

Recommendation on the BIPM guidelines for calibration

The Consultative Committee for Time and Frequency (CCTF),  
**considering that**

- the ability to compare the atomic frequency standards for the realization of UTC is dependent on the accuracy and precision of time transfer methods based on GNSS,
- the characterization of the delays of GNSS time-transfer equipment is essential to ensure the accuracy of the time links for UTC;
- uncompensated changes of the hardware delays in a time link may cause significant instability in UTC;
- the Consultative Committee for the Definition of the Second (CCDS) and subsequently the Consultative Committee for Time and Frequency (CCTF) have stressed in past Recommendations the importance of calibrating the time-transfer equipment in laboratories contributing data for the calculation of UTC at the BIPM;
- The Consultative Committee for Time and Frequency (CCTF), in its Recommendation 2(2009) and its Recommendation 4(2012), recommended that the Regional Metrology Organizations (RMOs) support the BIPM by organizing campaigns of measurement delays within the frame of regional comparisons to be linked to those conducted by the BIPM;

**noting that**

- Calibration guidelines have been prepared by the BIPM and published on the BIPM web site
- Among laboratories contributing to UTC, a set of “Group1” laboratories was selected by the RMOs, for which the calibration is organized by the BIPM and from which should be organized the calibration of GNSS equipment of the other laboratories (named “Group 2”)
- significant improvement in time link accuracy is expected from the implementation of this new calibration scheme
- the BIPM has organized the first calibration of the GPS equipment in Group 1 laboratories ;

**recommends that**

- the RMOs or laboratories contributing to RMOs organize calibration trips for Group 2 laboratories,
- the trips be planned in close collaboration with the BIPM, aiming at a complete coverage of Group 2 laboratories;
- these calibrations follow the guidelines published by the BIPM.