

## RESOLUTION 671 (WRC-07)

**Recognition of systems in the meteorological aids service  
in the frequency range below 20 kHz**

The World Radiocommunication Conference (Geneva, 2007),

*considering*

- a) that lightning detection systems used by meteorological organizations are long-established, passive applications which have operational, safety-of-life considerations providing warnings of extreme weather events to a range of organizations and customers including emergency services, aviation, defence, the utilities and the public;
- b) that although lightning strikes emit electromagnetic waves over a range of frequencies, the propagation characteristics below 20 kHz make the frequency range of about 9 kHz to 20 kHz the most suitable for detection;
- c) that to avoid interference in certain parts of the world, the centre frequency of a current international network of lightning detection stations, which had been centred on 9.765625 kHz since 1939, has recently had to be moved to 13.733 kHz;
- d) that other lightning detection systems often use a combination of UHF and LF frequencies, but these provide more limited coverage than systems operating at VLF frequencies;
- e) that it is expected that between 30 and 40 reception stations would be needed at VLF frequencies to provide global coverage;
- f) that these systems have coexisted with services already having allocations in potential spectrum for systems in the meteorological aid service for a considerable period of time without interference,

*recognizing*

- a) that the accurate location of lightning is important to public safety. As well as the dangers of the lightning strike itself, thunderstorms can result in intense precipitation with consequent flooding, severe icing, wind shear, turbulence and gusting winds;

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b) that recent instances of interference have increased concerns that lightning detection systems may not be able to maintain the quality of service or to provide global coverage unless recognition is afforded to these systems in the Radio Regulations, and coordination with other services is carried out properly;

c) that this passive use is poorly protected at present;

d) that it is desirable to allocate frequencies to the meteorological aids service for lightning detection systems in spectrum which is not shared with high-power systems,

### *noting*

a) that the 3 dB bandwidth of existing lightning detection systems is approximately 2.5 kHz and hence an allocation of between 3 and 5 kHz bandwidth would be required;

b) that the proposed allocation is not intended to prevent the development of other services in the same frequency band but for this to be done in a regulated manner. ITU-R may need to develop the appropriate sharing criteria, taking into account both in-band and adjacent band services,

### *resolves*

1 to invite ITU-R to conduct, and complete in time for WRC-11, the required studies leading to technical and procedural recommendations to the Conference enabling it to decide on an appropriate method of providing recognition to long-established systems, including the possibility of making an allocation to the meteorological aids service in the frequency range below 20 kHz;

2 that the studies referred to in *resolves* 1, without placing constraints on existing services operating in accordance with the Radio Regulations, shall include sharing and compatibility studies with services already having allocations in potential spectrum for systems in the meteorological aids service taking into account the needs of other services,

### *invites administrations*

to participate in the studies by submitting contributions to ITU-R.