RECOMMENDATION ITU-R RS.1282*, **

FEASIBILITY OF SHARING BETWEEN WIND PROFILER RADARS AND ACTIVE SPACEBORNE SENSORS IN THE VICINITY OF 1 260 MHz

(Question ITU-R 218/7)

(1997)

The ITU Radiocommunication Assembly,

considering

a) that active spaceborne sensors operate in the 1 215 to 1 300 MHz radiolocation band under the provision of No. S5.333 of the Radio Regulations;

b) that spaceborne synthetic aperture radars, which have been in operation for almost 20 years, produce important radar imagery data for the study of the Earth's ecosystem, climatic and geological processes, the hydrological cycle, and ocean circulation;

c) that one frequency band considered for the implementation of wind profiler radars near 1 000 MHz is the 1 215 to 1 300 MHz band with technical characteristics as described in Recommendation ITU-R M.1227;

d) that the frequencies used by air traffic control radars occupy most of the 1 215 to 1 300 MHz radiolocation band on a primary basis and hundreds are operated, some on every continent;

e) that the measured power level emitted isotropically from a typical air route surveillance radar (ARSR) is higher than the power level emitted in the main beam of a typical wind profiler radar;

f) that operational experience shows that the synthetic aperture radars can be successfully operated in the band with these terrestrial radars including ARSRs, with appropriate consideration given to the design of spaceborne synthetic aperture radars (SARs);

g) that theoretical analysis shows that a small number of wind profiler radars operating on the same frequency as the SAR will unacceptably degrade the performance of this device;

h) that frequency-modulated pulsed wind profiler radars would occupy a large bandwidth which makes sufficient centre frequency separation difficult to achieve;

j) that bandwidths up to 80 MHz will be required in future SARs;

k) that application of the topographic map made by interferometry is particularly sensitive to interference;

l) that interference degrades the monitoring accuracy in monitoring the tropical rainfall forest, ice, and subsurface survey,

recognizing

a) that wind profiler radars could be operated on one or several frequencies in the 1 215 to 1 300 MHz radiolocation band,

recommends

1 that sufficient centre frequency separation between wind profiler radars and SARs be provided to achieve successful sharing in the 1 215 to 1 300 MHz band since co-frequency sharing between active spaceborne sensors and wind profiler radars is not feasible in the band;

2 that the implementation of frequency-modulated pulsed wind profiler radars be avoided in the 1 215 to 1 300 MHz band.

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* This Recommendation should be brought to the attention of Radiocommunication Study Group 8.

** Radiocommunication Study Group 7 made editorial amendments to this Recommendation.