i>If yes, describe and justify the tasks to be subcontracted</i>	
Does the participant envisage that part of its work is performed by affiliated entities (article 8 of MGA)?	Y
<i>The AE (32. MERIENCE SCP, Calle Llimoner, 30. 08734 Olèrdola, Barcelona. Contact: Meritxell Martell (<a href="mailto:meritxell.martell@merience.eu">meritxell.martell@merience.eu</a>). Tel. +34 664674180. <a href="http://www.merience.eu">www.merience.eu</a>) is a research partner of CIEMAT in its function as national radiation protection research programme manager. The AE (MERIENCE SCP) participates in two tasks of WP3 on Stakeholder Engagement (Task 3.2 Partnership Projects, and Task 3.3. Stakeholder Engagement Planning and Management), providing additional expertise and competence.</i>	
Does the participant envisage the use of in-kind contribution provided by third parties (articles 6.1 and 9.2 of MGA)?	N
Does the participant envisage the provision of financial support to third parties (articles 6.2 D.1 and 9.4 of MGA)?	N
Does the participant envisage that part of the work is performed by associated partners <sup>1</sup> (Article 9.1 of the MGA)?	N

Barcelona Institute for Global Health (ISGlobal), carrer Rosselló, 132, 5<sup>o</sup> 2<sup>a</sup>, 08036, Barcelona, Spain, [Isabelle.thierrychef@isglobal.org](mailto:Isabelle.thierrychef@isglobal.org), (First Call project : IMAGEOMICS)

Agencia Estatal Consejo Superior de Investigaciones Científicas (CSIC), Institute for Corpuscular Physics (IFIC), Parc Científic de la Universitat de València. c/ Catedrático Beltrán, 2, E-46980, Paterna, Spain. [gabriela.llosa@ific.uv.es](mailto:gabriela.llosa@ific.uv.es), (First Call project : IMMPRINT)

**Participant 19: NCBR, Poland:**

Does the participant plan to subcontract certain tasks (please note that core tasks of the programme should not be sub-contracted) (article 6.2 B and 9.3 of Model Grant Agreement (MGA))?	Y
<i>In order to launch the call the electronic submission portal will be need. It will be subcontracted as NCBR does not have its own portal dedicated to international calls. It is planned to purchase the license for the submission system which will be in line with technical specification set up by EC.</i>	
Does the participant envisage that part of its work is performed by affiliated entities (article 8 of MGA)?	N
Does the participant envisage the use of in-kind contribution provided by third parties (articles 6.1 and 9.2 of MGA)?	N
Does the participant envisage the provision of financial support to third parties (articles 6.2 D.1 and 9.4 of MGA)?	N
Does the participant envisage that part of the work is performed by associated partners <sup>1</sup> (Article 9.1 of the MGA)?	N

**Participant 23 : CEA, France**

Does the participant plan to subcontract certain tasks (please note that core tasks of the programme should not be sub-contracted) (article 6.2 B and 9.3 of Model Grant Agreement (MGA))?	N
Does the participant envisage that part of its work is performed by affiliated entities (article 8 of MGA)?	Y
<p><i>CEA will work with 3 Affiliated entities. INSERM, CNRS and University of Caen ; Inserm is the only public research organization in France entirely dedicated to human health. Its objective is to promote the health of all by advancing knowledge about life and disease, treatment innovation, and public health research. Better estimate the risk of exposure to ionizing radiation in medical use and in societal conditions represents the main research for more than 20 Inserm teams with expertise in radiobiology, medical physic, mathematic, radio-epidemiology and medicine. In this purpose, Inserm is developing a research from basic studies to clinical application in radiation protection. INSERM has a long term official agreement (“Accord-cadre”) with CEA and several joint labs are running. INSERM will be a very valuable partner in medical use of radiations and will contribute to WP2 on task dealing with topical web-workshops dedicated to PIANOFORTE Priorities.</i></p> <p><i>The Centre National de la Recherche Scientifique (CNRS) is a French multidisciplinary public research organization under the supervision of the Ministry of Higher Education, Research and Innovation. It brings together 32,000 researchers in more than 1100 research laboratories located in France and abroad. It is one of the most important research institutions in the world. Its main objective is to meet the major challenges of the present and the future by exploring life, matter, the Universe and the functioning of human societies. CNRS comprises 10 institutes, including the Institute for Biological Sciences (INSB), the Institute of Chemistry (INC), the Institute of Ecology and Environment (INEE) and the Institute of Nuclear and Particle Physics (IN2P3). These four institutes have been collaborating for several years mainly in the fields of health, nuclear energy and the study of the impact of radionuclides in the environment, conducting interdisciplinary research from the very basic to the development of applications with societal impact.</i></p> <p><i>CEA and CNRS have a long term official agreement (“Accord-cadre”) and several joint labs are running. CNRS will be a very valuable partner in medical use of radiations and will contribute to</i></p>	

*WP5 on tasks dealing with transnational access to Infrastructures and will bring its expertise in running very large infrastructures and implementing transnational access.*

*One of the priorities of University of Caen Normandy (UniCaen) in France is performing research and education in radiobiology. The university comprises 45 laboratories (21 of which are supported by large research bodies such as the CNRS, CEA, INSERM and INRA) within several large multidisciplinary scientific poles including radiation sciences. Since many years, due to GANIL, CYCERON and the new HARDON therapy facilities, University of Caen Normandy has long-term collaboration and official agreement with CEA in both research and educational activities within radiation research. The University of Caen and the region of Normandy invested tremendous economic resources for obtaining new radiation equipment (such as cyclotron C400, proton cyclotron and x-rays machines), infrastructures and laboratory for continue doing basic and translational radiation biology covering high as well as low dose research. UniCaen is a very important partner for Education and training (WP4). UniCaen is a university with long-time experience in E&T, so its expertise is needed in the evaluation process of courses and mobility grants. Even more so because the majority of POMs are non-academic institutions. Moreover UniCaen in collaboration with Medical expert from the new Hadron therapy Facility will contribute to WP3 on Protontherapy and Radioprotection.*

Does the participant envisage the use of in-kind contribution provided by third parties (articles 6.1 and 9.2 of MGA)?	N
Does the participant envisage the provision of financial support to third parties (articles 6.2 D.1 and 9.4 of MGA)?	N
Does the participant envisage that part of the work is performed by associated partners <sup>1</sup> (Article 9.1 of the MGA)?	N

#### **Participant 24 :-ENEA, Italy**

Does the participant plan to subcontract certain tasks (please note that core tasks of the programme should not be sub-contracted) (article 6.2 B and 9.3 of Model Grant Agreement (MGA))?	N
Does the participant envisage that part of its work is performed by affiliated entities (article 8 of MGA)?	Y
<i>UniPv is a University research partner affiliated to ENEA, with collaboration consolidated in several European projects. UniPv will participate in WP4 Education and Training and WP5 Infrastructures and Data management. As a University with long-time experience in E&amp;T (also coordinating E&amp;T in EURATOM projects), its expertise is needed in the evaluation process of courses and mobility grants for WP4 and in tasks related to training on infrastructures for WP5. UniPv contribution is also important as the majority of POMs are non-academic institutions.</i>	
Does the participant envisage the use of in-kind contribution provided by third parties (articles 6.1 and 9.2 of MGA)?	N
Does the participant envisage the provision of financial support to third parties (articles 6.2 D.1 and 9.4 of MGA)?	N
Does the participant envisage that part of the work is performed by associated partners <sup>1</sup> (Article 9.1 of the MGA)?	N

#### **Affiliated Entities to ENEA**

**University of Pavia:** Contact: Dr. Giorgio Baiocco (giorgio.baiocco@unipv.it), Tel. +39 0382 987948  
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Homepage: <http://radbiophys.unipv.eu/>

**Participant 22 : JSI, Slovenia:**

Does the participant plan to subcontract certain tasks (please note that core tasks of the programme should not be sub-contracted) (article 6.2 B and 9.3 of Model Grant Agreement (MGA))? <b>N</b>	N
Does the participant envisage that part of its work is performed by affiliated entities (article 8 of MGA)?	Y
<i>The AE is a research partner of JSI. In WP 3 and WP6, of PIANOFORTE and integrative activities input is required that cannot be covered by the national PM in total. Additional expertise and competence is provided by the AE. The AE have special expertise and competence for input in the PIANOFORTE integrative activities and possibly in the R&amp;I activities. Its contribution is expert input in the tasks and deliverables of WP3 and WP6.</i>	
Does the participant envisage the use of in-kind contribution provided by third parties (articles 6.1 and 9.2 of MGA)? <b>N</b>	N
Does the participant envisage the provision of financial support to third parties (articles 6.2 D.1 and 9.4 of MGA)? <b>N</b>	N
Does the participant envisage that part of the work is performed by associated partners <sup>1</sup> (Article 9.1 of the MGA)? <b>N</b>	N

**Affiliated Entity to JSI**

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Contact person: Nadja.Zeleznik@eimv.si , <https://www.eimv.si/>

**Participant 43 : DSA, Norway**

Does the participant plan to subcontract certain tasks (please note that core tasks of the programme should not be sub-contracted) (article 6.2 B and 9.3 of Model Grant Agreement (MGA))?	N
<b>Does the participant envisage that part of its work is performed by affiliated entities (article 8 of MGA)?</b>	<b>Y</b>
<i>The affiliated entity, the Norwegian University of Life Sciences (NMBU) (<a href="http://www.nmbu.no">www.nmbu.no</a>, Address: P.O. Box 5003 NMBU, 1432 Aas, Norway; Contact persons: prof. Deborah Oughton, <a href="mailto:deborah.oughton@nmbu.no">deborah.oughton@nmbu.no</a>; prof Lindis Skipperud, <a href="mailto:lindis.skipperdu@dsa.no">lindis.skipperdu@dsa.no</a>) will support DSA in the role of national programme manager for radiation protection research during the PIANOFORTE partnership. NMBU will participate in WP3, WP4 and WP6 of the PIANOFORTE. In WP3, Stakeholder engagement, NMBU will contribute with its long experience of stakeholder involvement and organization of engagement activities. In WP4, Education and Training, NMBU is a university with long-time experience in E&amp;T, so its expertise is needed in the evaluation process of courses and mobility grants. Even more so because the majority of POMs are non-academic institutions. In WP6, Knowledge management, communication, dissemination and impact creation, NMBU will support dissemination and communication activities, particularly linked to the ethical aspects of</i>	

<i>open science and data management, drawing on international engagement in the area through UNESCO and ALLEA.</i>	
<b>Does the participant envisage the use of in-kind contribution provided by third parties (articles 6.1 and 9.2 of MGA)?</b>	<b>N</b>
Does the participant envisage the provision of financial support to third parties (articles 6.2 D.1 and 9.4 of MGA)?	N
Does the participant envisage that part of the work is performed by associated partners <sup>1</sup> (Article 9.1 of the MGA)?	N

### **Participant 25 : MoD, Denmark**

Does the participant plan to subcontract certain tasks (please note that core tasks of the programme should not be sub-contracted) (article 6.2 B and 9.3 of Model Grant Agreement (MGA))?	N
Does the participant envisage that part of its work is performed by affiliated entities (article 8 of MGA)?	Y
<p><i>DEMA will contribute to WP2: Research and Innovation calls, defining priorities for joint programming in order to enhance radiation protection culture and emergency preparedness. Especially, we are able to introduce advanced use of decision support systems and dispersion models into the project through the use and development of the ARGOS system, which has been developed in a close collaboration with DTU, PDC-ARGOS and Danish Meteorological Institute (DMI). To maintain and constantly improve ARGOS, to adopt it to the rapid development in international standards of data sharing, to establish links to other dispersion models, and to update the nomenclature used for best possible description of the available information DEMAs needs support from Affiliated Entities. Another priority is to further develop methods and advice on optimized intervention and related measurement strategies both for decision support and for practical implementation.</i></p> <p><i>DTU has been the main supplier of calculation concepts, methodologies and data for particularly the inhabited areas modules of ARGOS and RODOS (e.g., ERMIN), but has also delivered datasets for improvement of for example the food dose modules of the two decision support systems. Further, DTU has developed the methodologies for, e.g., plume rise, physicochemical source term characterization and dose calculation in the CBRN-related parts of ARGOS. DTU has also been a major supplier of information on countermeasure implementation based on a comprehensive practical development and testing program. DTU constitute an important part of the Danish emergency preparedness, and continuously carry out radiation surveillance work (e.g. national data for EU's REM database). DTU has a long history of collaboration with DEMAs and PDC-ARGOS in European projects (e.g., EURANOS (2004-2009), NERIS TP (2011-2014), PREPARE (2013-2016), CONFIDENCE (2017-2020)). DTU has also had extensive collaboration with DMI, as well as DEMAs and PDC-ARGOS, in for example a suite of research and development projects under the Nordic NKS framework, developing methodologies for the ARGOS system.</i></p> <p><i>PDC-ARGOS together with DEMAs has originally developed the ARGOS system to be used for CBRN(E) Emergency Preparedness and Response. ARGOS is a software system to support the emergency organization to make the best possible decisions in case of incidents involving atmospheric dispersion of hazardous CBRN-materials. PDC-ARGOS also maintains and develops on the short range ADM-model RIMPUFF, incorporated in the ARGOS DSS. RIMPUFF is originally developed by DTU. In addition, PDC-ARGOS, DEMAs and DMI have been mutually engaged in a number of</i></p>	

*international research and development projects i.a PDC-ARGOS is a supporting member of the NERIS-platform.*

*The second Affiliated Entities will be the Danish Meteorological Institute (DMI, Denmark). Since 1992, DMI has been an operational partner of the Danish nuclear emergency preparedness for which the Danish Emergency Management Agency (DEMA) is responsible. Through national and international research activities, DMI is constantly improving national meteorological services in the area of emergency preparedness for atmospheric dispersion of nuclear and other harmful substances. DMI has taken part in, and in many cases initiated and coordinated, numerous international research and development projects within radiation protection; e.g. NKS projects SOCHAOTIC, SLIM, AVESOME, MESO, FAUNA, MUD, NordRisk, NordRisk II, MetNet, and EKO-4, as well as EU projects ENSEMBLE, RTMOD, ETEX, ATMES-II, RODOS, and EnviroRisks.*

*All three EAs, Technical University of Denmark (DTU), Danish Meteorological Institute (DMI, Denmark) and PDC-ARGOS will provide in-kind contribution to PIANOFORTE with their own resources.*

Does the participant envisage the use of in-kind contribution provided by third parties (articles 6.1 and 9.2 of MGA)?	N
Does the participant envisage the provision of financial support to third parties (articles 6.2 D.1 and 9.4 of MGA)?	N
Does the participant envisage that part of the work is performed by associated partners <sup>1</sup> (Article 9.1 of the MGA)?	N

#### **Participant 26 : HZDR, Germany**

Does the participant plan to subcontract certain tasks (please note that core tasks of the programme should not be sub-contracted) (article 6.2 B and 9.3 of Model Grant Agreement (MGA))?	N
Does the participant envisage that part of its work is performed by affiliated entities (article 8 of MGA)?	Y
<i>The AE's are research partners of HZDR in its function as national radiation protection research programme manager. In WP2, WP3, WP4, WP5, and WP6 of the PIANOFORTE project and integrative activities input is required that cannot be covered by the national PM in total. Additional expertise and competence is provided by the AEs.</i>	
Does the participant envisage the use of in-kind contribution provided by third parties (articles 6.1 and 9.2 of MGA)?	N
Does the participant envisage the provision of financial support to third parties (articles 6.2 D.1 and 9.4 of MGA)?	N
Does the participant envisage that part of the work is performed by associated partners <sup>1</sup> (Article 9.1 of the MGA)?	N

#### **Affiliated entities to HZDR**

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GSI Helmholtzzentrum für Schwerionenforschung, Planckstraße 1, 64291 Darmstadt, Tel. : +49-6159 71 2009, contact : Prof. Marco Durante ([M.Durante@gsi.de](mailto:M.Durante@gsi.de))

### **Participant 28 : IMROH, Croatia**

Does the participant plan to subcontract certain tasks (please note that core tasks of the programme should not be sub-contracted) (article 6.2 B and 9.3 of Model Grant Agreement (MGA))?	N
Does the participant envisage that part of its work is performed by affiliated entities (article 8 of MGA)?	Y
<i>The AE is research partners of IMROH in its function as national radiation protection research programme manager. In WP 3 &amp; WP5.3.2 and maybe in WP4 , of PIANOFORTE and integrative activities educational input is required that cannot be covered by the national PM in total. Additional educational expertise and competence is provided by the AE (both of them)</i>	
Does the participant envisage the use of in-kind contribution provided by third parties (articles 6.1 and 9.2 of MGA)?	N
Does the participant envisage the provision of financial support to third parties (articles 6.2 D.1 and 9.4 of MGA)?	N
Does the participant envisage that part of the work is performed by associated partners <sup>1</sup> (Article 9.1 of the MGA)?	N

### **Affiliated entities to IMROH**

UNIZAG\_RGN

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Dubrava University Hospital (DUH), ja Gojka Šuška 6, 10000, Zagreb, Croatia, [ikralik@kbd.hr](mailto:ikralik@kbd.hr), (First Call project : SONORA)

Ruder Boškovic Institute (IRB), Bijenicka 54, 10000, Zagreb, Croatia, [zknez@irb.hr](mailto:zknez@irb.hr), (First Call project : SONORA)

**Participant 31, RIVM, Netherlands**

Does the participant plan to subcontract certain tasks (please note that core tasks of the programme should not be sub-contracted) (article 6.2 B and 9.3 of Model Grant Agreement (MGA))?	N
Does the participant envisage that part of its work is performed by affiliated entities (article 8 of MGA)?	Y
<i>NRG is one of the leading nuclear expertise centers in the Netherlands. NRG is a major supplier of medical isotopes and operated a publicly financed research program on nuclear science, which includes dedicated research activities in radiation protection, aligned with the major SRA from e.g. EURADOS, EURAMED and ALLIANCE. The department for RP has a total of 30 FTE, with dedicated computer and experimental facilities used in research. NRG and RIVM have a history of joint work in radiation protection research. In recent years, this has focused on naturally occurring radioactive materials in building materials, and their relevance to exposure of indoor exposure to the public. NRG will contribute to WP3.</i>	
Does the participant envisage the use of in-kind contribution provided by third parties (articles 6.1 and 9.2 of MGA)?	N
Does the participant envisage the provision of financial support to third parties (articles 6.2 D.1 and 9.4 of MGA)?	N
Does the participant envisage that part of the work is performed by associated partners <sup>1</sup> (Article 9.1 of the MGA)?	N

Aarhus University, Dept. of Clin. Medicine (DCPT), Danish Centre for Particle Therapy; Palle Juul-Jensens Boulevard 25 (B3), 8200, Aarhus, Denmark, [bassler@clin.au.dk](mailto:bassler@clin.au.dk), (First Call project : SONORA)

Erasmus Medical Centre, Radiology & Nuclear Medicine, Dr Molewaterplein 40, 3000CA, Rotterdam, Netherlands, [m.konijnenberg@erasmusmc.nl](mailto:m.konijnenberg@erasmusmc.nl), (First Call project : LutADose)



Table 2.3.b: AWP Set of Activities

Activity No	Activity Title	Lead Participant N°	Short name of lead participant	Total Person-Months	Start Month	End Month
<b>WP1</b>						
1.1	Overall coordination and legal, contractual, administrative and financial management	1	IRSN	20	M25	M36
1.2	General Assembly and Executive Board meetings	1	IRSN	6,0	M25	M36
1.3.	Task 1.3: Updating the annual work plan	1	IRSN	1,5	M25	M36
1.4	Negotiation of projects to be funded through open R&I calls	1	IRSN	3,7	M25	M36
1.5	Funding decision process for integration activities listed in the approved annual work program	1	IRSN	0,5	M25	M36
1.6	Monitoring of the progress of the Partnership	1	IRSN	2,6	M25	M36
			<b>Total WP1</b>	<b>34,3</b>		
<b>WP2</b>						
2.0	Management	10	SCK CEN	2	M25	M36
2.1.a	Priorities for third call	20	NNK	17	M25	M36
2.2.a	Identification of changes in science, technology, society and environment affecting the Joint Roadmap	41	ENEA	2	M25	M36
2.3.a	Organise topical workshops with selected projects	37	CEA	7.5	M25	M36
2.4.1	Review on AI implementations in RP	24	NCSR	2	M25	M36
2.4.2	Interaction with scientific communities specializing on AI	1	IRSN	2.5	M25	M36
2.4.3	Promoting the uptake of AI in R&I calls	11.1	OVGU	1	M25	M36
2.4.4	Ethical challenges of AI	42	UExet	1	M25	M36
			<b>Total WP2</b>	<b>33</b>		
<b>WP3</b>						
3.1	International partners and partnership priority setting	3	BfS	6.8	M25	M36
3.2	Partnership Projects	28	IMROH	3.1	M25	M36

3.3	Stakeholder Engagement Planning and Management	18	CIEMAT	4.9	M25	M36
3.4	Direct Stakeholder Engagement	43	DSA	7.5	M25	M36
3.5	Addressing stakeholder interests of DG Health: radiation protection and proton therapy	15.1	IFJ	5.4	M25	M36
			<b>Total WP3</b>	<b>27.7</b>		
<b>WP4</b>						
4.1	Support of targeted courses to promote knowledge, skills and competences of MSc/PhD students, early career researchers and professionals	35	NMBU	2,6	M25	M36
4.2	Support of mobility for MSc/PhD students and early career researchers (travel grants)	4	SU	4,4	M25	M36
4.3	Support of a continuous professional development programme for radiation protection professionals	10	SCKCEN	2,8	M25	M36
4.4	Development of a sustainable radiation protection E&T programme and support for early career researcher organisations	31	EK	2,4	M25	M36
			<b>Total WP4</b>	<b>12,2</b>		
<b>WP5</b>						
5.1	Establish an infrastructure oversight/stakeholder committee	6	UKHSA	5.25	M25	M36
5.2.1	Promoting the use of key existing RPR infrastructures	54	INFN		M25	M36
5.2.2	Developing a fair and transparent system to allow researchers to access key infrastructures through open calls	2	BfS	2.8	M25	M36
5.2.3	Continued development of training materials about different infrastructures	37	CEA	2.7	M25	M36
5.3.1	Development of a system for funding inter-comparisons to promote standardization (identify tools and funding framework)	12	EURADOS	2.1	M25	M36
5.3.2	To begin to identify and develop key protocols	46	IMROH		M25	M36
5.4.1	Identification of challenges faced by RPR infrastructures	37	CEA	6.8	M25	M36
5.4.2	To develop a framework of guidelines to promote best practice	31	EK		M25	M36
5.5.2	Promoting and training on available data storage platform	7	UCamb		M25	M36

	(STOREDB)					
5.5.3	Promoting the application of novel approaches to exploitation of archived data	37	CEA	2.8	M25	M36
			<b>Total WP5</b>	<b>22.45</b>	M25	M36
					M25	M36
6.1	Knowledge management SWOT analysis	50	RIVM	4.9	M25	M36
6.2	Communication and dissemination activities	53	LZP	3	M25	M36
6.3	Regular update on news related to the partnership and funded research projects using online tools	13	SURO	5.52	M25	M36
6.4	Assess the impact	4	SU	3.18	M25	M36
			<b>Total WP6</b>	<b>16,6</b>		
<b>WP7</b>						
7.2	Preparation of the Open Call documents and launch of the call	19	NCBR	9.1	M31	M34
7.3	Implementation of the open call	19	NCBR	9.1	M25	M36
7.4	Quality management of open research calls procedures	19	NCBR	1.1	M25	M36
			<b>Total WP7</b>	<b>19,3</b>		

Table 2.3.d: Summary of staff effort

	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5	Activity 6	Total Person/ Months per Participant
<b>WP1</b>	<b>T.1.1</b>	<b>T.1.2</b>	<b>T.1.3</b>	<b>T.1.4</b>	<b>T.1.5</b>	<b>T.1.6</b>	
IRSN	20	2,5	1,5	3,5	0,5	2	30
SCK CEN	0	0,3				0,1	0,4
BfS	0	0,3				0,1	0,4
SU	0	0,3				0,1	0,4
PHE	0	0,3				0,1	0,4
SURO	0	0,3				0,1	0,4
NCBR	0	0,3		0,2		0,1	0,6
All POMs		1,40					1,40
All Platforms		0,3					0,3
<b>Total WP1</b>	<b>20</b>	<b>6</b>	<b>1,5</b>	<b>3,7</b>	<b>0,5</b>	<b>2,6</b>	<b>34,30</b>
<b>WP2</b>	<b>T.2.0</b>	<b>T2.1</b>	<b>T.2.2</b>	<b>T.2.3</b>	<b>T2.4</b>		
SCK CEN	2	2.5	0,5	1.5	1.5		8
NNK		3					3
SSM		1.5					1.5
CIEMAT		1.5					1.5
JSI			0.25				0.25
EK			0.25				0.25
ENEA			1				1
STUK				2			2
NCRPP				1			1
CEA				1			1
INSERM				0.5			0.5
ISS				0.5			0.5
UExet					1		1
NCSR		1.5			2		3.5
IRSN					1		1
OvGU					1		1
All POMs		<b>7</b>					<b>7</b>
<b>Total WP2</b>	<b>2</b>	<b>17</b>	<b>2</b>	<b>7.5</b>	<b>6.5</b>		<b>33</b>
<b>WP3</b>	<b>T.3.1</b>	<b>T.3.2</b>	<b>T.3.3</b>	<b>T.3.4</b>	<b>T.3.5</b>		
IRSN	0.1	-	0.1	0.1	-		0.3
CEPN	-	0.1	0.1	0.1	-		0.3
BfS	6.0	1.0	1.0	3.0	1.0		12.0
SU	0.1	-	-	-	-		0.1
SKANDION	-	-	-	-	0.5		0.5
SCK CEN	0.1	0.1	0.1	0.3	0.4		1
KU Leuven	-	-	-	-	0.5		0.5
UTARTU	0.1	-	0.1	0.1	-		0.3
GIG	0.1	-	0.1	0.1	-		0.3
IFJ PAN	-	-	-	-	2.0		2.0
CIEMAT	-	-	2.5	0.5	-		3.0
MERIENCE SCP	-	0.1	0.1	-	-		0.2

ISS	-	-	0.1	0.1	-		0.2
EK	-	-	-	0.1	-		0.1
JSI	-	0.2	-	-	-		0.2
EIMV	0.1	-	0.1	0.1	-		0.3
CEA	-	-	-	0.1	-		0.1
UNICAEN	-	-	-	-	0.5		0.5
EEAE	-	-	-	0.1	-		0.1
IMROH Zagreb	-	1.5	-	-	-		1.5
UNIZG-RGNF	-	0.1	-	-	-		0.1
IST	0.1	-	0.1	0.2	-		0.4
NRG	-	-	-	0.1	-		0.1
INFN	-	-	-	-	0.5		0.5
DH	0.1	-	-	-	-		0.1
DSA	-	-	0.5	1.5	-		2.0
NMBU	-	-	-	1.0	-		1.0
<b>Total WP3</b>	<b>6.8</b>	<b>3.1</b>	<b>4.9</b>	<b>7.5</b>	<b>5.4</b>		<b>27.7</b>
<b>WP4</b>	<b>T.4.1</b>	<b>T.4.2</b>	<b>T.4.3</b>	<b>T.4.4</b>			
SCK CEN	0.2	0.2	0.3	0.3			1
BfS			0.2				0.2
UTartu		0.1		0.1			0.2
UnCaen	0.2						0.2
EK	0.2	0.2	0.2	0.4			1
NNK		0.2					0.2
UnPv	0.1			0.1			0.2
VIAA			0.2				0.2
NMBU	0.4	0.2	0.2	0.2			1
GIG			0.2				0.2
IST	0.2						0.2
SU	1	3.2	1	1			6.2
JSI			0.2				0.2
ALLIANCE	0.05	0.05	0.05	0.05			0.2
EURADOS	0.05	0.05	0.05	0.05			0.2
EURAMED	0.05	0.05	0.05	0.05			0.2
MELODI	0.05	0.05	0.05	0.05			0.2
NERIS	0.05	0.05	0.05	0.05			0.2
SHARE	0.05	0.05	0.05	0.05			0.2
<b>Total WP4</b>	<b>2.6</b>	<b>4.4</b>	<b>2.8</b>	<b>2.4</b>			<b>12.2</b>
<b>WP5</b>	<b>T.5.1</b>	<b>T.5.2.1</b>	<b>T.5.2.3</b>	<b>T.5.3.1 &amp; 2</b>	<b>T5.4.2</b>	<b>T5.5.2</b>	
UKHSA	1				1	1	3
MELODI	0.05	0.05	0.05		0.05		0.2
ALLIANCE	0.05	0.05	0.05		0.05		0.2
EURADOS	0.05	0.05	0.05		0.05		0.2
EURAMED	0.05	0.05	0.05		0.05		0.2
NERIS	0.05	0.05	0.05		0.05		0.2
SHARE	0.05	0.05	0.05		0.05		0.2
SU	0.1						0.1
IRSN	0.15				0.15		0.3
CEA	1.3	0.5	0.7		1.5		4
ISS	0.75			1	0.55		2.3
UTartu	1.3	0.7	0.7		1.3		4

Bfs	0.35				0.8	1	2.15
INFN		0.35	0.35				0.7
CIEMAT				0.3			0.3
IMROH				0.3			0.3
NCSR						0.2	0.2
CNRS		0.15	0.15				0.3
JSI		0.1	0.1	0.5			0.7
UniPv		0.3					0.3
EK		0.4	0.4		1.2		2
UCamb						0.6	0.6
<b>Total WP5</b>	<b>5.25</b>	<b>2.8</b>	<b>2.7</b>	<b>2.1</b>	<b>6.8</b>	<b>2.8</b>	<b>22.45</b>
<b>WP6</b>	<b>T.6.1</b>	<b>T.6.2</b>	<b>T.6.3</b>	<b>T.6.4</b>			
SURO	0.4	0.4	<b>4.8</b>	0.4			6
IRSN			0.6	0.1			0.7
Bfs				0.2			0.2
SU				<b>0.2</b>			0.2
DH-PHE	0.2	0.2		0.2			0.6
CEA		0.1		0.1			0.2
CIEMAT	0.5			0.1			0.6
DSA	0.2	0.2		0.2			0.6
EEAE	0.1						0.1
EIMV			0.12	0.08			0.2
EK	0.2			0.4			0.6
GIG	0.1	0.1					0.2
IST		0.1					0.1
JSI		0.1					0.1
NCRRP		0.1					0.1
NCSR	0.4						0.4
NNK	0.1			0.1			0.2
RIVM	<b>1.8</b>			0.2			2
UTartu	0.6						0.6
LZP		<b>1.4</b>					1.4
CEPN		0.3		0.3			0.6
NMBU	0.4			0.4			0.8
HZDR	0.1						0.1
<b>Total WP6</b>	<b>4.9</b>	<b>3</b>	<b>5.52</b>	<b>3.18</b>			<b>16.6</b>
<b>WP7</b>		<b>T.7.2</b>	<b>T.7.3</b>	<b>T.7.4</b>			
NCBR		9	9	1			19
IFA		0.05	0.05	0.05			0,15
MUR		0.05	0.05	0.05			0,15
<b>Total WP7</b>		<b>9.1</b>	<b>9.1</b>	<b>9.1</b>			<b>19,3</b>