QUESTION ITU-R 251/5

Technical and operational aspects of passive and active
base station antennas for IMT systems

(2012)

The ITU Radiocommunication Assembly,

considering

*a)* that ever-increasing demand for mobile broadband radiocommunications requires the continual evolution of systems, and development of new system components;

*b)* that for efficient system design, economy of scale and to facilitate deployment of IMT, it is desirable to agree on the IMT system technical, operational, and related parameters, including those of passive and active base station antennas;

*c)* that the advanced capability of IMT systems is increasingly dependent upon the performance of the base station antenna systems;

*d)* that the advanced capability of IMT systems is relying upon advanced antenna concepts, including Multiple Input Multiple Output (MIMO) techniques;

*e)* that the implementation of IMT systems is facilitated by having well-characterized base station antennas;

*f)* that the increasing use of mechanized radio system planning tools for IMT can benefit from the definition and standardization of base station antenna parameters and characteristics;

*g)* that antenna parameters, performance aspects and RF characteristics may become an increasingly important consideration in interference mitigation and sharing studies;

*h)* that antenna physical characteristics are an increasingly important consideration in complex antenna system deployments,

recognizing

*a)* that IMT systems include both IMT-2000 and IMT-Advanced in accordance with Resolution ITU‑R 56;

*b)* that IMT systems utilizing advanced passive and active antenna techniques are expected to be deployed in the near term and can derive benefit immediately from these studies, particularly for active antenna systems;

*c)* that work in external organizations addresses technical aspects of base station antennas, including performance testing,

decides that the following Questions should be studied

Part A – For base station passive antenna systems

1 Definitions of passive antenna systems and associated components and terminology.

2 Definitions for common performance parameters and tolerances.

3 Develop guidelines on performance parameters and tolerances by closely collaborating with relevant external organizations.

4 Consideration of advanced concepts (e.g. remote control of pattern and tilt).

Part B – For base station active antenna systems

1 Definitions of active antenna systems and associated components and terminology related to:

a) active antennas;

b) adaptive beamforming antennas;

c) MIMO antenna systems.

2 Definitions for common performance parameters and tolerances.

3 Develop guidelines on performance parameters and tolerances by closely collaborating with relevant external organizations.

4 Consideration of advanced concepts (e.g. remote control of pattern and tilt),

further decides

1 that the results of the above studies should be included in one or more Recommendations, Reports or Handbooks;

2 that the results of the above studies should be completed by 2014.

Category: S1