RECOMMENDATION ITU-R M.1233-1

Technical considerations for sharing satellite network resources between the mobile-satellite service (MSS) (other than the aeronautical mobile-satellite (R) service (AMS(R)S)) and AMS(R)S*

(Question ITU-R 83/8)

(1997-2006)

Scope

In this Recommendation, technical considerations such as network design and operation, MES and LES capabilities are recommended taking account of the priority communications in AMS(R)S in the case when the AMS(R)S network is provided by shared resources with other MSS networks.

The ITU Radiocommunication Assembly,

considering

a) that in accordance with Article 43 of the Radio Regulations (RR), the AMS(R)S is reserved for radiocommunications relating to safety and regularity of flights;

b) that a mobile-satellite network comprises its participating satellites, mobile earth stations (MESs) and land earth stations (LESs);

c) that the AMS(R)S may share resources of a mobile-satellite network with other mobile-satellite services;

d) that adequate power and bandwidth for AMS(R)S radiocommunications on satellites which provide mobile-satellite services should be made available in bands allocated for AMS(R)S;

e) that AMS(R)S communications may require special measures to ensure freedom from harmful interference to provide protection for safety and distress radiocommunications (see RR No. 4.10);

f) that unwanted emissions from channels adjacent to a channel being used for AMS(R)S communications could cause harmful interference to the AMS(R)S;

g) that effects of sharing within a satellite could induce degradation to AMS(R)S communications;

h) that AMS(R)S performance requirements are stated in the International Civil Aviation Organization (ICAO) AMSS Standards and Recommended Practices and Recommendation ITU-R M.1037;

j) that propagation impairments on feeder links used for AMS(R)S could cause degradation of AMS(R)S communications,

* This Recommendation should be brought to the attention of Radiocommunication Study Group 4.

recommends

1 that the satellite network be designed and operated in such a manner that within the bands 1 545 to 1 555 MHz and 1 646.5 to 1 656.5 MHz, potentially harmful effects (e.g., those that could be caused by transponder gain variations, power supply variations, group delay distortion, spurious transmissions and intermodulation products) on AMS(R)S communications, resulting from sharing, be minimized so that AMS(R)S communications performance requirements are met;

2 that each MES capable of using AMS(R)S allocated bands should:

– after gaining access to a system, be under real-time, direct channel assignment and power control from the controlling LES;

– automatically self-inhibit transmissions unless properly under control of an LES via a signalling channel;

3 that the controlling LES should:

– ensure that the effects of adjacent channel interference to AMS(R)S communications channels are within acceptable limits by adequate spacing of the carrier frequencies;

– exercise frequency and power control over each MES which has gained access to the system (power control is meant to include variable and/or on-off methods);

– as necessary, cease immediately all other communications in bands allocated to AMS(R)S to permit transmission of messages with priority 1 to 6 in RR Article 44;

– take operational measures, as necessary, to avoid harmful interference to AMS(R)S;

4 that adequate power margins be provided on feeder links used for AMS(R)S so that AMS(R)S performance requirements are not degraded.