

RECOMMENDATION ITU-R M.1678

Adaptive antennas for mobile systems

(Question ITU-R 224/8)

(2004)

The ITU Radiocommunication Assembly,

considering

- a) that mobile, and particularly cellular, radiocommunication systems are growing at a rapid rate globally;
- b) that the radio spectrum available for such systems is limited;
- c) that spectrally efficient technologies are essential to the continued growth in capacity of land mobile systems and increased numbers of mobile terminals;
- d) that control of radiation patterns is a desirable capability which can also become an important design tool;
- e) that adaptive antenna technology has been developed for both base stations and terminal stations;
- f) that adaptive antennas provide significant spectral efficiency benefits when implementing and operating mobile communication systems;
- g) that adaptive antennas can be used with a variety of air interfaces, including those adopted in Recommendation ITU-R M.1073 – Digital cellular land mobile telecommunication systems, and Recommendation ITU-R M.1033 – Technical and operational characteristics of cordless telephones and cordless telecommunication systems, among others;
- h) that adaptive antennas can reduce the interference generated to and received from adjacent radio systems, thereby improving their ability to coexist and facilitating cross-border and adjacent band sharing;
- j) that the use of adaptive antenna systems can facilitate the deployment of new wireless networks, including broadband wireless access and radio local area network systems,

noting

- a) that an analysis of adaptive antennas is provided in Report ITU-R M.2040 – Adaptive antennas concepts and key technical aspects;
- b) that the technology has already been successfully demonstrated and deployed in operational systems,

recommends

- 1 that adaptive antenna technology should be considered in the development of new radio interfaces and in the further enhancement of existing radio interfaces to increase spectral efficiency and improve spectral utilization;
 - 2 that, where practical, adaptive antenna systems should be incorporated into the deployment of new and existing land mobile networks to enhance their spectral efficiency and as a method to reduce interference from other radio systems.
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