

RECOMMENDATION ITU-R M.1797*

Vocabulary of terms for the land mobile service

(2007)

Scope

This Recommendation provides a vocabulary of terms and definitions for the land mobile service which may also be applicable to other radiocommunication services.

The ITU Radiocommunication Assembly,

considering

- a) that the terrestrial mobile service applications are growing at a rapid rate;
- b) that new vocabulary of terms is being introduced to accommodate this growth;
- c) that there is a need for clear definition of terminology, used in ITU-R Recommendations and other texts in order to use them in an unambiguous way,

noting

- a) that Recommendation ITU-R M.1224 contains vocabulary of terms for the international mobile telecommunications-2000 (IMT-2000);
- b) that Recommendation ITU-R F.1399 contains vocabulary of terms for wireless access;
- c) that Recommendation ITU-R F.592-2 contains vocabulary of terms for the fixed service;
- d) that Recommendation ITU-R V.573 contains terms of radiocommunications vocabulary;
- e) that Recommendation ITU-R V.662 contains general terms and definitions used in the International Electrotechnical Vocabulary (IEV);
- f) that Recommendation ITU-R V.666 contains abbreviations and initials used in telecommunications,

recommends

- 1** that the vocabulary of terms and definitions in Annex 1 should be used in texts relating to the land mobile service.

NOTE 1 – This vocabulary may also be applicable to other radiocommunication services.

* This Recommendation should be brought to the attention of the Coordination Committee for vocabulary (CCV).

Annex 1

Vocabulary of terms for the land mobile service

1 Terms related to antennas

Antenna

F:	<i>antenne</i>
S:	<i>antena</i>
A:	هوائي
C:	天线
R:	антенна

Any structure or device used to collect or radiate electromagnetic power.

Radiation pattern, antenna radiation pattern

F:	<i>diagramme de rayonnement, diagramme de rayonnement de l'antenne</i>
S:	<i>diagrama de radiación de la antena</i>
A:	مخطط الإشعاع، مخطط إشعاع الهوائي
C:	辐射方向图, 天线辐射方向图
R:	диаграмма направленности, диаграмма направленности антенны

The variation of the transmitted power of an *antenna* in three-dimensional space, usually expressed as an angular function with respect to a reference direction.

NOTE 1 – A radiation pattern is usually represented graphically for the far-field conditions in either horizontal or vertical plane.

Main-lobe, antenna main-lobe

F:	<i>lobe principal, lobe principal d'une antenne</i>
S:	<i>lóbulo principal, lóbulo principal de una antena</i>
A:	فص رئيسي، فص رئيسي لهوائي
C:	主瓣, 天线主瓣
R:	главный лепесток, главный лепесток диаграммы направленности антенны

The part of an *antenna radiation pattern* containing the direction of maximum radiation (exhibiting the greatest field strength), which is referred to as the direction of the main-lobe.

NOTE 1 – For a receive antenna it is the part of the receive pattern containing the direction of maximum sensitivity. The width of the main-lobe is usually specified as the angle encompassed between the points where the power has fallen 3 dB below the maximum value. The horizontal radiation pattern, i.e. that which is plotted as a function of azimuth about the antenna, is usually specified. The vertical radiation pattern, i.e. that which is plotted as a function of elevation from a specified azimuth, is also of interest and may be similarly specified.

Antenna downtilt

F:	<i>inclinaison de l'antenne vers le bas</i>
S:	<i>inclinación de la antena hacia abajo</i>
A:	ميل تدريجي للهوائي نحو الأسفل
C:	天线下倾
R:	наклон антенны вниз

Direction of the *main-lobe* of an *antenna* in the downward direction with respect to the horizontal plane.

NOTE 1 – The antenna downtilt can be accomplished either mechanically or electrically, and if both are implemented their effect is additive.

Downtilt angle, antenna downtilt angle

F:	<i>angle d'inclinaison vers le bas, angle d'inclinaison de l'antenne vers le bas</i>
S:	<i>ángulo de inclinación hacia abajo, ángulo de inclinación de la antena hacia abajo</i>
A:	زاوية الميل التدريجي للهوائي نحو الأسفل، زاوية الميل التدريجي نحو الأسفل
C:	下倾角度, 天线下倾角
R:	угол наклона вниз, угол наклона антенны вниз

The angle between the direction of the *main-lobe* and the horizontal plane.

NOTE 1 – It is a positive number for downtilt and a negative number for uptilt.

Mechanical downtilt, mechanical antenna downtilt

F:	<i>inclinaison mécanique vers le bas, inclinaison mécanique de l'antenne vers le bas</i>
S:	<i>inclinación mecánica hacia abajo, inclinación mecánica de la antena hacia abajo</i>
A:	ميل تدريجي ميكانيكي للهوائي نحو الأسفل، ميل تدريجي ميكانيكي للهوائي نحو الأسفل
C:	机械下倾, 机械天线倾角
R:	механический наклон вниз, механический наклон антенны вниз

An *antenna downtilt* that is accomplished by physically adjusting the mounting of the antenna structure.

Electrical downtilt, electrical antenna downtilt

F:	<i>inclinaison électrique vers le bas, inclinaison électrique de l'antenne vers le bas</i>
S:	<i>inclinación eléctrica hacia abajo, inclinación eléctrica de la antena hacia abajo</i>
A:	ميل تدريجي كهربائي للهوائي نحو الأسفل، ميل تدريجي كهربائي للهوائي نحو الأسفل
C:	电调下倾, 电调天线倾角
R:	электрический наклон вниз, электрический наклон антенны вниз

An *antenna downtilt* that is accomplished by adjusting the phasing of the antenna elements, or by similar electrical means.

Adaptive antenna system (AAS)

F:	<i>système d'antenne adaptative (AAS)</i>
S:	<i>sistema de antena adaptativa (AAS)</i>
A:	نظام هوائي تكيفي
C:	自适应天线系统
R:	адаптивная антенная система

An array of antennas and associated signal processing that together is able to change its antenna radiation pattern dynamically to adjust to noise environment, interference and multipath.

NOTE 1 – Adaptive arrays form an infinite number of patterns (scenario-based) that are adjusted in real-time. Adaptive antennas are one kind of smart antennas.

Adaptive spatial processing

F:	<i>traitement spatial adaptatif</i>
S:	<i>tratamiento espacial adaptativo</i>
A:	معالجة فضائية تكيفية
C:	自适应空间处理
R:	адаптивная пространственная обработка

An advanced signal processing technique that integrates a higher level of measurement and analysis of the scattering aspects of the RF environment to maximize the use of multiple antennas, combining signals in space in a method that transcends a one user-one beam methodology.

Antenna diversity combining

F:	<i>combinaison par diversité d'antennes</i>
S:	<i>combinación por diversidad de antenas</i>
A:	تجميع من مختلف الهوائيات
C:	天线分集合并
R:	сложение разнесенных сигналов от антенн

A technique of coherently combining the signals from multiple antennas to produce an increase of the desired signal strength.

NOTE 1 – Diversity combining uses all antenna elements at all times for each user, creating an antenna pattern that dynamically adjusts to the propagation environment.

Multibeam antenna

F:	<i>antenne multi-faisceaux</i>
S:	<i>antena de haces múltiples</i>
A:	هوائي متعدد الحزم
C:	多波束天线
R:	многолучевая антенна

An antenna system that uses multiple beams at an antenna site for transmission and/or reception.

NOTE 1 – Multibeam systems may or may not be adaptive.

Multiple-input multiple-output (MIMO)

F:	<i>entrées multiples et sorties multiples (MIMO) ou systèmes multi antennes</i>
S:	<i>entradas múltiples y salidas múltiples (MIMO) en un sistema de antenas múltiples</i>
A:	تعدد الدخول والخرج في نظام متعدد الهوائيات
C:	多端入多端出
R:	система с многими входами и многими выходами (MIMO)

A technique that utilizes multiple antennas on both ends of the transmit-receive channel, e.g. at both the base station and the terminal(s) in a wireless network, to provide significant improvements in the capacity or reliability of the system.

NOTE 1 – This is accomplished by exploiting the complex multipath propagation channels typically found in terrestrial mobile communications.

NOTE 2 – There are many alternative solutions within this family of techniques, but they are all based on using the same time and frequency (or code) resource(s) by using multiple antenna elements at both ends of the transmit-receive channel.