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Title	**Report on ITU-R JRG 8A-9B (Wireless Access) and Related Activities in ITU-R**
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Re:	Liaison report on ITU-R Activities
Abstract	This contribution provides highlights of the activities and results of the ITU-R Joint Rapporteur Group 8A-9B (JRG 8A-9B) on Wireless Access, up to its Seventh Meeting held on 13-17 March 2000 in Geneva, Switzerland. It also describes other relevant ITU-R results as those of the ITU Radiocommunication Assembly 2000 (RA-2000), held on 1-5 May 2000 in Istanbul, Turkey.
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Report on ITU-R JRG 8A-9B (Wireless Access) and Related Activities in ITU-R, for information of the members of IEEE 802.16

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Introduction

This contribution provides highlights of the activities and results of the ITU-R Joint Rapporteur Group 8A-9B (JRG 8A-9B) on Wireless Access, up to its Seventh Meeting held on 13-17 March 2000 in Geneva, Switzerland. It also describes other relevant ITU-R results such as those of the ITU Radiocommunication Assembly 2000 (RA-2000), held on 1-5 May 2000 in Istanbul, Turkey. This contribution presents the relevant summary highlights for information of the members of IEEE 802.16.

The Joint Rapport Groups 8A-9B on Wireless Access was formed by Working Parties 8A and 9B to resolve an important area of overlap between Study Groups 8 and 9 in the work on wireless access using both fixed and mobile technologies. The titles of the Questions[1] assigned by Working Parties 8A and 9B to the JRG 8A-9B are given in Annex 1. The arrangement has been very satisfactory for all the parties involved and has led to good results as demonstrated by the following outputs to-date:

- 10 ITU-R Recommendations[2] (8 in the F-series and 2 in the M-series, see Annex 2),
- one draft New Recommendation (see Annex 2),
- one draft update of the ITU-R FWA Handbook (Version 2), and
- 9 working documents towards preliminary draft new Recommendations (see Annex 3).

Highlights of the Seventh meeting of JRG 8A-9B

The seventh meeting of the Joint Rapporteur Group 8A-9B (JRG 8A-9B) on Wireless Access was held from 13-17 March 2000 in Geneva (Switzerland) with 44 participants from 14 Administrations, 1 International Organization and the BR (ITU).

The report of the Principal Rapporteurs, ITU-R Joint Rapporteur Group 8A-9B, Document 8A-9B/205, is available from http://www.itu.int/itudoc/itu-r/sg9/docs/jrg8a-9b/1998-00/index.html for TIES registered users and it is expected that it will also be made available for everyone at http://www.itu.int/was/docs/index.html). The report, document 8A-9B/205, contains attachments with the draft material in progress, which is carried forward as follows (see also Annex 3):

Block based frequency arrangements: preliminary draft revisions of Recommendations ITU-R F.748-3 and F.749-1 for the 25/26/28 and 38 GHz bands were produced.

Frequency bands for FWA: the Working Document on "Bands Under Study for Terrestrial FWA Systems and a Summary of Related Sharing Requirements" was updated.

FWA using ATM: The working document towards a PDNR on FWA using ATM was updated.

FWA Handbook: A deadline of 30 June 2000 was set up for the update to Volume I of the Land Mobile (including Wireless Access) Handbook.

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[1] A question in ITU is like a PAR in IEEE 802.16; that is, it directs the work to be done.

[2] ITU-R Recommendations are international voluntary standards.

Performance requirements: A working document towards a preliminary draft new Recommendation on "Performance and QoS requirements and objectives for fixed wireless access (FWA) to Internet protocol (IP) networks" was updated.

Vocabulary: The list of terms and definitions was updated towards an addendum to the new Recommendation ITU-R F.1399 on Vocabulary for Wireless Access.

Spectrum requirements for broadband RLANs: the work was progressed and a meeting is planned with ITU-R Study Group 7 experts in Canada in August.

Further Work of the JRG 8A-9B

The work continues by correspondence through the JRG e-mail reflector address[3]:

jrg8a-9bwas@itu.int

The next JRG 8A-9B meeting is scheduled to be held on 18-22 September 2000 in conjunction with the ITU-R WP 9B meeting period (Geneva, 18-26 September 2000).

The URL for the ITU-R JRG 8A-9B web site is http://www.itu.int/was

Radiocommunication Assembly 2000 (RA-2000)

RA-2000 was held from 1-5 May 2000 in Istanbul, Turkey. Six Recommendations prepared by JRG 8A-9B were approved (see Annex 2). In particular, Rec. ITU-R F.1499, "Radio transmission systems for fixed broadband wireless access (BWA) based on cable modem standards" may be of interest to IEEE 802.16 members. Following the proposal from the JRG 8A-9B, it was agreed to make Recommendation ITU-R F.1499 and ITU-T Recommendation J.116 (also approved by ITU-T in May 2000) complementary with each other. As part of the agreement between ITU-R and ITU-T, in the future PHY layer standards will be published through ITU-R and MAC layer standards through ITU-T.

RA-2000 also approved Resolution ITU-R 9-1 on "Liaison and Collaboration with other Organizations", which is reproduced in its entirety in Annex 4 since it provides the vehicle for a closer relationship between ITU-R and IEEE-SA.

As noted in an ITU Press Release of 8 May 2000, see http://www.itu.int/newsroom/press/releases/2000/09.html, in relation to the approval of a new recommendation on Radio Local Area networks (RLAN), the Assembly also tasked experts on mobile communications to define, in cooperation with other standards-development organizations such as the Institute of Electrical and Electronics Engineers (IEEE), the operational and technical characteristics required for future "nomadic wireless access systems", including RLANs, that would free computer-based equipment from the tyranny of wires not only in the workplace but also in public spaces.

World Radiocommunication Conference (WRC-2000), first Conference Preparatory Meeting for WRC-03 (CPM-02) and Chair/Vice-Chairpersons (CVC) meeting

WRC-2000 was held immediately after RA-2000 (Istanbul, 8 May – 2 June 2000), followed by first meeting of CPM-02 in conjunction with CVC meeting (Istanbul, 6 – 8 June 2000). The WRC-2000 established draft agenda for WRC-03 and preliminary agenda for WRC-[06]. At the same time, it

[3] 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: "subscribe jrg8a-9bwas".

adopted a number of Resolutions requesting further work by ITU-R. First meeting of CPM-02 and CVC meeting assigned the work to be done to relevant Study Groups/Working Parties/Task Groups. Decisions were adopted by CVC meeting to establish three new Joint Task Groups on new WRC-2000 Resolutions requesting ITU-R studies be carried out for 3 or 4 different Study Groups as follows:

- JTG 4-7-8 concerning sharing studies in the band 13.75 to 14.00 GHz (Resolution 733/[COM5/10] (Doc. CVC-11/9).
- JTG 1-6-8-9 concerning technical and regulatory requirements of terrestrial wireless interactive multimedia applications (Resolution 737/ [GT PLEN-2/2] (Doc. CVC-11/10).
- JTG 4-7-8-9 concerning regulatory provisions and spectrum requirements for a number of services in the frequency range 5 150 – 5 725 MHz (Resolution 736/[GT PLEN-2/1] (Doc. CVC-11/11).

The Joint Task Group 1-6-8-9 was set up to address Resolution [GT PLEN-2/2] (WRC-2000) – Review of spectrum and regulatory requirements to facilitate worldwide harmonization of emerging terrestrial wireless interactive multimedia applications, as follows:

resolves

1 to pursue its studies to facilitate the development of common, worldwide allocations or identification of spectrum suitable for new terrestrial wireless interactive multimedia technologies and applications;

2 to review regulatory methods and appropriate means of worldwide spectrum identification in order to facilitate the harmonization of emerging terrestrial wireless interactive multimedia systems for the instant and flexible implementation of universal personal services;

3 to review, if necessary, service definitions in the light of convergence of applications;

4 to report to a future competent conference.

Annex 1

Titles of Questions assigned to JRG 8A-9B by Working Parties 8A and 9B

Fixed Wireless Access (FWA) Questions

1. Question ITU-R 215-1/8, "Frequency bands, technical characteristics, and operational requirements for fixed wireless access systems using mobile technologies"

2. Question ITU-R 125-4/9, "Point-to-multipoint radio systems"

3. Question ITU-R 140-3/9, "The use of mobile-derived technologies in fixed wireless access (FWA) applications"

4. Question ITU-R 220/9, "Fixed wireless access systems conveying IP packets or ATM cells"

5. Question ITU-R [9B/blocks], "Frequency arrangements based on frequency blocks for systems in the fixed service"

6. Nomadic Wireless Access (NWA) Questions

7. Question ITU-R 212-1/8 , "Nomadic wireless access systems including radio local area networks (RLANs) for mobile applications"

8. Question ITU-R 142-2/9, "Radio local area networks (RLANs)"

Related Question

1. Question ITU-R [9A/access], "Performance and availability objectives for access part of network formed wholly or partly by fixed service radio systems"

Annex 2

Recommendations produced by JRG 8A-9B to-date

Fixed Wireless Access (FWA) Recommendations

1. Rec. ITU-R F.1399, "Vocabulary of terms for wireless access"

2. Rec. ITU-R F.1400, "Performance and availability requirements and objectives for fixed wireless access to public switched telephone network"

3. Rec. ITU-R F.1401, "Frequency bands for fixed wireless access systems and the identification methodology"

4. Rec. ITU-R F.1402, "Frequency sharing criteria between a land mobile wireless access system and a fixed wireless access system using the same equipment type as the mobile wireless access system"

5. Rec. ITU-R F.1488, "Frequency block arrangements for fixed wireless access (FWA) systems in the range 3 400-3 800 MHz"**

6. Rec. ITU-R F.1489, "A methodology for assessing the level of operational compatibility between fixed wireless access (FWA) and radiolocation systems when sharing the band 3.4-3.7 GHz"**

7. Rec. ITU-R F.1490, "Generic requirements for Fixed Wireless Access (FWA) applications"**

8. Rec. ITU-R F.1499, "Radio transmission systems for fixed broadband wireless access (BWA) based on cable modem standards"**

9. Draft New Recommendation ITU-R F.[9B/139], "Spectrum requirement methodologies for a TDMA/ FDMA system when FWA and MWA networks using the same technology coexist in a frequency band" *(Note: this Recommendation is expected to be adopted by WP 9B in September 2000)*.

Nomadic Wireless Access (NWA) Recommendations

10. Rec. ITU-R M.1450, "Characteristics of broadband radio local area networks (RLANs)"**

11. Rec. ITU-R M.1454, "E.i.r.p. density limit and operational restrictions for RLANs or other wireless access transmitters in order to ensure the protection of feeder links of non-geostationary systems in the mobile-satellite service in the frequency band 5 150-5 250 MHz"**

** Approved at RA-2000, 1-5 May 2000, Istanbul, Turkey.

Annex 3

Work in Progress in JRG 8A-9B

1. Preliminary Draft New Recommendation ITU-R F. [T1-3.5 GHz], "Use of frequency range 3 400–3 800 MHz for FWA systems and guidelines for sharing with systems in the Radiolocation Service"

2. Working Document:, "Bands under study for FWA systems and summary of related sharing requirements"

3. Preliminary Draft Revision of Recommendation ITU-R F.748-3, "RADIO-FREQUENCY ARRANGEMENTS FOR-SYSTEMS OF THE FIXED SERVICE OPERATING IN THE 25, 26 AND 28 GHz BANDS"

4. Draft Revision of Recommendation ITU-R F.749-1, "RADIO-FREQUENCY ARRANGEMENTS FOR SYSTEMS OF THE FIXED SERVICE OPERATING IN THE 38 GHz BAND"

5. Working Document, "General considerations on blocks-based frequency arrangements"

6. Working Document towards draft New Recommendation ITU-R F.[T2-PQoSIP], "Performance and Quality of service (QoS) Requirements and Objectives for Fixed Wireless Access (FWA) to Internet Protocol (IP) networks"

7. Draft Addendum to Rec. ITU-R F.1399, "Vocabulary of terms for Wireless Access"

8. Working Document towards Preliminary draft New Recommendation, "Technical characteristics of broadband FWA system conveying IP packets or ATM cells"

9. Working Document, "Methodology for assessing the required spectrum for generic broadband NWA networks"

10. Handbook on Fixed Wireless Access (expected to be completed before the next meeting of JRG 8A-9B).

Annex 4

RESOLUTION ITU-R 9-1

LIAISON AND COLLABORATION WITH OTHER ORGANIZATIONS

(1993-2000)

The ITU Radiocommunication Assembly,

bearing in mind

Article 50 of the ITU Constitution, and

considering

a) that a number of organizations dealing with radiocommunications exist;
b) that such organizations have the potential for identifying, defining and proposing solutions of particular problems of interest to the Radiocommunication Study Groups and for assuming responsibility for maintaining standards for such systems;

c) that one objective of the Radiocommunication Study Groups is to harmonize the work in radiocommunications with that of regional bodies and other international bodies;

d) that making reference in ITU-R Recommendations to organizations dealing with radiocommunications can minimize publication and translation costs to ITU, noting that it may increase the customer's total cost of acquiring such ITU-R Recommendations when the costs of non-ITU referenced documents are also included;

e) that such organizations may offer a means of improving the dissemination and effectiveness of ITU-R Recommendations,

noting

a) that references to standards published outside of the ITU-R are not appropriate in ITU-R Recommendations that may be incorporated-by-reference into the Radio Regulations;

b) that groups have been formed, at the international level, to exchange information on standardization, to facilitate harmonization of standards and to complement the formal processes of standardization bodies, in particular the ITU, in the work of developing international standards,

considering further

a) the spirit of Resolution 71 of the Plenipotentiary Conference (Minneapolis, 1998), which resolves *inter alia* that the responsible ITU-R study groups should

- encourage greater participation by Member States, Sector Members and other organizations in ITU-R activities, *inter alia* by concluding formal and informal task-oriented cooperation arrangements
- establish partnerships by concluding a range of formal and informal cooperation agreements with other intergovernmental organizations and with other organizations at the national and regional levels;

- develop innovative mechanisms for international cooperation outside the formal structures defined in the Constitution and Convention (e.g., Memoranda of Understanding (MoUs));

resolves

1 that administrations should encourage organizations dealing with radiocommunications to take into account the global activities of the Radiocommunication Study Groups;

2 that ITU-R Recommendations, as determined by the Study Group, may reference approved standards which are maintained by other recognized external organizations, e.g. standards development organizations;

instructs the Director

1 to take all the necessary steps in support of requests from Study Groups and Working Parties through the Study Group Chairperson, in collaboration with the Secretary-General and within the framework of the ITU's regional activities, to encourage increased involvement by these organizations in the Radiocommunication Study Group activities and to develop Memoranda of Understanding (MoUs) as required for the exchange of technical information on a reciprocal basis pending appropriate copyright agreements.

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