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Information Paper
Comments on the Russian Federation's "Concern" over Interference From HAPS Gateway Stations to FSS Allotments in RR Appendix 30B

During the discussion in the December 17, 2009, IWG-2 meeting, Dave Weinreich stated that the Russian Federation had "concerns" or words to that effect, that there would be interference from HAPS gateway links into FSS receivers using allotments in Appendix 30B.

For one thing, the Russian contribution, 5C/168, dated 5 May 2009, assumed that the characteristics of HAPS gateway links were those in PDNR [HAPS CHAR] shown in Annex 10 to 5C/129, the Chairman's Report of the May, 2009 5C meeting. Several of those characteristics, notably the sidelobe levels of both HAPS platform and gateway stations have since been reduced considerably as shown in the latest version of PDNR [HAPS CHAR] (and which would be one of the required characteristics of gateway station antennas). Therefore, that study must be revised, taking the new HAPS characteristics into account, if its conclusions are to be considered valid.

Even so, using the more conservative characteristics, the Russian contribution states that there will be no interference from HAPS platform downlinks into FSS satellite receivers.

Regarding interference from HAPS uplink gateway transmissions into FSS satellite receivers, it notes that such interference will occur only with main-beam to main-beam geometry. However, any such interference can easily and definitely be mitigated by limiting the e.i.r.p. of HAPS gateway transmissions in the direction of the geostationary orbit. Such geometries can be avoided in the planning, design and implementation of HAPS gateway stations, since the precise location of such notified GSO FSS space stations is known *a priori*. Therefore, the locations of HAPS gateway stations can always be planned so that none of them in any system point at or near an Appendix 30B allotment in the GSO.

The mitigation technique described above as a way of avoiding interference from HAPS gateway stations to FSS space stations receiving in the 6725-7025 MHz band under the provisions of RR 5.441 can -- and should be -- incorporated in the Radio Regulations (along with other necessary restrictions and limits on HAPS emissions to protect other existing services).