

TC-IR: Activity and Highlight Report

Ulrike Ankerhold, PTB
TC-IR chair

13th EURAMET General Assembly, Plenary Session
Borås, Sweden, 22 – 23 May 2019



**Ionising
Radiation**

TC-IR: Main Topics



TC-IR CP annual meeting (2.5 days, 01/2019):
MIRS/IJS, Ljubljana (Slovenia)

Topics:

- CMCs and comparisons
- revised MRA: TC-IR proposal =>
CCRI meetings 06/2019
- research activities: EMPIR
- new trends in IR: Health, Environment,
Energy and Industry
- capacity building
- annual institute reports
- EMPIR Call 2019
- EMNs

New: contact person for COOMET TC 1.9:
Efimia Luchian (INM-MD, Republic of Moldova)



TC-IR currently is involved in 12 EMPIR projects (Calls 2015, 2016, 2017, 2018), almost all JRPs are coordinated by TC-IR members:

- 4 JRPs **Health** (Calls 2015, 2018)
- 3 JRPs **Environment** (Call 2016)
- 1 JRP SIB (Call 2015), 1 JRP FUN (Call 2017)
- 2 JRP NRM (Calls 2016, 2018)
- 1 JRP RPT (Call 2017)

EMPIR Calls 2019:

- project and EMN ideas: separate session at CP meeting
- under participation of TC-IR members:
 - SRTs: 3(4) SRT Environment, 1 SRT NRM
 - SNTs: 2 (3)



Research Activities



Two scientific WGs:

- Ionizing Radiation and Radionuclides in **Health**
- Ionizing Radiation and Radionuclides in **Environment**, Energy and Industry

Brainstorming sessions at CP meeting:

new trends, their relevance and importance for the future, the metrological challenges; update of roadmaps in 2019

- metrological questions need:
 - combination of expertise from different disciplines
 - => **interdisciplinary metrological approach**
 - => interdisciplinary consortia



Research Activities - future



Digitalization:

An example for Medicine

Trend in medicine: combination of different techniques to new multimodal methodologies (e.g. PET/MR, MRgRT, RCT (radiochemotherapy))

- requirement: proper handling of big data, i.e. central role is the reliability, comparability and uncertainty of the data
- tools artificial intelligence, machine learning, deep learning: for data evaluation as well as for assisting doctors and medical physicists
- applications (examples): determination of image quality to optimize applied doses e.g. in mammography screening and CT; deep learning in treatment planning; computer-aided diagnosis (CAD)

=> Need of completely new metrological approaches with strong interdisciplinarity



TC-IR: Capacity building



- TC-IR contact person for capacity building: Denis Glavič-Cindro (MIRS/IJS, Slovenia)
 - Needs:
 - practical training courses in the calibration of dosimeters or standard instruments => RMGs
 - training in organization and coordination of comparisons
 - training in coordination of projects
-
- EMPIR RPot JRP: DOSEtrace, *Support for claiming CMCs in calibration of radiation protection dosimeters*; coordinator: Ambra Šabeta (IMBiH, Bosnia and Herzegovina)
 - 1 Researcher Mobility Grant (RMG), DOSEtrace project
 - *EURAMET-BIPM Training course on organization and piloting intercomparisons in IR, 9-11 October 2019 at NPL, UK*
 - see announcement on EURAMET website



TC-IR: outlook



- **Next TC-IR CP meeting:**
January 28 - 30, 2020, hosted by IST-LPSR-LMRI in Lisbon, Portugal, 2.5 days meeting
- **Revised MRA:** close contact with CCRI, next CCRI meetings in 2019
- **Capacity Building:** Research Mobility Grants, EURAMET/BIPM training course on comparisons in IR, October 2019
- **Cooperations** with other organizations and RMOs
 - => EURADOS and ICRM are important partner
 - => official contact person for COOMET TC 1.9

Special focus on: revised MRA, EMNs (in IR fields or better interdisciplinary), metrological challenges of digitalization

