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D9.93 Operation of the ENGAGE project

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Abstract

The ENGAGE project, funded under the H2020 CONCERT, aims at *ENhancing stAkeholder participation in the GovernancE of radiological risks*. This two-year project started on November 20th 2017, and aimed at identifying and addressing key challenges and opportunities for stakeholder engagement in relation to medical use of ionising radiation; post-accident exposures; and exposure to indoor radon. In all these situations, stakeholder engagement is a key issue for improving the governance of radiological risks and the radiological protection of the exposed individuals.

This report summarises key elements concerning the operation of the ENGAGE project.

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1 Introduction

The ENGAGE project, funded under the H2020 CONCERT, aimed at *ENhancing stAkeholder participation in the GovernancE of radiological risks for improved radiation protection and informed decision-making*. It focused on identifying and addressing key challenges and opportunities for stakeholder engagement in relation to medical use of ionising radiation; post-accident exposures; and exposure to indoor radon. In all these situations, stakeholder engagement is a key issue for improving the governance of radiological risks and the radiation protection of the exposed individuals.

The project duration was 25 months (one month extension from the initially foreseen duration of 24 months), starting from November 20th 2017.

ENGAGE is part of CONCERT - European Joint Programme for the Integration of Radiation Protection Research under Horizon 2020¹. This project has received funding from the EURATOM research and training programme 2014-2018 under grant agreement No 662287.

2 Consortium

The consortium brought together 13 partners and a 14th partner subcontracted. It brought together nuclear safety and radiation protection authorities; leading research institutes in radiation protection; public health organisations; and academia, representing ten European countries. Switzerland participated at its own cost demonstrating the importance of work proposed within ENGAGE and its international dimension. Altogether, the consortium members covered participation in all the European radiation protection research platforms and the Social Sciences and Humanities network established in the CONCERT project. The consortium assembled multidisciplinary expertise including public participation, stakeholder engagement in nuclear and non-nuclear areas, ethics of radiological protection, science and technology studies, sociology, risk perception and risk communication, and all technical aspects of radiation protection.

The French partner UFC (Université Franche-Comté) participated as Third Party that secured its own funding from salary of fixed positions at University; co-funding of the other costs (student internships and travels to project meetings) was provided by the French POM, IRSN.

The Belgian partner ULG (Université Liège) applied for Linked Third Party status with the Belgian POM, SCK•CEN, and participated in this quality once the status has been approved.

EIMV has been subcontracted by Jozef Stefan Institut (Slovenia).

¹ <https://concert-h2020.eu/>

3 Research subject

ENGAGED analysed and compared stakeholder engagement prescriptions and practices in three contexts: medical exposure to ionising radiation, radiological emergency preparedness and response as well as exposure to indoor radon. The empirical focus in each of these contexts was threefold:

i) to analyse the formal discourses prescribing or recommending engagement, as formulated in international and national legislation and guidelines and mobilised by different actors, highlighting how stakeholders and stakeholder engagement are defined; what the underlying rationales are; and what is included or excluded from these frames (WP1);

ii) to highlight, through case studies and more systematic mapping exercises, the forms of real or potential stakeholder engagement that can be observed in practice, with attention to what the issues at stake are; how the outcomes and processes of participation are crafted; what are the main challenges and opportunities; and how these practices relate to the frames set by the legislative documents and guidelines analysed (WP2). The project took into account that invited participation by institutional actors is only one part of a more complex “ecology of participation”, alongside citizen-led initiatives.

iii) to investigate through case studies the role and potential benefit of radiological protection culture in facilitating stakeholder engagement and informed decision-making, with identification of processes to build and transmit radiation protection culture, adapted to the specificities of different exposure situations (WP3).

Based on this, it formulated recommendations for a more robust stakeholder engagement in radiological protection.

Research was structured along three work packages dedicated to research, with a fourth work package dedicated to competence building and dissemination, and a fifth work package dedicated to project coordination (Fig. 1).

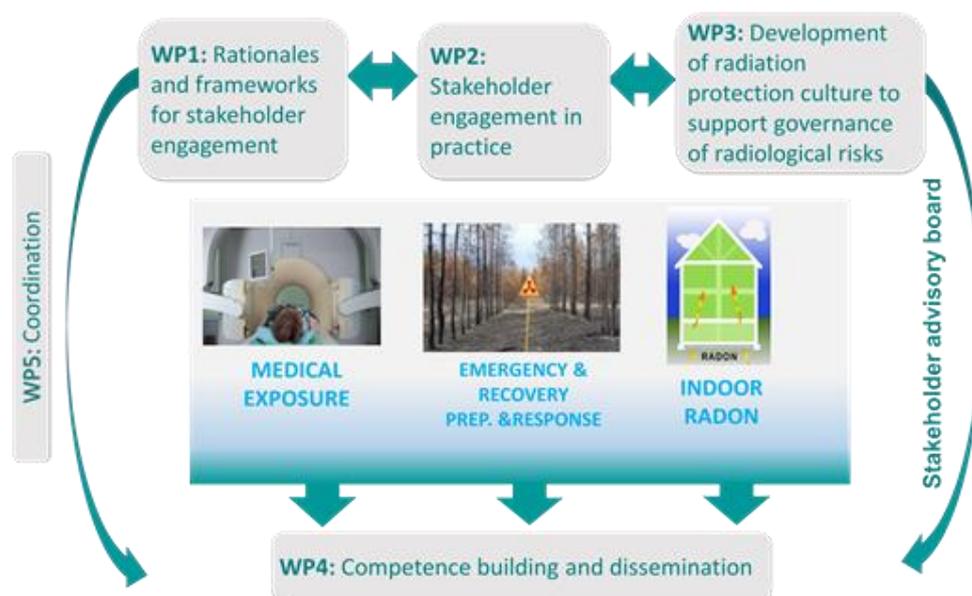


Fig. 1 ENGAGE work packages

4 Results

4.1 W1: Rationales and frameworks for stakeholder engagement

ENGAGE WP1 focused on rationales and frameworks for stakeholder engagement, based on document analysis (legal, binding requirements as well as guidelines from different international organisations) and interviews with representatives from international organisations for each of the field. Roundtables on stakeholder engagement in relation to emergency preparedness, indoor radon and medical exposures to ionising radiation provided the opportunity for in-depth discussions and collection of additional data.

The research questions were the following: i) how are “stakeholders” and engagement defined? ii) what are the underlying rationales for engagement? iii) what is included or excluded from these frames?

The focus of investigation in WP1 was the analysis of participation at macro-level, as highlighted in the European and international discourse, and transposed at national level in participating countries, including the extent and justification for stakeholder engagement.

The results of the document analysis and interviews with different international stakeholders are reported in deliverable D9.85 “Rationales and frameworks for stakeholder engagement in radiation protection in the medical field (Part 1), nuclear emergency and recovery preparedness and response (Part 2) and indoor radon exposure (Part 3)”. The outcomes of the transversal analysis of stakeholder engagement prescriptions and expectations, as reflected in international and national legal provisions, and international recommendations and guidelines in three fields of exposure: medical exposures, emergency and post emergency situations and indoor radon are summarised in D9.86 “Report on stakeholder engagement in radiation protection: transversal issues and specifics of different exposure situations”.

4.2 WP2: Stakeholder engagement in practice

For ENGAGE WP2, a first study was carried out to identify key challenges, best practices and recommendations for stakeholder engagement has been carried out.

Subsequently, case studies were conducted using a dedicated methodology. The Research questions were: i) how are legal requirements, guidelines and recommendations translated into practice? ii) Which (other) real or potential forms of stakeholder engagement and public participation can be observed in practice? Case studies were selected to cover a broad range of participation practices in the three exposure situations. Attention was given to both formal and informal participation. “Formal” refers to participation initiated by formal institutions with a governmental mandate (e.g. stakeholder dialogues organised by a nuclear safety regulator), whereas “informal” refers to forms of engagement initiated by civil society or publics. In total, 15 national case studies of stakeholder engagement in practice have been developed in three exposure contexts – medical exposures, indoor radon and emergency preparedness, response and recovery to address the aforementioned questions. Most case studies were requirement-focused, actor-focused or practice-focused. One of the case studies involved a broader mapping exercise, to highlight the diversity of actors and forms of participation.

Additionally, a cross-national study was conducted focused on the analysis of radon websites in eight European countries, in order to identify elements conducive to stakeholder engagement.

The results are reported in project deliverables D9.82 “Report on key challenges, best practices and recommendations for stakeholder engagement”, D9.89 “Report on venues, challenges, opportunities and recommendations for stakeholder engagement in the medical field”, D9.90 “Report on venues, challenges, opportunities and recommendations for stakeholder engagement in emergency and recovery preparedness and response” and D9.91 “Report on venues, challenges, opportunities and recommendations for stakeholder engagement in relation to indoor radon exposure”.

4.3 WP3: Development of radiation protection culture to support the governance of radiological risks

In WP3, an analysis grid was drafted and case studies were conducted on the role of radiation protection culture for enhancing participation and informed decision making in radiation protection have been elaborated in the three areas addressed by ENGAGE (11 national case studies). The key research questions were: i) what is the role and potential benefit of building and enhancing radiation protection culture for supporting effective stakeholder engagement and informed decision-making; and ii) what are the processes to build and transmit radiation protection culture, adapted to specifics of different exposure situations?. The main topics addressed in the analysis grid were the target stakeholders, the aim of radiation protection culture, the characterisation of radiation protection culture, the tools, methods and processes to build radiation protection culture, and the evaluation of radiation protection culture. A dedicated stakeholder workshop has been organised in Athens (13-15 February 2019) to discuss the findings from the case studies. These discussions have provided elements to further elaborate the lessons learned and formulate recommendations for building RP culture in the various fields, as well as to identify further research topics that could be developed in the future.

The results from WP3, including the stakeholder workshop, have been reported in deliverables D9.83 “Preliminary report on case studies: Development of radiological protection culture to support the governance of radiological risk”, D9.84 “ENGAGE Stakeholder Workshop” and D9.87 “Final report on case studies, including recommendations and guidelines on building and enhancing radiation protection culture”.

4.4 WP4 Competence building and dissemination

The objective of WP4 was to disseminate the results of the project to all stakeholders in the radiation protection field, to enhance mutual learning and to co-develop recommendations.

4.4.1. Knowledge base

First ideas about the ENGAGE knowledge base have been discussed at the NERIS 2018 workshop and RICOMET 2018. Deliverable D9.92 summarises the concept for the knowledge base structure and includes annexes based on case studies developed under the ENGAGE project illustrating the use of the database.

4.4.2 Dissemination and engagement activities

Several **dissemination activities** have been undertaken, see section 10.

To increase **interaction with radiation protection researchers**, an interactive experiment was conducted at the European Radiation Protection Week in Rovinj, 2018, mapping experiences and expectations of participants concerning stakeholder engagement. Roundtable discussions were held at the NERIS 2018 workshop (in collaboration with the NERIS Working Group on ‘Information, Participation and Communication’) and the European Radiation Protection Week in Rovinj 2018.

A **special session** on stakeholder engagement has been organised by ENGAGE partners as part of the RICOMET 2018 international conference (June, Antwerp). Another session on formal and informal participation was hosted by ENGAGE at RICOMET 2019 (July 1-3, Barcelona), together with a workshop dedicated to ways to maximised the impact of the ENGAGE project (more details in section 10).

The results of task 9.4.4 are D9.88 “ENGAGE Final Workshop”, D9.92 “Knowledge base for designing and documenting stakeholder engagement process” and D9.94 “Final report of the ENGAGE project: Findings and recommendations from the ENGAGE project”.

4.5 WP5 Management and coordination

WP5 ensured the good coordination of the project activities, the timely delivery of all project deliverables, and the efficient interaction between the different work packages. Management of the project was enacted by the project Management Board. A Stakeholder Advisory Board (SAB) provided advice concerning project activities throughout the entire duration of the project. Regular project meetings (nine in total, most of them coupled to events where ENGAGE hosted sessions or workshops) were implemented for the project coordination and for the involvement of SAB members and others invited.

4.5.1 Project meetings

The kick-off meeting was held in Brussels (27-28 November 2017). Other face-to-face meetings have been held in Antwerp (at RICOMET, 12-13 June 2018), Rovinj (at ERPW, 04 October 2018), Fontenay-aux-Roses (CEPN, 22-23 October 2018), Brussels (SCK•CEN, 12-13 December 2018), Athens (EEAE, 12 February 2019, at WP3 workshop), Brussels (SCK•CEN, 13-14 June 2019), Bratislava (11-13 September 2019, dissemination workshop), Mol (SCK•CEN, 29-30 November 2019).

The following results were provided: D9.80 “Project website”, D9.81 “Establishment of the management and advisory structures of ENGAGE this report”, D9.93 “Operation of the ENGAGE project”.

4.5.2 Website

The project website was established as one of the main communication channels with radiation protection stakeholders and related publics. The website has public access and can be accessed via <http://www.engage-concert.eu/>. The ENGAGE website was used to provide news and information about the project goals, its research and participatory activities, as well as its results. It was updated regularly throughout the duration of the project.

The first version of the website consists of a home page and a number of dedicated subsections:

- Goals, summarising project goals
- Advisory board with information about the role
- Partners, listing the project partners and other collaborators (e.g. subcontractors)
- Publications with deliverables and other documents developed
- Work packages, containing links to separate pages describing the work packages
- Get engaged for stakeholder group



ENGAGE:
ENhancing stAkeholder participation in the GovernancE of radiological risks for improved radiation protection and informed decision-making

ENGAGE seeks to identify and address key difficulties and opportunities for stakeholder engagement in three fields of exposure to ionising radiation:

1. medical use of ionising radiation,
2. post-accident exposures, and
3. exposure to indoor radon.

The ENGAGE project is part of [CONCERT](#) European Joint Programme for the Integration of Radiation Protection Research' under Horizon 2020.

News

- [Final workshop presentations](#)
- [Draft findings and recommendations](#)
- [ENGAGE final workshop programme](#)

[More news](#)

5 Researchers interaction, mobility and training (E&T activities)

ENGAGE contributed to improving radiation protection culture and the governance of radiological risks towards enhanced stakeholders' engagement and informed decision-making, in different exposure situations. In this context, education and training (E&T) was a key element in order to strengthen the methods and to increase the findings of this research, and to promote the radiation protection culture in the new generations.

- *Engagement in the research activities of ENGAGE of Master students and PhD students*
 - investigation of citizen science (part of PhD Joke Kenens, KU Leuven, in collaboration with SCK•CEN; results reported at the European Radiation Protection Week in Stockholm, 2019 – presenter)
 - analysis of radon websites (two student traineeships at SCK•CEN)
 - mapping of participatory practices on emergency preparedness and response (two student traineeships at SCK•CEN)
 - Belgian case study of stakeholder engagement in emergency preparedness and response (PhD student Colin Glesner, University of Liège in collaboration with SCK•CEN, results reported in at the European Radiation Protection Week in Stockholm, 2019 – co-author of presentation) .

• *Transdisciplinary approaches to the governance of radiological risk have been stimulated by presentations and activities with both social sciences and natural science researchers*

- 1) In the former case, stakeholder engagement in ionizing radiation exposure situations provided case studies for sociological research. **Special sessions dedicated to Stakeholder Engagement were hosted by ENGAGE at RICOMET 2018 and 2019.** RICOMET is a series of multi-disciplinary conferences dedicated to Social Sciences and Humanities research related to ionizing radiation.
- 2) In the latter case, stakeholder involvement processes have been an important addition to the education and training of students and practitioners, through testing the benefits of effective stakeholder engagement and the importance of a functioning radiation protection culture. In that context a **Workshop on the Development of Radiological Protection Culture to Support the Governance of Radiological Risk (ENGAGE WP3)** took place in February 13-15, 2019 in Athens, Greece. The workshop gathered ENGAGE partners as well as invited stakeholders. The objectives were to share the results of the case studies developed in the WP3 and to initiate the elaboration of guidelines/recommendations for the building of radiological protection culture in view of improving stakeholder engagement in the governance of radiological risk.

ENGAGE project was also presented at the following **stakeholders workshops and training courses:**

- 27 June 2018, at CIEMAT, Madrid, WP4 CONFIDENCE workshop; presentation on ENGAGE by L. Liutsko
- 21 September 2018, Madrid, UPM: Local (Spanish) Stakeholders' workshop, where ENGAGE was presented followed by a group discussion on the relevant questions of ENGAGE WP2 (L. Liutsko)
- 28 June 2019, radon local stakeholders workshop in Spa (**Belgium**), organized in the framework of the RESPIRE project, (T. Perko)
- CONCERT Stakeholder workshops in Rovinj (2018) and Stockholm (2019) (C. Turcanu)

• *Involvement of the departments in the academic faculties (medicine, physics), through the direct contacts with the personnel participating to the ENGAGE project:*

- by supporting the introduction and discussion in the academic environment of parts of the case studies produced and analyzed in the project (e.g; at SCK•CEN -, in the field of emergency preparedness and response);
- by organizing seminars on the ENGAGE guidelines/recommendations for building radiation protection culture in universities selected by the project partners (e.g. in universities which are partner of the project);
- by promoting, where applicable, the inclusion of the results of ENGAGE project, as part of already existing and offered courses.

• *Inclusion of project communication in established courses and workshops in radiation protection (see details in section 10).*

6 Use of shared resources and collaboration

ENGAGE had exchanges, through ENGAGE researchers, with other CONCERT funded projects: SHAMISEN-SINGS, TERRITORIES and CONFIDENCE. It also engaged with radiation protection platforms in several workshops and roundtables.

7 Methodology applied

ENGAGE defined stakeholders as: actors (individuals or groups, institutional and non-institutional) with a tangible or intangible (yet to be shaped or discerned) interest in the radiation exposure situation and the related radiation protection issues, directly affecting decisions, or affected by the formulation and resolution of a problem or challenge. In this perspective, stakeholders are constructed in interaction with actors, issues, contexts. Various publics are also (potential) stakeholders.

The research methodology is described in:

- D9.85 “Rationales and frameworks for stakeholder engagement in radiation protection in the medical field, nuclear emergency and recovery preparedness and response and indoor radon exposure”. The investigation of rationales and frameworks for stakeholder was based on data collected through document analysis and interviews. The aim was to investigate what “external” pressures, mandates, demands, and/or expectations have emerged in public venues commending the engagement of stakeholders (including wider publics) in radiation protection. A template was developed for all document analyses and a protocol was developed for the semi-structured interviews. Key elements of analysis included:
 - motivations for participation: instrumental (to secure an end point), normative (responding to a certain principle), and substantive (to achieve better decisions) ;
 - level of participation: considering e.g. the influence on decisions, the purpose of participation, the interactions between stakeholders;
 - frames used to define / recommend engagement: assess how prescriptions explicitly or implicitly convey a problem definition, moral evaluation, and treatment recommendation;
 - stakeholders: who is involved and/or have interest in interaction in radiation protection, either from legal framework perspective or based on expectations and adopted norms in different fields.
- D9.82 “Report on key challenges, best practices and recommendations for stakeholder engagement”, including the methodology for case study of participation practices. Data were collected through document analysis and interviews. Case studies were analysed and reported using a common template. The aim is to identify i) if and how the requirements are put into practice; ii) what can be observed in practice and if this is derived from the requirements or not; and iii) if there is an obvious link between prescription and practice. In order to operationalise these overarching questions, these were further explicated in the following derived questions (adapted to the case studies and used when relevant):
 - What levels of awareness about external prescriptions of stakeholder engagement in radiation protection do researchers and practitioners reveal?
 - How do researchers and practitioners understand and practice stakeholder engagement (at individual and institutional level)?
 - What were the rationales for stakeholder engagement, the final objectives? Has there been a critical evaluation of the attainment of objectives and of the impact of stakeholder engagement? Have there been any guided improvement activities?
 - What forms of acceptance, resistance, denial, or alteration of engagement do you observe or encounter? And how do these forms change over time?
 - What are radiation protection actors and communities doing that may de facto count as stakeholder engagement (but are not necessarily labelled that way)?
 - Are there any alignments/misalignments between case practice, on the one hand, and external conceptions and prescriptions, on the other, and if so why? Which challenges and opportunities do you encounter for stakeholder engagement in your specific case?
 - What else have you found or should we be asking?

- What are the outcomes of implementing stakeholder engagement processes (in the situation studied)?
- What are the lessons learned for the establishment of efficient stakeholder engagement processes?
- Deliverable D9.83 “Preliminary report on case studies: Development of radiological protection culture to support the governance of radiological risk”. An analysis grid has been developed for the **case studies on radiation protection culture**. Case studies in each field have been analysed by the Project partners following this grid, based on their feed-back from their practical experience in the actions / processes described. Interviews of some key actors of the actions have sometimes been used to complete the analysis. The analysis grid included the following elements:
 - **Characterisation of case study including type of actions, processes:** *description of the actions/processes that will be studied and analysed from the point of view of RP culture dissemination processes.*
 - **Characterization of RP culture (elements / definition):** *elaborate around the “definition” of RP culture and its characterization according to the exposure situation, in order to identify aspects that can influence RP culture such as organisational, societal, ethical or economical aspects.*
 - **Development of tools, methods & processes to build, enhance and transmit RP culture:** *description and analysis of the RP culture dissemination process. It should help to identify the elements of RP culture, the dissemination process, its specificities according to the target stakeholders. This examined also the efficiency of the processes as dissemination of RP culture and how it may have influence the practices, understandings, behaviours... of the target stakeholders regarding RP. Finally, the question of the sustainability or dynamic of the process was also investigated.*
 - **Evaluation of the level of RP culture:** *evaluation of the efficiency of RP culture and its dissemination process*
 - **Highlighting the role of RP culture:** *the role and the potential benefit of building and enhancing radiation protection culture for supporting effective stakeholder engagement and informed decision-making in relation to radiation protection at the individual and collective level.*
 - **Connection with the European RP research programme:** *links with the RP research platforms as well as the RP research roadmaps, highlighting lessons learned and recommendations.*

8 Impact on Radiation Protection

Through all the research activities, interactions with radiation protection researchers and practitioners, the dissemination activities and the co-development of the final recommendations, ENGAGE directed its efforts towards improving the governance of radiological risk and radiation protection itself. Its beneficiaries are radiation protection researchers, policy makers, civil society stakeholders and wider publics.

Results from ENGAGE were also discussed in the Radon Risk Communication Workshop (Potsdam, 8-10 October 2019), which led to the development of a manifesto published in the Journal of Risk Research that will inform enhanced radon risk management.

A number of ENGAGE research recommendations have been included in the development of and publishing the SHARE Strategic research Agenda (Perko et al., 2019) and the revised Strategic Research Agenda of the NERIS platform.

9 Impact on the scientific community

The methodology for analyzing stakeholder engagement in practice is original.

Additionally, novel approaches were adapted and tested for:

- i) mapping formal and informal participatory practices related to emergency preparedness and response (to be described in a forthcoming article), and
- ii) the analysis of radon websites' features supporting stakeholder engagement in radon management (published in Journal of Environmental Radioactivity).

10 Communication and dissemination activities (local, regional, national)

Presentations reporting on the ENGAGE project and/or its results have been held at several international events: European Radiation Protection Week 2018 and 2019, RICOMET 2018 and 2019, NERIS Workshop 2018 and 2019, EC REM 2019 course on Radon-in-Water Proficiency Test & Training course on the measurement of radon and radioactivity in water (26 – 29 March 2019, Geel, Belgium), IAEA workshop on Communication and stakeholder involvement in Radon issues (4-6 June, 2019, Belgrade, Serbia), EANM'19 Congress, (October 12-16, Barcelona, Spain), Radon Risk Communication Workshop (Potsdam, 8-10 October 2019).

Two **scientific articles** have been accepted for publication:

- 1) Liutsko, L., Montero, M., Trueba, C., Sala, R., Gallego, E., Sarukhan, A., & Cardis, E. (2019). Stakeholder participation in nuclear and radiological emergency preparedness and recovery in Spain: benefits and challenges of working together. *Journal of Radiological Protection*. <https://iopscience.iop.org/article/10.1088/1361-6498/ab55cd>
- 2) Perko T., Turcanu C. (2019). Is internet a Missed Opportunity? Evaluating Radon Websites from a Stakeholder Engagement Perspective. *Journal of Environmental Radioactivity*. Accepted.

An agreement has been signed for a special issue of Radioprotection Journal with ENGAGE project outcomes (Open Access). The special issue will be delivered within the CONCERT project time frame by the end of May 2020.

The ENGAGE project hosted a special session within the **RICOMET 2018** international conference, entitled: "*Involve, Engage, or Participate? Shaping Engagement with Stakeholders and Wider Publics in Radiation Protection*". Several presentations related to ENGAGE project were given, such as:

- *Reconceptualizing stakeholder participation in Emergency Preparedness and Response* (Abelshausen B. et al)
- *Stakeholder engagement in radiation protection – what can we learn from practice?* (Pözl-Viol C. et al)
- *Saving and sharing knowledge on stakeholder engagement in radiation protection - challenge for knowledge base development* (Duranova T. et al)

For the **RICOMET 2019** (July 2019, Barcelona) ENGAGE hosted a session entitled "*Participation in radiological protection: from formal to informal (and back)*" and participated in the session on "*Communication about indoor radon and stakeholder engagement in a radon national plan*".

Presentations for ENGAGE included:

- *Participation in radiological protection: comparing and contrasting three exposure contexts* (Turcanu C. et al)
- *Should we inform or engage about radon? From health behavior theories to practices in stakeholder engagement* (Perko T. and Turcanu C.)
- *Medical exposure to ionizing radiation: Communication, justification and optimization of radiological risks in dental clinics and for X-rays preventive procedures.* International conference (Liutsko, L., Cantone, M-C., Pözl-Viol, C., & Turcanu, C.)(oral)

ENGAGE contributions at **4th NERIS workshop** which took place in April 25-27, 2018 in Dublin, Ireland. ENGAGE researchers presented the project and engaged with researchers and practitioners in the field on nuclear and radiological emergency management and discussed expectations from and challenges related to stakeholder engagement. Several presentations related to ENGAGE project were given, such as:

- *Engaging stakeholders in the governance of radiological risk: Developing theory, practice and guidelines* (Turcanu C. et al)
- *Knowledge base for stakeholder engagement in radiation protection* (Duranova T. et al)
- *Stakeholder Engagement in Emergency Preparedness and Response* (Abelshausen B. et al)

ENGAGE at **3rd European Radiological Protection Research Week** in Rovinj, Croatia, 1-5 October 2018 with several activities:

- Stakeholder engagement for medical exposures and exposures to indoor radon with reports:
 - Round table on stakeholder engagement in relation to medical exposures to ionizing radiation (Pözl-Viol C. et al.)
 - Round table on stakeholder engagement in relation to radon exposures (Abelshausen et al.)
- “Imagining engagement” - a hands-on experiment with stakeholder engagement: a participatory mapping exercise where conference attendees write and draw their thoughts about stakeholder engagement in radiation protection with follow-up facilitated discussion. (Turcanu C. et al)

ENGAGE at **5th NERIS Workshop** which took place in 3-5 April 2019 in Roskilde, Denmark with following presentations:

- *Formal and informal participation in Emergency Preparedness and Response - A purposeful mapping exercise* (Van Oudheusden M. et al.)
- *Radiation Protection Culture in the Field of Emergency - Preparedness and Response: First Outcomes from the European Project ENGAGE* (Schieber C. et al)

ENGAGE at **4th European Radiological Protection Research Week** in Stockholm, Sweden, 14-18 October 2018 with the following presentations:

- *Citizen radiation measurement organizations after Fukushima: local bottom-up initiatives in context* (Kenens J.)
- *Analyzing frames and practices of stakeholder engagement in emergency preparedness and recovery* (Geysmans R. et al)

ENGAGE at **Radon Risk Communication Workshop** Potsdam, Germany, 8-10 October 2019

- *Overview of ongoing radon communication campaigns in Europe: main challenges and pitfalls* (Perko T.)

ENGAGE at **EANM'19 Congress** (European Association of Nuclear Medicine), October 12-16, in Barcelona, Spain.

- *Risk Communication: Why and How to Communicate about Ionizing Radiation?* (Perko T.)

ENGAGE at **EC REM 2018**: Radon-in-Water Proficiency Test & Training course on the measurement of radon and radioactivity in water. 26 – 29 March 2019. JRC-Geel, Belgium

- *Radon communication: state-of-the-art and good practices* (Perko T.)

ENGAGE contribution to the **IAEA workshop on Communication and stakeholder involvement in Radon issues** (4-6 June, 2019, Belgrade, Serbia)

- *Stakeholder engagement in radon issues and Participatory methods and practices in radon issues* (Perko T.)

ENGAGE project was also presented at the following local **workshops and training courses**:

- 27 June 2018, at CIEMAT, Madrid, WP4 CONFIDENCE workshop; presentation on ENGAGE by L. Liutsko
- 21 September 2018, Madrid, UPM: Local (Spanish) Stakeholders' workshop, where ENGAGE was presented followed by a group discussion on the relevant questions of ENGAGE WP2 (L. Liutsko)
- *Radon communication and incentives*, Radon stakeholder workshop in Spa (Belgium), organized in the framework of the RESPIRE project, 28 June 2019 (T. Perko)
- Presentation of ENGAGE results related to radiation protection culture at the seminar on "Changes introduced by the new Radiation Protection regulations in clinical practice", which took place at the Konstantopoulio General Hospital in Athens on 19th of April 2019 (S. Economides).

Furthermore, ENGAGE reported to the **CONCERT Stakeholder Group** in Rovinj (2018) and Stockholm (2019) (C. Turcanu)

A **first stakeholder international workshop dedicated to ENGAGE WP3** (radiation protection culture was organised in Athens), in the premises of the Greek Atomic Energy Commission (EEAE), from 13 to 15 February, 2019. The objectives of the workshop were:

- i) to share, with various stakeholders, the results of the case studies that have been elaborated to analyse the development and role of radiological protection culture in the three exposure situations studied in ENGAGE, and in various countries (Italy, France, Greece, Slovak Republic, Switzerland).
- ii) To initiate the elaboration of guidelines/recommendations for the building of radiological protection culture in view of improving stakeholder engagement in the governance of radiological risk.

28 participants from 10 countries attended the Workshop. In addition to the ENGAGE project partners, other stakeholders have been invited to participate to the workshop. They were identified as being involved in some of the processes analysed in the case studies. Three members from the stakeholder advisory board (SAB) of ENGAGE also attended the workshop, as well as one representative from the NERIS platform, and one from EURAMED platform.

The **final project workshop** has been prepared and conducted in 11-13 September 2019, in Bratislava, Slovakia. The findings and draft recommendations presented at the workshop, as well as the posters

dedicated to particular case studies analysed within the ENGAGE work packages, provided a good basis for discussions in working groups dedicated to the three fields: medical exposures to ionizing radiation, emergency and post-accident exposures, and exposure to indoor radon. The workshop programme and its interactive structure provided conditions for reflection on the fulfilment of the ENGAGE project objectives, namely to i) answer the questions why, when and how are stakeholders engaged in radiation protection issues; ii) develop novel approaches to analysing stakeholder interaction and engagement; iii) investigate processes for enhancing radiation protection culture and their role in facilitating stakeholder engagement; and iv) provide recommendations and build a knowledge base for stakeholder engagement in radiation protection. The workshop provided opportunities to share views and experiences from a wide range of stakeholders participating to the workshop, in view of enhanced governance of radiological risks for improved radiation protection and informed decision making. It contributed to the synthesis of the results of WP1, WP2 and WP3 and provided feedback on the draft recommendations, which will be finalised based on the workshop outputs. A detailed analysis and description of ENGAGE recommendations will be the subject of the final synthesis report developed as deliverable D9.88. The final workshop was attended by 46 participants from 15 countries. This included ENGAGE project partners, stakeholders involved in some of the processes analysed in the case studies, as well as other experts and specialists representing international organisations (OECD/NEA, IAEA), professional associations (WONCA), radiation protection research platforms (NERIS, ALLIANCE, EURADOS, SHARE), nongovernmental organisations (Greenpeace, SAFecast), national institutions and universities (IRSN, PHE, FOPH, FANC/AFCN, NMBU, UPM, Policlinico Universita Palermo), who took part in panel discussions as well as in the working groups discussions.

Social media was used as follows:

- Announcement of the ENGAGE workshop on LinkedIn, SCK•CEN
- Communication on IsGlobal blog; IsGlobal, SCK•CEN
- Tweets from the ENGAGE at the RICOMET conference (#RICOMET hashtag)

11 Operation of the project

11.1 Management board

The management board (MB) was composed from WP leaders as follows:

- WP1 - SCK•CEN, Bieke Abelshausen and EIMV, Nadja Zeleznik
- WP2 – BfS, Christiane Pözl-Viol
- WP3 – CEPN, Caroline Schieber
- WP4 – VUJE, Tatiana Duranova
- WP5 - SCK•CEN, Catrinel Turcanu (project coordinator)

The management board had operated via face-to-face meetings as well as via videoconferences and in the occasion of the meetings under the requirements of the working programme and deliverables development. MB has cooperated in close contact with the Stakeholder Advisory Board (SAB).

11.2 SAB

The Scientific Advisory Board was composed from following experts, researchers and stakeholders:

Mrs. Yeonhee Hah / Mr. Ted Lazo, OECD-NEA

Dr. Clara Carpeggiani, Italian National Research Council

Mrs. Ciara McMahon, EPA, Ireland, and ENSREG

Dr. Jason Chilvers, University of East Anglia

Mr. Igor Gogora, community Kalna nad Hronom, Slovakia

Mr. Yves L'hereux, ANCCLI, France

The role of the ENGAGE Stakeholder Advisory Board was the following:

- Participate in pertinent e-meetings of the project and to the SAB meetings once a year;
- Provide user perspectives on the work carried out within ENGAGE;
- Provide feedback on the deliverables of the ENGAGE project in the area of expertise;
- Support ENGAGE with establishing and maintaining links to international organizations and non-participating institutions;
- Advise on the future use of the guidelines developed by ENGAGE.

11.3 ENGAGE stakeholders

An ENGAGE stakeholder group was established with the invitation to follow the project outcomes and provide suggestions/comments. The information was published on the website of ENGAGE https://www.engage-h2020.eu/en/get_ENGAGED/become-stakeholder. The role of this group was to support and cooperate with the ENGAGE partners, as an ENGAGED stakeholder, and were a) informed about project activities and outcomes; b) providing feedback on the projects results, such as project deliverables; c) providing feedback on research carried out (methodology case studies, etc.); d) participating in various ENGAGE activities, such as stakeholder workshops or interviews.

The ENGAGE stakeholder group was regularly informed about the development in the ENGAGE project and provided as much as possible all deliverables for review and for comments. They were also invited to workshops and other meetings in the project, including the financial support for the participation.

12 List of deliverables

The deliverables are published on the ENGAGE webpage: <https://www.engage-h2020.eu/en/Publications/Deliverables> and on the CONCERT webpage <https://concert-h2020.eu/en/Publications>:

D9.80	Project website
D9.81	Establishment of the management and advisory structures of ENGAGE
D9.82	Report on key challenges and best practice for stakeholder engagement
D9.83	Preliminary report on case studies
D9.84	Stakeholder Workshop
D9.85	Report on rationales and frameworks for stakeholder engagement in radiation protection in the medical field (part 1), nuclear emergency and recovery preparedness and response (part 2) and indoor radon exposure (part3)
D9.86	Report on stakeholder engagement in radiation protection: transversal issues and specifics of different exposure situations
D9.87	Final report on case studies, including recommendations and guidelines on building and enhancing radiation protection culture
D9.88	Dissemination workshop
D9.89	Report on venues, challenges, opportunities and recommendations for stakeholder engagement in the medical field
D9.90	Report on venues, challenges, opportunities and recommendations for stakeholder engagement in emergency and recovery preparedness and response
D9.91	Report on venues, challenges, opportunities and recommendations for stakeholder engagement in relation to indoor radon exposure
D9.92	Knowledge base report
D9.93	Operation of the ENGAGE project
D9.94	Final report of the ENGAGE project

4.4.3 Project meetings

The kick-off meeting was held in Brussels (27-28 November 2017). Other face-to-face meetings have been held in Antwerp (at RICOMET, 12-13 June 2018), Rovinj (ERPW, 04 October 2018), Fontenay-aux-Roses (CEPN, 22-23 October 2018), Brussels (SCK•CEN, December 2018), Athens (EEAE, 12 February 2019), Brussels (SCK•CEN, 13-14 June 2019). Final project: Bratislava 11-13 September 2019.