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PIANOFORTE Partnership

European Partnership for Radiation Protection Research

Horizon-Euratom – 101061037

D 5.1: Terms of reference for the WP5 Infrastructures oversight committee

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Infrastructures Oversight Committee – Terms of Reference (Draft 1.0)

Purpose

The Pianoforte Infrastructures Oversight Committee (IOC) is established to oversee the work of the Partnership in relation to infrastructure requirements as described in the Work Package 5 description of work.

Specific activities

1. Coordination of WP5 work between the different WP5 tasks to ensure efficient and effective delivery of WP5 objectives and timely production of deliverables. Review of deliverables following establishment of the IOC
2. Facilitating coordination of work related to infrastructure across all Pianoforte WPs, and advise the Pianoforte Executive Board on infrastructure topics
3. Consideration of the infrastructure needs of relevant European Platforms in support of Pianoforte funded activities to ensure that access to the infrastructures required to deliver the Pianoforte work programme are available
4. Coordination of interactions and communication with the infrastructure related aspects of the project successfully funded under NRT-01-12
5. Develop criteria for the evaluation of applications for infrastructure training as described under Task 5.2.3 (to include aspects relating to relevance to Pianoforte work programme, benefit to applicant and relevance to their individual research programme) and coordinate the evaluation process in a transparent manner
6. Develop criteria for the evaluation of applications for intercomparison exercises as described under Task 5.3.1 (to include aspects relating to relevance to Pianoforte work programme, benefits to the technical area, overlap with other intercomparison exercises/programmes in Europe and more widely) and coordinate the evaluation process

Membership

WP5 leads - Chair

WP5 Task leads

Pianoforte coordinator nominee

Representatives from each European platform in radiation protection (ie MELODI, EURADOS, NERIS, ALLIANCE, EURAMED, SHARE)

WP4 lead/representative

NRT-01-12 representative

Independent Infrastructure provider representative(s)

Meeting frequency

At least annual, and ideally each 6 months, and as required for coordination of activities and evaluation on infrastructure access/intercomparison applications

Appendix – WP5 Description of Work

Objectives WP5 has the following objectives:

1. To establish an oversight committee for infrastructures that will ensure that all infrastructure needs required for the implementation of the roadmap for radiation protection research (RPR) and PIANOFORTE projects are recognised and served, provide strategic direction for the WP, and evaluate applications for WP4- allocated funding

2. To provide support for the radiation protection research community and PIANOFORTE partners/projects to access cross-national infrastructures

3. To promote harmonization of quality standards, practices and protocols in all areas relevant to implementation of the research roadmap

4. To develop a strategic work plan for utilisation, novel uses and inter-operability of key RPR infrastructures

5. To develop a plan and vision for FAIR (findable, accessible, interoperable and reusable) data management and approaches to exploitation of archived data in radiation protection R&I.

6. To establish close links with the project selected in NRT01-12 in order to benefit from each other's expertise, to foster collaborations without duplication of activities, and we will endeavour to carry out joint actions favouring access to research infrastructures (potentially including co-sponsored calls).

Task 5.1 - Establish an infrastructure oversight committee (Lead: DH-PHE, all Platforms, SU, IRSN, CEA, ISS, UTartu, BfS,)

The range of infrastructures relevant to radiation protection research is wide and diverse and it is important that PIANOFORTE WP5 supports implementation of the research roadmap To this end we will establish an Infrastructures Oversight Committee (IOC) that will provide support for the WP tasks outlined below, a forum for coordination between WP5, Platforms, WP4 in respect of training and education, across the entire PIANOFORTE partnership, PIANOFORTE supported projects and with the successful NRT-01-12 consortium. In addition to the coordination function, the IOC will be the body responsible for evaluating applications for funding; a number of focused WP5 ‘internal’ calls are planned with the objective of encourage access to training in trans-national infrastructures, and to facilitate small-scale technical inter-comparison exercises to promote harmonization of techniques and protocols at the European level, particularly in support of the research roadmap. The key tasks will focus on identification and appointment of IOC members, to draft and agree the Terms of Reference for the IOC, to convene the first of the planned series of virtual meetings (to take place at very least annually), to draft and agree the evaluation criteria for WP5 focused internal infrastructure training calls and to establish the regular virtual meeting schedule to include the launching and evaluation of WP5 infrastructure training calls and intercomparisons.

Task 5.2 - Providing support for cross–national access to infrastructure (Lead: CEA, UTartu, EK, INFN, CNRS, UNIPV, JSI, all Platforms)

The key objectives of this task will be: (i) to promote the use of key existing RPR infrastructures (with WP6 facilitating consortium-wide and community-wide communication); (ii) to develop a fair and transparent system to allow researchers to access key

infrastructures through open calls within the consortium (with WP2); (iii) to develop and promote training in the use of key RPR infrastructures (with WP4)

Subtask 5.2.1. Promoting the use of key existing RPR infrastructures (Subtask leader: INFN; CEA, CNRS, UTartu, EK,all Platforms) Continuing the CONCERT efforts, the strategy and its roadmap developed previously, the list of infrastructures (AIR^2D^2) will be updated, integrating suitable infrastructures linked with EURAMED and more generally with the medical sphere that are connected with research for medical applications using ionizing radiations. Networking among infrastructures of various categories will be encouraged, accompanied and highlighted. (M1-M60). In addition, through selected projects supported through PIANOFORTE open research calls, data will be collected with the help of a short survey to evaluate the evolution of the real positioning of infrastructures in the research system and their impact on the quality of the produced data and results. A high-level report will be prepared to give a global analysis of the landscape of the use of infrastructures and a SWOT of the situation, which is envisaged will be of use for further RP research (M19-M60).

Subtask 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)

Efforts will be made to promote transparency in relation to costs of infrastructure access. To develop an “easy to use system” for researchers, the network between infrastructures developed in Task 5.2.1 will contribute to promote common approaches, eg. simplified access, same methodology to establish costs, data storage and IP. (M7-M60). Further, recommendations about infrastructures will be edited and send to all potential users. Recommendations/rules will be edited to be applied by applicants to PIANOFORTE open calls to facilitate and extract data for the visibility and understanding of the use of resources and efforts (€ and pm) focused on infrastructures. (M1-M12).

Subtask 5.2.3. Developing and promoting training in the use of key RPR infrastructures (Subtask leader: CEA; participants: UniPv, EK, all Platforms)

Existing recurring courses organized by infrastructures relevant to implementation of the research roadmap will be identified, collected and promoted. For that, a joint ‘infrastructure call text’ will be created and edited annually to invite researchers to apply those training courses on infrastructures on a basis of a trans-institutions access and receive a grant to participate. Internal rules will be edited in order to develop a top-down approach e.g. award linked to topics selected from SRAs) and a bottom-up approach (individual needs) (M1-M60). Considering the potential missing areas for infrastructure training, a focused infrastructure programme will be developed to invite specific infrastructures to organize a dedicated course (M13-M60). Finally a third category of courses (face to face and or using online platforms such as YouTube) will be developed in order to present to all successful applicants to PIANOFORTE open calls and indeed to the wider RPR community to inform them about the different infrastructures and their role in the RPR research landscape and to help researchers how to include infrastructures in their future proposals, how to have access to them (M7-M60).

Task 5.3 - Promoting harmonization of quality standards, practices and protocols (Lead: ISS, participants JSI, IMROH, CIEMAT, INFN, all Platforms)

This task will continue and extend the CONCERT approach to infrastructures and harmonization of their standard protocols and practices, taking into account the latest platforms and network communities (e.g. EURAMET) achievements and current activities in this direction. The support of the POMs which represent the main infrastructure owners will be guaranteed by direct involvement of key collaborators. Collaboration with both RP

Platforms and POMs is essential considering the large heterogeneity of the infrastructures (e.g. exposure facilities with different irradiation sources and related technologies, radioecology observatories, databases including bio and sample banks and cohorts, analytical platforms, modelling tools including recent advanced artificial intelligence based models. Moreover, due to the large number of organizations involved in RP research, it is vital to harmonize the methods and protocols for measurements..

Subtask 5.3.1. Development of a system for funding inter-comparisons to promote standardization (identify tools and funding framework); (SubTask Leader: EURADOS , Contributors: JSI, INFN, ISS, all Platforms) Inter-comparisons are essential for proper research harmonization and standardization, stimulating infrastructures to keep high quality standards. In this sub-task we will review and survey methods utilized, particularly those of relevance to PIANOFORTE funded projects; classification of infrastructures and associated techniques requires definition and revision of performance parameters in order to define the “gold standard” infrastructure examples. Subsequently this subtask will identify and develop, in collaboration with RP platforms and POMs representatives running infrastructures, a systematic contest where inter-comparisons can be funded and carried on effectively. Between M6-18, this sub-task will analyze the existing systems of inter-comparisons (e.g. procedures for preparation of dosimetric international inter-comparisons, as organized by EURADOS in the last 20 years) and their funding scheme (e.g. applied by funding agencies); we will also identify candidate infrastructures willing to participate to new inter-comparisons, define use-cases and potential funding sources. Between M24 and 60, the task will define and publish internal calls for selected inter-comparisons to support implementation of the research roadmap.

Subtask 5.3.2. Development of Standard Operating Procedures (SOP) for key protocols to promote standardization; (Lead: IMROH, Contributors: CIEMAT, ISS, JSI, all Platforms) Between M18 and M30, the aim will be to identify key protocols for selected infrastructure (sub)classes, following and integrating the outcomes of the review/survey activities of sub-task 5.3.1. Following this, existing SOPs will be analysed to propose improvements (if any) or define new SOPs, also in synergy with WP5.5.3 regarding methods for data mining. Then between M30 and 48, the task will focus on testing new SOPs in selected (voluntary) infrastructures, especially those relevant to roadmap implementation and PIANOFORTE-supported projects.

Task 5.4 – Challenges, best practices, and strategic plan for radiation protection research (RPR) infrastructures (Lead: UTartu, CEA, EK, ISS, DH-PHE, BfS, IRSN, all Platforms)

This task develops a coordinated vision and strategic plan to enhance sustainability of RPR infrastructures, addressing considerations such as utilisation, novel uses and inter-operability. The aim is to facilitate access, enhance the visibility of infrastructures, and assure their sustainability beyond short-term constraints. Dialogue between Task 5.4 and Task 2.2 is foreseen to address RPR infrastructures issues in the PIANOFORTE Joint Roadmap.

Subtask 5.4.1. Identification of challenges faced by RPR infrastructures. (Lead: CEA, EK, IRSN, UTartu, ISS, DH-PHE, BfS, all Platforms) Task 5.4.1 will identify challenges faced by RPR infrastructures, taking into account the attributes of RPR infrastructure categories and selected cross-cutting themes such as medical and computational applications. The task realizes an outcome-oriented extension of the H2020 CONCERT effort on RPR infrastructure classification, based on categories: (a) exposure platforms; (b) databases, sample banks, cohorts; (c) analytical platforms, models, tools.

Subtask 5.4.2. Guidelines of best practices for sustainable, harmonized RPR infrastructures. (Lead: EK, CEA, IRSN, UTartu, ISS, PHE, BfS, all Platforms) Task 5.4.2 will develop a framework of guidelines to promote best practices for sustainable RPR infrastructures within a harmonized European context, building on the work in Task 5.4.1. A virtual/hybrid RPR infrastructure stakeholder panel will be employed, in coordination with Tasks 3.3 and 3.4. Furthermore, the task will seek contributions from the IOC to help identify best practices and determine the desired position of RPR within the European infrastructures space. The task serves as an input to the strategic plan (Task 5.4.3) and supports updating the PIANOFORTE Joint Roadmap (Task 2.2).

Subtask 5.4.3. Strategic plan for radiation protection research (RPR) infrastructures. (Lead: UTartu, CEA, EK, ISS, DH-PHE, BfS, IRSN, all Platforms) Task 5.4.3 will create a strategic plan for the inclusion of users, research, industry and policymakers in the development and advancement of RPR infrastructures. Priorities (pillars) for RPR infrastructures to address (e.g. visibility/promotion, industry dialogue, etc.) will be elaborated. To evaluate and align the strategy and priorities with emerging needs of RPR infrastructures, the task will seek contributions from the IOC, and a virtual/hybrid stakeholder panel/workshop will be organised in coordination with Tasks 3.3 and 3.4. The task will incorporate findings from Tasks 5.4.1 and 5.4.2, and engage in dialogue with Task 2.2, to ensure that RPR infrastructures issues are addressed in the updated PIANOFORTE Joint Roadmap.

Task 5.5 - Developing a plan and vision for data management and approaches to exploitation of archived data (Lead: BfS, Contributors: DH-PHE, UCAMB, NCSRD)

The main focus of this task is to develop and promote a Data Management Plan (DMP) according to the FAIR principles to support its use within the radiation research community and the move to the principles of ‘open science’. The DMP includes the security, regulatory and ethical issues to ensure secure, transparent and efficient data storage, maintenance, access and utilisation.

Subtask 5.5.1. Drafting a plan and vision for data management (Lead: – BfS, Contributors: DH-PHE, UCAMB) The DMP to support implementation of the research roadmap will be drafted in close contact with the key stakeholders in the field. The DMP will be based on the FAIR principles and enable open science principles. The inputs from the experts and the demands of data producers and users will be incorporated in the DMP draft to address the current problems associated with data exchange and archiving. The DMP will address the key issues of the type and structure of data in research projects (former and upcoming – through the open calls), standardised strategies for data collection and archiving, and secure, transparent means of data sharing and exploitation.

Subtask 5.5.2. Promoting and training on available data storage platform (STOREDB) (Lead – UCAMB, Contributor: BfS) The DMP will encourage further use of the STORE databank for archiving and sharing research data by promoting STORE in the community and through the establishment of a training plan for radiation researchers, in partnership with WP4. The plan will promote the implementation of the recent development of the Radiation Biology Ontology (RBO) (provided in RadoNorm 2021) to improve data structuring.

Subtask 5.5.3. Promoting the application of novel approaches to exploitation of archived data (Lead - BfS, Contributors: NCSRD, UCAMB) To improve the (re)use of the archived data, DMP promotes application of the novel approaches such as AI to management of radiation protection data. The efficient establishment of such a novel approaches requires the improvement and maintenance of compatible hardware and software platforms. To achieve this, events are planned in a Hackathon format, bringing together users and data

providers at different levels, from the first steps of exchanging ideas to the presentation of the final structures for the development of the prototype software. To identify the requirements and challenges, a small pilot platform for applying AI to one type of dataset is proposed.

Deliverables (brief description and month of delivery)

D5.1 – Terms of reference for the WP5 Infrastructures oversight committee, including criteria for evaluation of applications for WP5 funds (Task 5.1 - M6)

D5.2 – Data Management Plan (Task 5.5 - M6)

D5.3 – Document describing the identified protocols and related qualification criteria on selected infrastructure classes (Task 5.3 – M24)

D5.4 – Document on identified key protocols and developed SOP, results of case studies (Task 5.3 – M48)

D5.5 Final report on training activities related to infrastructures (Task 5.2 – M60)

D5.6 – Report on challenges, best practices, and strategic plan for RPR infrastructures (Task 5.4, M60)

Milestones

MS5.1.1 Report on the actions of the IOC - M60

MS5.2.1 Recommendations to infrastructures for PIANOFORTE open calls - M12

MS5.2.2 Working document with definitions of RP research infrastructures and their classification, continuous update of infrastructures list - M18

MS5.2.3 Report on data, feedback and SWOT extracted from projects supported by PIANOFORTE - M60

MS5.3.1 Document on results of the funding schemes analysis for sustainable inter-comparison system of selected infrastructures - M30

MS5.4.1 Categorized list of identified challenges faced by RPR infrastructures (Task 5.4.1, CEA, M18)

MS5.4.2 Working document on desired position and best practices for RPR infrastructures (Task 5.4.2, EK, M30)

MS5.5.1 Report on improvement and maintenance of STORE – M60

MS5.5.3 Novel uses of AI in data management - M 60)