

RECOMMENDATION ITU-R M.1086-1

**Determination of the need for coordination between
geostationary mobile satellite networks
sharing the same frequency bands**

(Question ITU-R 83/8)

(1994-2006)

Scope

This Recommendation deals with considerations for determining the need for coordination between geostationary mobile satellite networks in a co-frequency sharing scenario, for protection against other networks that may cause interference.

The ITU Radiocommunication Assembly,

considering

- a) that it is necessary to protect a network operating in the mobile-satellite services (MSS) from interference by other such networks;
- b) that in general, the discrimination of mobile earth station antennas is relatively low;
- c) that coordination is usually required among mobile satellite networks in cases where the earth stations operating in the service area of one network are visible to the satellite of the other network (see Note 1);
- d) that networks employing frequency reuse may generate multiple entries of interference at the same frequencies;
- e) that, when CDMA techniques are employed by a satellite network, a number of mobile earth station or satellite carriers may operate simultaneously at the same frequency;
- f) that Appendix 4 of the Radio Regulations (RR) identifies characteristics of planned satellite networks that are needed to determine whether coordination with respect to other satellite systems is required and to evaluate the actual levels of interference that may be caused or received by the networks,

recognizing

- 1 that the procedures of RR Appendix 8 are to be applied to determine the need for coordination among geostationary mobile satellite networks sharing the same frequency bands,

recommends

- 1 that for a network that transmits several CDMA type carriers at the same frequency, the total transmitting power density from all simultaneous transmitting mobile earth stations or satellites should be applied when calculating $\Delta T/T$ values in accordance with *recognizing* 1;
- 2 that for networks employing CDMA, Administrations furnish the number of each type of carrier that may be operated simultaneously on each uplink and downlink frequency in advance publication and coordination data (see RR Appendix 4) for MSS systems using geostationary satellites;

3 that for a network that employs frequency re-use, the total power density of all potential simultaneous interference entities should be applied (see Note 2);

4 that for networks employing frequency re-use, administrations furnish a description of the frequency re-use capabilities in advance publication and coordination filings (see RR Appendix 4) for MSS systems using geostationary satellites.

NOTE 1 – MSS systems generally have a satellite antenna coverage area (e.g. area within the 4 dB discrimination contour) that extends beyond its service area, and it may not be possible to assure that mobile earth stations associated with a network will not be operated outside the service area of the network. Thus, there is a potential for interference between earth stations located in the coverage area of one network (rather than only its service area) and visible satellites of other networks, although satellite antenna discrimination of the latter networks may limit such interference to acceptable levels.

NOTE 2 – Networks employing the same frequencies in two or more satellite antenna beams may generate two or more significant interference entries in another network. In such cases, individual ΔT values associated with each potential entry of interference should be calculated and added when determining the value of $\Delta T/T$ for comparison with the coordination threshold (6%).
