

CCM Recommendation to NMIs on managing the consequences of the corrections to the BIPM as-maintained mass unit

The Consultative Committee for Mass and Related Quantities (CCM), at its 15th meeting in 2015,

considering

- the good uniformity of world-wide mass measurements of NMIs in CCM.M-K4 (key comparison of 1 kg stainless steel standards),
- that CMCs for mass calibrations at the level of 1 kg have uncertainties that range from 28 µg to 1850 µg,
- that determinations of the Planck constant will provide the basis for the future definition of the kilogram after the introduction of the “new SI”,
- that an extraordinary calibration using the International Prototype of the Kilogram (IPK) took place at BIPM from January 2014 to January 2015,
- that the BIPM as-maintained mass unit (traceable to the IPK at the 3rd Periodic Verification (3rd PV) 1988-1992) had changed over 22 years by 35 µg,
- that a mathematical model established by BIPM was able to explain this change between the 3rd PV and 2014,
- that the BIPM will update calibration certificates issued between 1.1.2003 and 31.12.2013 for calibrations of 1 kg mass standards,

decides

- that the published results of key comparisons carried out by the CCM will not be corrected, and that the WGD-kg will advise the RMOs about how degrees of equivalence may be linked in a way that maintains consistency,

recommends

- that determinations of the Planck constant shall be updated based on the corrections provided by the BIPM to the NMIs concerned,
- that NMIs receiving updated calibration certificates from the BIPM should take appropriate action as regards the need to inform their customers and the correction of calibration certificates affected, and should take the updated mass values as the basis for their future calibrations.