

## RESOLUTION 416 (WRC-07)

**Use of the bands 4 400-4 940 MHz and 5 925-6 700 MHz by an aeronautical mobile telemetry application in the mobile service**

The World Radiocommunication Conference (Geneva, 2007),

*considering*

- a)* that there is a need to provide global spectrum to the mobile service for wideband aeronautical mobile telemetry (AMT) systems;
- b)* that studies have been conducted within ITU-R concerning the sharing and compatibility of AMT for flight testing with other services in the bands 4 400-4 940 MHz and 5 925-6 700 MHz;
- c)* that based on the results of these studies, in the bands 4 400-4 940 MHz and 5 925-6 700 MHz, technical and operational measures applied to AMT for flight testing purposes facilitate sharing with other services and applications in these bands;
- d)* that spectrum efficiency is enhanced in situations where new applications can be implemented compatibly in bands that are heavily occupied;
- e)* that there is extensive deployment of fixed-satellite service (FSS) earth stations in the band 5 925-6 425 MHz and to a lesser extent in the band 6 425-6 700 MHz;
- f)* that there is extensive deployment of fixed service stations in the bands 4 400-4 940 MHz and 5 925-6 700 MHz;
- g)* that in certain locations, availability of spectrum will be limited due to its extensive use by the various services while in other locations, this may not be the case;
- h)* that there are various techniques which can enhance sharing between co-primary services such as frequency or geographic separation;
- i)* that WRC-07 has adopted Nos. **5.440A** and **5.457C**,

*recognizing*

- a)* that the bands 4 400-4 500 MHz and 4 800-4 940 MHz are allocated to the fixed and mobile services on a primary basis;
- b)* that the band 4 500-4 800 MHz is allocated to the fixed, fixed-satellite (space-to-Earth), and mobile services on a co-primary basis;
- c)* that the band 4 800-4 990 MHz is allocated to the radio astronomy service on a secondary basis worldwide and that No. **5.149** applies;
- d)* that the band 4 825-4 835 MHz referred to in *recognizing c)* is allocated on a primary basis to radio astronomy in Argentina, Australia and Canada (see No. **5.443**);
- e)* that No. **5.442** applies to AMT for flight testing operations in the band 4 825-4 835 MHz;

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- f)* that the band 5 925-6 700 MHz is allocated to the fixed, fixed-satellite (Earth-to-space), and mobile services on a co-primary basis;
- g)* that the use of the band 4 500-4 800 MHz (space-to-Earth) by the FSS shall be in accordance with the provisions of Appendix **30B (Rev.WRC-07)** (see No. **5.441**);
- h)* that provisions for the coordination of terrestrial and space services exist in the Radio Regulations,

*resolves*

1 that, in the bands 4 400-4 940 MHz and 5 925-6 700 MHz, administrations authorizing AMT for flight test purposes per Nos **5.440A**, **5.442** and **5.457C** shall utilize the criteria set forth below:

- emissions limited to transmission from aircraft stations only, see No. **1.83**;
- in these bands, AMT in the aeronautical mobile service is not considered an application of a safety service as per No. **1.59**;
- the peak e.i.r.p. density of a telemetry transmitter antenna shall not exceed  $-2.2$  dB(W/MHz);
- transmissions limited to designated flight test areas, where flight test areas are airspace designated by administrations for flight testing;
- if operation of AMT aircraft stations is planned within 500 km of the territory of an administration in which the band 4 825-4 835 MHz is allocated to radio astronomy on a primary basis (see No. **5.443**), consult with that administration to determine whether any special measures are needed to prevent interference to their radio astronomy observations;
- in the bands 4 400-4 940 MHz and 5 925-6 700 MHz, bilateral coordination of transmitting AMT aircraft stations with respect to receiving fixed or mobile stations must be effected if the AMT aircraft station will operate within 450 km of the receiving fixed or mobile stations of another administration. The following procedure should be used to establish whether a fixed or mobile service receiver within 450 km of the flight test area will receive an acceptable level of interference:
  - determine if the receiving fixed or mobile station's antenna main-beam axis, out to a distance of 450 km, passes within 12 km of the designated area used by transmitting AMT aircraft stations, where this distance is measured orthogonally from the main-beam axis projection on the Earth's surface to the nearest boundary of the projection of the flight test area on the Earth's surface;
  - if the main-beam axis does not intersect the flight test area or any point within the 12 km offset, the interference could be accepted. Otherwise, further bilateral coordination discussions would be needed;

2 that administrations authorizing AMT per Nos **5.440A**, **5.442** and **5.457C** in the bands 4 400-4 940 MHz and 5 925-6 700 MHz require the use of technical and/or operational measures on AMT where appropriate to facilitate sharing with other services and applications in these bands.