

QUESTION ITU-R 217-2/4*, **

**Interference to the radionavigation-satellite service in the
ICAO global navigation satellite system**

(1997-2006-2007)

The ITU Radiocommunication Assembly,

considering

- a) that the types of radiation which can cause harmful interference can differ widely depending on the particular technical and operational characteristics of the services involved and the aircraft phase of flight (e.g. en route, approach);
- b) that GPS and GLONASS are constituent elements of the International Civil Aviation Organization's (ICAO) Global Navigation Satellite System (GNSS);
- c) that other planned RNSS systems such as Galileo may request to become constituent elements of the International Civil Aviation Organization's (ICAO) Global Navigation Satellite System (GNSS);
- d) that the ICAO 10th Air Navigation Conference, in 1991, adopted a future Communications Navigation Surveillance (CNS) system concept largely based on satellite services, of which the GNSS is the key navigation component;
- e) that standards and recommended practices (SARPs) which provide technical data for the global navigation satellite system (GNSS) operations and associated aircraft avionics equipment have been developed by ICAO;
- f) that from 1998 onwards the narrow-band mode of GLONASS-M operates in the band 1 597.5515-1 609.8235 MHz. After the year 2005 both the narrow-band and wideband GLONASS-M modes will operate in the band 1 592.9525-1 609.3600 MHz. ICAO is currently considering using only the narrow-band mode for the GNSS;
- g) that some administrations may be currently using, or may be planning to use the band allocated to RNSS for fixed service operations;
- h) that such fixed service operations may have the potential to cause harmful interference to GNSS operations in the band,

* This Question should be brought to the attention of the International Civil Aviation Organization (ICAO).

** Former Question ITU-R 217-2/8.

recognizing

- a) that the radionavigation-satellite service provides a navigation service relating to safety of flight when used in the aeronautical environment and that RR No. 4.10 recognizes that safety services require special measures to ensure freedom from harmful interference;
- b) that parts of the frequency bands allocated to the radionavigation-satellite service are also allocated to the fixed service in certain countries (RR No. 5.362B) on a co-primary basis systems;
- c) that, according to RR No. 5.36, all primary services within an allocated frequency band have equal rights;
- d) that RR Appendix 3 specifies the maximum permitted spurious emission power levels,

decides that the following Question should be studied

- 1** What is the maximum permissible interference level from fixed services in the 1 559-1 610 MHz band to ensure no harmful interference to GNSS en route, terminal and approach and landing operations?
- 2** What separation distance would be necessary for GNSS equipped aircraft to maintain from fixed service operations to be afforded protection from harmful interference?
- 3** How should the interference protection criteria for the radionavigation-satellite service consider aggregate and single entry interference?
- 4** How should the out-of-band and spurious emissions in their relative domains from other radio services operating in other frequency bands be accounted for in the protection criteria of the radionavigation-satellite service?

further decides

- 1** that the results of the above studies should be included in one or more Recommendations;
- 2** that the above studies should be completed no later than 2010.

Category: S2