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| **Radiocommunication Study Groups** |  |
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| **7 October 2014** |
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| Radiocommunication Study Group 7 |
| revision of recommendation itu-r TF.374-5  |
| Precise frequency and time-signal transmissions |

Summary of the proposed revision

This contribution proposes to update Recommendation ITU-R TF.374-5 “Precise frequency and time-signal transmissions.” This update includes in addition to minor editorial changes explicit mentioning of two new emerging satellite navigation systems, the European Galileo system and the Chinese BeiDou system, including the frequency bands occupied by their services, which will both rapidly be of equal importance for time and frequency dissemination as the systems established today. The attachment to this document contains the preliminary draft revision of Recommendation ITU-R TF.374-5.

**Attachment:** 1

ATTACHMENT

DRAFT REVISION OF RECOMMENDATION ITU-R TF.374-5

Precise frequency and time-signal transmissions

(Questions ITU-R 152-2/7, 244/7, 248/7, 250/7)

(1951-1953-1956-1959-1963-1966-1970-1974-1998-1999-2014)

Rec. ITU-R TF.374-5

Scope

This document describes the frequency assignments for precise time and frequency signal transmissions including new emerging satellite navigation systems and the frequency bands occupied by their services. The emerging systems will rapidly be of equal importance for time and frequency dissemination as the systems established today.

The ITU Radiocommunication Assembly,

considering

*a)* that over the years World Radiocommunication Conferences, allocated the frequency bands 19.95-20.05 kHz,
2.495-2.505 MHz (2.498-2.502 MHz in Region 1), 4.995-5.005 MHz
, 9.995-10.005 MHz, 14.990-15.010 MHz , 19.990-20.010 MHz  and 24.990-25.010 MHz, to the standard‑frequency and
time-signal service;

*b)* that in addition the following frequency bands for use by the standard-frequency and time‑signal satellite service were allocated:

 400.05 -400.15 MHz,

 4 200-4 204 MHz (space-to-Earth),

 6 425-6 429 MHz (Earth-to-space),

 13.4-14 GHz (Earth-to-space),

 20.2-21.2 GHz (space-to-Earth),

 25.25-27 GHz (Earth-to-space),

 30-31.3 GHz (space-to-Earth);

*c)* that additional standard frequencies and time signals are emitted in other frequency bands, e.g. 14-19.95 kHz and 20.05-70 kHz and in Region 1 also in the bands
72-84 kHz and 86-90 kHz, which have been designated by other conferences (see No. **5.56** of
the Radio Regulations (RR));

*d)* that time and/or frequency are also obtained from signals from other services, such as Radionavigation-satellite service at 1 164-1 300 MHz and
1 559-1 610 MHz (GPS/GLONASS/Galileo/BeiDou), fixed‑satellite services at the Ku-band
(10.7-14.5 GHz) and the C-band (4-8 GHz) (two-way satellite time and frequency transfer), and radio navigation at 100 kHz (Loran-C);

*e)* the time and frequency transfer through Global Navigation Satellite System signals is, next to other usage, instrumental for synchronization of mobile and fixed telecommunication networks and power distribution networks;

*f)* the provisions of RR Article **26**;

*g)* that transmissions in the bands mentioned in *considering a)* and predominantly those in *considering c)* provide widely accepted means of distributing time signals and standard frequencies;

*h)* that for many purposes worldwide time synchronization with an uncertainty of less than 1 ms is required, which in an ideal case should be based on simple and inexpensive equipment;

*i)* that interference may reduce the usefulness of standard-frequency and time-signal services to a serious degree,

recommends

1 that ITU-R continues its study of worldwide standard-frequency and time-signal services and explore the application of new techniques for this purpose;

2 that existing standard-frequency and time-signal services be operated in conformity with the detailed Recommendations of the ITU-R;

3 that all efforts be made to prevent or reduce the mutual interference between emissions in the bands specified in the *considering*;4 that the methods and results of measurements of phase instabilities over paths in
bands 4 and 5 (as defined in Article 2 of the Radio Regulations) be made available to ITU-R;

5 that appropriate stations existing in band 5 be employed for distributing standard frequencies by precise control of their carrier frequencies as a complement to satellite systems distributing a time reference;

6 that the documentation of services in Recommendations ITU-R TF.583 and
ITU-R TF.768, in Chapter 2B of the ITU-R Handbook “Selection and Use of Precise Frequency and Time Systems”, and in the ITU-R Handbook “Satellite Time and Frequency Transfer and Dissemination”, be taken into consideration when using existing services or planning new services.

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