EMN for Radiation Protection

Acting Chair
Annette Röttger, PTB

2021-06-08

EURAMET General Assembly

Need for the EMN (Part 1/2)

Metrology: To measure is to know!
But without knowing: What, where and how do we measure in radiation protection?

Why is the radiation exposure increasing worldwide?

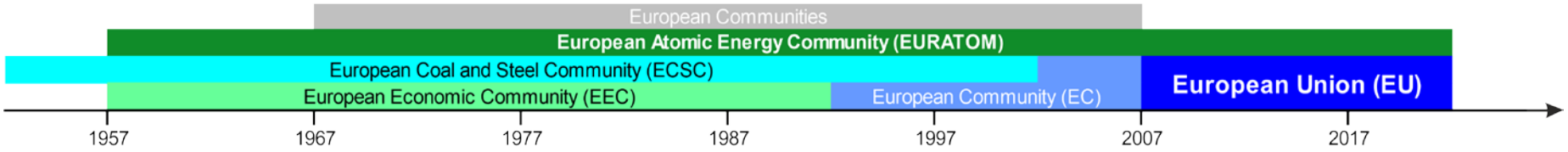
Advances in medical therapy, nuclear industry and other technical development generate **new exposure scenarios** and **increasing radiation exposure** for a growing number of workers.

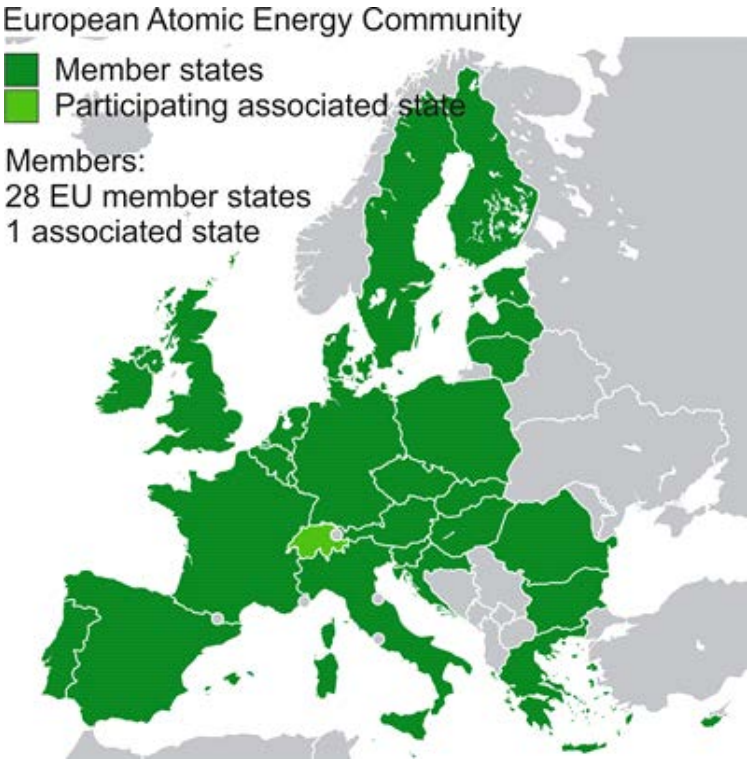
https://www.iaea.org/topics/workers

Due to **increasing urbanization** followed by the **change of living conditions**, the influence of natural radioactivity from radon and natural occurring radioactive material in buildings increase the exposure of all people.

https://www.iaea.org/.../prevention-and-mitigation-methods-related-to-indoor -radon-and-natural-radionuclides-in-**building**-**materials**

Need for the EMN (Part 2/2)





To underpin the **EU regulation on ionizing radiation** by metrology:

- **Council Directive 2013/59/EURATOM**
- **Treaty establishing the European Atomic Energy Community**

The formation of an EMN is needed as a single point of contact: Ensuring the coordination of the provision of services, identifying stakeholder research needs, developing new reference fields and standards to comprehensively underpin a legally endorsed European QA in future.

Strategy: Support of regulation

Kick-off Meeting
EMPIR 19NET03 supportBSS

Towards a proposal for an EMN on Radiation Protection

23 June 2020 EMPIR 19NET03 supportBSS

08:00 - 08:30	Technical test of the Web Conference
08:30 - 09:00	**Registration**
09:00 - 09:15	**Welcome**
09:15 - 09:45	**Keynote talk:** Ellie Connolly (JNP Project Officer), *Introduction to JNPs*
09:45 - 10:00	Open Questions
10:00 - 11:00	**Initial Activities:** *JNP Work Packages 1 & 2*
11:00 - 11:15	Break
11:15 - 12:15	**Initial Activities:** *JNP Work Packages 3 & 4*
12:15 - 13:15	Lunch
13:15 - 14:15	**Initial Activities:** *JNP Work Packages 5 & 6*
14:15 - 15:30	**First outputs:** Publishable summary Data Management Plan **Open Discussion:** Stakeholder Committee, Logo, Newsletter and the next meeting
15:30 - 16:00	**Closing Remarks**

The meeting will be held at PTB Braunschweig in combination with a web conference.

24 June 2020 EMN based on 19NET03

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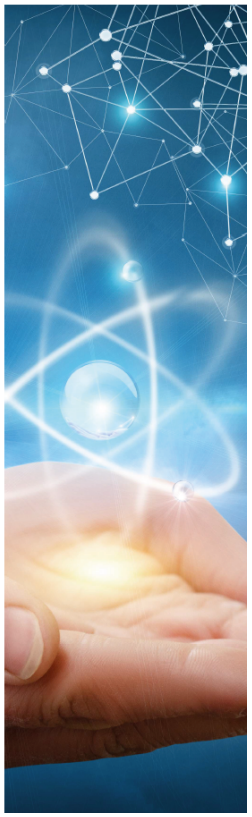

Kick-off Meeting

Stakeholder identification and needs

WP1

Communication strategy

Questionnaire, Stakeholder mapping

Stakeholder needs

WP2

Web portal, technical specification

Content and function

Implementation

WP3

Information on Capacities & Gaps

Metrological priorities

SRA & roadmaps

WP4

Information on Knowledge & capacity building

Knowledge management in the EMN

Early actions

WP5

Exisiting Infrastructure

Exisiting smart specialisation

Plan of EMN infrastructure

Impact of the EMN

Your action is needed now!
Inform your authorities, if they are not represented.

EMN for Radiation Protection
Acting Chair:

Annette Röttger

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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."

EURAMET
EMN proposal

Version 3.0, issued 2021-03-26

Proposal

EMN
for Radiation Protection

Proposer: Annette Röttger

Supporting Delegate: Jörn Stenger

195 FTEs from NMI/DI
28 FTEs from non-NMI/non-DI

- Discussion in M12 Meeting of supportBSS with additional potential EMN recently -

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Making a vision reality

EURAMET

EMPIR EURAMET

The EMPIR initiative is co-funded by the European Union's Horizon 2020 research and innovation programme and the EMPIR Participating States

suppo Project

Marc

Content

EURAMET's Eu Networks

The vision of EURAMET Europe has a world-leadir on high-quality scientific r inclusive infrastructure, advancing needs of end u Metrology Networks (EMN

member states to build and m metrological competence. Increas lead to digital legal dosimetry ove Legal dose assessment and a registry is currently a national workers are active internationa personal dose values must be co value. This is only possible if c performed in each country with reliability and that combining dose on harmonised data processing.

In the past, radiation protection re implemented without considerin implications, leading to cost ineffic implementation of limit values was in practice. Shared specialist facili required protection to be achieve costs.

At the moment 16 project partners goal!

History of radiation pr

Radiation protection legislation has better protect European citizens. measurement (dosimetry) will ne responsive to changing needs, technologies more harmonised measures, and digitalisation tren comprehensive facility capable of requirements, a European Met reliable radiation protection re considered, to help introduce a European quality assurance syst support the establishment of the E 2020 and will last for four years. long-term ongoing dialogue betv community and relevant stakeho radiation protection regulation.

The need for this development in capabilities to enable compr protection can be understood bes the history of radiation protection. T the turn of the 19th and 20th observation that ionising radiatio artificial sources can have a dama organisms.

The discovery of X-rays by Wilhelm 1895 led to extensive experim physicians and inventors. Initially, t handled very carelessly. For a long radioactivity and radiation were *Figure 2.*

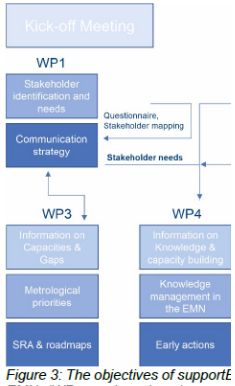

Figure 3: The objectives of supportB EMN. (WP = work package)

Objective 1: Implementing a dialogue

The aim is to establish regular, co and liaison between the project a radiation protection regulation. The are central to the development of Figure 3.

An on-line questionnaire to identify e capabilities related to radiation prot and their needs was created and s list of stakeholders. The stak standards development and regula national and international bodies. radiation protection devices, mec stakeholder committee was form discussions during and after kick-c consortium and stakeholder groups. information on SRAs and roadmaps and summarised for the stakeholde database has been created and regularly throughout the project.

Objective 2: Web portal for protection regulation

The aim is - to design and imple serving as a contact point for the m stakeholders and customers in th protection. The web portal will e easy access to capabilities and the a exchange information.

The majority of work planned for 2021. This will rely on the stakehold the information gathered from th

Objective 5: Joint and sustainable European metrology infrastructure

The aim is to develop a plan for a joint and sustainal European metrology infrastructure underpinni radiation protection regulation. The plan will completed within the first 12 months of the project a will address how to (i) use coordination and sm specialisation of capabilities (ii) align with other runni initiatives and projects, (iii) promote the development emerging member states, and (iv) consider how extend collaboration to third countries.

To date, the existing metrology infrastructure th underpins the radiation protection regulation has be identified and combined into a database. The availal good practice guides and international standards (IS IEC) and IAEA guides related to radiation protecti calibrations, type testing and emergency preparedne have been collected as well and have been combin in a second database. Using this data, a gap analy will be performed to identify the fields of radiati protection where infrastructure, guides and standar are missing.

Past Events

Kick-off meeting of supportBSS


Kick-off Meeting
EMPIR 19NET03 supportBSS

EURAMET

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Figure 4: Agenda from supportBSS kick-off meeting.

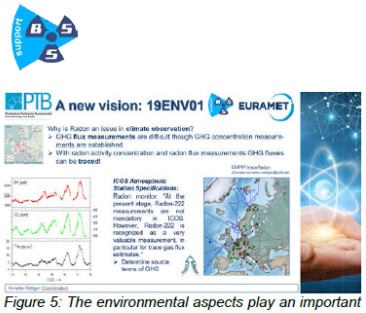


Figure 5: The environmental aspects play an important role in the developing EMN on radiation protection.

In the annual meeting of EURADOS e.V., the consortium presented first results in the WG 3.3 with a special focus on the environmental aspects following the EMPIR environmental call in 2019 and preparing for the Green Deal call in 2021 of the potential European Partnership on Metrology.

EURAMET Stakeholder Engagement Workshop

The engagement with stakeholders is a key objective of EURAMET and its European Metrology Networks. In a recent workshop EURAMET introduced the concept and supported the consortium in defining priorities. The outcomes of the workshop, which was hosted by Thomas Damitz and Caroline Pritchard, will be used to create a communication strategy for a potential EMN on radiation protection regulation.

Recent & Upcoming Events

The consortium is currently preparing for the following meetings, conferences and workshops:

10 February 21	TC IR Meeting
18 February 21	Joint Meeting BoD / TC Chairs / EMN Chairs/WG Convenors
19 – 30 April 21	EGU 2021
In planning:	
05 May 21	supportBSS M12 project meeting

Update on the establishment of the potential EMN for Radiation Protection

Everyone in the world is exposed to environmental radiation and more than 23 million people around the world are exposed to ionising radiation in the workplace.

Due to new technological developments radiation exposure has been increasing for years. Thus, compliance with the corresponding legislation has become more complex due to stricter legal dose rate assessments, exposure limits and limits on activity concentrations.

An EMN for radiation protection regulation is needed as a central contact point to cover all metrological requirements in connection with radiation protection. Such an EMN under the umbrella of EURAMET is in under discussion and being prepared and supported by the EMPIR project 19NET03 supportBSS.

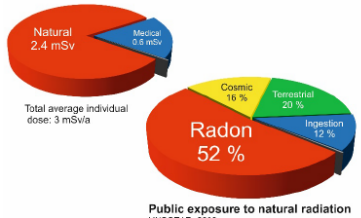


Figure 6: Public exposure published as published by UNSCEAR, 2008.

The partners of supportBSS, together with other organisations providing a service in the field of radiation protection, are preparing a proposal for the EURAMET General Assembly in 2021 to establish the EMN on radiation protection. The proposal and the Memorandum of Understanding (MoU) are nearly finished. The supporting Delegate from EURAMET is Jörn Stenger, the proposer is Annette Röttger. The final objective of the network project is to develop a plan for a harmonised, sustainable, coordinated and smartly specialised infrastructure to underpin the needs expressed in the European regulations for radiation protection.

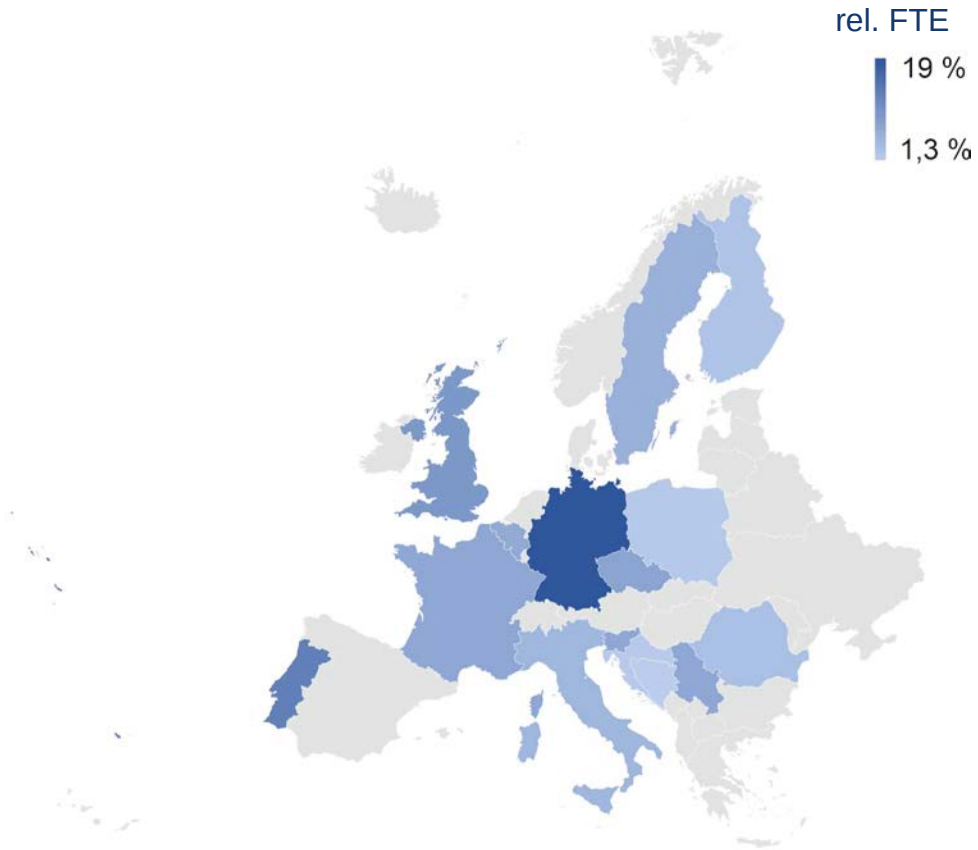
Acknowledgements

The consortium is grateful to have this powerful support from colleagues worldwide! Further collaboration interest is welcome.

This project (19NET03) has received funding from the EMPIR programme co-financed by the Participating States and from the European Union's Horizon 2020 research and innovation programme.

https://www.euramet.org/index.php?eID=tx_securedownloads&p=418&u=0&g=0&t=1651646867&hash=01764acae6928e87ab18f9209b639aa1a35ee0bf&file=Media/images/projects_EMRP_EMPIR_Partnership/Networks/19NET03/supportBSS_Project_Overview_2021_03_15.pdf

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:

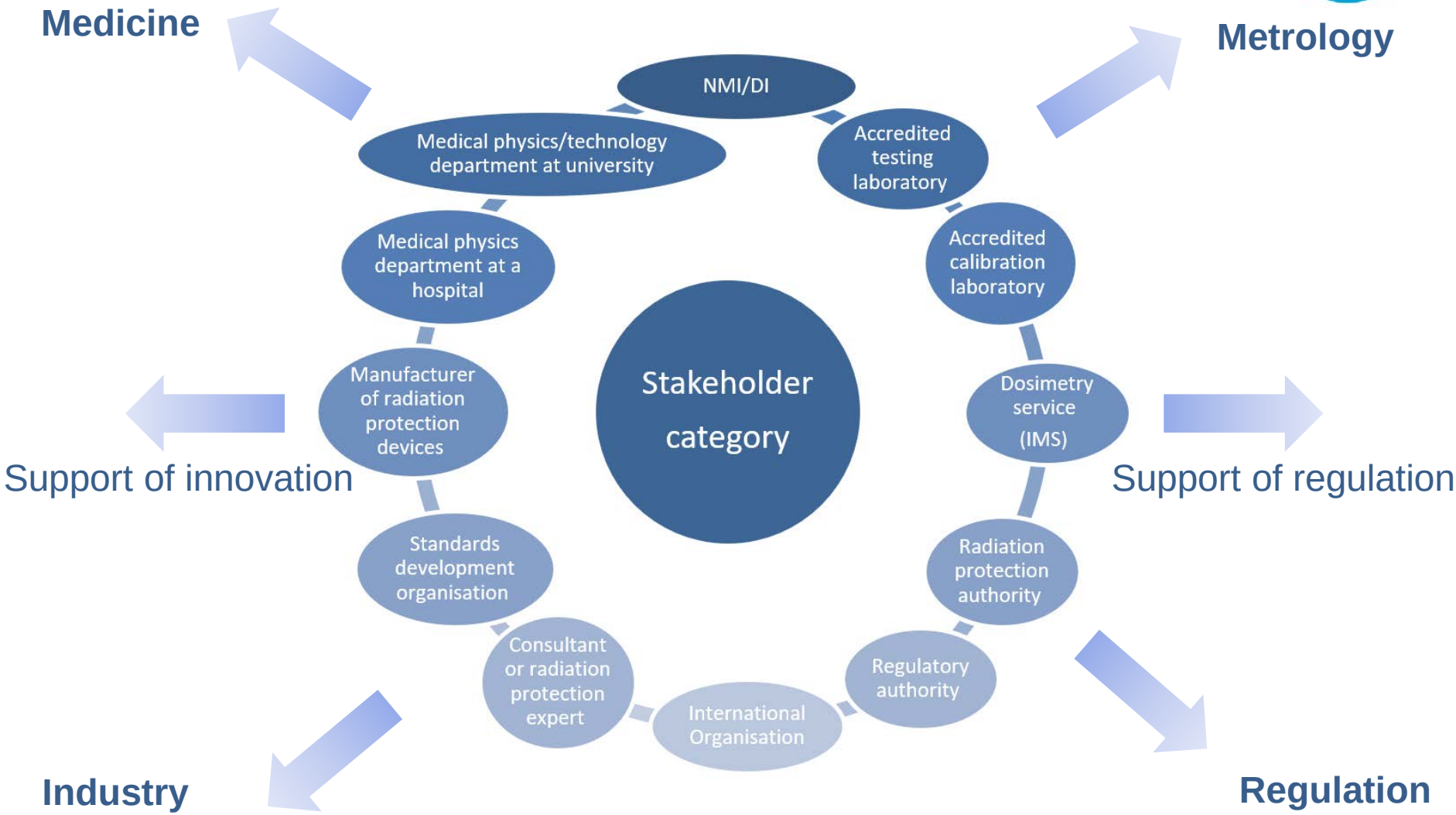
   With an attendance of more than 150 experts worldwide.
   https://www.youtube.com/watch?v=V2B77LyY62I

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 **RMO**s

Strategic Work Plan



Thank you!

If you have questions, I would be happy to answer now or later by the following contact information:

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19NET03 supportBSS *denotes the EMPIR project reference.*