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IRMM
Institute for Reference Materials and Measurements
JRC Reference Laboratory for Radionuclide Metrology

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Report on the Development of the Future SIR

The future SIR - or The Bq at the Basic Level - is based on the concept of a reproducible ionisation chamber. It has been conceived by D. Reher, IRMM and is being realised in co-operation with the NPL (M. Woods) and since recently LNHB (N. Coursol) and PTB (H. Janßen) under the framework of VERMI – the Virtual European Radionuclide Metrology Institute.

Actual situation:

- Design and drawings are checked, revised and ready for use.
- Hardware parts are ready and tested.
- All information exchanged with NPL.
- Meeting with NPL, LNHB and PTB in 2005.
- LNHB and PTB start to collaborate.

Problems:

- Metallization of inner wall and collecting electrode.
- Replacement of BIPM/NIST Kimble ampoule.
- Traceability of small current measurements to the SI.
- Additional independent laboratory to construct the chamber is needed.

Outlook:

- A. Švec joined the group at IRMM to continue working on the chamber.
- Alternative for VESPEL™ inner wall and collecting electrode being studied (simulation and practical realisation).
- First tests of the chamber by the end of 2005.

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