

# Highlights from EURAMET TC for Ionising Radiation

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# Overview of the TC-IR

Reorganisation of the TC-IR – recap from 2013

Work in the new Working Groups

CMCs

On-going JRPs

Strategic Research Agenda

Capacity Building

# Reorganisation of the TC-IR

## WG CMCs and Comparisons

Convenor István Csete (IAEA) and member Bruno Chauvenet (LNE-LNHB)

## WG Health care and new dose quantities

Convenor Jean-Marc Bordy (LNE-LNHB)

## WG Radionuclides and Dosimetry in Energy, Industry and Environment

Convenor Franz-Josef Maringer (BEV).

The Contact Person meeting will have 1 day of WGs  
Annual reporting will be adjusted slightly to align with WGs

## WG CMCs and Comparisons

### CMCs review

availability of expertise and staff

### Review of draft “MRA stage II” document

### Summarise Issues:

Measurement matrix, uncertainties

Piloting of KC

Delay of KC results, many are more than 10 years delayed.

Release of a shorter version of the report?

## WG Health care and new dose quantities

### MRI safety

Metrology for new generation safety standards and equipment in MRI

Bernd Ittermann (PTB), Germany, 3 partners

### MetrExtRT

Metrology for radiotherapy using complex radiation fields

Jean-Marc Bordy (CEA), France, 10 partners

### MetroMRT Metrology for Molecular Radiotherapy

Vere Smyth (NPL) UK, 14 partners

### BioQuaRT Biologically weighted quantities in radiotherapy

Hans Rabus (PTB) Germany, 7 partners



## WG Health care and new dose quantities

### SRA additions

#### Metrology for

hadron therapy

modern diagnostics (e.g. mammography, CT, SPECT/CT, PET/CT, PET/MRI...) and improved metrological traceability in Quantitative Imaging.

novel radiation sources such as high-power lasers and for high-intensity radiation fields at plasma facilities (neutrons, gamma rays), pulsed radiation, high-energy neutrons, synchrotron radiation and spallation sources (e.g. the European Spallation Source, ESS).

## WG Radionuclides and Dosimetry in Energy, Industry and Environment

### **MetroMetal** Measuring radiation in scrap metals

Eduardo Garcia-Toraño (CIEMAT), Spain, 14 partners

### **MetroRWM** Metrology for radioactive waste management

Petr Kovar (CMI), Czech Republic, 13 partners

### **MetroNORM** Metrology for processing materials with high natural radioactivity, Franz Josef Maringer (BEV), Austria

### EMRP JRPs to start shortly:

### **MetroERM** Metrology for radiological early warning networks in Europe, Stefan Neumaier (PTB), Germany

### **MetroDecom** Metrology for decommissioning nuclear facilities, Jiri Suran (CMI), Czech Republic

# WG Radionuclides and Dosimetry in Energy, Industry and Environment

## SRA additions

### Metrology for

Homeland security - Emergency preparedness

Climate change

Release of radioactivity from medical and industrial production

Radiation damage to electronic structures, particularly the nanometric structures.

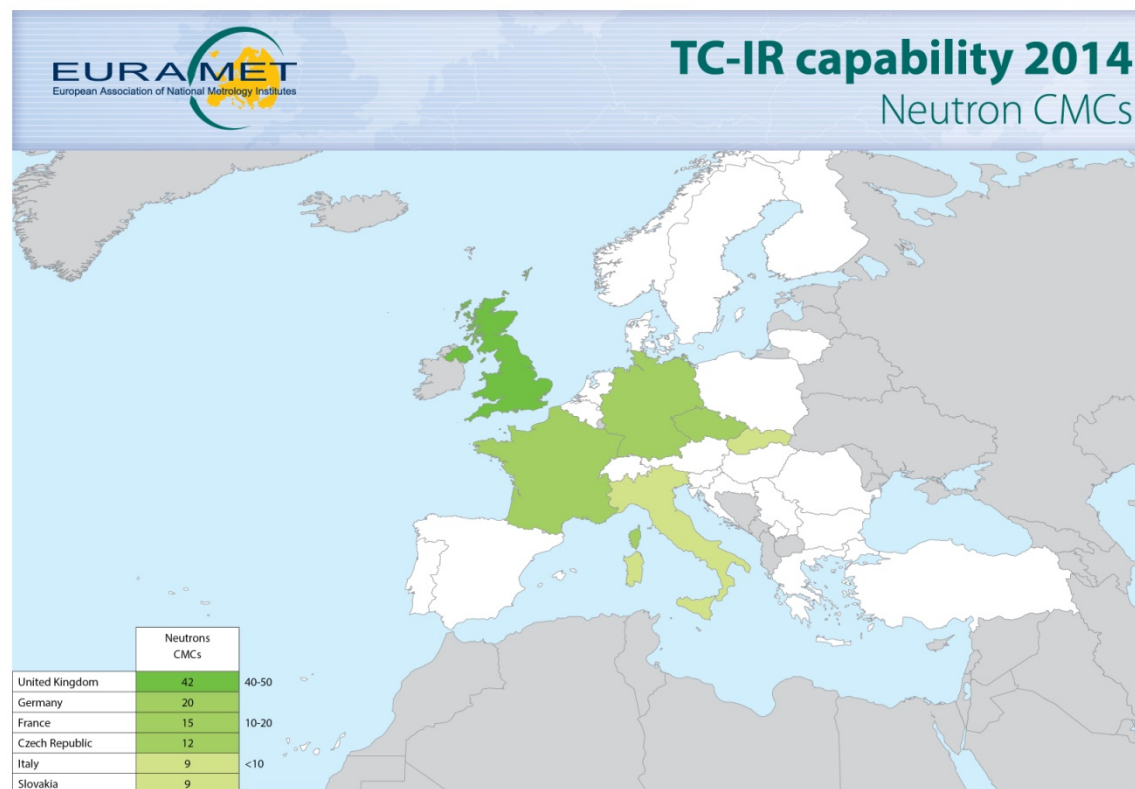
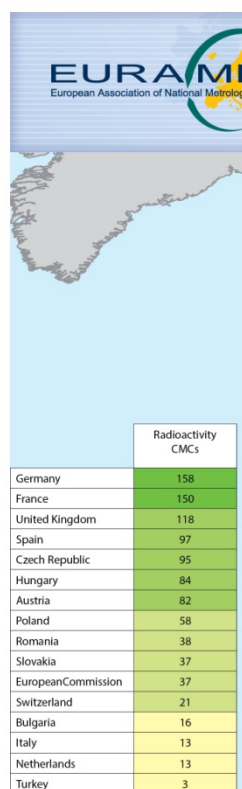
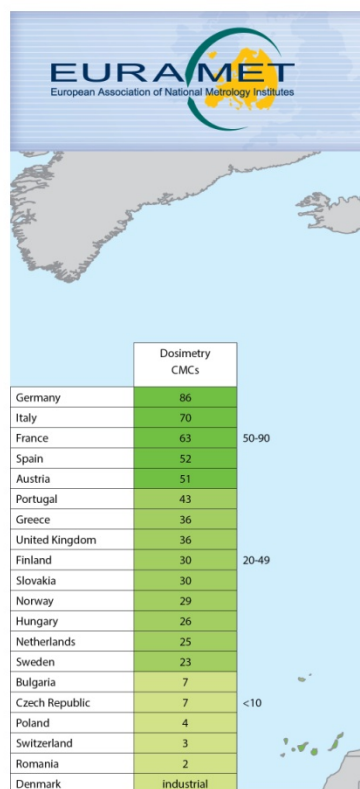
Production of radioisotopes



# EURAMET projects

Ref	Starting date	Title	Coordinating Institute
1326	2014-09-01	Comparison of the air kerma standards for $^{137}\text{Cs}$ and $^{60}\text{Co}$ gamma-ray beams for radiation protection measurements	IST/ITN
1313	2014-06-01	On-site visit by external technical experts in the field of ionising radiation (radionuclide activity)	VMT/FTMC proposed
1292	2014-01-01	Sm-151 activity measurement	LNE-LNHB
1287	2013-04-01	Standardization of a solution of I-129.	CIEMAT
1285	2013-03-01	Comparison of air kerma and dose to water standards for Co-60 radiation beams for radiotherapy	METAS
1284	2013-10-01	Survey of European countries' legal regulations and practices in ionising radiation calibrations	NRPA
1257	2013-02-18	Comparison on the activity concentration of the same $^{166}\text{mHo}$ solution	PTB
1243	2013-02-28	The interlaboratory comparison of the radionuclide calibrators	VMT/FTMC
1221	2012-08-31	Comparison of air kerma measurements for diagnostic X-ray beam qualities	IAEA
1200	2011-07-31	Comparison of air kerma measurements of the medium energy X-ray radiation in radiation protection measurements	MKEH
1132	2013-01-17	Comparison of the ambient dose equivalent rate for photon radiation	PTB

# TC-IR Capabilities



# Capabilities – TC-IR survey

1 - Through EMRP/iMERA, your lab has **DEVELOPED** new capabilities in the following metrology domain(s).

3 - Within the scope of the road maps, the priority of your lab is to **BUILD** capabilities in: RM 1: Dosimetry and Radionuclides in Health Care, RM 2: ... etc.

4 - In which call(s) would you be interested to post a PRT?

Fundamental	17
Health	19
Environment	19
Energy	13
Industry	13
Pre-normative	9
Capacity building	14

# Capabilities – TC-IR survey

If “HEALTH” , which topics?

Atomic and nuclear data	6
Biological effect of radiation	7
New treatment modalities	11
New irradiation facilities/techniques	7
Molecular Radiotherapy	6
Hadron therapy	9
Photon therapy	13
Electron therapy	7
Brachytherapy	11
Quality assurance	9
In vivo dosimetry	8
Secondary cancer risk	6
Radiation sterilisation	3
other	
Rad prot (workers patient)	
Spectro neutron High energy in new ref field	



## Capabilities – survey results

19 / 27 replies by dead-line (22<sup>nd</sup> May)

TC-chair will write up results and distribute

Will be used for future proposals



## Next steps and challenges

### Stakeholder involvement

- Reports from Stakeholder workshops in CP meeting
- WGs to identify important players related to the roadmaps

### Cooperation between TCs (possibly TC-IM?)

### Representation of Neutron Measurements in TC

***Thank you for your attention***