

RECOMMENDATION ITU-R M.1142-2*

Sharing in the 1-3 GHz frequency range between geostationary space stations operating in the mobile-satellite service and stations in the fixed service

(Questions ITU-R 201/8 and ITU-R 118/9)

(1995-1997-2005)

Scope

Levels of power flux-density (pfd) are presented as thresholds for coordination of frequency assignments for geostationary (GSO) space station transmitters in the mobile-satellite service (MSS) and receiving stations in the fixed service in frequency bands shared between these services in the 1-3 GHz frequency range. The Annexes address fixed system considerations that may facilitate coordination and summarize studies of frequency sharing between transmitting fixed stations and GSO space station receivers in the MSS.

The ITU Radiocommunication Assembly,

considering

- a) that there is a need to study criteria for sharing and coordination between systems in the mobile-satellite and fixed services;
- b) that WARC-92 adopted new allocations in the 1-3 GHz range for the mobile-satellite service (MSS) in order to help meet the rapidly growing spectrum requirements of that service;
- c) that administrations have submitted advance publication data (Appendix 4 to the Radio Regulations (RR)) for mobile-satellite networks which, as a set, would operate throughout the frequency bands in the 1-3 GHz range that are shared with the fixed service (FS);
- d) that for several decades, many administrations have been operating systems in the FS in certain bands shared with the MSS, and will continue to do so,

considering further

for the MSS space-to-Earth direction:

- e) that the bands 2 170-2 200 MHz, and 2 483.5-2 500 MHz are allocated to the MSS (space-to-Earth) and FS on a co-primary basis in all three Regions;
- f) that the bands 1 518-1 525 MHz, 1 525-1 530 MHz and 2 160-2 170 MHz are allocated to the MSS (space-to-Earth) and FS in some Regions and some administrations, on a co-primary basis;
- g) that the band 2 500-2 535 MHz may be used by the MSS (space-to-Earth) in all three Regions subject to agreement obtained under the procedure set forth in RR No. 9.21, the band 2 500-2 520 MHz is allocated to that service on a primary basis as of 1 January 2005, and these and adjoining frequencies are allocated to the FS on a primary basis;

* The revision of this Recommendation was jointly prepared by Radiocommunication Study Groups 8 and 9 and any future revision will also be undertaken jointly.

- h) that in order to fulfil operating requirements, most types of mobile-satellite systems designed for operation in the 1-3 GHz range may have to generate power flux density (pfd) levels in excess of the levels specified in RR No. 21.16 for the nearby band 3 400-4 200 MHz;
- j) that broadcasters in many countries operate ancillary services which have both fixed and mobile characteristics in the bands shared with the MSS;
- k) that some systems described in *considering* d) and j) above may have by necessity a low permissible level of interference owing to the nature of their operation or design, based upon their performance and availability requirements,

considering also

for the MSS Earth-to-space direction:

- l) that Recommendation ITU-R F.1246 establishes the reference bandwidth of systems in the FS, in the 1-3 GHz frequency range, to be used in specifying the coordination threshold levels;
- m) that the bands 1 980-2 010 MHz in all three Regions and 2 010-2 025 MHz in Region 2 are allocated to the mobile-satellite (Earth-to-space) service and FS on a co-primary basis;
- n) that in the band 1 980-1 990 MHz in Region 2, the allocation for the MSS (Earth-to-space) shall not be implemented until 1 January 2005 (RR No. 5.389A);
- o) that the band 1 610-1 626.5 MHz is allocated to the MSS (Earth-to-space) and the FS on a co-primary basis by some administrations (RR No. 5.359), and the band 1 668-1 675 MHz is allocated to MSS (Earth-to-space) and FS on a co-primary basis worldwide;
- p) that the band 2 670-2 690 MHz is allocated to the MSS (Earth-to-space) on a primary basis as of 1 January 2005 (RR No. 5.419), and these and adjoining frequencies are allocated to the FS on a primary basis; until 1 January 2005, the band 2 655-2 690 MHz shall be used by the MSS (Earth-to-space) in all three Regions subject to agreement obtained under the procedure set forth in RR No. 9.21 (RR No. 5.420);
- q) that sharing between the FS and the MSS (Earth-to-space) poses risks of harmful interference to the receiving space stations that increase with the geographic deployment density of fixed stations and the percentage of fixed stations operating on the same frequencies as the space station transponders (see Annex 2),

recommends

- 1 that the following pfd levels at angles of arrival δ (degrees) from geostationary (GSO) space stations in the MSS should be applied as coordination thresholds with respect to stations in the FS (analogue and digital) that operate on the same frequencies (Note 1):

P	dB(W/(m ² · MHz))	for $0^\circ \leq \delta < 5^\circ$
$P + r(\delta - 5)$	dB(W/(m ² · MHz))	for $5^\circ \leq \delta < 25^\circ$
$P + 20r$	dB(W/(m ² · MHz))	for $25^\circ \leq \delta \leq 90^\circ$

where values for the parameters P (pfd at low angles of arrival) and r (rate of pfd increase with increasing angle of arrival) are given in Table 1 (see Notes 1, 3, 4 and 5):