EUROPEAN RADIATION PROTECTION RESEARCH FOR THE EFFECTIVE PROTECTION OF PEOPLE AND THE ENVIRONMENT

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Let's talk about

- Importance of radiation protection
- Development and innovation needs in radiation protection
- Pivotal role of PIANOFORTE Partnership and MEENAS association
- Requirement of mutual interconnectivity

Radiation protection research and innovation – enabler of technology and progress

- Purpose of RP
  - provide appropriate level of protection for humans and environment without limiting beneficial actions giving rise to radiation exposure → allowing to define the correct balance
  - connect to innovation processes early on (for not being perceived as purely regulatory obstacle)
- R&D&I in RP
  - enhance basic knowledge and enable development of new ideas, designs, services, products
  - contribute to advancement of use of ionising radiation and radiation protection rules & guidelines for better life & health
- RP of importance in a plethora of exposure contexts
  - Medical therapy and diagnosis using ionising radiation
  - Nuclear fuel cycle
  - (TE)NORM
  - Natural radiation – terrestrial, cosmogenic

Challenge-opportunity context

- Rapid development of applications making use of IR is beneficial for improvement of medical diagnosis and treatments, but also quality and safety need to be a priority
- Protection of human health and environment against impact of ionising radiation is at heart of Global and European strategies and an integral part of a sustainable economy
- Emergency preparedness needs continuous sustained cross border efforts, innovations & harmonisation
- Access to and development of research infrastructures, education and training (E&T) key to maintaining and developing excellence in research on safe use of IR and RP
- R&I key for improving radiation protection science-based regulation and standards and meeting stakeholders´ expectations

Towards a European joint programme in H-EU

EUROPEAN JOINT PROGRAMME FOR THE INTEGRATION OF RADIATION PROTECTION RESEARCH

CONCERT

European Joint Programme for the Integration of Radiation Protection Research

The 'European Joint Programme for the Integration of Radiation Protection Research-CONCERT ' under Horizon 2020 is operating as an umbrella structure for the research initiatives of the platforms MELODI, ALLIANCE, NERIS, EURADOS and EURAMED. It is a co-fund action that aims at attracting and pooling national research efforts with European ones in order to make better use of public R&D resources and to tackle common European challenges more effectively in key areas of radiation protection research.

June 2015-May 2020

Developed a joint roadmap (JRM)

- Reflects broad spectrum of societal and scientific issues requiring consideration by RP R&I community
- Defines priority areas and strategic objectives till 2030
- Research challenges relevant from societal and radiation protection point of view, considering all exposure scenarios
- *'Game changers'*: research issues with potential to substantially impact and strengthen the system of radiation protection

United European Radiation Protection Research

12 March 2020

Consortium of European Radiation Protection Research Platforms

MEENAS

MELODI • EURADOS • EURAMED

NERIS • ALLIANCE • SHARE

Memorandum of Understanding for an integrative approach to European Radiation Protection Research — MEENAS — MELODI, EURADOS, EURAMED, NERIS, ALLIANCE, SHARE

With > 200 entities, representation of European radiation protection (R&I) community

A vision for a Radiation Protection Research Programme in the Frame of Horizon Europe

"The newly adopted Euratom Programme will complement Horizon Europe. It will support research and innovation in areas such as cancer treatment and diagnostics, nuclear safety and fusion. Thanks to Euratom, Europe will maintain world leadership in fusion, nuclear safety, radiation protection, waste management and decommissioning, safeguards and security with the highest level of standards."

Mariya Gabriel *Commissioner for Innovation, Research, Culture, Education and Youth*

Draft proposal for a European Partnership under Horizon Europe

Partnership for Radiation Protection Research

January 2021

The **Partnership for Radiation Protection Research** is intended, through a competitive open call system, to **consolidate and strengthen the EU's research and innovation capacity for improving radiation protection** of the population, workers and the environment.
We aim to further **enhance the science-based best level of protection** in relation with the safe use of ionising radiation for both power and non-power applications with a special emphasis on diagnostic and curative use of radiation in medicine and **in answer to societal needs**.

PIANOFORTE

PIANOFORTE: Partnership for European research in radiation protection: towards a safer use and improved protection of the environment and human health.

Ambition:

Improve radiological protection of members of the public, patients, workers and environment in all exposure scenarios and provide solutions and recommendations for optimised protection in accordance with BSS

60 months, 30 M€ EC funding + 16 M € → 65 % EC funding; R&I via Open Calls .

59 PARTNERS

- **33 POMs - PO/PM (programme owners and programme managers)** representing 24 countries (23 EU)
- **6 platforms** (ALLIANCE, EURADOS, NERIS, EURAMED, MELODI, SHARE) (will sign the GA and will be member of the GA)
- **5 Associated partners**

→ will sign the Grant Agreement (GA) and will be member of the General Assembly (GA)

- 15 Affiliated Entities

PIANOFORTE objectives

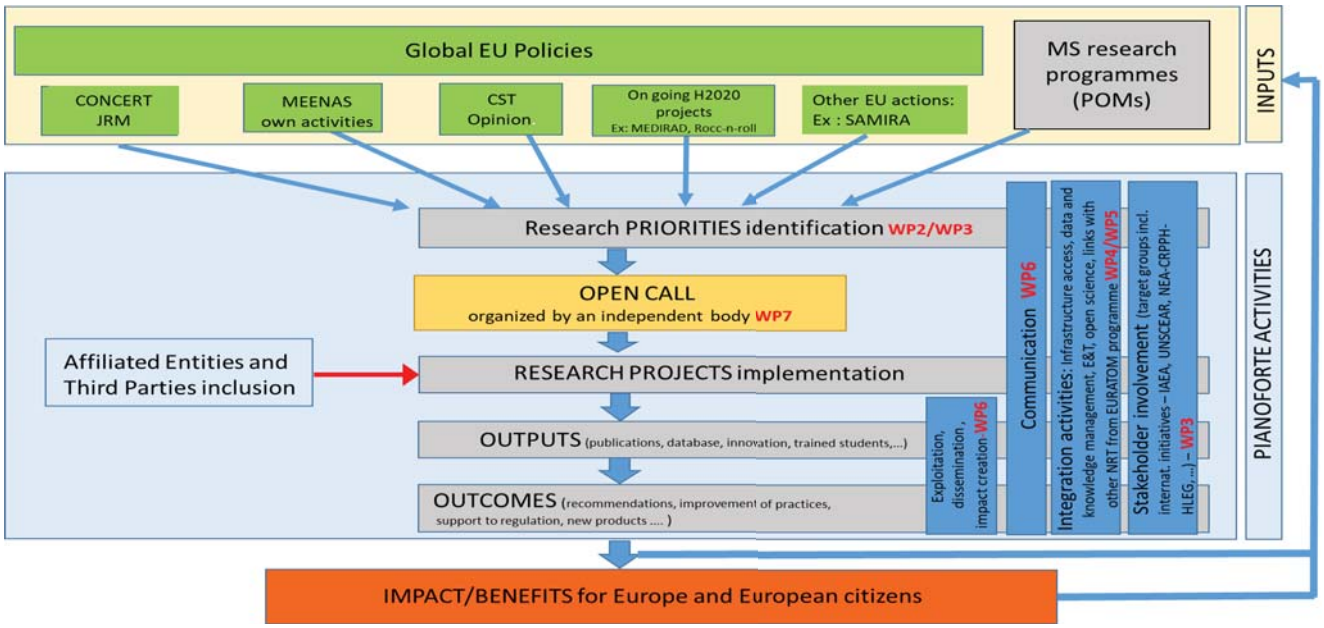
General Objective : To improve radiological protection of members of the public, patients, workers and environment in all exposure scenarios and provide solutions and recommendations for optimised protection in accordance with the BSS.
Multidisciplinary projects focusing on identified R&I priorities will be selected through competitive open calls.

Scientific

- Innovate in ionising radiation based medical applications combating cancer and other diseases by new and optimised diagnostic & therapeutic approaches improving patient health & safety and supporting transfer of R&I outcome to practice.
- Improve scientific understanding of the variability in individual radiation response and health risk of exposure
- 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.
- Provide scientific basis to recommendations, procedures & tools for assuring better preparedness to response & recovery from a potential radiological event or nuclear accident and improve know-how to manage legacy sites.
- Maintain a sustainable expertise capability on radiation protection issues across EU by fostering availability, use & sharing of existing state-of-the-art infrastructures at European level & beyond and conducting education and training activities.
- 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

Integrative

Project structure and approach



Links and collaboration opportunities with other topics of EURATOM Work programme 2021-2022

- NRT-01-01: Safety and operating nuclear power plants and research reactors → **Emergency preparedness**
- NRT-01-07: Development of tritium management in fusion and fission facilities → **Emergency management, Impact of tritium**
- NRT-01-10: Safe use and reliable supply of medical radionuclides → **Medical applications**
- NRT-01-12: European facility for nuclear research
  - **OFFERR** – European Platform for Accessing NUclear R&D Facilities
  - Identify relevant radiation protection and medical facilities
  - Ensure link with PIANOFORTE infrastructure WP
- NRT-01-13: Towards a European nuclear competence area.→ **SteerCo + link to PF E&T WP4**

Links and collaboration opportunities with other topics of EURATOM Work programme 2021-2022

- NRT-01-02: Safety of advanced and innovative nuclear designs and fuels
  - ANSELMUS - Safety of advanced and innovative nuclear designs and fuels (SHARE)
- NRT-01-08 - Towards an aligned harmonised application of international regulatory framework in waste management and decommissioning
  - HARPERS – Harmonised practices, regulations and standards in waste management and decommissioning (SHARE)
- NRT-01-14 - Socio-economic issues related to nuclear technologies
  - ECOSENS - Economic and Societal Considerations for the Future of Nuclear Energy in Society (SHARE)
- NRT-01-16 Support for the Sustainable Nuclear Energy Technology Platform to address cross-sectoral challenges and non-power applications of ionising radiation
  - SNETPFORWARD project (MEENAS)

A call towards SNETP

- **Fostering link SNETP-MEENAS**
- **Enhanced collaboration**

Links and collaboration opportunities with other topics of EU programme → creative linking

- Establish links with “Health”, “Civil security for society” and “Food, natural resources, agriculture and environment, biodiversity” clusters.
- Digital, Industry and Space work programme
  - Circular, ‘green’ and ‘sustainable’
    - REE, HM (Co) for ‘green’ technologies → NORM associated
  - Space
- Food, Bioeconomy, Natural Resources, Agriculture and Environment
  - Tracer studies for environmental processes
- Climate, Energy and Mobility
  - Circular, ‘green’ and ‘sustainable’
  - Tracer studies for environmental processes
- Health
  - Medical applications using IR
- DG-ENER - SAMIRA

Conclusions

- **MEENAS** was successfully established to integrate and enforce radiation protection R&I in Europe
- EURATOM-Horizon Europe **Partnership for Research in Radiation Protection** → important achievement, basis for integrated progress
- **Liaison** within the EURATOM and Horizon Europe programme (e.g. Health Cluster, DG SANTE, DG-ENER) essential to optimise and maximise our role in radiation protection R&I
- **Liaison with SNETP**
- **Funding for radiation protection R&I** linked with/limited to the EURATOM programme yet radiation protection is ubiquitous and quintessential also for Health and medical applications, Energy and Electricity production (REE, NORM), Space exploration, …
- Enhanced **Europe-wide multidisciplinary** collaboration, integration, networking among and between programmes is needed is critical to assure public (patient and medical personnel) health, welfare and progress.