RESOLUTION 762 (WRC-15)

Application of power flux-density criteria to assess the potential for harmful interference under No. 11.32A for fixed-satellite and broadcasting-satellite service networks in the 6 GHz and 10/11/12/14 GHz frequency bands not subject to a Plan

The World Radiocommunication Conference (Geneva, 2015),

considering

a) that the 6 GHz and 10/11/12/14 GHz frequency bands, not subject to a Plan, are extensively used with operational satellites about every 2-3° around the geostationary-satellite orbit;

b) that there are currently a very large number of satellite networks submitted to the ITU Radiocommunication Sector for these frequency bands;

c) that the above factors have led to significant difficulties for administrations to introduce new satellite networks;

d) that more precise criteria to assess the probability of harmful interference under No. **11.32A** have the potential to reduce undue protection requirements for assignments in respect of incoming assignments;

e) that due to the congestion in these frequency bands as well as advances in technology and applications in these frequency bands, practical satellite implementations are seen in practice to use relatively homogeneous technical parameters;

f) that use of more homogeneous technical parameters will facilitate efficient spectrum usage and support the introduction of new networks;

g) that the use of power flux-density (pfd) thresholds will encourage use of more homogeneous technical parameters and support efficient spectrum usage,

resolves

1 that, for satellite networks operating in the frequency bands 5 725-5 850 MHz (Region 1), 5 850-6 725 MHz and 7 025-7 075 MHz (Earth-to-space) having a nominal orbital separation in the geostationary-satellite orbit of more than 7°, assignments for a fixed-satellite service (FSS) satellite network with respect to other FSS networks do not have the potential to cause harmful interference if the pfd produced at the location in the geostationary-satellite orbit of the other FSS network under assumed free-space propagation conditions does not exceed −204.0 dB(W/(m^2 · Hz))*;

2 that, in the frequency bands 10.95-11.2 GHz, 11.45-11.7 GHz, 11.7-12.2 GHz (Region 2), 12.2-12.5 GHz (Region 3), 12.5-12.7 GHz (Regions 1 and 3) and 12.7-12.75 GHz (space-to-Earth), assignments for an FSS or broadcasting-satellite service (BSS) satellite network not subject to a Plan with respect to other FSS or BSS networks not subject to a Plan having a nominal orbital separation in the geostationary-satellite orbit of more than 6° do not have the potential to cause harmful interference if the pfd produced under assumed free-space propagation conditions does not exceed the threshold values shown below*, anywhere within the service area of the potentially affected assignment:

5.8°	<	θ	≤ 20.9°	−187.2 + 25log(θ/5)	dB(W/(m^2 · Hz))
20.9°	<	θ		−171.67	dB(W/(m^2 · Hz))

where θ is the minimum orbital separation in the geostationary-satellite orbit, in degrees, between the wanted and interfering space stations, taking into account the longitudinal station-keeping tolerance;

* NOTE – The pfd thresholds were derived from the parameters shown below.

Downlink		**10/11/12 GHz**
Earth station antenna diameter	N/A	0.45-11 m
Earth station antenna diagram	N/A	Main lobe: According to Appendix **8**, Section III Sidelobes: 29−25logθ dBi (Recommendation ITU-R BO.1213, which implements these main and sidelobe characteristics, was used in deriving the pfd threshold)
Earth station noise temperature	N/A	125 K
Earth station antenna efficiency	N/A	70%
Equivalent $\Delta T/T$	N/A	6%
Uplink	**6 GHz**	**14 GHz**
Maximum satellite G/T	0 dB/K	11 dB/K
Equivalent $\Delta T/T$	6%	6%

3 that, for satellite networks operating in the frequency band 13.75-14.5 GHz (Earth-to-space) having a nominal orbital separation in the geostationary-satellite orbit of more than 6°, assignments for an FSS satellite network with respect to other FSS satellite networks do not have the potential to cause harmful interference if the pfd produced at the location in the geostationary-satellite orbit of the other FSS satellite network under assumed free-space propagation conditions does not exceed −208 dB(W/(m^2 · Hz))*,

4 that as of 1 January 2017 the Bureau and administrations shall apply this Resolution,

instructs the Director of the Radiocommunication Bureau

to include in his report, for consideration by WRC-19, the results and any potential difficulties relating to the implementation of this Resolution.