Report of the CCTF WG TAI to the 21st Meeting of the CCTF

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21st Meeting of the CCTF

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Bureau
International des
Poids et
Mesures

CCTF WG TAI – Terms of Reference

- to examine the remarks and requirements expressed by the users of TAI;
- to prepare guidelines for the improvement of the service of TAI and to report on these to the CCTF, and
- to establish temporary *ad hoc* study groups to analyse specific problems, whenever necessary; these study groups should report to the working group.
- The said mandate should extend to Coordinated Universal Time UTC.
- The working group should normally work by correspondence addressed to the Chair, and should meet annually at the Chair's request, if possible.
- The Working Group on TAI should work closely with all the other CCTF working groups to harmonize the overall contributions to TAI.
- The BIPM provides the permanent secretariat for the working group.

CCTF WG TAI - membership

a. representative of each of the following organizations: International Astronomical Union (IAU), International Committee for Weights and Measures (CIPM), International Union of Radio Science (URSI), International Telecommunication Union, Radiocommunication Sector (ITU-R);

b. the Director of the BIPM;

c. the individual responsible for TAI at the BIPM; and

d. representatives of the laboratories contributing to TAI

11th Meeting of the WG TAI, 7 June 2017

- About 80 participants

- Morning session:
  - BIPM and laboratories updates
  - Presentation of recommendations to be submitted to the 21st CCTF

- Afternoon session: Joint meeting WG TaI and CCTF delegates
  - Strategy towards the WRC-23 in Nov. 2023
  - Consideration of a recomendation with time scales definitions

- Main topics:
  - The BIPM and the RMOs and NMIs organize regularly calibrations of GPS equipment in contributing laboratories, allowing a significant reduction of the calibration uncertainty (1.5 ns a,d 2.5 ns respectively for G1 and G1 calibrations).
  - Campaigns are ongoing and/or in preparation in SIM, EURAMET, APMP, and will be organized in COOMET.

  - The number of reports of PFS has been decreasing since 2014, but new standards under development or evaluation should appear soon. About ten delegates reported primary/secondary standards under development or in evaluation. The delegates explained that they need to interrupt the operation of their standards for some refurbishment or maintenance operations.

- Main topics:
  - New algorithm for evaluation of uncertainties of UTC-UTC(k), necessary to correct negative effects of having a unique pivot and of having correlated data. A complete aproach will consist also on making use of redundant time links.
  - Corrective actions have been identified by the CCTF WG TWSTFT for reducing the diurnal noise present in TW links. Using a Software Defined Radio Receiver is presented as a good solution for short distance link.
  - Recommendations proposed by the WGs on GNSS time transfer and TWSTFT were discussed and aproved by the attendees.

On time scales definition (afternoon)

- The actions organized by the ITU-T, the CCTF and the BIPM were given in detail.
- A Task Group was appointed in the WG TAI in 2016 for drafting the text of a recomendation providing definitions of the current time scales.
- The recommendation was discussed and agreement was met rapidly.
- This recommendation will be submitted to the CIPM with the aimof providing the frame to a resolution of the CGPM in 2018.

THANKS FOR YOUR ATTENTION

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