

EUROMET SUMMARY REPORT ON RADIATION DOSIMETRY (May 2003- April 2005)
Prepared by Tony Aalbers,
EUROMET Convenor for Radiation Dosimetry

Meetings

Euromet Contact Persons Meetings for Ionizing Radiation were held at Helsinki (6-7 November, 2003) and at Paris (27-29 September, 2004) hosted by STUK and BNM respectively. Important topics on both meetings were CMC tables submitted for internal or inter-RMO review, comparisons and co-operation projects. When appropriate separate syndicate group meetings were held during the Contact Persons meetings for the subfields radioactivity, radiation dosimetry and neutrons. In May 2005 Nelcy Coursol (BNM-LNHB) will be succeeded by Istvan Cséte (OMH) as chairman of EUROMET TC-IR.

Status of CMCs

In 2003-2004 CMCs (subject field: radiation dosimetry) submitted by 13 NMIs in the EUROMET region were reviewed by APMP and COOMET. In February 2005 this batch of CMC tables, coded: EUROMET.RI.1.2001 was approved by the reviewing RMOs and published on the KDCB database.

The CMC batch (EUROMET.RI.3.2001) comprises tables from the following NMIs:

COUNTRY	NMI	Does QS satisfy ISO17025 or equivalent	All CMCs covered by QS	QS fully implemented	QS Approved by RMO
Austria	BEV	y	y	y	y
Czech republic	CMI	y	y	y	y
Finland	STUK	y	y	y	y
France	BNM-LNHB	y	y	y	y
Germany	PTB	y	y	y	y
Hungary	OMH	y	y	y	y
Italy	ENEA	y	y	y	y
Netherlands	NMi	y	y	y	y
Poland	GUM	y	y	y	y
Portugal	ITN	y	y	y	y
Sweden	SSI	y	y	y	y
Switzerland	METAS	y	y	y	y
United Kingdom	NPL	y	y	y	y

The following NMIs or designated laboratories have submitted CMCs in dosimetry, which are in different stages of internal RMO review:

CIEMAT (Spain), HAEC (Greece), LNMIC_RMTIC (Latvia), LSDG (Belgium), MIRS/S.I. (Slovenia), NRPA (Norway), NCM (Bulgaria), SMU (Slovakia) and ZMIDM (Serbia & Montenegro). A new batch of CMC tables in dosimetry will be submitted as soon as possible for inter-RMO review.

The EUROMET review team for radiation dosimetry reviewed various CMC tables submitted for inter-RMO review by APMP, COOMET and SIM. This process is ongoing.

Quality Systems

All NMIs in the EUROMET region have presented their QS to the QS forum group in writing and/or by oral presentation. In April 2005 the latest report about the status of the QS of the EUROMET NMIs has been submitted to the JCRB. In the table above information is given about the QS of the different NMIs. The information presented in the table is based on the latest report prepared by the QS forum group for the JCRB. All approved and published CMCs in dosimetry are fully covered by a QS, which is in compliance with ISO/IEC: 17025 and are approved by EUROMET.

Comparisons and co-operation projects

The following intercomparison projects are being proposed, running or completed:

Ref. no.	BIPM KCDB identifier	Title	Pilot lab.	Participating laboratories	Status
526	EUROMET.RI(I)-S4	Calibration of dosimeters used in mammography with different X-ray qualities (tube voltages from 20 kV to 50 kV)	BEV	BEV, BNM-LNHB, ENEA, IAEA, IRA, NMI, NPL, NRPA, OMH, PTB, SIS, SMU, SSI, STUK	Completed and published in Rad. Prot. Dosim. 108(1), 2004: 33-45
545	EUROMET.RI(I)-S3	Intercomparison of NMI air kerma standards for ISO 4037 narrow spectrum series radiation qualities	PTB	BEV, ENEA, NMI, NPL, OMH, PTB, SMU	In progress
605	Co-operation project	Beam quality specification of high-energy photon beams	METAS	ARPANSA, BNM-LNHB, ENEA, METAS, NPL, NRC, PTB, SMU	In progress, planned to be completed in December 2005
628		Direct comparison of primary standards of air kerma for medium energy (300 kV) X-rays	NPL	BIPM, CIEMAT, ENEA, NMI, NPL, OMH, PTB	In progress, max. one comparison per year
738	EUROMET. RI(I)-S5	Intercomparison of the personal dose equivalent for photon radiation	PTB	BEV, BNM-LNHB, CIEMAT, CMI, ENEA, HAEC, IAEA, ITN, NMI, NPL, NRPA, OMH, PTB, SMU, SSI, STUK	In progress
739	EUROMET.RI(I)-S2	Intercomparison of extrapolation chamber measurements of the absorbed dose rate in tissue for beta radiation	PTB	BNM-LNHB, VNIIM, ENEA, OMH, PTB, STUK, NIST, NRC	In progress

813	EUROMET.RI(I)-K1 and EUROMET.RI(I)-K4	Comparison of air kerma and absorbed dose to water measurements of Co-60 radiation in radiotherapy	OMH	BEV, BNM-LNHB, CMI, CNEA-CAE, ENEA, GUM, HIRCL, IAEA, IRB, LMRIR, LMRI-LNMRI, METAS, NCM, NIST, NMI, NPL, NRC, NRPA, OMH, PTB, RMT, SMU, SSI, STUK, VNIIM	Final measurement protocol agreed and distributed to participants. In progress.
814	EUROMET.RI(I)-S6	Bilateral comparison of dosimetric standards of BNM-LNHB and NPL for ¹⁹² Ir HDR brachytherapy	BNM-LNHB	BNM-LNHB, NPL	In progress

Two bilateral comparisons of extrapolation measurements of absorbed dose rate in beta radiation between BNM-LNHB (France) and VNIIM (Russian Federation) from 1997-1999 and between VNIIM and PTB (Germany) from 1999 – 2001 respectively were approved by EUROMET and registered in the KCDB data base as EUROMET.RI(I)-S2.B2 and as EUROMET.RI(I)-S2.B1 respectively. Further details about EUROMET projects can be found on website: www.euromet.org