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# ***Report to IEEE 802.16 Working Group on ITU-R WP 5D Meeting #3***

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*22 October 2008*

## **Introduction**

Working Party 5D (WP 5D) held its Meeting #3 in Seoul on 8 - 15 October 2008. For a report on the previous two meetings, see IEEE C802.16-08/008 and C802.16-08/015.

IEEE's delegates were Roger Marks and John Humbert of 802.16, Bruce Kraemer of 802.11, and Mike Lynch and John Notor of 802.18. Many other 802.16 members participated in the meeting on other delegations.

The Working Party continues in "temporary" mode until the full structure of Study Group 5 (for the study period until 2011) is concluded when SG 5 meets in November 2008.

## **IEEE Contributions**

IEEE had submitted three contributions to this meeting. All were wholly or significantly developed within the 802.16 Working Group. One contribution was related to IMT-2000 developments:

\* ITU-R 5D/246 [IEEE L802.16-08/044r1]: *Updated Material on IMT-2000 OFDMA TDD WMAN for Revision 9 of Recommendation ITU-R M.1457*

The second responded to a liaison statement as part of a continuing dialog on ACS issues:

\* ITU-R 5D/245 [IEEE L802.16-08/043r1]: *Further response on IMT-2000 OFDMA TDD WMAN ACS values*

The third contribution responded to a request for parameters regarding radio interfaces in new IMT bands:

\* ITU-R 5D/244 [IEEE L802.16-08/042r1]: *Parameters of radio interface technologies*

This provided very general information and will not be addressed further in this report.

In addition, the following approved IEEE 802.16 document was relevant to a major meeting topic, although it was not submitted to the WP 5D meeting:

\* IEEE L802.16-08/039r1: *Draft contribution to ITU-R: Proposed Amendments to ITU-R Technology Description Template*

## **IMT-2000**

IEEE submitted 5D/246 (“Updated Material on IMT-2000 OFDMA TDD WMAN for Revision 9 of Recommendation ITU-R M.1457.”) This was the second (“Meeting X +1”) of three contributions toward the update of the IEEE 802.16-based radio interface in IMT-2000. A parallel document (ITU-R 5D/260) was submitted by the WiMAX Forum, which supports the same radio interface. Additional update notifications were provided by other organizations regarding the other five IMT-2000 radio interfaces.

These contributions were reviewed by the M.1457 Sub-Working Group (SWG), which provided a meeting report 5D/TEMP/135. Regarding IMT-2000 OFDMA TDD WMAN, several issues were discussed:

\* The meeting noted the fact that 5D/246 and 5D/260 proposed to move all materials originally associated with WiMAX Forum profiles from the text of M.1457 into a normative reference in the IMT-2000 “GCS.”

\* While the WiMAX Forum’s 5D/260 supported the IEEE’s 5D/246, it indicated some changes to the content of the text in subclause 5.6.1 of Rec. M.1457. This additional text proposed the addition of a 7 MHz channelization option. No opposition was raised to these changes, and the WiMAX Forum’s version was included in 5D/TEMP/120R1, to be attached to the meeting report.

\* A contribution from France and Germany (5D/301) opposed the IEEE proposal to add FDD as an enhancement to the relevant radio interface, arguing that it should instead be a separate radio interface because “FDD and TDD are radio interfaces which are deployed under different regulatory conditions and in different spectrum (paired/unpaired).” This issue was discussed at length, with no conclusion. The meeting report noted that the material carried forward in 5D/TEMP/120R1 “is not

agreed and it is attached to this report simply to stimulate input for the next meeting on the FDD/TDD issue.”

**RECOMMENDED ACTION: The 802.16 WG should prepare a “Meeting X+2” contribution for consideration at the February WP 5D meeting. This should be concluded at the November 802 Plenary. Regarding subclause 5.6.2, IEEE should not provide additional input, instead allowing the WiMAX Forum to specify its preferred format for its profiles.**

Also:

\* Changes were agreed to the M.1457 Introduction were agreed in the M.1457 SWG, based on a drafting group’s conclusion at Meeting #2 and some additional meeting inputs. The resulting changes agreed to M.1457 are reported in 5D/TEMP/119R1. A number of these edits were in line with those originally proposed by IEEE at Meeting #2 in ITU-R 5D/114 (IEEE L802.16-08/013r1).

\* Per prior notice to IEEE in TEMP/70 (IEEE L802.16-08/050), a statement was approved for SG 5 concerning support for global roaming by OFDMA TDD WMAN.

## **M.1580/M.1581**

Discussions took place regarding the update of ITU-R Rec. M.1580 and M.1581, addressing unwanted emissions, with a focus on ACLR. New working documents were developed. A liaison statement (5D/TEMP/127R1) will notify external organizations that WP 5D “will try to harmonise” the results for all six radio interfaces and seeks input (specifically on test tolerances and ACLR) to conclude the revisions at the next meeting.

## **Spectrum Aspects**

IEEE’s contribution ITU-R 5D/245 (“Further response on IMT-2000 OFDMA TDD WMAN ACS values”) was reviewed, as was the WiMAX Forum’s response (ITU-R 5D/258) to the same liaison statement. The IEEE contribution indicated that it remains interested in responses to an earlier contribution (ITU-R 5D/108 [IEEE L802.16-08/017r1]).

Regarding the request in IEEE’s 5D/108 for a derivation of the ACS/ACR formula cited by WP 5D, an input contribution from France and Germany (5D/315) provide

information relevant to the answer. However, this information was not forwarded to IEEE.

Regarding the request in IEEE's 5D/108 for an explanation of the ACS/ACR relationship cited in an alternative IMT-2000 radio interface, WP 5D again did not respond directly. However, it did submit a liaison statement to 3GPP requesting an explanation of that expression. The draft liaison statement prepared by the relevant Working Group (5D/TEMP/112) specified that IEEE was to be copied on the liaison to 3GPP. However, at the WP 5D Closing Plenary, the cc to IEEE was deleted, as was the reference to IEEE as the source of the inquiry.

WP 5D did prepare a statement back to the WiMAX Forum (5D/TEMP/111R1) in response to 5D/258. This document references "IEEE standards". The letter acknowledges one of the many issues raised in previous discussions: the frequency-independence of ACR specifications.

**RECOMMENDED ACTION: IEEE 802.16 should review 5D/TEMP/111R1 and 5D/TEMP/112(revised) at Session #58, though it appears that no resulting IEEE contribution is necessary.**

WP 5D concluded a Draft Revision of Report ITU-R M.2113 ("Report on sharing studies in the 2 500-2 690 MHz band between IMT-2000 and fixed broadband wireless access systems including nomadic applications in the same geographical area"). This work, which was originated prior to the inclusion of IEEE 802.16 in IMT-2000, includes significant references to non-mobile use of IEEE 802.16.

## **IMT-Advanced Technology Description Template**

Extensive discussions took place regarding the Technology Description Template that is a required element of proposal submissions. It was agreed that the template “shall be used by the proponents to describe their proposal for a radio interface for IMT-Advanced to a level of detail that will facilitate a sufficient understanding of the proposed technology to enable an independent technical assessment of compliance with the IMT-Advanced requirements.” During the meeting, a significant number of elements of the previous working document were deleted or modified, and a few were added. The work was concluded (5D/TEMP/134R2) and will be added to the previous draft report (temporarily designated as IMT.REST), along with a new Link Budget Template (5D/TEMP/107R1).

**RECOMMENDED ACTION: IEEE 802.16 should review IMT.REST and become familiar with the questions that need to be answered as part of the IMT-Advanced submission process.**

## **IMT-Advanced Evaluation Criteria and Methodology**

The draft report on evaluation criteria and methodology, temporarily designated as IMT.EVAL, was concluded (5D/TEMP/99R1) without major difficulties.

**RECOMMENDED ACTION: TGM should review the IMT.EVAL draft, including issues such as the test scenarios and channel models, and consider updating its Evaluation Methodology Document (EMD) accordingly in order to take advantage of the opportunity to reuse its internal evaluations for IMT-Advanced purposes.**

## IMT-Advanced Workshop

Document 5D/321 is a report of the IMT-Advanced Standardization Workshop of 7 October. It notes that “At the time of the Workshop, 3GPP, 3GPP2 and IEEE had requested the opportunity to present their preparations on the IMT-Advanced technologies.” José Costa presented the 802.16 Working Group’s approved document IEEE L802.16-08/057r2 (“IEEE Project 802.16m as an IMT-Advanced Technology”). The report notes that 3GPP stated that it “will follow the timeline” of the process but that “In the near future, 3GPP2 will focus on enhancements of CDMA2000 and HRPD.” Japan’s ARIB and Korea’s also presented their activities on IMT-Advanced.

## Future Meetings

The tentative meeting plan beyond 2008 was revised. The new tentative schedule is:

WP 5D Meeting # 4	<del>14-17</del> Feb-09	<del>India</del> <u>Geneva</u>
WP 5D Meeting # 5	10-17 Jun-09	<u>Germany</u> <u>Geneva/Asia</u>
WP 5D Meeting # 6	14-21 Oct-09	<u>China</u> <u>Germany</u>