

Opening Speech by François Rancy, Director of the ITU Radiocommunication Bureau

ITU/BIPM Workshop - Future of the International Time Scale

19 September 2013, ITU HQ Geneva, Switzerland

Good morning,

Honorable Members and ITU-R Sector Members, Academia, Friends, Ladies and Gentlemen,

It is a pleasure for me to be with you today to welcome you to this **Workshop on the Future of the International Time Scale** jointly organized by **ITU** and the **International Bureau of Weights and Measures (BIPM)**.

In the context of international cooperation on the future of the ‘leap second’, we are honored here today by the presence of so many eminent actors and officials in this domain.

The international atomic time-scale, **Coordinated Universal Time**, as defined by the ITU, is used throughout the world and disseminated by radiocommunication systems. Recommendation **ITU-R TF.460-6** on “Standard-frequency and time-signal emissions” is incorporated by reference in the **Radio Regulations** and provides its official/regulatory definition.

Timekeeping is critical to the functioning of the modern society, and its **international coordination** is crucial. Coordinated Universal Time, better known by its acronym **UTC**, is the legal basis for timekeeping for most countries in the world, and is the *de facto* time-scale in most others.

Currently, UTC is used for a range of different purposes, from the minutes needed by the general public in adhering to timetables, to the synchronized nanoseconds required in the most demanding applications such as navigation through the global navigation satellite systems — for example the Global Positioning System (GPS), GLONASS and others on the horizon including Europe’s Galileo and China’s BeiDou.

A variety of systems using UTC have been developed over the past 40 years since the introduction of the leap second (in 1972), and some of these systems — for example for search and rescue services — are critical to human life. It has, therefore, been argued that the present definition of UTC should be maintained so that these systems can continue to operate as they do now. Another point that has been raised is that, if leap seconds are no longer used, the UTC time-scale will diverge from Earth rotation time. Apart from the affront to the common understanding of time by society at large, this may cause technical difficulties for specific applications including some used in astronomy.

In counterpoint, several arguments have been made for the adoption of a continuous reference time-scale, which would abolish the leap second. One is that the insertion of leap seconds is a costly process and reduces the reliability of systems that depend upon time. Pre-testing of equipment as well as correcting inevitable problems afterwards results in significant expenditure in terms of personnel as well as equipment. Furthermore, stopping all clocks in the world for one second in order to accommodate a leap second creates an ambiguous hiatus, where orderly processes, such as precise time-stamping, are disrupted. Also, the occasional nature of leap-second insertion is likely to cause significant technological problems to international infrastructures in years to come.

The ITU Radiocommunication Sector (ITU-R) is conducting studies on the feasibility of achieving a continuous reference time-scale for dissemination by radiocommunication systems. As part of the preparatory efforts for the World Radiocommunication Conference in 2015 (WRC-15) which will be held in Geneva from 2 to 27 November 2015, this special workshop organized by the International Telecommunication Union (ITU) and the International Bureau of Weights and Measures (BIPM) for the next two days, is intended to provide information to all stakeholders, to raise awareness of the key issues and the different perspectives, and encourage exchange of views on this critical subject.

WRC-15 will “consider the feasibility of achieving a continuous reference time-scale, whether by the modification of UTC or some other method, and take appropriate action, taking into account ITU-R studies”. Meanwhile, I encourage the ITU-R membership to continue participating in our studies by submitting contributions to ITU-R.

Ladies and Gentlemen, Distinguished colleagues,

As you can see this is a very important matter for discussion over the next two days during this Workshop on the Future of the International time Scale.

The combined knowledge of all the time experts in the room [here today] provides a very valuable resource and reference on the science of timekeeping that will enrich and inform the ongoing debate on the future of time, and on whether or not to abolish the leap second.

I wish you all a successful workshop and discussion that will enlighten us all on the future of keeping the world’s time.

Thank you.
