RadoNorm
Managing risks from radon and NORM

Deliverable 8.1: Strategy and plan for communication, dissemination and exploitation of results

Work Package 8

This project has received funding from the Euratom research and training programme 2014-2018 under grant agreement No 900009.

Document information

Project Acronym	**RadoNorm**
Project Title	**Towards effective radiation protection based on improved scientific evidence and social considerations - focus on radon and NORM**
Project Type	**RIA**
EC grant agreement No.	**900009**
Project starting / end date	**1st September 2020 – 31 August 2025**
Work Package No.	**8**
Work Package Title	**Communication, Dissemination and Exploitation of Results**
Deliverable No.	**8.1**
Deliverable Title	**Strategy and plan for communication, dissemination and exploitation of results**
Lead Beneficiary	**EIMV**
Contractual Delivery Date	**M3**
Actual Delivery Date	**30.11.2020**
Type	**R**
Dissemination level	**PU**
Authors	**Nadja Zeleznik (EIMV), Ulrike Kulka, Mandy Birschwilks (BfS), Laureline Fevrier (IRSN), Balázs Madas (EK), Sisko Salomaa (STUK), Ales Fronka (SURO), Tanja Perko (SCK.CEN), Andrzej Wojcik (SU)**

To be cited as:

Zeleznik N., Kulka U., Birschwilks M., Fevrier L., Madas B., Salomaa S., Fronka A., Perko T., Wojcik A., (2020): Strategy and plan for communication, dissemination and exploitation of results. Final version as of 30.11.2020 of deliverable D8.1 of project RadoNorm.

Disclaimer

Acknowledgement

This document is a deliverable of the RadoNorm project. This project has received funding from the Euratom research and training programme 2014-2018 under grant agreement No 900009.

Status of deliverable		
	By	Date
Delivered (Lead Beneficiary)	EIMV	6.11.2020
Verified (WP Leader)	EIMV	19.11.2020
Reviewed (Reviewers)	WPLs	26.11.2020
Approved (PC)	BfS	30.11.2020
Submitted to EC (PC)	BfS	30.11.2020

Executive Summary

RadoNorm project is focused around improving radiation risk knowledge and management for radon and NORM. Assessment of radon and NORM exposure situations, radon and NORM dosimetry, effects and risks from exposures due to radon and NORM, mitigation of radon and NORM exposure situations, societal aspects of radiation protection with regard to radon and NORM exposures will be addressed in the scientific and technological development WP 2 to 6, respectively. The cross-cutting topics of education and training, dissemination, communication and exploitation of results and ethics will be addressed in WP 7 to 9 respectively. The management of RadoNorm will be the responsibility of Work Package 1.

WP8 will be cross cutting to all other WPs and will enable communication, dissemination and exploitation of the RadoNorm results in the most effective way with the highest impact throughout the project lifetime, and also beyond. To achieve best results the WP leaders will be involved in WP8 and will contribute to most of the tasks. Coordination of activities will be ensured, to optimise the resources, to ensure consistency of the dissemination activities and maximise the public outreach.

The present deliverable is the first version of communication, dissemination and exploitation plan of the RadoNorm project and provides basis for both external and internal communication, dissemination activities and approach to the exploitation of results. The overall aim of this document is to identify the most efficient means and set a plan for the implementation of dissemination, exploitation and communication activities. RadoNorm's outreach activities aim at communicating and disseminating the project results during the project lifetime and increase the impact after the end of the project.

The external communication strategy will use a synergetic combination of several channels and tools:

- a project website linked with social media networks;
- newsletters and other information materials;
- two-way interaction tools and channels with different stakeholders;
- conferences and other event opportunities;
- publications in various media including peer-reviewed scientific journals and popular science publications.

The internal communication plan defines responsibilities among project partners and consortium bodies and describes internal communication flows and monitoring instruments. Internal communication will be conducted via emails sent out by the coordinator and work package (WP) leaders and periodic electronic or face-to-face meetings. Project communication, documentation (including project minutes, deliverables etc.) is stored and shared in the internal repository on the RadoNorm webpage. The internal communication plan also provides information on templates made available to all partners.

This document will serve as a "living document" throughout the project, guiding the communication and dissemination effort carried out by the consortium. A formal update of the deliverable will be provided in month 36. At the end of the project, a final version will be presented, together with the results of each dissemination activity, reporting also future-oriented dissemination and exploitation activities, foreseen by each partner, after the end of the project. However, additional intermediate updates will be released anytime it will be needed.

Table of content

List of figures

List of Tables

Glossary

ALLIANCE	European Radioecology Alliance
ENA	European NORM Association
EP	Exploitation Plan
ERA	European Radon Association
EURADOS	European Radiation Dosimetry Group
GDPR	General Data Protection Regulation
ICRP	International Committee for Radiation Protection
IRPA	International Radiation Protection Association
MELODI	Multidisciplinary European Low Dose Initiative
NORM	Naturally Occurring Radioactive Materials (the term NORM will include aspects of TENORM)
PEDR	Plan for the Exploitation and Dissemination of Results
RIA	Research & Innovation Action
SHARE	Social sciences and HumAnities in ionizing radiation REsearch
TENORM	Technologically Enhanced Naturally Occurring Radioactive Materials
WPs	Work Packages
WPLs	Work Package Leaders

1. Aim of the document

1.1 Introduction

According to the Grand Agreement Number 900009 — RadoNorm [1] the objectives of WP8 Communication, Dissemination and Exploitation of Results is to:

- enable two-way communication about the RadoNorm and its results[1] to multiple audiences and show its impact and benefits by addressing and providing possible solutions to challenges of radon and NORM exposures;
- make the RadoNorm results transferable for audiences that may use the new knowledge, data and information in their own work, enable use and uptake of results and maximise the impact of EU-funded research;
- utilise the RadoNorm results in developing, creating and marketing products, processes, services or any other activities (policymaking) to effectively exploit the project's results for society.

These objectives are also part of obligations related to communication, dissemination and exploitation, and are formally outlined in Grant Agreement. More specifically, by signing the EC RadoNorm Grant Agreement participants agree to:

- Promote the action and its results, by providing targeted information to multiple audiences (including the media and the public), in a strategic and effective manner and possibly engaging in a two-way exchange (Article 38 of the Grant Agreement),
- Disseminate results - as soon as possible - through appropriate means, including in scientific publications (Article 29 of the Grant Agreement),
- Ensure open access (free of charge, online access for any user) to all peer-reviewed scientific publications relating to its results (Article 29 of the Grant Agreement),
- Take measures aiming to ensure 'exploitation' of the results - up to four years after the end of the project - by using them in further research activities; developing, creating or marketing a product or process; creating and providing a service, or using them in standardisation activities (Article 28 of the Grant Agreement)
- Acknowledge EU funding in all communication, dissemination and exploitation activities (including IPR protection and standards) as well as on all equipment, infrastructure and major results financed by the action by using the wording and criteria specified in the Grant Agreement (Articles 27, 28, 29, 38).

In order to achieve the objectives of WP8, the Plan for the Exploitation and Dissemination of Results (PEDR) is part of the Deliverable 8.1 where a well-planned strategy for protection, exploitation and dissemination of results is given. The Communication plan is integrated in the PEDR to increase the reciprocal impacts and includes proactive engagement with different stakeholder based on the stakeholders mapping. To fulfil the objectives, different tools and channels for communication and dissemination are established along with activities for involvement of target groups. Different opportunities are given: online communication and feedback, specific materials to promote key messages, events and participation in other relevant actions. Also support for other Work Packages in communication and dissemination of their research to scientific and non-scientific audiences is provided.

The plan will also ensure that the members of the consortium will take a proactive role in the effort to maximize the outreach of the project by participating in relevant workshops, conferences and exhibitions, as well as publishing project results in relevant scientific journals and conference

[1] Results are "*any tangible or intangible output of the action, such as data, knowledge and information whatever their form or nature, whether or not they can be protected, which are generated in the action as well as any attached rights, including intellectual property rights*" (Source: EC Research & Innovation Participant Portal Glossary).

proceedings to allow for high international visibility of RadoNorm. This task will also track publications to ensure compliance with open access requirements.

The definitions and distinctions between the terms communication, dissemination and exploitation of results are given in *Figure 1 Communication/Dissemination/Exploitation definitions and distinctions*, as presented in the European IPR helpdesk publication [2].

	Communication	Dissemination	Exploitation
Definition	"Communication on projects is a strategically planned process that starts at the outset of the action and continues throughout its entire lifetime, aimed at promoting the action and its results. It requires strategic and targeted measures for communicating about (i) the action and (ii) its results to a multitude of audiences, including the media and the public and possibly engaging in a two-way exchange." (Source: EC Research & Innovation Participant Portal Glossary/Reference Terms)	"The public disclosure of the results by any appropriate means (other than resulting from protecting or exploiting the results), including by scientific publications in any medium." (Source: EC Research & Innovation Participant Portal Glossary/Reference Terms)	"The utilisation of results in further research activities other than those covered by the action concerned, or in developing, creating and marketing a product or process, or in creating and providing a service, or in standardisation activities." (Source: EC Research & Innovation Participant Portal Glossary/Reference Terms)
Objective	**Reach out to society and show the impact and benefits** of EU-funded R&I activities, e.g. by addressing and providing possible solutions to fundamental societal challenges.	**Transfer knowledge & results** with the aim to enable others to use and take up results, thus maximising the impact of EU-funded research.	**Effectively use project results** through scientific, economic, political or societal exploitation routes aiming to turn R&I actions into concrete value and impact for society.
Focus	**Inform** about and **promote** the project AND its results/success.	**Describe** and **ensure results available** for others to **USE** ➡ focus on results only!	**Make concrete use** of research results (not restricted to commercial use.)
Target Audience	Multiple audiences beyond the project's own community incl. media and the broad public.	Audiences that may take an interest in the potential **USE** of the results (e.g. scientific community, industrial partner, policymakers).	People/organisations including project partners themselves that make concrete use of the project results, as well as user groups outside the project.
Formal Obligations	• Rules for Participants • RIA & IA Proposal Template 2.2 b) • Grant Agreement Art. 38.1	• Rules for Participants • RIA & IA Proposal emplate 2.2 a) • Grant Agreement Art. 29	• Rules for Participants • RIA & IA Proposal Template 1.1, 2.1, 2.2 a) • Grant Agreement Art. 28

Figure 1 – Communication/Dissemination/Exploitation definitions and distinctions [2]

1.2 Purpose and scope of this deliverable

The purpose of deliverable D8.1 Strategy and plan for communication, dissemination and exploitation of results is to establish and agree upon strategic approach for communication, dissemination and exploitation of results at the RadoNorm project level and at the participants' level for the duration of project. This deliverable includes also the deployment plan and serves as a guide to perform in the most effective ways all related activities. The strategy and plan include the stakeholders identification, development of different channels and tools, preparation of tailored material to address stakeholder

needs, organizing online and face to face events, active stakeholder engagement, and development of platform for use and reuse of collected data and other results. In addition, evaluation and feedback is proposed to be used for regular updates of activities. Liaisons with related organisations and events is used to enlarge the project's impacts. This will ensure that the work done within this project is brought to the attention of, and where possible actively involves, as many relevant stakeholders as possible. Establishing mechanisms through which two-way communication and knowledge exchange can occur between individual groups and our project is central to our success. The communication, dissemination and exploitation plan will ensure that information is shared with relevant external stakeholders in a timely way using effective communication tools. Measures agreed on in the communication plan focus on gaining a significant impact of RadoNorm and include outreach actions for deliverables and any other promotional material.

Since there are numerous overlaps between communication and dissemination in terms of target audiences, key messages to convey, channels, tools and activities, it was adopted that one single strategy plan covers both communication and communication approaches. Exploitation plan includes first approach to what results are to be exploited, exploitation management and IPR management.

This deliverable aims to formalise communication, dissemination and exploitation of results within RadoNorm progress with describing:

- How to maximise RadoNorm's ambitions and expected impacts towards the potential users,
- How to raise awareness of RadoNorm's activities and results as added value these will bring to all identified stakeholders in the project,
- How to promote the exploitation of RadoNorm's results to further guide R&D policies, strategies and activities in related domains.

Communication activities will inform about and promote the RadoNorm and its results to the multiple audiences, including the media and the public, in a two-way exchange. They will demonstrate how EU-funding contributes to tackling social challenges. Dissemination activities will describe and ensure that the results are available for others interested, like scientific communities, industrial partners, policymakers and other end users. Exploitation activities will enable concrete use of project results through scientific, economic, political or societal routes by interested organizations within project partners or other user groups outside the project. RadoNorm results will be public unless the decision to protect the outputs (IPR) will be taken. Green open access at the RadoNorm's website online repository will be used to publish all deliverables, and also other results. In addition, also gold open access for limited number of publications, developed at the end of the project as a summary of research findings is foreseen. Open access to research data will be ensured by use of STORE^{DB} platform (https://www.storedb.org).

The following will be undertaken:

- PEDR plan will be developed and implemented to ensure that all the milestones of the project have an accurate broadcasting and reach the targeted audience having the expected impact.
- Communication plan will be integrated in PEDR, with focus on two-way exchange and proactive stakeholder‘s engagement.
- RadoNorm channels and tools will be established for effective communication, dissemination and exploitation of research data and results.
- Intensive follow-up plan of the deployment of communication, dissemination and exploitation activities, ensuring its correct functioning and making the necessary corrections when it is needed.
- Coordination of the communication and dissemination activities among all partners to ensure a correct deployment of the strategy.
- Coordination with external stakeholders, such as related projects, institutions and media to ensure a high outreach of the related activities.

The general strategy is to progressively increase communication and dissemination activities as the project's results appear, moving from creating awareness of RadoNorm to creating favourable conditions to prepare wider uptake and exploitation of results. Activities are directed and coordinated by dedicated WP8, in which all other WPLs are involved, and with this also all consortium participants. The implementation of plan will be monitored and evaluated which will enable regular updates and improvements, foreseen throughout the project lifetime.

It is foreseen that an update of deliverable will be developed in month 36 as a new deliverable D8.2 based on the lessons learned and feedback from the activities, but also as result of project development. In between, regular annual updates of document will be published as milestone reports. At the end of the RadoNorm project D8.6 Communication, dissemination and exploitation final report will be developed to provide the information on all activities for past five years.

1.3 Structure of the deliverable

The deliverable 8.1 is structure in 5 sections. After Section 1 with general introduction, purpose and scope, Section 2 identifies stakeholders and networking groups for communication and dissemination activities. Section 3 highlights the key messages of RadoNorm linked with its objectives, ambitions and expected impacts. Section 4 provides communication and dissemination plan with details on channels, tools, activities, describes open access strategy with access to research data and results, and sets the deployment plan with time distribution of activities. As separated subchapter deals with monitoring, reporting and evaluation. Separate section 5 describes the routes for the exploitation of results that project partners have envisioned at the beginning of the project and which are being redefined as the project technically progresses. As the exploitation plan will be developed along the project, this document only contains the general exploitation strategy which is outlined at this stage. IPR management strategy is briefly outlined and will be further elaborated. The Appendices contain functional additional material.

2. Stakeholders and networks

Stakeholder involvement in RadoNorm project is the key to an effective radiation protection framework, therefore the analyses of their views, needs and expectations is planned. An adequate, understandable communication of the scientific basis and the decision making under uncertainty are considered essential to enhance confidence and acceptance of legal regulations and practical actions to improve radiological protection of citizens, workers and the environment. The dissemination and exploitation of the project findings and results are to be tailored to the specific needs of interested and affected groups, workers and other stakeholders.

In terms of communication, dissemination and results' exploitation for radon and NORM exposures with stakeholders the following steps are taken:

- Identification of related and relevant stakeholders for the project and for project's uptake,
- Mapping of stakeholders in view of their interest, attitude, needs and their interactions, and
- Engagement activities to address their particular needs and requirements.

This document focuses on the identification of stakeholders which are important for the RadoNorm project and grouping them in the potential networks to be actively involved in the project's activities based on their interests and needs. It is foreseen that separate document with more precise information on stakeholders, their interests and needs will be prepared as milestone report MS 8.6 Stakeholder mapping and establishment of stakeholders' networks in month 4.

The RadoNorm results will include deliverable reports, recommendations, new skills and knowledge, educational materials, scientific publications and PhD thesis, new collected data and prototypes (like

new pre-standards, measurements methods). By sharing the research results with the broader scientific community, and beyond, like business partners, policymakers and other interested, the RadoNorm will contribute to the progress of science in general, and in particular to better implementation of the BSS Directive, which sets the requirements for radon and NORM exposures situations.

In general, there are two target audiences for RadoNorm project: internal RadoNorm participants and external audiences.

2.1 RadoNorm participants

The RadoNorm consortium includes 56 partners from 20 EU countries plus Norway, Switzerland and Ukraine (see Appendix A). In particular, RadoNorm partners have competences in the fields of dosimetry, physics, biology, epidemiology, molecular-epidemiology, medical, societal sciences and data management. All the project partners are fully committed to the project and have complementary roles needed to reach the project goals.

Among them are research groups from national radiation protection institutions and regulatory authorities, national research centres, universities as well as SMEs and a non-profit organisation. Additional liaisons are included into the project through exchange with partners and projects outside Europe. As radiation protection and regulatory authorities are involved in the implementation of new directives and regulations and/or have advisory functions to policy makers and radiation protection authorities on national, European and international level, the results of RadoNorm will be directly available for further implementation in recommendations and legislation. Many of the partners involved in RadoNorm represent their country in international or government organizations or actively participate in relevant committees of those such as IAEA (i.e. RASSC), WHO, UNSCEAR, Euratom Art. 31 Group of experts, OECD-NEA and HERCA. In addition many of the partners actively participate in the work of ICRP, the European ALARA Network, the related ERA and ENA associations and the European radiation protection research platforms (MELODI, ALLIANCE, EURADOS, NERIS, EURAMED, SHARE,) Thus the composition of the RadoNorm consortium provides the multiplying impacts and guarantees the best possible dissemination and use of the RadoNorm results for decision makers, regulatory authorities and various stakeholder groups on national, European and international level.

2.2 External stakeholders

The objective of the RadoNorm project is to support European Union Member States, Associated Countries and the European Commission in the implementation of the Council Directive 2013/59/EURATOM laying down Basic Safety Standards (BSS) for protection against the dangers arising from exposure to ionising radiation at the legal, executive and operational level. The project aims to significantly reduce scientific, societal as well as technical uncertainties in all steps of the radiation risk management cycle for radon and NORM (Naturally Occurring Radioactive Materials; the term NORM will include aspects of TENORM, i.e. Technologically Enhanced Naturally Occurring Radioactive Materials, in this proposal) exposure situations.

Based on this objective, the following stakeholders are identified:

- relevant scientific communities such as the European radiation protection research platforms MELODI, ALLIANCE, EURADOS and SHARE, and professional associations, such as ERA, ENA, IRPA and ICRP,
- future scientific community, like students, PhD candidates, young researchers in the area,
- radiation protection regulatory authorities, also at the European level like HERCA, health institutions and other responsible ministries, municipalities and implementing authorities,
- decision makers and politicians,
- public building managers and house owners,
- building professionals, industry, construction engineers and architects,
- residents in radon and NORM prone areas,

- workers and their organisations (unions),
- media,
- broader civil society (citizens science networks) and general public.

The identified stakeholders can cover the whole cycle of communication, dissemination activities and exploitation of results as presented in *Figure 2 Influence of RadoNorm*. The involved consortium partners will produce the scientific and technical outputs and spread the results to the wider scientific community, responsible authorities, decision makers and operational bodies at different levels. The target audiences, like residents and workers will be involved to obtain the feedback on the outputs. The media will be used as a broadcast source for all involved, including general public.

Figure 2 – Influence of RadoNorm [1]

All these stakeholders will be identified on variety of levels: from national, even municipality level, to the European and pan European level, to the international level. All these levels are important to be identified as the impacts of RadoNorm outcomes will be amplified.

2.3 Network groups

These stakeholders can be grouped in networks based on their interests and needs to be actively involved in the project's activities, such as pilot testing of communication tools in WP6. The following network groups are proposed:

- **Scientific community and researchers:** RadoNorm community, young researchers, related research platforms (like MELODI, ALLIANCE, EURADOS and SHARE), associations (ERA, ENA), ICRP, IRPA, IAEA, ….
- **Authorities**: responsible ministries (health, environment, …), EC, regulatory authorities (radiation protection, nuclear safety, HERCA,…), municipalities and implementing authorities,
- **Policy makers**: decision makers and politicians,
- **Implementers**: public building managers and house owners, building professionals, construction engineers and architects, industry,
- **Related:** stakeholders with similar project, citizen science networks,
- **Impacted:** workers, residents,
- **Media** and
- **General public**.

The collection of data about stakeholders and network groups will respect Regulation (EU) 2016/679 of the EU Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data (GDPR). The collected data will include information such as name, email, institution, stakeholder group, country and will be based on proactive policy, however based on consent and option to change the mind and withdraw from the database. The management of the collected data will be organized carefully for purpose of RadoNorm project only, based on advice from data protection officer. The collection of data will focus first on the already established networks (associations, platforms, ….) from project partners, from past activities/projects or ongoing related projects.

3. Key messages

3.1 The RadoNorm project

RadoNorm is designed to initiate and perform research and technical development in support of European Union Member States, Associated Countries and the European Commission in their efforts to implement the European radiation protection Basic Safety Standards. The proposed multidisciplinary and inclusive research project will target all relevant steps of the radiation risk management cycle for radon and NORM exposure situations. RadoNorm aims to reduce scientific, technical and societal uncertainties by (i) initiating and performing research and technical developments, (ii) integrating education and training in all research and development activities, (iii) and disseminating the project achievements through targeted actions to the public, stakeholders and regulators.

This will strengthen the scientific and technical basis for all key steps of the radiation risk management cycle for radon and NORM. The inclusive character of RadoNorm is given at different levels, by (i) targeting research and development on all steps of the management cycle, (ii) combining biomedical, and ecological research with mitigation development and social science research, (iii) integration of researchers from national radiation protection institutions, research centres, universities, and SME, (iv) incorporation of E&T activities in all undertakings, and (v) linking dissemination efforts directly to knowledge achievements and new recommendations. Steps addressed are the (a) characterization of radon and NORM exposures, (b) improving dosimetry, (c) assessing effects and risks for humans and the environment, (d) refining mitigation technologies, (e) raising the understanding for societal aspects, and (f) disseminating achievements. Further, an ambitious pan European E&T programme, will contribute to competence building and sustainability of the project findings.

3.2 The RadoNorm objectives

The main objective of RadoNorm project is to improve radiation protection in radon and NORM exposure situations by initiating, supporting and performing multidisciplinary, innovative, integrated research and technical developments, integrating education and training (E&T) in the research and development work of the project, disseminating the project achievements through special actions targeted at the public, other stakeholders including regulatory authorities and policy makers.

This objective will be reached by focussing resources and efforts in seven key directions:

1) **Strengthening the scientific and technical basis** in all key steps of the radiation risk management cycle for radon and NORM exposure situations (a) by improved characterisation of these exposure situations, (b) via improving measurements and dosimetry, (c) by providing improved risk assessment for humans and for the environment, (d) via evaluating and improving mitigation strategies, (e) via incorporating a better understanding of societal aspects, (f) by disseminating and communicating the project activities and results.
2) Stimulating and **fostering excellence in research and technological development** by bringing together well known and scientifically respected research groups from a broad range of disciplines, as well as from universities, research centres and national radiation protection institutions from numerous European countries.
3) **Integrating E&T activities** into the scientific and technical development work of the project by initiating a PhD and Postdoctoral grant programme which will be open to talented students and early career scientists from all European countries. It will be embedded in a joined postgraduate programme organised by RadoNorm and will be organised in a way that the PhD and PostDoc projects will be hosted in RadoNorm partner institutions.
4) **Exchanging and communicating with stakeholders**, including the general public, affected populations, professional and regulatory organisations across Europe as well as international communities of scientific, technical, legal, and other professional experts in radiation protection.

5) **Bringing together variety of competences** from the fields of radiation effects and risks, radioecology, dosimetry, mitigation, civil engineering, and social sciences, health communication and participation, whose joint expertise is essential in a multidisciplinary approach to achieve the project goals. RadoNorm will dwell on the specific scientific outputs from past projects as well as on the specific joint programming work of the European radiation protection research platforms, i.e. especially of MELODI, ALLIANCE, EURADOS and SHARE. It will build links to professional associations like ERA, ENA, IRPA and ICRP.
6) **Fostering the application of well-balanced radiation protection measures** by making available state of the art scientific knowledge, by providing evidence-based recommendations to the public as well as legal and executive level, from all fields of radiation protection. Moreover, RadoNorm will empower citizen science initiatives and improve collaboration between experts and the society.
7) **Preserving the close and fruitful partnerships** between research groups from universities and national research centres on one side and from research institutions having a regulatory mandate for radiation protection research in their country on the other. Connections and interactions between more basic radiation protection research, translational research, technological development, and science-based standard setting.

To reach its goals RadoNorm has five research Work Packages (WPs). Assessment of radon and NORM exposure situations (WP2), radon and NORM dosimetry (WP3), effects and risks from exposures to radon and NORM (WP4), mitigation of radon and NORM exposure situations (WP5), and societal aspects of radiation protection regarding radon and NORM exposures (WP6). The cross-cutting topics includes: education and training (WP7), dissemination, communication and exploitation (Wp8) and ethical issues (WP9). The management of RadoNorm is the responsibility of WP1.

3.3 RadoNorm ambition

The implementation of the BSS poses major challenges for the European Member States. The ambition of RadoNorm project is to generate scientific evidence tailored to the needs of societies, stakeholders and decision makers in Europe and beyond to optimise radiation protection with regards to radon and NORM and to develop scientific and operational capabilities based on the latest scientific and technical knowledge for a robust, improved protection system in the future.

Within the RadoNorm project the following will be addressed:

- Improvement of understanding of the uncertainties regarding radon and NORM exposure assessments (WP2) including (i) development in metrology for radon and thoron progeny, (ii) acquisition of new scientific knowledge and identification of new processes/factors to consider to predict radon and NORM concentrations at different places (including indoor for radon) and timescale, (iii) transfer of this knowledge in radioecological models of dispersion and transfer at various spatial scale (from indoor / outdoor, local – near contaminated areas – to European scale). WP2 will provide (i) recommendations or guidelines for radon-radon progeny measurement, (ii) workplace type specific measurements protocols for correct assessment of radon exposure of the workers, (iii) provide methods as support to the Member States for the identification of high indoor radon levels at the European level, (iv) recommendations to support the revision of EC –Radiation Protection document relative to NORM (RP 1351 as example) in consideration of new types of NORM industries, processes, environmental standards and types of releases.
- Improvement of assessment of radon and NORM dose effect relationship (WP3): Absorbed organ doses will be calculated for miners with updated biokinetic and dosimetric models taking into account the most recent recommendations of ICRP. Biokinetic and dosimetry models will be further developed for specific groups with potentially higher sensitivity (different lung diseases), or higher public concern (pregnant women, children including breast-fed babies, embryos and foetuses). Intraorgan dose distribution following radon exposure has been well

characterised by the stochastic lung model, IDEAL, and computational fluid dynamics (CFD) techniques for some parts of the human respiratory tract. This approach along with microdosimetry will be extended to other parts of the human respiratory tract including the larynx and pharynx. In a rat exposure model dose to rat lungs will be characterised in order to help the analysis of epidemiological (e.g. incidence of pharyngeal and laryngeal cancer) and experimental data (mutations in rat lungs). Based on the effects of inhomogeneous dose distributions for relevant radon exposures, the potential ways for the introduction of a new weighting factor accounting for dose inhomogeneity will be explored.

- Improvement in understanding of effects and risks from exposures to radon and NORM (WP4): Major knowledge gaps in human health risk assessment of radon and NORM will be addressed, such as a) interaction between radon and smoking for lung cancer, b) risks of radon outside of the lung, c) risks associated with radon exposure during childhood, d) risks from radon and NORM in drinking water, e) mechanisms of radiation action in the disease processes, and f) quantification of various sources of uncertainties in risk inference. We also carry out studies to validate radon measurements and predictive models. Furthermore, the major knowledge gaps for the risk assessment of non-human biota will be addressed related to the g) combined effects of NORM and other stressors, and h) determining adverse outcome pathways leading to such effects. To study the molecular changes and driver mutations in lung tumours among never-smokers, we organise a collection of lung tumour samples and evaluate the radon exposure of the patients. In parallel, we make use of biobanked materials from lung cancers from prior studies on rats exposed to radon, to study if same molecular pathways and driver mutations show up in human and animal models.
- Improvement of mitigation of radon and NORM exposure situations (WP5): innovative mitigation techniques will be developed to optimize the current mitigation systems with respect to analysis of all information collected on lessons learned and experience gained in mitigation of radon in buildings, workplaces and mitigation of natural radiation exposures in NORM industries in EU Member states in order to improve regulation tools and procedures leading to reduction of occupational and public exposures to ionizing radiation.
- Societal aspects of radiation protection regarding radon and NORM exposures (WP6): improve public awareness of radon risks, evaluates methods to achieve behavioural change in order to increase application of mitigation actions and ensure policy support for radiation protection from radon and NORM on national and local levels.
- Continuous education and training (WP7): The explicit and extensive E&T program of RadoNorm is thought to send a strong and effective signal to counteract this development by offering a profound education and training to a large number of future researchers and radiation protection experts. Radon prevention and radon mitigation call for new competencies and new experts entering the field. NORM activities are covering a range of new duties, such as notification of activities such as mining and underground work, dose assessment/exemption from dose assessment, measures to reduce exposure, licensing, baseline survey and monitoring, approval for waste exceeding clearance levels and approval for discharge other than ”minor discharge”. Reference levels are set for exposure to natural radiation and optimization and graded approach are used.

3.4 RadoNorm expected impacts

The key aim of RadoNorm is to provide answers to open questions related to radon and NORM exposure of humans and the environment and to provide sound, feasible and applicable solutions for radiation risk reduction which are widely acceptable for the individuals and the public. RadoNorm will have impact on radiation protection of humans and the environment in many ways.

First of all, it will support the implementation of the European Basic Safety Standards and help to cope with the new requirements on radon and NORM. RadoNorm addresses both human protection as well as protection of the environment. The inclusive approach of RadoNorm covers both exposure and risk assessment on one side and risk management on the other. In addition, RadoNorm develops tools, methods and best practises to cope with the issues related to radon and NORM, all along the different steps of the radiation risk management cycle, thus making major impact on society. Authorities operating in radiation protection, environmental and public health and environmental protection will benefit from surveys and investigations carried out by RadoNorm.

Radon prevention and radon mitigation call for new competencies and new experts entering the field, and NORM activities are covering a range of new duties. Guides, recommendations and regulations are needed, along with good practices and reliable methods for the field and laboratory work. Graded approach in risk management is needed and RadoNorm will help in putting exposures and risks in perspective. Lifting uncertainties will provide more reliable risk assessment, new scientific knowledge and evidence-based risk communication. Technological development comes up with new standards, technological innovations and improved capabilities, all improving the resilience of the society and helping to cope with situations and sites with enhanced levels of radon and/or NORM. Radon and NORM risk mitigation is in one hand risk prevention or reduction, e.g. there is great potential for radon prevention and reduction in new buildings, while radon mitigation in older houses is more demanding and may fail in a significant exposure reduction. The implementation of the RadoNorm work programme will have direct and widespread impact on radiation protection in Europe. In particular, the project's findings and the derived recommendations will enable a consolidated, harmonised and robust decision making in the field of radiation protection throughout Europe and beyond. The expected impacts of RadoNorm are presented on *Figure 3– Impact of RadoNorm on radiation protection of humans and the environment*.

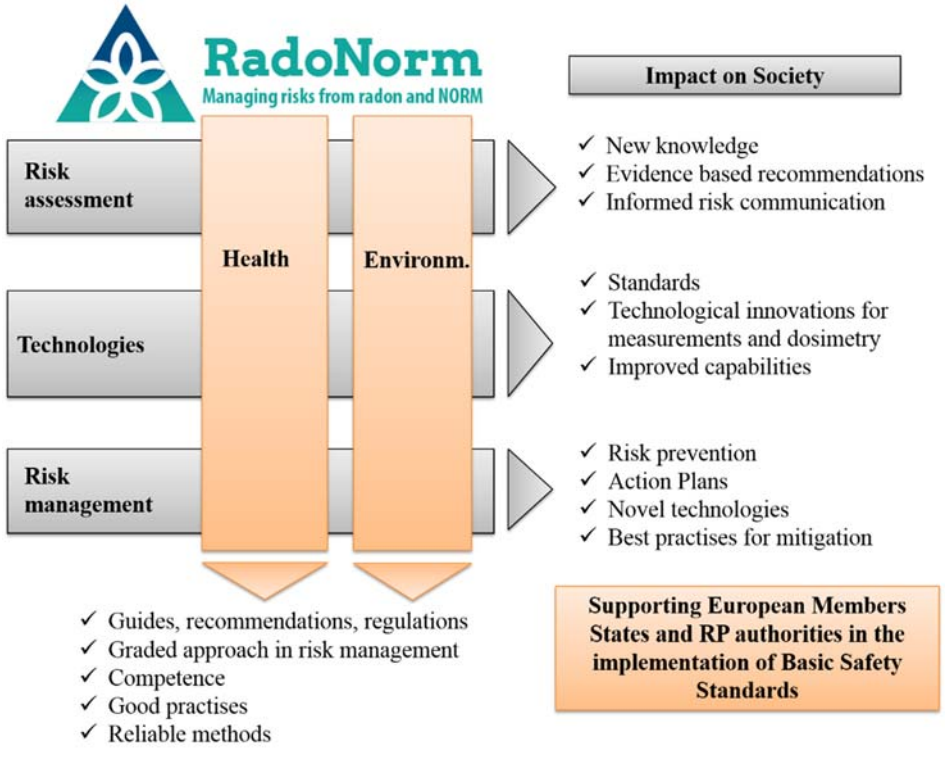

Figure 3 – Impact of RadoNorm on radiation protection of humans and the environment [1]

4. Communication and dissemination plan

4.1 General

The draft Plan for the Exploitation and Dissemination of Results (PEDR) and draft Communication Plan were developed already as part of the RadoNorm proposal and now part of GA [1] according to the EC reference documents Fact Sheet - the Plan for the Exploitation and Dissemination of Results in Horizon 2020 [3] and Communicating EU research and innovation guidance for project participants [4]. The strategy gives an orientation towards the organisation of the RadoNorm project activities and therefore addresses the following questions:

- What kind of needs does the project respond to?
- What kind of problems the proposed solutions will solve and why these solutions will be better than existing ones and in which areas?
- What new knowledge (results) the project will generate based on assessment of the state of the art?
- Who will use these results?
- What benefits will be delivered and how much benefit?
- How will end users be informed about the generated results?

The Strategy and plan for communication, dissemination and exploitation of results provides the answers to the identified questions in all sections of deliverable to the appropriate level of details, so the plan can be implemented from beginning. The following timing of activities is foreseen:

- Initial awareness phase (month 0-6): this especially includes establishment of RadoNorm project website, analysis of relevant information resources, identification of communication and dissemination opportunities (activities and channels), stakeholders' mapping and engagement, creation of basic communication and dissemination channels and tools including graphical identity of the project (i.e. project logo, project website, templates for project documents and for project presentations, databases), development of related plans including Data Management Plan and first activities to foster initial knowledge exchange.
- Targeted communication and dissemination phase (month 7-36): the consortium will enrich the website, use the social media, publish a project documents designed to the target groups (poster, brochures, leaflets, newsletters, press releases), conduct events (with proceedings) and attend other related events. Preliminary project results will be presented to the target audiences.
- Deliverable phase (month 37-60): this represents the second period of the project, when RadoNorm consortium partners will deliver the majority of project outputs. This phase will be focused on informing the target audience of the exploitable results.

As stated, the plan will be annually updated to ensure the integration of feedback from communication and dissemination activities, to assure improved alignment with the project development and to respond to the contextual changes (from inside the project or from other related developments in the field of radon and NORM exposures).

Within the RadoNorm the following subjects will be communicated and disseminated:

- RadoNorm project itself (general scope, coverage, goals, milestones and plans to reach them),
- publishable research results (reached objectives and achievements as in open access policy for publications and research data),
- developed techniques and methodologies (in view of pre-industrial research impacts),
- developed tools and technologies (in respect of industrial IPR issues),
- innovation aspects (in an "open innovation" perspective),
- developed recommendations (as mechanisms for improved policy).

Focus of the communication activities is to inform about and promote the RadoNorm and its results to the multiple audiences, including the media and the public, in a two-way exchange. The dissemination activities describe and ensure that the results are available for others interested, like scientific communities, industrial partners, policymakers and other end users. The exploitation activities enable concrete use of project results through scientific, economic political or societal routes by interested organizations within project partners or other user groups outside the project. WP8 enables open access to research data by use of STORE^{db} platform (https://www.storedb.org) developed for the archiving and sharing of the primary data outputs from research on low dose radiation and which will be further developed for RadoNorm results' exploitation for all user groups. The RadoNorm results will be public unless the decision to protect the outputs will be taken (such as patenting or other forms of protection). Green open access at the website project online repository will be used and also gold open access for limited number of publications.

4.2 Communication & Dissemination strategy

4.2.1 Open access

According to the guidance on open access for H2020[2], the appropriate measures to grant open access to all scientific publications and research data resulting from RadoNorm will be adopted by the consortium. Each beneficiary must ensure open access (online access for any user, free of charge) to all peer-reviewed scientific publications relating to their results. The RadoNorm website will serve as a platform to enable open access of the project outputs.

In particular, each partner must:

i. As soon as possible, and at the latest upon publication, send an electronic copy of the published version or final peer-reviewed manuscript accepted for publication to the coordination and WP8-leader to be posted on the RadoNorm website.

ii. Ensure open access to the scientific publications via the RadoNorm website:

   a. Immediately upon publication if a free electronic version is available via the publisher, or

   b. Within six months of publication in any other case that involves delayed access.

The Gold Open Access in Open Access Journals for five scientific articles is foreseen in the project.

4.2.2 EU identity

Unless the European Commission requests or agrees otherwise or unless it is impossible, any dissemination of results (in any form, including electronic) must:

a) Display the EU emblem and
b) Include the following text: "This project has received funding from the Euratom research and training programme 2014-2018 under grant agreement No 900009".

When displayed together with another logo, the EU emblem must have appropriate prominence. For the purposes of their obligations under this Article, the beneficiaries may use the EU emblem without first obtaining approval from the Commission.

This does not however give them the right to exclusive use. Moreover, they may not appropriate the EU emblem or any similar trademark or logo, either by registration or by any other means.

[2] H2020 Programme: Guidelines to the Rules on Open Access to Scientific Publications And Open Access to Research Data in Horizon 2020, http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-pilot-guide_en.pdf

4.2.3 Disclaimer and IP rights

Any communication and dissemination activity related to the RadoNorm must indicate that these only reflect the author's view and that the European Commission is not responsible for any use that may be made of the information it contains.

The following sentence shall be used for this purpose and is included at the beginning of each project deliverable:

'This document reflects only the author's view and the European Commission is not responsible for any use that may be made of the information it contains.'

Consequences of non-compliance

If a beneficiary breaches any of its obligations under Article 29 of the Grant Agreement, the grant may be reduced.

IP rights

Dissemination activities in RadoNorm project are deeply wedded with the intellectual property (IP) rights protection which is clearly stated in General Agreement Articles 23a [1]. Practical application of IP rights protection agreed among RadoNorm project partners is adjusted in the Consortium Agreement (CA) [5] in Section 8: Results, Section 9: Access Rights and Section 10: Non-disclosure of information. The IP rights in RadoNorm follow the proposals as given in the EU IP Helpdesk [6].

4.2.4 Communication and dissemination approach

All partners of the consortium must contribute to the dissemination and communication according to their foreseen role and effort and using all available tools. The WP8 and the WP8 leader will be the central point for the coordination of activities. It is foreseen that the proposals from WPs are transferred by WPLs to the WP8 leader because all WPLs are members in WP8. The final approval will be given by the project coordinator (PC and also WP1 leader).

It is proposed to communicate between project partners in cascades:

- Project Coordinator (PC) to all WP Leaders (WPLs),
- WPLs to WP members in their particular WP,
- PC to all partners' main contacts in case of information important to all.

However, for the more effective internal communication still the emails of all participants with regards to WPs, tasks and subtasks will be established on the internal RadoNorm webpage and regularly updated by PC.

The main contact point for the RadoNorm communication and dissemination is the email address radonorm@bfs.de which is managed by PC (WP1).

To increase efficiency, a standard email subject title shall be used. This will allow the project partners to quickly recognise RadoNorm related emails. These should include in the subject title the project name RadoNorm and WP number (if applicable), followed by a more specific description of the subject and a deadline for feedback or reply (if applicable). You can see here some examples of subject lines:

RadoNorm-Kick-Off_presentations

To keep traffic down, if you have any query about an e-mail, please reply just to the sender. While sending emails, please also consider to send them only to relevant people who are concerned by the subject matter.

4.3 Communication & Dissemination activities, channels and tools

A wide range of activities, channels and tools can be used specifically or commonly for communication and dissemination purposes. Different activities, channels and tools are briefly described bellow, in

separate subsection the indication is given for which purpose the activity/channel/tool is used and for which targeted audience they are suitable for.

4.3.1 RadoNorm Website

The main communication and dissemination tool of RadoNorm project targeting all audiences is a public website. The RadoNorm website was registered in the "eu" domain with intuitive URL to increase the hit rates: https://www.radonorm.eu/. It is the main channel for the provision of information and updates about the RadoNorm project and serves as a repository for all public deliverables of the project and other project's results as part of the open access policy (green open access).

It has public area, external for anybody to be able to connect and non-public area intended for internal communication and dissemination between project partners which is protected with login and password.

Public RadoNorm website

The RadoNorm website has the following structure (folders):

- Home with basic overview information about the project,
- About with main objectives of the project,
- Participants with overview of the geographical coverage and short information about all members of consortium and with links to their home websites,
- Work Packages with short descriptions, objectives and tasks,
- Publications, divided to the deliverables, other contributions (like scientific articles and presentations) and videos (with links to the YouTube RadoNorm site),
- News with RadoNorm's interesting information and updates,
- Calls with information on RadoNorm Calls for courses and travel grants,
- Events with monthly and yearly calendar of different events that are of RadoNorm interest (RadoNorm events, RadoNorm related events – events that RadoNorm is a part of, and internal project events for members only),
- Stakeholders with groups of networks based on their interests and needs to be actively involved in the project's activities,
- Important links with connections to the related platforms and associations, and to facts about radon and NORM, links to the respected websites are given,
- Contact with information about how to get in touch,
- Direct access to the social media (Twitter, LinkedIn, YouTube).

At the bottom of the RadoNorm website there is a legal notice and privacy statement to inform the users about the terms and conditions of use of the internet website, and to inform about the personal data management. The European Green Deal policy is supported with special statement *"When planning your activities please consider the possibility of reducing the carbon footprint. Actions to be considered include preferential choice of train transportation and minimising printing of any paper material."*

In addition, there is on website connection to the STORE^{DB} https://www.storedb.org intended to store the research data from RadoNorm to fulfil open assess policy for research data. According to the GA a separate deliverable D8.7 Open Research Data Pilot and project Data Management Plan will be prepared in month 6. It will include information about research data, which will be collected, generated or processed within the project and beyond, which methodology & standards will be applied, whether data will be shared/made open access and how data will be preserved & curated after the end of the project. It will also include the information about the STORE^{DB} as a main tool/channel for open access to research data.

The website is regularly updated with on-going activities (about the progress in WPs), public reports/deliverables, publications, upcoming events (3 categories: RadoNorm, related to RadoNorm, internal for RadoNorm partners), scientific meetings and workshops, as well as trainings, courses and PhD and postdoctoral activities. The new information will be upgraded two times per month, for the

period from 1-15 and from 15-30/31 of the month, if there will be any news. All participant and WPLs are expected to contribute to feed the RadoNorm website with news about their work package (like issue of an important deliverable and other results, reach of an important milestone, new training or event related to the WPs). The website administrator is EIMV with its subcontractor. New contents for the RadoNorm website are managed by EIMV and approved by BfS.

Website hits, page views and deliverables/documents' downloads will be monitored in order to measure the impact of the RadoNorm website. The collected information will be used anonymously (without the personal data of the users) for the purpose of the RadoNorm project.

Internal website (Member space)

The non-public area intended for common file-sharing, for the collection of the various reports produced during the project as well as a central element of the communication between Consortium partners. All reports, deliverables, results and relevant material will be accessible to all project partners at all time. The internal website with have the general structure:

- General folder with General Documentation (include GA, CA, …), Deliverables (it will be linked with public Publication area), Reports, Meetings, Scientific Publications, Contact Database (RadoNorm participants and stakeholder groups), Logo and Templates, and
- WPs area (for WP2 to 9) with substructure free agreeable within the WPLs.

Project partners have the permission to upload any digital file (documents, pictures) by simple drag and drop. Documented user guide and online training to partners are available upon request.

To keep the repository functional the following guidelines are considered:

- Creation of directories/folders when needed,
- When communicating on uploaded/changed documents, indicate in which folder, if not obvious, e.g. RadoNorm/Meetings/…,
- If it is needed to upload Word and/or Excel files containing complex formatting, figures, graphs etc. it must be checked whether these features are preserved when uploaded. If not, convert to pdf before uploading,
- Notifications on changed documents by email is an option, but preferred way is to include relevant authors only (to avoid notification spamming).

4.3.2 Social media

In addition to the internet website, also other online tools are established for the communication and dissemination activities of RadoNorm project as in H2020 Social media guide for EU funded R&I projects [7]. The following web based social media are formed:

- **Twitter** @RadoNorm, https://twitter.com/RadoNorm,
- **LinkedIn** (RadoNorm.eu) www.linkedin.com/in/radonorm-eu-b0205a1bb and
- **YouTube** (RadoNorm) https://www.youtube.com/channel/UC6yCORiPX5DXgmu5AaGLn9Q.

They are available from the RadoNorm website and follow to the extent possible the RadoNorm graphical design. The Twitter account is intended for short messages up to 280 characters to be posted for some specific audiences like media, policy makers, but also general public. Besides the RadoNorm twitter name #RadoNorm the contributions are encouraged also to include related hashtags such as #radiationprotection, #radon, #NORM, #Horizon 2020, #EUcollaboration etc. The LinkedIn account has no limitations for the publishing and the profile can include many interesting information, like important results, events or development within PhDs or postdoctoral research, and also links to the RadoNorm website. This social media is mainly used for professional networking, including participants of the RadoNorm. The YouTube account enables to share interesting videos about the project, with special attention to the presentation of the RadoNorm results, including the contributions from PhD and postdoctoral researchers and RadoNorm events.

All the online tools will be regularly maintained and updated with on-going activities. The new information will be uploaded several times per month, more intensively with Twitter, and less with LinkedIn and

YouTube. All participant and WPLs are expected to contribute to feed the RadoNorm social media with news about their work packages. The social media administrator is EIMV with its subcontractor. New contents for the RadoNorm website are managed by EIMV and approved by BfS.

4.3.3 RadoNorm material

As part of the communication and dissemination activities, RadoNorm material will be prepared including the project's visual identity and logo to be used within different channels and tools depending on the targeted group.

The official ***RadoNorm leaflet*** will be produced to inform about RadoNorm project objectives and expected results as well the methods which will be used. It will be used for on-line communication and dissemination, and also to be distributed to the different stakeholder networks. The level of details will be generic, therefore it will be intended mostly for most of the stakeholders network groups. The RadoNorm leaflet will be electronical (as PDF), and could be also printed to be used during different events. The RadoNorm leaflet will be reviewed and upgraded on yearly bases to provide information on the RadoNorm development.

The ***RadoNorm poster*** (A0 format) will be another form of the information about RadoNorm project. It will have the similar content as leaflet but will be prepared in PPT format in order to be used more for different events. The content could be more oriented for different professionals, like scientific community and researchers, authorities and implementers. The RadoNorm poster will be in electronical form (as PPT or PDF) so it could be also modified for the particular purpose and printed.

The ***RadoNorm presentation*** will be further form of presentation about RadoNorm project and will consist of approximately 15 slides in ppt to be used for the events where participants would promote RadoNorm and the results from beginning. In time it will be modified and enriched with the results from the project so it could serve for continuous communication and dissemination activities within RadoNorm.

The ***WPs brochures/leaflets*** are the forms of material with more specific content devoted to the particular scientific areas which are covered by WPs 2 to 6. In addition, the WP7 leaflet would be prepared promoting the activities in the WP on trainings, mobility programme and doctoral and postdoctoral activities. The PhD and postdoctoral research details will also be presented within WP2-WP6 as they are part of them. Such brochures and leaflets are intended for the professionals.

The ***WPs videos*** will be recorded as short movies about each WPs narrated by WPLs. They will present the WPs objectives and planned results in a short 2-3 minutes video. The WPs videos will feed the social media, especially YouTube as modern and attractive inputs about the project and expected results. These contributions will be recorded and used in the first period of the project (until month 6). Later more details ***interviews*** will be produced on particular aspects of WPs (like, methods, addressed challenges, important outcomes and recommendations) to be used for communication and dissemination activities.

The bi-annual ***RadoNorm E-Newsletter*** will be developed as a main source of information about updates and news of the RadoNorm project, like results in WPs, past and upcoming events, publications, trainings, etc. The content will be incorporating latest developments of the project as well as recent or upcoming dissemination activities; success stories; presentations, workshops; reports, publications and media interest, etc. The E-Newsletter will be published on RadoNorm website as electronic version, promoted also by other social media and distributed to the RadoNorm contact database. All together 10 issues will be developed, each after end of 6 months period.

In order to achieve a broader distribution and facilitate the engagement of as many stakeholders as possible, the RadoNorm partners will be encouraged to distribute the newsletters to their contacts who may be interested in the project. A specific option for subscription to the list of newsletter recipients, has been included on the RadoNorm website.

As a tool for important news, the ***RadoNorm Press releases*** will be used to be published on RadoNorm on-line channels, but also to be distributed to stakeholder groups, in particular to media, or to other identified group. It is expected that such releases, especially if properly prepared (use of understandable language, interesting information, supported by photos, graphs, videos or other material) will be re-published and with this increase the impacts of RadoNorm.

The RadoNorm material will be developed during the first year of the project, first the basic leaflet, poster and slides (until month 6) and later the Newsletters, WPs brochures/leaflets and videos (until month 12). In the second year of the RadoNorm it is planned that material will be continuously developed, based on the first issues. All participant and WPLs are expected to contribute to the RadoNorm material development with news about their work package. The coordinator of activity is EIMV with contributions from WPLs. The RadoNorm material is approved by BfS.

4.3.4 Deliverables and scientific publications

The RadoNorm project foresees a number of milestones and deliverables which will be developed during the project within each of the WPs. Each of the milestone or deliverable is already briefly described in the GA [1] with lead participant and other participants which will be involved. The milestone documents will be reviewed and approved, and will be published on internal RadoNorm website. The deliverables will be reviewed, approved and submitted to the EC according to the adopted timetable in GA [1]. Only when approved by EC, they will be uploaded on the public RadoNorm website under the Publications/Deliverables. With such approach the Green Open Access will be assured for all interested with aim to make research outputs more transparent and their use more efficient. Other publications, like scientific articles, presentations or papers, will be also uploaded to the RadoNorm website under Publications/Others to assure Open Access policy as soon as possible (and in line with GA).

For a limited number of peer reviewed publications summarising the RadoNorm results the Gold Open Access in Open Access Journals will be assured presumably near the end of the RadoNorm project. It is foreseen to publish 5 scientific articles covering the results from scientific WPs (from 2 to 6). The selection of the scientific journals with such option will be detailed in the next version of the strategy, after the discussion with WPLs.

4.3.5 Events

Events are the most engaging activities because they provide the possibility to have direct or indirect contact with a wider audience and increase RadoNorm visibility (physical and online) across branding identities through the use of e.g. the logo etc. Opportunities to take part in events organized by RadoNorm, the European Commission and other partners will be continuously sought after.

The partners will participate at conferences, events, workshops etc. relevant to the project in order to:

- present the project and project results to the audience,
- promote the project on a formal basis, through a presentation at the conference/event, participation in a workshop panel discussion etc., and
- increase the project visibility.

A number of ***RadoNorm events*** are planned as part of the project. One scientific RadoNorm event per year (in total 5 events) is foreseen at the end of each project year. It will start with kick-off workshop around month 12 with the aim to present the project, the results from the first year of research and investigation and the plans for further work. The next annual RadoNorm events will have different forms, depending on the content, either seminars (smaller event, presentations and discussions) or workshops (bigger event, presentations, discussions, also exercises). The final RadoNorm event (at month 60) will have the form of the scientific conference, where the RadoNorm results and recommendations will be also complemented by other developments in the field of radon and NORM, or with further development of the research in the radiation protection.

Additionally, ***online RadoNorm events*** will be organised once a year to attract also related target audiences (like, younger generation, other related scientific communities, building professionals, citizen science members).

The programme committee will be established 6 months before the meetings consisted by WPLs, the organisation will be managed by EIMV with assistance of local partner, depending on the location. For each of the events the proceedings will be developed (either as milestone documents, or with overview of all events as final deliverable). The events will take into account the needs of different stakeholders' networks, defined in previous section: Scientific community and researchers, Authorities, Policy makers, Implementers, Related, Impacted and Media. More precise plan for events will be prepared annually in related WP8 documents.

Within the WP7 Education and training also the RadoNorm training courses will be organised with the aim to provide training, in particular for PhD students and early career researchers, covering all aspects of the scientific research areas relevant to RadoNorm in order to develop expertise in the field. The activities will be reported in WP7 documents.

Apart from RadoNorm events, also **participation in thematically associated events** will be promoted as far as possible, organised by other related platforms, associations or organisations. Already established connections with events will be used to obtain the information (like European Radiation Protection Week, RICOMET, related platforms' events (MELODI, ALLIANCE, EURADOS and SHARE), associations' events (ERA, ENA), activities of ICRP, IRPA, IAEA. As the RadoNorm participants are members of many, event could be also co-organised with RadoNorm project. The main aim of such involvement will be to communicate and disseminate RadoNorm project and results. All WPLs will be involved in collection of information and prioritisation of participation.

4.3.6 Contact Database

To assure active stakeholder engagement the Contact Database will be developed and regularly maintained as a basic tool for communication and dissemination activities, as well as for some actions within WPs (like pilot testing in WP6). It will be uploaded on the internal RadoNorm website and will follow the stakeholders network groups division: Scientific community and researchers, Authorities, Policy makers, Implementers, Related, Impacted, Media and General public. The collection of data about stakeholders network groups will respect Regulation (EU) 2016/679 of the EU Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data (GDPR). The RadoNorm Privacy policy (published at RadoNorm website) with regards to data protection management will be applied. The Database will be structured to provide possibilities for effective interactions and engagement, so it will include following data: name, email, institution, stakeholder group and country. The network groups will be than involved in RadoNorm activities to engage, to obtain feedback, to be used in the pilot tests, always based on their consent. The option to change the mind and to withdraw from the database will be also given. The management of the collected data will be organized carefully for purpose of RadoNorm project only. The collection of data will focus first on the radon and NORM related stakeholder, including the scientific community, representatives from regulatory authorities, health institutions and other responsible ministries, municipalities and implementing authorities, public building managers and house owners, building professionals, construction engineers and architects, residents and media representatives. The updates and further collection of data will follow the development of RadoNorm project.

All WPLs and project partners will contribute to development of active stakeholder engagement, with a stronger participation of BfS and SCK.CEN in the stakeholder engagement.

4.4 Channels/tools/activities vs networks

Presented channels/tool/activities will be used for communication and dissemination of RadoNorm project and results to different stakeholder network groups: Scientific community and researchers, Authorities, Policy makers, Implementers, Related, Impacted, Media and General public. Most of the measures will be used for both, for communication about the project and its results, and for dissemination of RadoNorm results and knowledge as an input for further use. The exception used for dissemination only are RadoNorm events and scientific articles. The Contact Database will be used as a basic tool for support of measures implementation. The table 1 below presents main results to be communicated/disseminated to particular group and connect with appropriate measures presented in previous subsection.

Target group	Results to be communicated/disseminated	Measures
Scientific community and researchers	New knowledge in the fields of research: metrology measurements, dosimetry, radiobiology and toxicology, epidemiology, modelling, mitigation technics and technologies, radioecology, behavioural and social science.	• Publications and reports, RadoNorm material • RadoNorm events and other face to face meetings • Social Media and Website, online events • Green and Gold Open Access • RadoNorm STORE^{db} • Citizen sciences
Authorities	New knowledge on standards, approaches, guidelines and recommendations to address the needs.	• Publications, reports and recommendations • RadoNorm material • Devoted events • Feedback from involvement • Social Media and Website, online events • Green Open Access
Policy makers	Advice to regulatory framework and inclusion of new standards in legal framework.	• Publications, reports and recommendations • Devoted events • RadoNorm material • Feedback from involvement • Social Media and Website • Green Open Access
Implementers	Guidelines and advice on the best approaches to fulfil standards and regulatory requirements, approaches to remediation.	• Publications, reports and recommendations • Devoted events • RadoNorm material • Feedback from involvement • Social Media and Website • Green Open Access
Related	New knowledge supporting the research activities and directions for future research.	• Publications and reports • RadoNorm events and other face to face meetings • Social Media and Website, online events • Green and Gold Open Access • RadoNorm STORE^{db}
Impacted	Approaches how to improve conditions in homes and guides for remediation Guidelines for radiation protection, better awareness of related health risk, new standards based on the research	• Publications, reports and recommendations • Devoted events • RadoNorm material • Feedback from involvement • Social Media and Website

General public	Information about activities and raising of awareness for radon and NORM	• Publications, reports and recommendations • RadoNorm material • Social Media and Website • Citizens science
Media	Findings and recommendations from RadoNorm, relevant for general public to promote and enable information for all	• Publications, reports and recommendations • Devoted events • Press releases and other RadoNorm material • Social Media and Website • Citizens science

Table 1 – Measures for communication and dissemination to targeted groups

4.5 Reporting, monitoring and evaluation

Several approaches will be used for reporting, monitoring and evaluation of the communication and dissemination activities in the RadoNorm project with the aim to improve the activities and to advance the used material. Although the WP8 will coordinate the communication and dissemination activities, all RadoNorm project partners are expected to actively participate in activities.

The results of each communication/dissemination activity will be reported after they are implemented. The reports are part of the GA and consist of milestones and deliverables as presented in the Appendix B WP8 milestones and deliverables. The first results are developed in the first half year after the project start, and are then yearly prepared based on activities. The reports should beside the content include also feedback gathered from the target audience (if applicable) and eventually gained contacts to be added to the Contac Database (as a separate, confidential part) to be used for further communication and dissemination activities. All partners should send the communication and dissemination material (any type of material, like papers, articles, presentations or the audio file of an interview for example) to the WP8 leader. The material should be according to the procedure uploaded on RadoNorm website.

For monitoring purposes, all communication and dissemination activities will be followed-up, as given in separate table 2 where related information will be collected. The excel file will be available for all at the internal RadoNorm website.

No	Type of activity	Main leader	Title	Date	Location or publication	Network group	Size of audience	Countries addressed
1	Press release	BfS	BfS coordinates European radon research project	12/3/2020	https://www.bfs.de/SharedDocs/Pressemitteilungen/BfS/EN/2020/005.html	Media, all	-	global
2	Co-organisation of conference	SCK.CEN	Pre-RICOMET	2/9/ 2020	https://www.radonorm.eu/news/radonorm-project-started-with-three-webinars-as-part-of-the-on-line-pre-ricomet-2020/	Scientific community and researchers	300	global
3	meeting	BfS	Kick Off meeting	9+10/09/2020	Internal RadoNorm website	Consortium, EC	170	EU
4								

Table 2 – Communication/Dissemination monitoring

In addition, also publications (Journal, Proceeding, Book, …) developed in the RadoNorm project will be collected with information about the DOI, type of publication, link to the repository, information about the publication (number, date, title, ISBN, publisher), title of contribution with authors and similar. The excel file will be upload on the RadoNorm internal website to be used by participants.

The WP8 meetings will be organised every 6 months to reassess the activities based on the collected data from monitoring. The information gathered during the entire lasting period will be incorporated to the updates of the communication and PEDR report (foreseen as milestone and deliverables).

The collected information from reports and monitoring will serve as a basis for RadoNorm impact evaluation. The effectiveness of communication and dissemination activities will be reviewed during WP8 meetings, on the basis of quantitative and qualitative criteria: quality of media references, number and impact factors of scientific publications, video views and comments (neutral, positive, negative), website visits, social media feedback, attendance numbers at RadoNorm events, e-newsletter distribution, interactions with related initiatives and projects. These measures will help to achieve the expected impact of the project by addressing the full range of potential users and uses.

4.6 Networking with other EU funded projects

RadoNorm will collaborate and liaise with other projects (previous and ongoing) and initiatives that could complement its activities and provide synergies in order to avoid overlaps and taking advantage of possible new ideas that could arise from such correspondence. Furthermore, it will enhance the dissemination of the project results to a specialised and professional audience.

Also, participants collaborated in other multilateral European projects, international activities of organisations like WHO, UNSCEAR, ICRP, IAEA, OECD/NEA and related platforms: MELODI, ALLIANCE, EURADOS and SHARE. The details of RadoNorm relevance are given in GA, annex 1 and 2 [1].

After the adoption of this deliverable, the contacts with on-going and previous projects will be established to benefit from synergies and to exchange the information. WP1 will coordinate the interactions.

4.7 Visual identity and templates

4.7.1 RadoNorm Logo

The RadoNorm project logo must be placed on all the project dissemination material, documents and communication tools throughout the project lifetime. The RadoNorm project logo is developed in two variants as presents in Figure 4, one with the explanation title and the other with just sign and name. Both variants are intended to be used in the RadoNorm project.

Figure 4 – RadoNorm logo variants

The main colours of RadoNorm project are defined in Figure 5 and are used in all RadoNorm channels/tools/activities.

Figure 5 – RadoNorm basic colours

4.7.2 RadoNorm additional graphical elements

Some other graphical elements in Figure 6 are proposed to be used in presentations, posters, leaflets, brochures and all other RadoNorm material and as background for documents. Internal RadoNorm websites includes several graphical elements to be used in the development of material.

Figure 6 – RadoNorm graphics and examples of backgrounds

4.7.3 RadoNorm templates

RadoNorm will be presented in several events, conferences, meetings as well as other occasions to disseminate project developments and results, enhancing the overall dissemination efforts. Different templates have been made available to Consortium partners via the project's internal repository to be used for milestones, deliverables, presentations (PPT), meeting minutes, poster or any other product in order to have a homogeneous strategy and approach to execute dissemination activities as well as to report on them. It is recommended that participants agree with WP8 leader and PC any modified version of templates.

Additionally, as required per Article 29.4[3] of the Grant Agreement, all material used for communication and dissemination purposes of RadoNorm, will demonstrate the EU emblem along with along with the statement that the project has received funding from the H2020 Research and Innovation programme:

This project has received funding from the Euratom research and training programme 2014-2018 under grant agreement No 900009.

A disclaimer that excludes the responsibility of the European Commission for any use that may be made of the information contained in any communication and dissemination activity related to the RadoNorm as required by Grant Agreement Article 29.5.

5. Exploitation plan

According to "Article 28.1 Obligation to exploit the results" of the Grant Agreement [1]

Each beneficiary must — up to four years after the period set out in Article 3 — take measures aiming to ensure 'exploitation' of its results (either directly or indirectly, in particular through transfer or licensing; see Article 30) by:

(a) using them in further research activities (outside the action);
(b) developing, creating or marketing a product or process;
(c) creating and providing a service, or
(d) using them in standardisation activities.

The Exploitation Plan (EP) has the objective to define the strategy to multiply the impact of the proposed solutions or innovations of RadoNorm project (as presented in section 3) to be prepared for the transition towards industrial and commercial uptake in order to fully achieve the expected impacts. The EP will describe the activities to be undertaken (how and by whom) in order to ensure the exploitation beyond the project itself.

The exploitation strategy will reflect and will be built-up as a result of the analysis of RadoNorm products, potential users, and financial sustainability if applicable. All WPLs will be involved in such analyses with tasks/subtasks leaders. A special seminar will be devoted in second half of the first year to explore the possibilities for exploitation of RadoNorm results. The target users of the RadoNorm results will be precisely identified and analysed in terms of specific needs and objectives. Any related IP rights plan will be recognised in relation to the availability of results and any potential limitation (like confidentiality). The exploitation possibilities will be analysed and recorded. It is also foreseen to focus than the dissemination activities to the identified users. The exploitation activities will be coordinated by the Project Coordinator and supported by WP8 leader. The next milestone report with updates of the Strategy and plan for communication, dissemination and exploitation of results foreseen for month 12 will include the findings from devoted seminar.

During the RadoNorm project research data will be collected and generated. The approach to data management will be given in the deliverable Open Research Data Pilot and Data Management Plan to be prepared in Month 6. The outcomes of the deliverable will be included in the next exploitation plan.

[3] http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/amga/h2020-amga_en.pdf

6. References

[1.] Grand Agreement Number 900009 — RadoNorm as from 13.05.2020
[2.] Making the Most of Your H2020 Project,https://www.iprhelpdesk.eu/sites/default/files/EU-IPR-Brochure-Boosting-Impact-C-D-E_0.pdf
[3.] Fact Sheet - the Plan for the Exploitation and Dissemination of Results in Horizon 2020
[4.] Communicating EU research and innovation guidance for project participants
[5.] Consortium Agreement, draft
[6.] EU intellectual property rights (IPR) Helpdesk
[7.] Social media guide for EU funded R&I projects

Appendix A. RadoNorm consortium

Beneficiary/linked third party, full official name and country

1 - BfS	BUNDESAMT FUER STRAHLENSCHUTZ	DE
2 - IRSN	INSTITUT DE RADIOPROTECTION ET DE SURETE NUCLEAIRE	FR
3 - EK	ENERGIATUDOMANYI KUTATOKOZPONT	HU
4 - STUK	SATEILYTURVAKESKUS	FI
5 - SURO	STATNI USTAV RADIACNI OCHRANY v.v.i.	CZ
6 - SCK CEN	STUDIECENTRUM VOOR KERNENERGIE / CENTRE D'ETUDE DE L'ENERGIE NUCLEAIRE	BE
7 - SU	STOCKHOLMS UNIVERSITET	SE
8 - EIMV	Elektroinstitut Milan Vidmar	SI
9 - UMB	UNIVERZITA MATEJA BELA V BANSKEJ BYSTRICI	SK
10 - EPA	ENVIRONMENTAL PROTECTION AGENCY OF IRELAND	IE
11 - UANTWERP	UNIVERSITEIT ANTWERPEN	BE
12 - MERIENCE SCP	MERIENCE SCP	ES
13 - CSTB	CENTRE SCIENTIFIQUE ET TECHNIQUE DU BATIMENT	FR
14 - AGES	OSTERREICHISCHE AGENTUR FUR GESUNDHEIT UND ERNAHRUNGSSICHERHEIT GMBH	AT
15 - KIT	KARLSRUHER INSTITUT FUER TECHNOLOGIE	DE
16 - PTB	PHYSIKALISCH- TECHNISCHE BUNDESANSTALT	DE
17 - RPI	PRIVATE JOINT STOCK COMPANY RADIATION PROTECTION INSTITUTE OF THE ACADEMY OF TECHNOLOGICAL SCIENCES OF UKRAINE	UA
18 - RIVM	RIJKSINSTITUUT VOOR VOLKSGEZONDHEID EN MILIEU	NL
19 - UHasselt	UNIVERSITEIT HASSELT	BE
20 - DCS	KRAEFTENS BEKAEMPELSE	DK
21 - TCD	THE PROVOST, FELLOWS, FOUNDATION SCHOLARS & THE OTHER MEMBERS OF BOARD OF THE COLLEGE OF THE HOLY & UNDIVIDED TRINITY OF QUEEN ELIZABETH NEAR DUBLIN	IE
22 - DH	Department of Health	UK
23 - UH	HELSINGIN YLIOPISTO	FI
24 - UEF	ITA-SUOMEN YLIOPISTO	FI
25 - UGR	UNIVERSIDAD DE GRANADA	ES
26 - LUMC	ACADEMISCH ZIEKENHUIS LEIDEN	NL
27 - HZDR	HELMHOLTZ- ZENTRUM DRESDEN- ROSSENDORF EV	DE
28 - INSP	INSTITUTUL NATIONAL DE SANATATE PUBLICA	RO

29 - CIEMAT	CENTRO DE INVESTIGACIONES ENERGETICAS, MEDIOAMBIENTALES Y TECNOLOGICAS- CIEMAT	ES
30 - UB	UNIVERSITAT DE BARCELONA	ES
31 - CVUT	CESKE VYSOKE UCENI TECHNICKE V PRAZE	CZ
32 - SUJCHBO	STATNI USTAV JADERNE, CHEMICKE A BIOLOGICKE OCHRANY VVI	CZ
33 - UAVR	UNIVERSIDADE DE AVEIRO	PT
34 - UPorto	UNIVERSIDADE DO PORTO	PT
35 - CEA	COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES	FR
36 - CEPN	CENTRE D'ETUDE SUR L'EVALUATION DE LA PROTECTION DANS LE DOMAINE NUCLEAIRE	FR
37 - INSERM	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE	FR
38 - HES-SO	HAUTE ECOLE SPECIALISEE DE SUISSE OCCIDENTALE	CH
39 - LMU	LUDWIG- MAXIMILIANS- UNIVERSITAET MUENCHEN	DE
40 - UP	UNIVERSITE DE PARIS	FR
41 - HMGU	HELMHOLTZ ZENTRUM MUENCHEN DEUTSCHES FORSCHUNGSZENTRUM FUER GESUNDHEIT UND UMWELT GMBH	DE
42 - ISS	ISTITUTO SUPERIORE DI SANITA	IT
43 - GIG	GLOWNY INSTYTUT GORNICTWA	PL
44 - TAU	TAMPEREEN KORKEAKOULUSAATIO SR	FI
45 - UBern	UNIVERSITAET BERN	CH
46 - IDIBAPS	CONSORCI INSTITUT D'INVESTIGACIONS BIOMEDIQUES AUGUST PI I SUNYER	ES
HCB	HOSPITAL CLINIC DE BARCELONA	ES
47 - IGR	INSTITUT GUSTAVE ROUSSY	FR
48 - UCAM	THE CHANCELLOR MASTERS AND SCHOLARSOF THE UNIVERSITY OF CAMBRIDGE	UK
49 - IST ID	ASSOCIACAO DO INSTITUTO SUPERIOR TECNICO PARA A INVESTIGACAO E DESENVOLVIMENTO	PT
50 - SSM	STRÅLSÄKERHETSMYNDIGHETEN	SE
51 - GSI	GSI HELMHOLTZZENTRUM FUER SCHWERIONENFORSCHUNG GMBH	DE
52 - CNRS	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS	FR
53 - DSA	DIREKTORATET FOR STRALEVERN OG ATOMSIKKERHET	NO
54 - NIPH	FOLKEHELSEINSTITUTTET	NO
55 - NMBU	NORGES MILJO-OG BIOVITENSKAPLIGE UNIVERSITET	NO
56 - EORTC	EUROPEAN ORGANISATION FOR RESEARCH AND TREATMENT OF CANCER AISBL	BE

Appendix B. WP8 milestones and deliverables

Following milestones and deliverables are planned for the WP8 Communication, Dissemination and Exploitation of results (information includes number, title and month to be developed):

Milestones:

- MS8.1 Establishment of project website (external –project repository, internal – project place): M3 and regular updates
- MS8.2 Updates of Strategy and plan for communication, dissemination and exploitation of results: M12, 24,36, 48
- MS8.3 Data Management Plan: M6 and yearly update DMP document
- MS8.4 Establishment of web based social media for RadoNorm: Twitter, LinkedIn: M3 and regular updates
- MS8.5 Printed and digital materials' reports: M6, and updates every 6 months
- MS8.6 Stakeholder mapping and establishments of stakeholder' networks: M4, and yearly updates
- MS8.7 Upgrading of STORE^{db} platform for easy handling of big data: M6 and yearly updates
- MS8.8 Proceeding from project events: M12, 24, 36, 48, 60
- MS8.9 Report from online events: M12, 24, 36, 48, 60

Deliverables:

- D8.1 Strategy and plan for communication, dissemination and exploitation of results (M3)
- D8.2 Strategy and plan for communication, dissemination and exploitation of results update (M36)
- D8.3 Printed and digital materials' final report (M60)
- D8.4 Report on stakeholder engagement (M59)
- D8.5 RadoNorm STORE^{db} report (M60)
- D8.6 Communication, dissemination and exploitation final report (M60)
- D8.7 Open Research Data Pilot and Data Management Plan (M6)