



# INTERNATIONAL TELECOMMUNICATION UNION

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**Administrative Circular**  
**CACE/516**

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**To Administrations of Member States of the ITU,  
Radiocommunication Sector Members, ITU-R Associates  
participating in the work of Radiocommunication Study Group 7  
and the Special Committee on Regulatory/Procedural Matters**

**Subject:** Questionnaire on a draft revision of Recommendation ITU-R TF.460-6,  
Standard-frequency and time-signal emissions

The Radiocommunication Study Group 7 meeting, held on 7 and 15 September 2009, discussed a draft revision of Recommendation ITU-R TF.460-6 "Standard-frequency and time-signal emissions". Following the discussion that took place at that Study Group 7 and the previous meeting of Working Party 7A it appeared that there were conflicting views on this particular Recommendation as some administrations and international organizations were in favour of eliminating the procedure of introducing leap seconds for adjustment of UTC while other administrations were opposed to this elimination. Study Group 7 meeting concluded that the Study Group 7 Chairman would prepare and send to the ITU Member States information concerning the proposed draft revision of Recommendation ITU-R TF.460-6 and a Questionnaire asking views of administrations on this matter to be discussed at the next SG 7 meeting in October 2010.

The Attachment contains a Questionnaire on the draft revision of Recommendation ITU-R TF.460-6 prepared by the Study Group 7 Chairman Mr. V. Meens addressed to the ITU Member States.

Therefore, Member States are kindly invited to answer the attached Questionnaire and return it to the BR Secretariat before the next meeting of Study Group 7 (October 2010).

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**Attachment:** Questionnaire on a draft revision of Recommendation ITU-R TF.460-6  
(leap seconds issue)

**Distribution:**

- Administrations of Member States and Radiocommunication Sector Members
- ITU-R Associates participating in the work of Study Group 7
- Chairmen and Vice-Chairmen of Radiocommunication Study Groups and Special Committee on Regulatory/Procedural Matters
- Chairman and Vice-Chairmen of the Conference Preparatory Meeting
- Members of the Radio Regulations Board
- Secretary-General of the ITU, Director of the Telecommunication Standardization Bureau, Director of the Telecommunication Development Bureau

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## Attachment

### Questionnaire on a draft revision of Recommendation ITU-R TF.460-6 (leap seconds issue)

During the last meeting of Study Group 7 on 15 September 2009 a draft revision of Recommendation ITU-R TF.460-6 on standard-frequency and time-signal emissions (Document [7/68](#)) was introduced by the Chairman of WP 7A along with Document [7/73](#) giving some information on the studies concerning the future of UTC.

Following the discussion that took place during Study Group 7 and the previous meeting of Working Party 7A it appeared that there were conflicting views on this particular Recommendation as some administrations and international organizations were in favour of eliminating the procedure of introducing leap seconds for adjustment of UTC while other administrations were opposed to this elimination.

Although there was no agreement on the modified Recommendation either during this September 2009 Working Party 7A meeting or during its previous meeting in October 2008 there was also no proposal to modify its content and find an agreement. Therefore considering that the technical work had been done on the Recommendation, the Chairman of Working Party 7A decided to send it to Study Group 7 as a draft revision of the Recommendation.

Since the difficulties were obviously not resolved at the Working Party level, the proposed revision could not be adopted by the Study Group. It was considered not appropriate to send it back to the Working Party since no further technical work would be done.

The Chairman of SG 7 proposed to send this draft revision of Recommendation ITU-R TF.460-6 to the next meeting of the Radiocommunication Assembly but this was opposed by some administrations.

It was then decided to keep this Recommendation within the Study Group for the time being and await feedback from the administrations on its possible resolution at the next meeting of Study Group 7 that is due in October 2010. In the objections during the discussions it was suggested that administrations in opposition should provide detail on their technical objections.

The current version of Recommendation ITU-R TF.460-6 defines Coordinated Universal Time (UTC) as an atomic time scale adjusted by leap seconds to keep it within 0.9 seconds of Universal Time adjusted for polar motion (UT1). The rate of UT1 varies with the rotation of the Earth. The rate of UTC is the same as that of International Atomic Time (TAI). TAI is a continuous time scale generated by a global ensemble of atomic clocks, and its scale interval is maintained close to the duration of the SI second. UTC was originally defined to produce a more stable and reproducible time scale, based on the SI second but linked to UT1, for coordination of time and frequency broadcasts and timekeeping. Leap second adjustments are typically made about once a year but can occur more or less frequently depending upon the variability of UT1. In accordance with the definition in Recommendation ITU-R TF.460-6 they may be inserted at the end of any month but December and June are preferred.

The issue in the draft revision of Recommendation ITU-R TF.460-6 is whether or not to define UTC as continuous un-interrupted time scale by eliminating the provision for leap seconds. The question on this issue was first posed in 1999 and WP 7A has been working on this issue since then. A report on WP 7A activities on this question is at Document [7A/19](#). The major technical consequence of eliminating leap seconds would be a gradual divergence between UT1 and UTC on the order of about 1 second a year. There are technical arguments for the revision that have been supported by the majority (5 administrations) of WP 7A and arguments in opposition (2 administrations).

If the arguments in opposition are technical issues they need to be explained and detailed so that they may be referred back to WP 7A for study and resolution. If they are other than technical then they should properly be referred to the Radiocommunication Assembly for resolution. To that end it is requested that Member States provide comments and be prepared to discuss the technical issues involved at the next meeting so that the Study Group may come to a decision on the proper course for the draft revision.

In order to be able to take a decision on the future of this Recommendation the feedback of the administrations on the use of leap second in the current situation or its proposed elimination is required. Therefore it is proposed that the Member States answer the questions below.

Following the responses received, Study Group 7 might be able to take a decision on the future of the proposed revision of Recommendation ITU-R TF.460-6 at its next meeting in October 2010.

Do you support maintaining the current arrangement of linking UT1 and UTC (to provide a celestial time reference)?	YES - NO
Do you have any technical difficulty in introducing leap second today? (If YES could you explain your reasons?)	YES - NO
Would you support the revision of Recommendation ITU-R TF.460-6? (In any case could you explain your reasons?)	YES - NO
If it is agreed to eliminate leap second within 5 years after approval of the revision of Recommendation ITU-R TF.460-6, would that create technical difficulties for your administration? (If YES could you explain your reasons?)	YES - NO