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Re:	Liaison report
Abstract	This contribution provides an update on ITU-R activities on Fixed Wireless Access, following contribution IEEE 802.16l-00/16. It covers the relevant aspects of the meetings of ITU-R JRG 8A-9B, Working Party 9B, Study Group 9, Joint Task Group 1-6-8-9, Working Party 8A, and Study Group 8, which were held during September and October 2000 at the ITU Headquarters in Geneva, Switzerland.
Purpose	For information only.
Notice	
Release	

Update on Fixed Wireless Access Activities in ITU-R

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Introduction

This contribution provides an update on ITU-R activities on Fixed Wireless Access, following the liaison contribution IEEE 802.16li-00/16. It covers the relevant aspects of the meetings of ITU-R JRG 8A-9B, Working Party 9B, Study Group 9, Joint Task Group 1-6-8-9, Working Party 8A, and Study Group 8, which were held during September and October 2000 at the ITU Headquarters in Geneva, Switzerland.

Vocabulary of Terms for Wireless Access

ITU-R Study Group 9 adopted draft revised Recommendation ITU-R F.1399 "Vocabulary of Terms for Wireless Access" submitted by JRG 8A-9B (Wireless Access) through Working Party 9B. Many important new terms and definitions were added by JRG 8A-9B to the draft revised Recommendation, particularly frequency management terms, but none of the terms and definitions in the original Recommendation ITU-R F.1399 were changed. The draft revised Recommendation is enclosed in Attachment 1 for information of IEEE 802.16 members.

Second Edition of the Fixed Wireless Access (FWA) Handbook

Working Party 8A approved the text for the Second Edition of the FWA Handbook, which was submitted by the JRG 8A-9B.

The original version of this handbook was compiled in November 1996 and was published by mid-year in 1997. Both the technology and the applications have changed significantly since then and the handbook had to be updated. Some of main changes in the market include the explosive growth of Internet applications and the increasing need to provide Universal Access to the Internet in most parts of the world, in addition to the need to support existing access services. New broadband wireless access systems are emerging that will satisfy that need.

A summary of the changes that have been made to the Second Edition with respect to the original publication (first edition) is as follows:

- The terminology has been updated to conform to the latest ITU-R Recommendations. For example, the original title of this handbook was "Wireless Access Local Loop." However, the term "local loop" not only carries negative connotations of limited bandwidth, but also it is not technically correct. Hence, its use has been explicitly deprecated in ITU Recommendations. The new title of the handbook, "Fixed Wireless Access" (FWA) is more accurate and follows the ITU Recommendations.
- New sections on industry trends have been added, for example, the access to the Internet, the convergence of wireline and wireless access, etc.
- Technologies that were described in the first edition of the handbook, but that have become in disuse or that are not being deployed any more, have been removed from the handbook.

- Substantial material has been added on Broadband Wireless Access (BWA), following the most recent industry trends.

Future Status of the Joint Rapporteur Group 8A-9B

Due to the increasing interest in wireless access and the overlap in the mandate of SGs 8 and 9, a joint Rapporteur Group was formed in 1997 with experts from WP 8A and WP 9B (JRG 8A-9B) to continue the wireless access studies. It should be noted that satellite wireless access was not within the scope of JRG 8A-9B. A number of Recommendations were developed by JRG 8A-9B and were approved by the parent working parties. This was a result of JRG 8A-9B being instrumental in providing the appropriate forum to attract the necessary expertise, which has been very successful in carrying out the work on WA.

Study Group 8 discussed and agreed at its November 1999 meeting the upgrading of the Joint Rapporteur Group 8A-9B to a Joint Working Party. At the tenth meeting of the Radiocommunication Study Group Chairmen and Vice-Chairmen this question was also discussed and the course of action suggested was endorsed. The Chairman of Study Group 9 agreed in principle, but drew attention to possible implications on the terms of reference of Working Party 9B. (Reference: Document 8/1001). This issue was discussed further at the Radiocommunication Assembly (RA-2000) and the Chairman of SG 9 asked that it be considered by Study Group 9 before taking any action.

The matter of the continuation of a joint group between SGs 8 and 9 was discussed by SG 9 at its meeting in September 2000 (see Document 8/30, Source: Document 9/32(Rev.1)), which concluded that the scope of the joint group should be limited to:

– all aspects of Radio Local Area Networks (RLANs);
– system characteristics of mobile technology derived Fixed Wireless Access (FWA).

Study Group 9 also redefined the terms of reference of its current Working Parties as follows (see also Fig. 1):

Working Party 9A

- Performance and availability aspects of FWA systems in general;
- Basic performance and interference criteria specifically for fixed systems using HAPS, if essential.

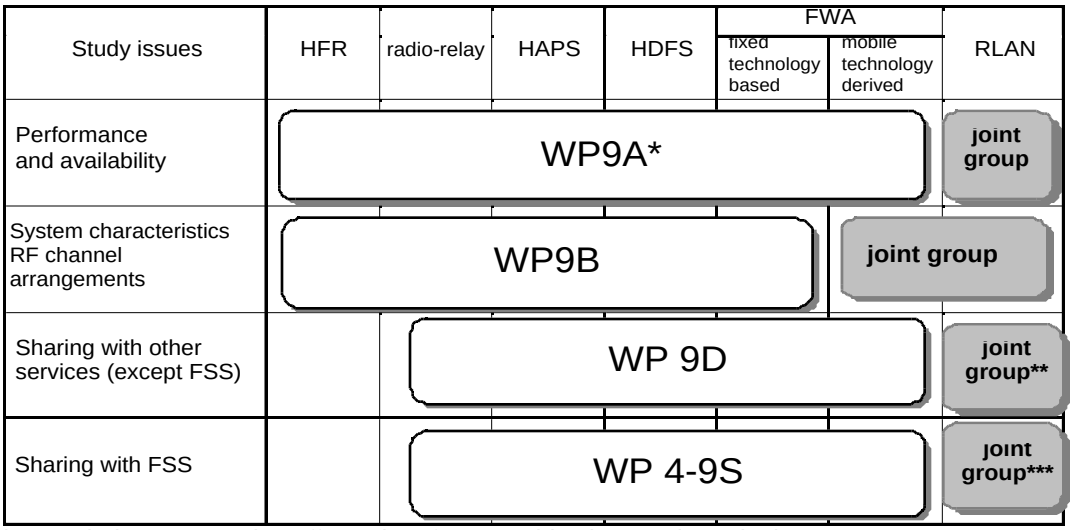
Working Party 9B

- Sharing and compatibility between fixed systems using HAPS and other FS systems;
- System characteristics and RF channel arrangements for fixed technology derived FWA

Working Party 9D

– Sharing and compatibility between FWA in general and other services (except for FSS);
- Sharing and compatibility between fixed systems using HAPS and other services (except for FSS).

No changes were made to the terms of reference of Working Party 9C (HF systems) and 4-9S (sharing with satellite).



(*) Includes propagation effects, interference objectives and terminology

(**) Joint work between joint group and other concerned WPs

(***) Joint work between joint group and WP 4A

HDFS: High density applications in the fixed service;
HAPS: High altitude platform stations;
HFR: Hybrid fiber radio;
RLAN: Radio local area networks;
FWA: Fixed wireless access

FIGURE 1
Scope of the Working Parties and Joint Group 8A-9B

Study Group 8, at its meeting in October 2000, noted these conclusions of Study Group 9, but disagreed on the allocation of the work on performance and availability. The discussions will continue within WP 8A with a view of revising the Study Questions allocated to WP 8A as required.

Progress Report of the first Meeting of Joint Task Group 1-6-8-9 on Terrestrial Wireless Interactive Multimedia Systems

The first meeting of Joint Task Group 1-6-8-9 to address the studies given in joint Decision of Study Groups 1, 6, 8 and 9 (reference: ITU-R Document CVC-11/10) relating to terrestrial wireless interactive multimedia systems was held during 2-4 October 2000 at ITU headquarters in Geneva. It was agreed that the work of the JTG should be focused on developing the draft CPM Report on agenda item 1.21 for WRC-03. A summary of discussions on Terrestrial Wireless Interactive Multimedia Systems is given in Attachment 2. A liaison statement was sent to the feeder groups with specific questions to solicit input. The next meeting of JTG 1-6-8-9 is scheduled to be held in November 2001.

Establishment of a Correspondence Group concerning the changing radiocommunication trends and the impact on the structure of the ITU-R Study Groups

The Radiocommunication Assembly, held in Istanbul from 1 to 5 May 2000, decided to form a Correspondence Group to examine the possible evolution of the structure of the work in ITU-R. The Correspondence Group is to consider the evolving radiocommunication trends and structure options both in the short term and the long term based on contributions from Member States and Sector Members (Reference: ITU-R Administrative Circular CACE/194). In particular, the correspondence group will consider:

a) the trends of convergence and integration of systems supporting communication services and applications, including wireless and wireline access, fixed and mobile, terrestrial and satellite, telecommunications and broadcasting;

b) Resolution ITU-R 4-3;

c) that the structure of the work in ITU-R has traditionally followed the definitions of the radiocommunication services and that many of the radiocommunication systems in use today do not correspond precisely to the defined radiocommunication services;

d) that ITU-R needs to adapt itself to the changing trends to produce significant results;

e) that the Study Group structure should offer a focus for business and institutional interests of the ITU-R membership to attract the necessary expertise and allow more effective coverage of the work by the ITU-R Members;

f) that focussed work will facilitate the timely development and approval of Recommendations, so that ITU-R becomes more responsive to market and industry needs while maintaining the high technical quality of Recommendations;

g) that the structure of the Study Groups should allow the most efficient development of the work in terms of impact on the ITU-R budget.

Next Meeting of JRG 8A-9B (Wireless Access)

The next ITU-R JRG 8A-9B meeting is scheduled to be held in March 2001 in conjunction with the Working Party 9B meeting (12-19 March 2001, Geneva, Switzerland). The following meeting is planned to be held in conjunction with the meeting of Working Party 8A (22-30 October 2001, Geneva, Switzerland). The URL for the JRG 8A-9B is **http://www.itu.int/was**

JRG 8A-9B works also by correspondence through the JRG e-mail reflector address: jrg8a-9bwas@itu.int Those wishing to subscribe to the e-mail reflector should send an e-mail to the following address: mailserv@itu.int with the following single line in the text (without the quotes):

"subscribe jrg8a-9bwas"

Attachments: 2

ATTACHMENT 1

INTERNATIONAL TELECOMMUNICATION UNION
RADIOCOMMUNICATION STUDY GROUPS

Document 9/8-E
26 September 2000
English only

Source: Doc. 9B/40

Working Party 9B

DRAFT REVISION TO RECOMMENDATION ITU-R F.1399[*, **]

VOCABULARY OF TERMS FOR WIRELESS ACCESS

(Questions ITU-R 215/8 and ITU-R 140/9)
(1999)

1 Introduction

This Recommendation consists primarily of those terms and definitions that are considered essential to the understanding and application of the principles of wireless access. However, they are not exclusive to wireless access and are recommended also for application, in so far as they are relevant, to other types of telecommunication systems and services.

Included are terms that may already be defined in the Radio Regulations and other ITU-R/ITU-T Recommendations. However, the definitions given here embrace only the essential concepts and on this basis it is considered that they are not inconsistent with the more specialized definitions that appear in those texts.

Where a truncated term is widely used in an understood context, the complete term is quoted following the colloquial form.

Some definitions include terms in italic face to indicate that these terms are defined elsewhere in this Recommendation.

Technologies in use today for implementing wireless access include cellular systems, cordless phone and cordless telecommunication systems, satellite systems, etc. New technologies and systems such as IMT-2000, wireless broadband ISDN, wireless ATM, HAPS, etc., also form part of wireless access if they satisfy the basic criteria of end-user radio connection(s) to core networks (see § 4.3 for list of acronyms and abbreviations).

Wireless access may be considered from many perspectives, for example:

[*] This Recommendation was developed jointly by Radiocommunication Study Groups 8 (Working Party 8A) and 9 (Working Party 9B), and any further revision should be undertaken jointly.

[**] This Recommendation should be brought to the attention of Radiocommunication Study Groups 4 (Working Party 4A), 8 (Working Party 8A) and Coordination Committee for Vocabulary (CCV).

– *Mobility capabilities* of the terminal: fixed, nomadic (may be used in different places but the terminal must be stationary while in use), mobile, restricted mobility (e.g. within a single cell), etc.

– *Service support capabilities*: narrow-band, broadband, multimedia, etc.

– *Type of telecommunication service*: conversational, distribution, information retrieval.

– *Connectivity*: (which would depend on the switched network that the terminal accesses, e.g. Internet, PSTN, etc.). (See § 4.3 for list of acronyms and abbreviations.)

– *Radio transmission technology*: access technique (TDMA, CDMA, etc.), modulation technique (analogue, digital, etc.), duplex technique (FDD, TDD, etc.), etc. (See § 4.3 for list of acronyms and abbreviations.)

– *Delivery mechanism*: terrestrial, satellite, etc.

Of particular interest are the mobility characteristics of wireless access systems; thus this Recommendation provides definitions of the terms "fixed", "mobile" and "nomadic" wireless access.

The purpose of this Recommendation is to specify terms and definitions for terrestrial wireless access.

2 Scope

The Recommendation specifies definitions for terms primarily focused in the field of terrestrial wireless access systems. Wireless access applications may be provided within the definitions of the radio services FS, MS, FSS and MSS contained in the Radio Regulations.

The ITU has deprecated the use of the term "loop" (see References below: CCITT Blue Book, Vol. I, Fascicle I.3, 1988); for this reason, and more so because this term does not make any sense with radio technologies, the use of the terms that include loop are deprecated. These include wireless local loop, radio local loop, and wireless access local loop.

It should be noted that in many cases systems may be able to support a mixture of users (i.e. fixed, mobile and nomadic) and possibly with restrictions on the type of mobility. It is not practical to define terms for each possible combination, but those above should suffice to refer to the primary characteristics of the system.

3 References

The following references have been used in the development of the vocabulary of terms for wireless access:

– ITU, terms and definitions; abbreviations and acronyms; recommendations on means of expression (Series B), General Telecommunications Statistics (Series C), CCITT Blue Book, Vol. I, Fascicle I.3, 1988.

– Recommendation ITU-R F.592-2: Terminology used for radio-relay systems.

– Recommendation ITU-R M.1224: Vocabulary of terms for International Mobile Telecommunications-2000 (IMT-2000).

– ITU-T Recommendation D.000: Terms and definitions for the Series-D Recommendations.

– ITU-T Recommendation E.600: Terms and definitions of traffic engineering.

–	ITU-T Recommendation G.100:	Definitions used in Recommendations on general characteristics of international telephone connections and circuits.
–	ITU-T Recommendation I.112:	Vocabulary of terms for ISDNs.
–	ITU-T Recommendation I.113:	Vocabulary of terms for broadband aspects of ISDNs.
–	ITU-T Recommendation I.114:	Vocabulary of terms for universal personal telecommunication.
–	ITU-T Recommendation J.112:	Transmission systems for interactive cable television services.

4 Recommendations

The ITU Radiocommunications Assembly recommends that the terms and definitions for wireless access in this Recommendation be adopted.

4.1 Vocabulary of terms: Main terms

4.1.1**Wireless access;** Accès hertzien, Accès sans fil; Acceso inalámbrico:
End-user radio connection(s) to core networks.

NOTE 1 - Core networks include, for example, PSTN, ISDN, PLMN, PSDN, Internet, WAN/LAN, CATV, etc. (See § 4.3 for list of acronyms and abbreviations.)

NOTE 2 - The *end-user* may be a single *user* or a *user* accessing the services on behalf of multiple *users*.

4.1.2**Fixed wireless access (FWA);** Accès hertzien fixe; Acceso inalámbrico fijo:
Wireless access application in which the location of the *end-user termination* and the network access point to be connected to the end-user are fixed.

4.1.3**Mobile wireless access (MWA);** Accès hertzien mobile; Acceso inalámbrico móvil:
Wireless access application in which the location of the *end-user termination* is mobile.

4.1.4**Nomadic wireless access (NWA);** Accès hertzien transportable ou nomade; Acceso inalámbrico nómada:
Wireless access application in which the location of the *end-user termination* may be in different places but it must be stationary while in use.

4.2 Vocabulary of terms: General terms

4.2.1 **Backhaul communication**

F: communication de liaison de raccordement

S: comunicación relativa a la red de retroceso

Transport of aggregate communication signals from base stations to the core network.

4.2.2 **Base station**

F: station de base

S: estación de base

See Central station

4.2.3**Broadband wireless access (BWA);** Accès hertzien à large bande; Acceso inalámbrico de banda ancha:
Wireless access in which the connection(s) capabilities are higher than the primary rate.

4.2.4 Central station

F: station centrale

S: estación central

The common name for all the radio equipment located at one and the same place used for serving one or several cells.

Note – Also known as hub station, and also as base station, even though RR No. S1.71 defines base station more restrictively "a land station in the land mobile service".

4.2.5 Customer premises equipment/network

F: équipement/réseau des locaux d'abonné

S: equipo/red en las instalaciones del cliente

The equipment/network administered by the user.

(NOTE - Based on ITU-T Recommendation H.310.)

4.2.6 Distribution system

F: système de distribution

S: sistema de distribución

System for unidirectional delivery (transmission) of services to end users.

NOTE 1 - This is strictly not wireless access as such, for the latter requires an additional return (reverse) or interaction channel to be included. Such distribution systems include LMDS, but it should be noted that some systems labelled distribution systems are in fact MWS systems and should be so referenced.

4.2.7 Dynamically variable bandwidth

F: largeur de bande variable dynamiquement

S: *ancho de banda variable dinámicamente*

A capability of a system to be able to change the bandwidth of the information payload capacity of a communication channel available to a user for services according to negotiated user requirements.
NOTE - This is also known as bandwidth on demand.
4.2.8**End-user;** Utilisateur final ou usager final; Usuario final:
A human being, organization, or telecommunications system that accesses the network in order to communicate via the services provided by the network.

(See ITU-T Recommendation J.112.)

4.2.9**End-user connection point;** Point de connexion d'utilisateur final; Punto de conexión del usuario final:
Point at which the *end-user* obtains the communications service (see Fig. 1).
4.2..10**End-user termination, end-user radio termination;** Terminaison radioélectrique d'utilisateur final; Terminacion de usuario final; Terminación radioeléctrica del usuario final:
The *end-user* radio equipment antenna (see Fig. 1)
4.2.11**High altitude platform station (HAPS);** Station placée sur une plate-forme à haute altitude; Estación en plataforma a gran altitud:
A station located on an object at an altitude of 20 to 50 km and at a specified nominal, fixed point relative to the Earth (see Note 1).
F:Station installée sur un objet placé à une altitude comprise entre 20 et 50 km et en un point spécifié, nominal, fixe par rapport à la Terre.
S:Estación situada sobre un objeto a una altitud de 20 a 50 km y en un punto nominal, fijo y especificado con respecto a la Tierra.
(See RR No. S1.66A.)

NOTE 1 - Systems using HAPS which consist of a HAPS and ground stations located at the end-user termination provide wireless access serving as links for various communications. The communication mode of a system using HAPS is, for the time being, limited to FWA applications on account of technical reasons at the ground station equipment. However, nomadic or mobile wireless access applications are also expected in the future.

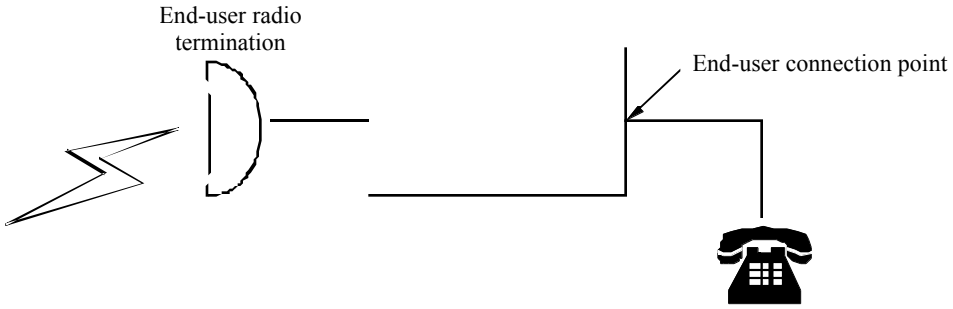


FIGURE 1

Illustration of terms

4.2.12 **High Density applications in the Fixed Service (HDFS)**

F:

S: Aplicaciones de alta densidad en el servicio fijo.
A significant level of ubiquitous deployment of point-to-point (P-P) and/or point-to-multipoint (P-MP) systems per square kilometre in a service area.
Note - These systems are generally intended to support broadband applications.

4.2.13 **Hub station**

F: station pivot

S: estación troncal

See **central station**.

4.2.14 **Internet protocol**

F: protocole Internet

S: protocolo Internet
Networking protocol defined by IETF standards.

4.2.15 **Multimedia wireless system**

F: système d'accès sans fil multimédia

S: sistema de acceso inalámbrico multimedia; sistema de acceso inalámbrico multimedios
A *wireless system* which supports information exchange of more than one type, such as text, graphics, voice, sound, image, data, and video.
4.2.16**Multipoint systems**; Systèmes multipoint; Sistemas multipunto:
A generic term for P-MP, MP-MP and variations/hybrids of these.

Narrow-band wireless access

F: accès sans fil à bande étroite

S: acceso inalámbrico de banda estrecha
Wireless access in which the maximum usable end-user bit rate is up to and including 64 kbit/s.

NOTE - The access is typically digital but could encompass equivalent analogue access.
4.2.17**Point-to-multipoint system;** Système point à multipoint; Sistema punto a multipunto:
A system that establishes connections between a single specified point and more than one other specified points.

NOTE 1 - It should be noted that wireless access systems commonly feature air-side concentration in order to preserve valuable spectrum resources, although not necessarily so (as, for example, in some lower density, rural systems). Generally point-to-multipoint systems offer FWA, hence the use of the term "fixed wireless access" defined above to distinguish such point-to-multipoint systems from mobile or nomadic wireless access systems.
4.2.18**Point-to-point system;** Système point à point; Sistema punto a punto:
A system that establishes a connection between two end points only.

NOTE 1 - These systems may be cascaded geographically,including in the form of a ring.

4.2.19 **Primary rate**

F: débit primaire

S: velocidad primaria
The transmission bit rate of 1 544 kbit/s or 2 048 kbit/s.

4.2.20 **Quality of service**

F: qualité du service

S: calidad del servicio
The collective effect of service performance which determine the degree of satisfaction of a user of the service.

NOTE 1 - The quality of service is characterized by the combined aspects of service support performance, service operability performance, serveability performance, service security performance and other factors specific to each service.

NOTE 2 - The term "Quality of Service" is not used to express a degree of excellence in a comparative sense nor is it used in a quantitative sense for technical evaluations. In these cases a qualifying adjective (modifier) should be used.

(NOTE - ITU-T Recommendation E.800 (94), 2101.)

4.2.21 **Repeater; repeater station**

F: station répéteur

S: estación repetidora
A station used to extend geographical range or coverage ability incorporating both receive and transmit functions, which may or may not feature frequency translation.
4.2.22**Station;** Station radioélectrique; Estación radioeléctrica:
The common name for all the radio equipment at one and the same place (see Fig. 1).

NOTE 1 - The term "station" may refer to any *end-user* radio equipment or network radio equipment.
4.2.23**Teledensity, access density;** Densité d'accès, densité de terminaisons; Teledensidad, densidad de accesos:
Number of *end-user terminations* per square kilometre.
4.2.24**Teledensity, terminal density;** Densité de terminaux; Teledensidad, densidad de terminales:
Number of *end-user* terminals per square kilometre.
4.2.25**Teledensity, telephone density;** Télédensité, densité téléphonique; Penetración, densidad telefónica; teledensidad:
The number of telephones (or lines) relative to a characteristic element such as number of inhabitants (telephones per 100 population), number of households, business premises, area units, income groups, etc., used generally for planning purposes.
(See TERMITE – TERMInology of TElecommunications – ITU, Serial number: MT1886, Modified: June 1997.)

4.2.26 **Terminal station**

F: station terminal

S: estación terminal
The user or end-user station.

NOTE - Also known as remote station, out station, subscriber station, subscriber radio terminal, and remote terminal.
4.2.27**Termination, radio termination;** Terminaison radioélectrique; Terminación, terminación radioeléctrica:
The physical location of the radio equipment antenna.
4.2.28**Total station density;** Densité totale de stations radioélectriques; Densidad total de estaciones radioeléctricas:
The total number of *stations* per square kilometer in a service area.
4.2.29**Total transmitter density;** Densité totale d'émetteurs; Densidad total de emisores:
The total number of transmitters per square kilometer in a service area.
4.2.30**User;** Utilisateur; Usuario:
Any entity external to the network which utilizes connections through the network for communication.
(See ITU-T Recommendation E.600.)

4.2.31 **Virtual point-to-point connections**

F: connexion virtuelle point-à-point

S: conexión virtual punto a punto
Providing a point-to-point connection to a subscriber using a point-to-multipoint system.

4.2.32 **Wideband wireless access**

F: accès sans fil à bande èlargie

S: acceso inalámbrico de banda amplia
Wireless access in which the maximum usable end-user bit rate is greater than 64 kbit/s and up to, and including, the primary rate.

NOTE - The access is typically digital but could encompass equivalent analogue access.

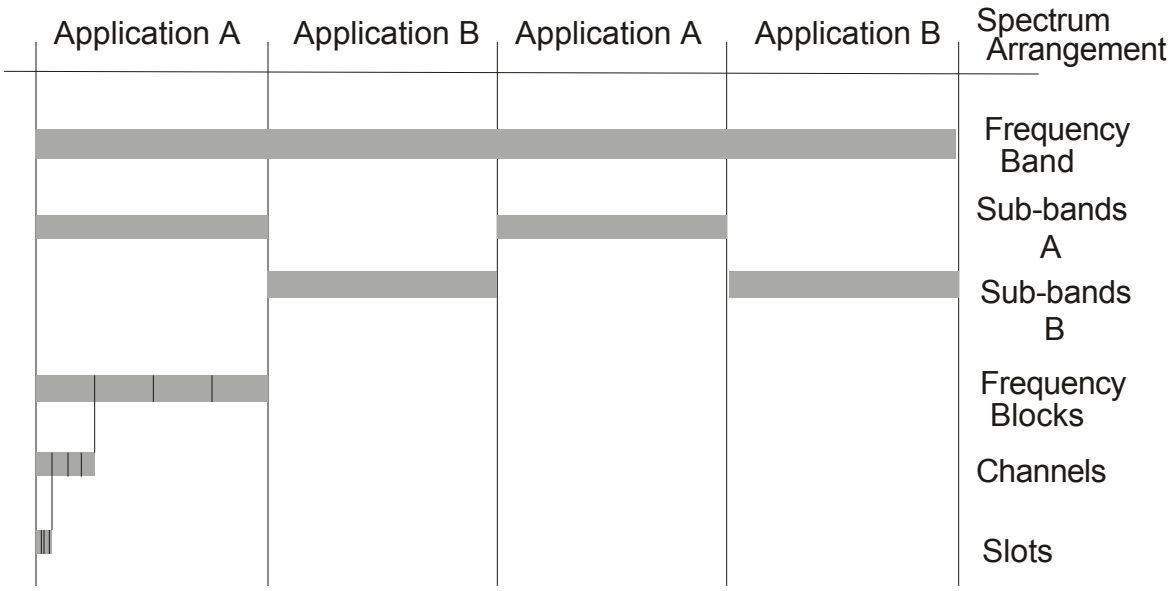
4.3 Vocabulary of terms: Frequency management terms

4.3.1 **Block, frequency block, spectrum block**

F: bloc; bloc de fréquences; bloc de spectre

S: bloque, bloque de frecuencias; bloque de espectro
A contiguous portion of spectrum within a sub-band or frequency band, typically assigned to a single operator.

NOTE - A collection of frequency blocks may form a sub-band and/or a frequency band. See Figure 2.



NOTE: Guardbands can occur at any frequency edge in this diagram

FIGURE 2

Example of Relationships between Spectrum Terminology

4.3.2 **Channel; radio-frequency channel**

F: *canal; canal de radio-fréquence*

S: *canal; canal de radio-frecuencia*

A specified portion of the RF spectrum which carries a specific radio signal.

NOTE 1 - A frequency channel includes one or more transmission channels

NOTE 2 - A channel is composed of one or more slots. A collection of channels is a frequency block and/or a sub-band. See Figure 1.

4.3.3 **Channel; transmission channel**

F: *canal de transmission*

S: *canal de transmisión*

A means of transmission of signals between two points.

NOTE 1 - This is normally, but not always, unidirectional.

4.3.4 **Downlink channel**

F: *canal de la liaison descendante*

S: canal de enlace descendente
A unidirectional transmission channel from central station to terminal station. Also referred to as downstream.

4.3.5 **Downstream**

F: descendant

S: descendente
The direction from base station to subscriber station(s).

4.3.6 **Downstream; downstream channel**

F: canal descendant

S: canal descendente
See downlink.

4.3.7 **Forward channel**

F: voie d'aller

S canal de ida
A unidirectional transmission channel from central station to terminal station. Also known as forward link/path.

NOTE 1 - The use of the term forward channel implies the presence of an associated reverse channel.

4.3.8 **Frequency Division Duplex**

F: duplex à répartition en fréquence

S: dúplex por división de frecuencia
Separation of upstream and downstream transmission in the frequency domain at the same time.

4.3.9 **Frequency plan; frequency arrangement**

F: plan de fréquences; arrangement de fréquences

S: plan de frecuencias; disposición de frecuencias
A systematic division of a frequency band into a collection of *sub-bands*, *blocks*, and/or *channel*s, that are applicable to a radiocommunication service or services using the frequency band.

NOTE - The term "plan" in this context does not imply the regulatory plans in the Radio Regulations. The latter should be referred to by using title case "Plan".

4.3.10 **Interaction channel; interaction transmission channel**

F: canal de transmission interactive

S: canal de transmisión interactivo

A bidirectional transmission channel (path or link) used in conjunction with a higher capacity, main traffic forward channel which enables the terminal and central stations to communicate independently of the main traffic delivery.
Also known as interaction link or path.

NOTE 1 - In some cases the central-to-terminal station part of this interaction channel may be combined with the main traffic delivery. In this case the interaction channel may refer only to the reverse channel.

NOTE 2 - The main traffic capacity is normally offered in the forward (down) direction and the interaction channel is of lower capacity.

4.3.11 **Return channel**

F: *canal de retour*

S: *canal de retorno*
A unidirectional transmission channel from terminal station to central station. Also known as reverse channel/link/path.

NOTE 1 - The use of the term return channel implies the presence of an associated forward channel.

4.3.12 **Slot; frequency slot**

F: *créneau; créneau de fréquence*

S: *intervalo; intervalo de frecuencias*
The smallest unit of spectrum used in construction of a *frequency plan*, such that all *bands*, *sub-bands*, *blocks*, and *channels*, which are used in this plan are integer multiples of the slot size.

NOTE - See Figure 1.

4.3.13 **Sub-band, frequency sub-band**

F: *sous-bande; sous-bande de fréquences*

S: *subbanda; subbanda de frecuencias*
A portion or portions of a frequency band, which identifies a particular use, service, category and/or system type.

NOTE - A sub-band may be a collection of slots, channels and/or frequency blocks. The sub-band may also include guardbands. See Figure 1.

4.3.14 **Time Division Duplex**

F: *duplex à répartition dans le temps*

S: *dúplex por división de tiempo*
Separation of upstream and downstream transmission in the time domain using the same frequency.

4.3.15 **Uplink channel**

F: *canal de la liaison montante*

S: *canal de enlace ascendente*
A unidirectional transmission channel from terminal station to central station. Also referred to as upstream channel.

4.3.16 **Upstream**

F: *montant*

S: *ascendente*
The direction from subscriber station(s) to base station.

4.3.17 **Upstream; upstream channel**

F: *canal montant*

S: *canal hacia adelante*
See uplink channel.

4.4 Acronyms and abbreviations used in wireless access

ATM	Asynchronous transfer mode
BWA	Broadband wireless access
CATV	Community antenna television
CDMA	Code division multiple access
FDD	Frequency duplex division
FDMA	Frequency division multiple access
FSS	Fixed-satellite service
FWA	Fixed wireless access
HAPS	High altitude platform stations
HDFS	High Density applications in the Fixed Service
IMT-2000	International Mobile Telecommunications-2000
ISDN	Integrated services digital network
LAN	Local area network
LMCS	Local Multipoint Communication System(s)
LMDS	Local Multipoint Distribution System(s)
MMDS	Multichannel Multipoint Distribution System(s)
MP	Multipoint
MP-MP	Multipoint-to-multipoint
MSS	Mobile-satellite-service
MVDS	Multipoint Video Distribution System(s)
MWA	Mobile wireless access
MWS	Multimedia Wireless System(s)
NWA	Nomadic wireless access
P-P	Point-to-point
P-MP	Point-to-multipoint
PLMN	Public land mobile network
PSDN	Public switched data network

PSTN	Public switched telephone network
TDD	Time division duplex
TDMA	Time division multiple access
WAN	Wide area network

APPENDIX 1

Alphabetical List of Terms

Term *Section Number*

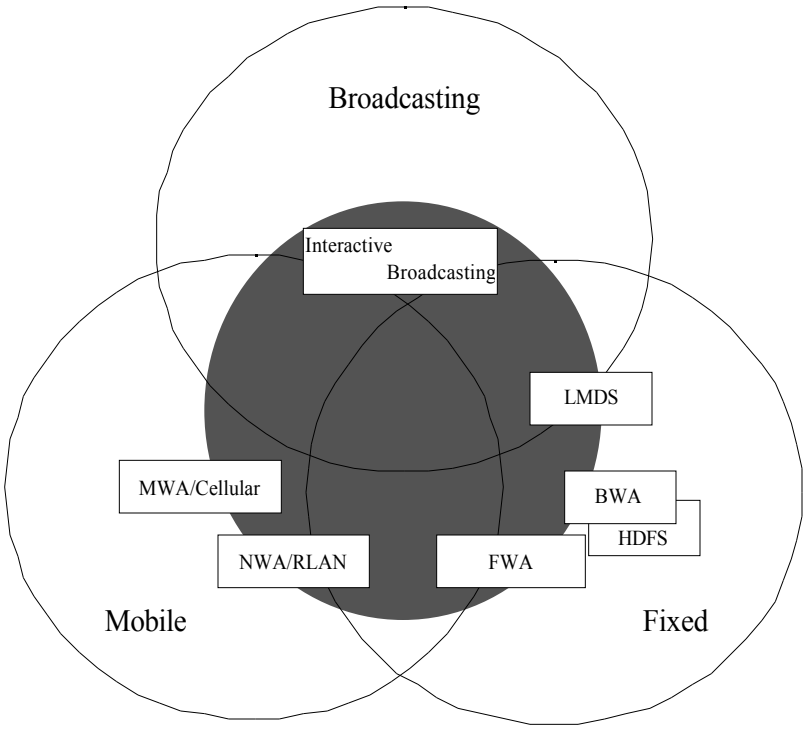
Backhaul service 4.2.1
Base station 4.2.2
Block, frequency block, spectrum block
Broadband wireless access 4.2.3
BWA 4.2.3
Central station 4.2.4
Channel; radio-frequency channel
Channel; transmission channel
Customer premises equipment/network 4.2.5
Distribution system 4.2.6
Down-link channel
Downstream
Downstream channel
Downstream; downstream channel
Dynamically variable bandwidth 4.2.7
End-user 4.2.8
End-user connection point 4.2.9
End-user termination 4.2.10
Fixed wireless access (FWA) 4.1.2
Forward channel
Frequency arrangement
Frequency block
Frequency Division Duplex
Frequency plan; frequency arrangement
Frequency slot
Frequency sub-band
High altitude platform station (HAPS) 4.2.11
High Density applications in the Fixed Service (HDFS) 4.2.12
Hub station 4.2.13
Interaction channel; interaction transmission channel
Interaction transmission channel
Internet protocol 4.2.14
Mobile wireless access (MWA) 4.1.3
Multimedia wireless system (MWS) 4.2.15
Multipoint systems 4.2.16
Narrowband wireless access
Nomadic wireless access (NWA) 4.1.4

Point-to-multipoint system 4.2.17
Point-to-point system 4.2.18
Primary rate 4.2.19
Quality of service 4.2.20
Radio termination
Radio-frequency channel
Repeater station
Repeater; repeater station 4.2.21
Return channel
Slot; frequency slot
Spectrum block
Station 4.2.22
Sub-band, frequency sub-band
Teledensity, telephone density 4.2.25
Teledensity, terminal density 4.2.24
Telephone density
Terminal density
Terminal station4.2.26
Termination, radio termination 4.2.27
Time Division Duplex
Total station density 4.2.28
Total transmitter density 4.2.29
Transmission channel
Up-link channel
Upstream
Upstream channel
Upstream; upstream channel
User 4.2.30
Virtual point-to-point connections 4.2.31
Wideband wireless access 4.2.32
Wireless access4.1.1

ATTACHMENT 2

Summary of JTG 1-6-8-9 Discussions on
Terrestrial Wireless Interactive MultiMedia Systems

There is a trend toward technical convergence of a range of end-user services that is revolutionizing communications and broadcasting and is offering a whole range of new market opportunities. The JTG considered the scope of terrestrial wireless interactive multimedia to be within the Fixed, Mobile and Broadcasting Services. This process of technical convergence may be creating an overlap between traditionally distinct Services as defined in the Radio Regulations. This overlap is illustrated by the conceptual view in Figure 1, which is provided to facilitate discussions in the JTG and Working Parties. The shaded area represents an area of indeterminate size, shape and content in which terrestrial wireless interactive multimedia systems may operate. Wired systems may carry similar end user services. The purpose of the JTG's work is to understand the evolution of those applications embraced by the concept of terrestrial wireless interactive multimedia systems so as to determine the degree of convergence and to identify if there are any specific regulatory requirements.



LMDS: Local multipoint distribution system
FWA: Fixed wireless access
BWA: Broadband fixed wireless access
HDFS: High density applications in the fixed service
RLAN: Radio local area network
NWA: Nomadic wireless access
MWA: Mobile wireless access

FIGURE 1