

Annette Röttger, PTB
on behalf of **WG 3.3 „Radon“** from EURADOS:

Results and developments in 2021

European Radon Week:
9th ERA Workshop on International Collaborations on Radon

Subgroup WG3-S3 “Radon”

- **Task 1.** Collaboration with MetroRadon → participation in comparisons and workshops
MetroRadon is finished, the collaboration is ending successfully.

- **Task 2.** Collaboration with traceRadon European Project (start at June 2020)
 - Two main areas: **climate change** and **radiation protection**.
 - **Letter of support** signed by **EURADOS**.
 - Creating a link to the upcoming calls of the new framework: **European Partnership on Metrology: Green Deal Call is running, three SRT proposals are under review.**

- **Task 3.** To provide support in the usage of the radon/-progeny dose conversion factors published by ICRP in dose assessment at homes and at workplaces
 - Collaboration between both field: **radon metrology (WG3)** and **radon dosimetry (WG7)** in order to provide to the community guidelines and recommendations.
 - Discussion on the HERCA Workshop
 - Input was generated by the gap workshop on radiation protection metrology
 - Input will be generated from RadoNORM

Subgroup WG3-S3 “Radon”: Gaps in radon metrology

ICRU report No. 88, 2012

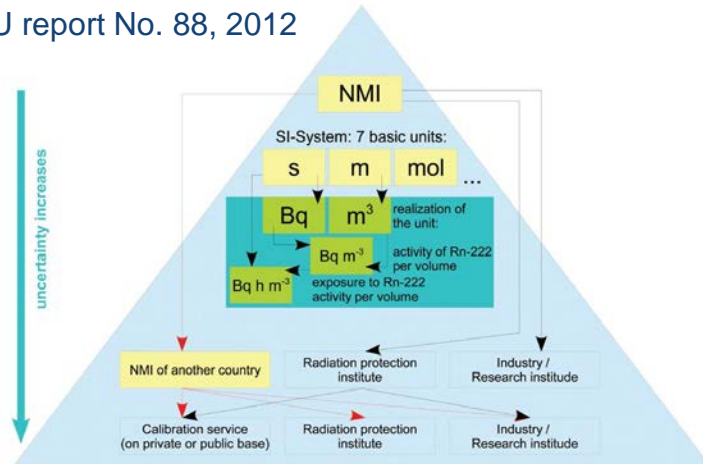


Figure S.1. Traceability chain for the determination of an exposure to ²²²Rn activity concentration at the time of issuing this report. The basic units (s, m, mol) are realized by an NMI (PTB). The derived units (Bq, m³) may be realized by an NMI but have to be at least traceable to an NMI. The length of the traceability chain will influence the total uncertainty.

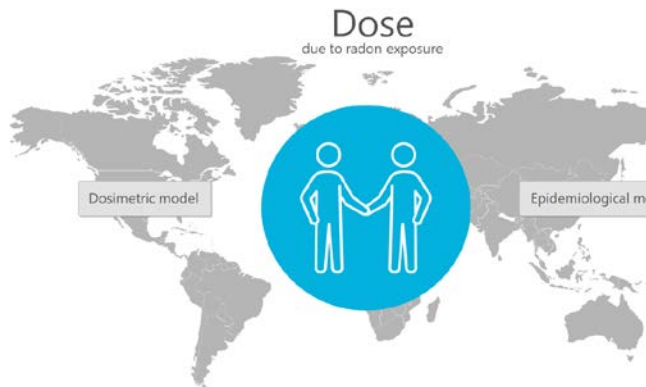
Limited number of suppliers of primary **Radon** gas standard: in Europe recently LNHB, CMI, PTB

In Europe, only 2 NMI's (Austria, Ukraine) realizes the relevant measurand Radon-222 activity concentration in air

- What is their source of traceability? Who else does it?

Only 1 laboratory (BfS) which conducts proficiency testing of radon monitors.

Virtual Workshop „Gaps in radiation protection metrology“, **S. Feige**, BfS, 2020-09-11



Virtual Workshop „Gaps in radiation protection metrology“, **J. Gutiérrez Villanueva**, Radonova, 2020-09-11

Page 5: ...Member States should ensure that these workplaces are notified and that, in cases where the exposure of workers is liable to exceed an effective dose of **6 mSv per year** ..., they are managed as a planned exposure situation

Art 35 (2): For **workplaces** specified in Article 54(3), and where the exposure of workers is liable to exceed an effective dose of 6 mSv per year

Art 54 (3): In areas within **workplaces**, where the radon concentration ... continues to exceed the national reference level, despite the action taken in accordance with the principle of optimisation as set out in Chapter III, Member States shall require this situation to be notified in accordance with Article 25(2) and Article 35(2) shall apply



Subgroup WG3-S3 “Radon”: From the gap workshop, to traceRadon and HERCA

Virtual Workshop on Gaps in radiation protection metrology
11 September 2020

TOP 1: reference fields
TOP 2: radiation protection quantities
TOP 3: education and training needs
TOP 4: measurement devices for radiation protection in medical or industry applications of ionizing radiation or for environmental monitoring & handling and transmission of measurement data
TOP 5: activity standards
TOP 6: type testing: harmonisation and national requirements & radiation protection legislation, ISO standards, accreditation

Scientific Workshop 20th October 2020
EMPIR 19ENV01 traceRadon

The meeting will be held as a virtual meeting from PTB, Bundesallee 100, 38116 Braunschweig, Germany

2nd HERCA Workshop on National Radon Action Plans

New developments in the EURADOS WG 3.3 “Radon”

Annette Röttger
EURADOS Chair of WG 3.3 “Radon”
Head of the Division of Ionizing Radiation, PTB, Germany

08:30 - 09:00	Technical test of the Web Conference
09:00 - 09:10	Welcome
09:10 - 09:30	Introductory Lecture: View of the IAEA, Paula Toroi (IAEA)
09:30 - 09:45	Impulse Lectures on TOP 1
09:30 - 09:45	Towards a reference field for pulsed radiation in linac facilities. The role of Monte Carlo calculations, Liset de la Fuente Rosales (PTB)
09:45 - 10:00	Neutron Reference Fields, Vincent Gressier (IRSN)
10:00 - 10:10	Impulse Lecture on TOP 2
10:00 - 10:10	ICRP and ICRU proposals for new quantities: A critical review, Pete Burgess (Radiation Metrology Ltd)
10:10 - 10:25	Developing innovative sensors for environmental water monitoring and management, Paul Leonard (CRA Risk)
10:25 - 10:35	Break
10:35 - 10:45	Impulse Lectures on TOP 4
10:35 - 10:45	Which gaps jeopardise Radon protection? The viewpoint of an authority AND accredited calibration lab, Sebastian Felge (BfS)
10:45 - 10:55	A service provider's view, José-Luis Gutiérrez Villanueva (Radonova)
10:55 - 11:05	Impulse Lecture on TOP 5
10:55 - 11:05	Activity standards, Stefan Röttger and Dirk Arnold (PTB)
11:05 - 11:20	Impulse Lectures on TOP 6
11:05 - 11:20	Conformity assessment between product control and radiological protection, Takatoshi Hattori (CRIEPI)
11:20 - 11:30	Standardization in Radiation Protection Dosimetry, Rolf Behrens (PTB)
11:30 - 11:40	Break
11:40 - 12:40	Virtual group work in 6 parallel sessions
12:40 - 13:40	Lunch
13:40 - 13:50	Welcome back
13:50 - 14:00	Presentation and summary of the individual group work on TOP 1
14:00 - 14:10	Presentation and summary of the individual group work on TOP 2
14:10 - 14:20	Presentation and summary of the individual group work on TOP 3
14:20 - 14:30	Presentation and summary of the individual group work on TOP 4
14:30 - 14:40	Presentation and summary of the individual group work on TOP 5
14:40 - 14:50	Presentation and summary of the individual group work on TOP 6
14:50 - 15:30	Open Discussions
15:30 - 15:45	Closing Remarks

08:00 - 09:00 Technical test of the (Web-) Conference

09:00 - 09:15 Annette Röttger (PTB): Introduction to traceRadon

09:15 - 10:15 Florian Mertes and Stefan Röttger (PTB): Status of the Rn-222 emanation source development at PTB

Katarzyna Woloszczuk (CLOR): Calibration procedures of radon instruments

Razvan Ioan (FIN-HH): Capabilities at IFIN-HH

Scott Chambers (ANSTO): Overview of the new portable ANSTO dual-flow-loop two-filter Radon-222 monitor

10:15 - 10:30 Break

10:30 - 11:15 Claudia Grossi (UFC): State of the art of radon flux measurements

Luis Quindos (UC): A radon bed exhalation facility

11:15 - 12:00 Ute Karstens (ICOS Carbon Portal Lund University) and Arturo Vargas (UFC): Radon flux maps and their validation using radon flux measurements and terrestrial data

12:00 - 13:00 Lunch

13:00 - 13:45 Giorgia Cinebli (JRC): Radon and radon flux in maps for radiation protection issues

Gordana Pantelic, Ivana Vukanac, Jelena Kmetz Nikolic, Maciej Norenberg, Zuzanna Baranowska, Igor Celikovic, Milos Zivanovic (VINS): Literature survey on the use of radon flux data for estimating indoor and outdoor radon activity concentrations

13:45 - 14:00 Closing remarks

Postponed to 2022?

Invitation to a CCRI webinar on “Metrology for Radiation Protection”

Annette Röttger

Head of Ionizing Radiation, Physikalisch-Technische Bundesanstalt (PTB)
Thursday November 5th 2020
13:00-14:00 Paris time

Register on: https://zoom.us/join/zoom/register/WN_EMBE_QnKQZSWC5ySjQbhpw

More than 23 million people worldwide are exposed to ionizing radiation in the workplace and all people in the world are exposed to environmental radiation. Due to developments in healthcare and changes in living conditions, radiation exposure from artificial and natural sources has been increasing for years.

Accurate measurement of radiation dose is key to ensuring safety, but there are two challenges to address: First, new standards and reference fields are needed due to the rapid developments in medical imaging, radiotherapy and industrial applications. Second, communication channels are needed to ensure information on best practice in measurements reaches the people concerned effectively and quickly.

This seminar will summarise the technical issues facing the field over the next few years, including opportunities to get involved in research. The second part of the seminar will cover a EURAMET initiative to engage with stakeholders, strengthening existing knowledge transfer activities. EURAMET is keen to work with other regions to build a new, sustainable, infrastructure to help protect the workforce and the public.

Creating a link to the new framework: European Partnership on Metrology

- Green Deal Call is running now!
- Health Call and Digital Call is coming in 2022 ...



Creating a Link to RadoNORM



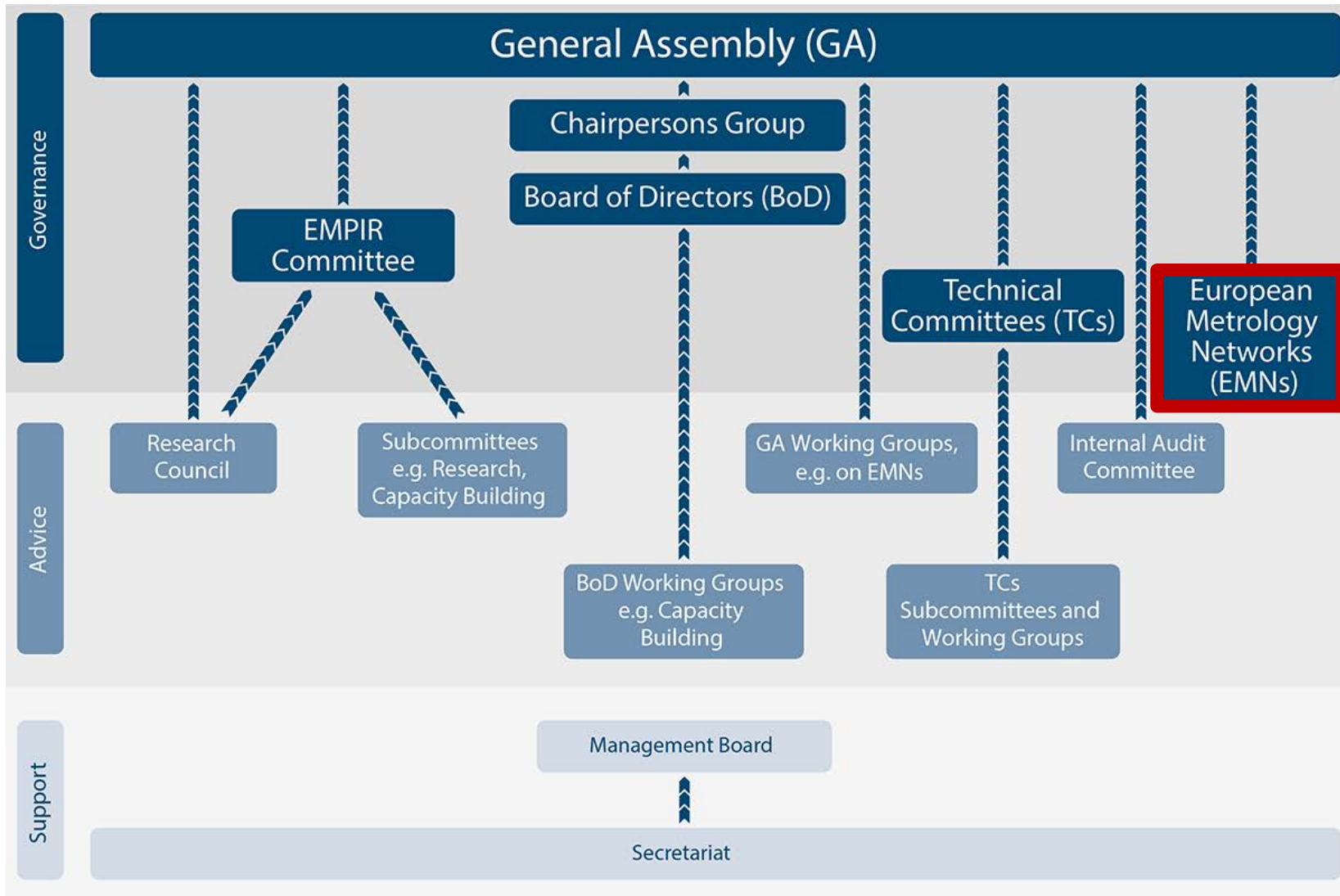
https://msu.euramet.org/current_calls/greendeal_2021/index.html

Annette Röttger, PTB
on behalf of **EMN for Radiation Protection**

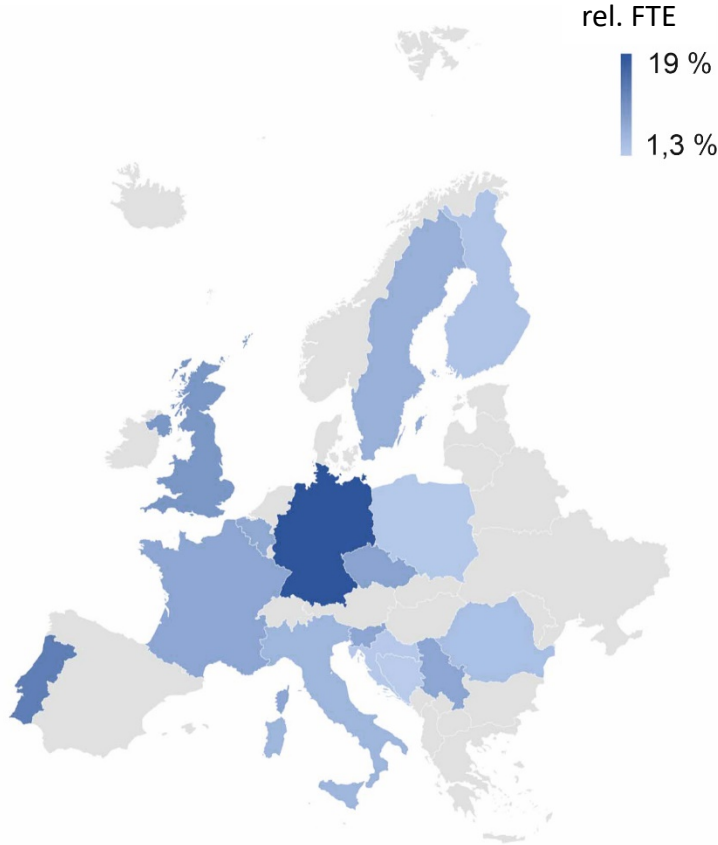
EURAMETs European Metrology Network for Radiation Protection

European Radon Week:
9th ERA Workshop on International Collaborations on Radon

EURAMET and the EMNs



EMN at work



Communication

1. A high-ranking Stakeholder Committee
2. Gap workshop on 11th September 2020:

This workshop was attended by more than 100 experts from more than 40 institutes active in radiation protection worldwide but mainly in Europe. A joint presentation from PTB, BfS, STUK, CRA, Radiation Metrology Ltd., IRSN, radonova and IAEA on the RAD 9 conference has been accepted.

3. CCRI webinar on 5th November 2020:

With an attendance of more than 150 experts worldwide.

<https://www.youtube.com/watch?v=V2B77LyY62I>



Interaction and contributions:

1. Interaction with EURAMET together with TC-IR

Call Scope Green Deal

2. Contribution to EURAMETs strategic work:

Metrology for Health (2022), Horizon Europe Work Programme, policy debate on 5th May 2021

3. Interaction and promotion by EURADOS:

General Assembly 2021 of EURADOS e.V..

Our vision to cooperate beyond Europe has already started:
Engagement of **BIPM** and **IAEA**,
recently other **RMOs**

Strategic Work Plan



Medicine

Metrology



Impact of the EMN



Your action is needed now!

Inform your authorities, if they are not represented.



EMN for Radiation Protection

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“The project objective and scope are of vital importance for the implementation not only of the EU Directives but also the IAEA Basis Safety Standards.”

